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IN KERALA:
TRENDS AND DIFFERENTIALS**

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ABSTRACT

This paper examines the trends and differentials in school educational attainment in Kerala, the State that ranks right on top in terms of human development in India. The trend analysis is based on a cohort-level comparison of educational attainment while the differential analysis is done using life table techniques. The analysis is based on data on educational attainment of the household population in the National Family Health Survey (2005-06). The unique features of this paper are that it provides comparable time-series data on entry to different stages of the schooling system, right from the time the State was formed in 1956, and that it analyses the probabilities of continuing from the first standard to the higher secondary level across different sub-groups of the population.

Over these years, female students have acquired a definite edge over their male counterparts at the high school and the higher secondary levels. The progress noted at lower levels of schooling is not manifest at the higher secondary level, with less than half the children enrolled in high school proceeding to the next level. Socio-religious differences are large at the higher levels of education, with scheduled tribes, Muslim girls and scheduled castes benefiting the least, in that order. The situation among the vulnerable scheduled tribe communities is today worse than what it was among other backward class Hindus or even the forward castes at the time the State was formed. The backwardness of Muslim children in schooling begins from the higher secondary level onwards.

The survival analysis brings out that uninterrupted continuity in schooling is a major issue in the State, with a fifth of the children at the higher secondary level being overaged, according to the study's definition. Further, females do better in schooling continuity than males. It also reveals considerable levels of socio-economic disparities in higher secondary school education. Religious differentials indicate Christians are well ahead of other religious groups in terms of uninterrupted progress to the higher secondary level. The presence of a graduate in the household and the educational level of parents have a significant impact on children's schooling continuity. The paper also exposes the wealth-based inequalities in schooling continuity in Kerala.

Key words: schooling, continuity, inequality, social divide, educational attainment, Kerala.

JEL Classification: I 21, I 28, J 7, I 10

Introduction

Educational attainment is an inevitable component of human capital development in a population. Kerala is often lauded for the progress it has achieved in the field of schooling. The median number of years of schooling completed by females aged six years and above was 7.5 in Kerala, while it was only 1.9 in the rest of India (International Institute for Population Sciences and Macro International 2007). The successful development of school education in the State has been attributed to a mix of historical and programme factors. Two of the prominent historical factors were social movements against caste discrimination and the role Christian missionaries played in promoting education (Tharakan 1984). Another historical factor was the progressive outlook of the government of the princely state of Travancore, which not only recognised the potential of education but also made it the responsibility of the state (Jeffery 1976). The achievements after the 1950s have been, to some extent, ascribed to public action that led to an equitable distribution of social services, including education (Dreze and Sen 2002). For instance, the public policy of providing a transport subsidy to students facilitated the spread of education across rural Kerala (Kumar and George 2009). Researchers also see factors like remittances from Keralites working abroad, especially the Gulf countries, having led to significant improvements in the educational attainments of backward communities and relatively backward regions in the State (Zachariah and Rajan 2004). Much of the State's social development-

related achievements continue to be attributed to the superior status it enjoys in education. Bhat and Rajan (1990) see female literacy as the most important factor that has contributed to the ongoing demographic transition in Kerala. So education, especially female education, has served as a catalyst for faster social development in the State than other parts of the country.

However, the situation is not that encouraging when it comes to higher levels of school education in Kerala. The State has low levels of high school and higher secondary school completion rates. As per the 55th round (1999-2000) survey of the National Sample Survey Organisation (NSSO), only 33% of the population aged seven years and above had completed secondary school education in Kerala. Unfortunately, those who were not eligible to study in a particular schooling level due to age constraints were also included in the NSSO's calculations. The 2005-06 National Family Health Survey (NFHS-III), which took this aspect into consideration, revealed that 49% of the females aged 15 to 49 years in Kerala had completed their high school education. The corresponding figure for the country as a whole was only 22% (IIPS and Macro International 2007). In the case of males aged 15 to 49 years, 48% in Kerala had completed their high school education, while it was only 35% in India as a whole. The reality is that 98% of the rural population in the State has a facility for secondary school education within a radius of 8 kilometres of their houses and that there is no fee payable at any level in government and government-aided schools (Kumar and George 2009). Given this, the number of students who enter the higher secondary level after completing high school should be considerably more.

Some attempts have been made to explain the causes of educational development in Kerala over time. However such explorations were handicapped by the lack of comparable time-series data on school educational attainment among various social groups. The existing

inferences on educational development are either based on literacy rates available from the Census of India or on limited school enrollment statistics compiled by the Directorate of Public Instruction, Government of Kerala (Government of Kerala 2006; Planning Commission 2008). The gross enrolment statistics released by the Government of Kerala are characterised by heavy over-reporting because of the government policy of allocating financial resources on the basis of student strength (Kumar and Lathika 2007). This paper makes an attempt to fill the gap in time-series data on school educational attainment in Kerala from 1956, the year the State was formed.

The paper also examines the socio-religious divide, which has been a crucial barrier to the spread of school education in the State. Researchers have highlighted the educational backwardness that existed among poor social groups until the middle of the 19th century and its historical reasons (Tharakan 1984; Salim and Nair 2002). The role of caste and religion-based hierarchies in educational participation in Kerala has been partially documented until the 1960s (Nair 1976; Sivanandan 1976). But a comprehensive analysis of the trends in schooling has been a missing since then because of the data constraints mentioned earlier.

However, there is cross-sectional data-based evidence on socio-religious differences in schooling within the State. Religion-based hierarchies indicate the superiority of Christians in secondary education and levels higher than it. Hindus and Muslims come in second and third, though Muslims lag behind the other two communities (Planning Commission 2008). This report highlights that though the Christians are well ahead of other religious groups in terms of education, there exist huge variations among Christians belonging to different denominations. Caste-based inequalities are also prominent with a relatively low retention rate in schools among scheduled tribes (STs) and scheduled castes (SCs). Of all ST students enrolled in the first

standard, the proportion making it to the 10th standard was only 46%. It was 77% among SC students and 86% among all students in the State (Government of Kerala 2006).

The Kottathara Panchayat Human Development Report (KoHDR), prepared in 2008 by the Centre for Development Studies (CDS) for the United Nations Development Programme (UNDP) and State Planning Board, brought out the striking socio-religious differentials in education attainment in a panchayat. It showed that the poor connectivity of tribal colonies and their poverty contributed to their lack of access to education beyond the upper primary stage. The report was also critical about the low level of education attained by Muslims in the panchayat. The divisions noticed at the panchayat level justify the need to re-examine the trends and differentials in school educational attainment within the State.

Data

The data analysed here is from the NFHS-III, a survey that covered 29 states with more than 99% of the country's population. This household survey conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, was a part of the demographic health surveys (DHS) held across the world. The NFHS-III data set, which provides ample information on the educational attainment of members in sample households, is considered one of the most reliable sources of information for examining the state of education in India. Researchers from various disciplines have effectively made use of NFHS-III data to explain levels of schooling in India (Dreze and Sen 2003; Filmer and Pritchett 2003; Kingdom 2007). In Kerala, a total of 13,806 individuals were surveyed in 3,023 households that comprised the sample. Of these, 11,653 usual residents (visitors were excluded) aged seven years and above have been included in this analysis of trends in school educational achievement in the State.

Differentials in school educational attainment are analysed using data from the NFHS-III on school attendance status among children aged five to 18 years. This provides an understanding of current patterns in school attendance and its correlates. There were 2,712 children in the relevant age group among those surveyed in the sample households. This analysis is restricted to 2,668 cases (44 with missing data were excluded) where information on school attendance during the academic years 2004-05 and 2005-06 was available in the data set.

Classification and definitions

It may be useful to keep in mind that the schooling system in Kerala comprises four levels or stages—primary school (first to fourth standards or classes); upper primary school (fifth to seventh standards); high school (eighth to 10th standards); and higher secondary school (11th and 12th standards). For the purpose of this analysis, a person is defined as having entered a particular level if he or she has completed the initial year of schooling at that level. Children entering a particular level but dropping out before completing a year are not considered as having undergone schooling at that level. Thus students who have completed the first standard are treated as ones who have effectively entered and studied in a primary school, those who have completed the fifth standard are treated as ones who have effectively entered and studied in an upper primary school, those who have completed the eighth standard as ones who have effectively entered and studied in a high school, and those who have completed the 11th standard as ones who have effectively entered and studied in a higher secondary school or related level requiring successful completion of high school education (junior college, ITI, diploma in engineering, nursing or the like). The present analysis revolves around the four stages in the schooling system due to the fact that quite often a student may have to change schools because a higher level may not be available in the school where he or she is studying. The possibility of dropping out is

quite high when children have to shift from one school to another, especially if the nearest school for the next higher level of study is quite far from their house.

Methods

A cohort-based analysis is used to examine the historical trends in development of school education since the formation of the State in 1956. Differentials in school attendance levels are obtained by arriving at schooling continuation rates using life table techniques. The details are presented below.

Cohort-based analysis

NFHS-III-based information on the highest number of years of education completed by individuals interviewed in the survey enables us to examine trends in educational attainment over time. Trends are understood by making comparisons of variations in school educational attainment across schooling cohorts. Cohort-based analysis using point data (census/survey) is often employed in demographic analysis, where a cohort is a set of individuals entering a system at the same time. Here, time refers to the year of entry to a particular level of schooling. Cohorts are identified from the cross-sectional survey data based on age at entry to different levels of schooling, adopting a procedure close to that used by Shariff (1999).

The NFHS-III in Kerala was conducted in 2006. First, using the current age, the expected year of entry to a higher level of schooling (primary school, upper primary school, high school or higher secondary school) is determined. The official minimum age is five years for admission to the first standard, nine years to the fifth standard, 12 years to the eighth standard and 15 years to the 11th standard. So the minimum expected age at which a child completes the first standard is six years (without dropping out or repeating a class), the fifth standard is 10 years, the eighth standard is 13 years and the 11th Standard is 16 years.

For a person of a certain age, the expected year of study (Y_i) in the i^{th} standard is

$$Y_i = S - A + (M_i + 1)$$

Where S is the year of survey; A is the age in completed years as on the date of survey; and M_i is the minimum official age for completion of the i^{th} standard.

We have to make allowances for late entries to school, illness or repetition in a particular class by a number of students. To account for this, a one-year relaxation ($M_i + 1$) is provided while converting age data to schooling cohort data.

Table 1: Illustration of arriving at expected year of study from the age at the time of survey

Age (in 2006)	Schooling level	Expected year of study
20 years	Primary school	1993
	Upper primary school	1997
	High school	2000
	Higher secondary level	2003
48 years	Primary school	1965
	Upper primary school	1969
	High school	1972
	Higher secondary level	1975
72 years	Primary school	1941
	Upper primary school	1945
	High school	1948
	Higher secondary level	1951

The expected year of study thus obtained was used to classify the sample population into the following schooling cohorts—1946-1956; 1956-1966; 1966-1976; 1976-1986; 1986-1996; and 1996-2006. The highest year of education completed by each individual according to

the NFHS-III data enables us to identify the number/share among each schooling cohort effectively entering a stage in the schooling system. It should be noted that the actual year of study in a particular standard may vary from the expected year of study in some cases because of late entry to school; frequent failure and repetition in a class; and dropping out and then re-entering the school system. But the expected age at entry is static for student of a certain age as it is based on government guidelines for entry to the school education system. This is the strength of the present procedure proposed for understanding trends in school educational attainment in Kerala.

The limitation of this method is lack of information on the educational attainment of the population that was eligible to be enrolled in various schooling levels after 1956, but was not alive during the NFHS-III. To elaborate, while tracing the educational attainment of schooling cohorts, the sample does not account for information on those who have not survived till NFHS-III Survey, but were eligible for schooling during the period under study. This is an inherent limitation of any cohort analysis using cross-sectional data and a reason for restricting our analysis beyond 1956. It needs to be clarified that the estimates presented here are not affected by mortality levels during the period of study. Mortality would affect the estimates only if the State had experienced sizeable education-wise differentials in mortality during the observation period. Such mortality differentials are assumed to be low in a demographically progressive State like Kerala. But readers should be aware that differentials noted in this analysis across any indicator would worsen further, if we account for the so-called educational differential in mortality (if any) of the population during the period of study.

Schooling continuation analysis

The school attendance status of a child aged five to 18 years is determined using the following information—the age of the child at the

start of the 2005-06 schooling year; whether the child attended school or college during 2005-06; and what standard the child was studying in in 2005-06. Based on these details, children aged six to 17 years are classified into four categories—those who have never been to school; school dropouts; those in school but overaged; and those in school but not overaged (ideal attendance).

The following procedure is adopted to identify overaged school-going children. We have information on which standard a child was studying in during the 2005-06 academic year and the age of the child at the start of the year. As mentioned earlier, a child aged five years at the beginning of the academic year is likely to be in the first standard, six years in the second standard, seven years in the third standard, and so on until he or she is in the 12th standard by the age of 16. While computing overage we allow for an extra year because any child may lose a year of schooling because of illness, failure or repetition in a particular standard, or late admission to the first standard. But a child who is two or more years late in entering a particular standard is treated as overaged. A child aged seven years and above at the beginning of 2005-06 academic year studying in the first standard, a child aged eight years and above at the beginning of 2005-06 academic year studying in the second standard, and so on, are considered overaged. Differentials in school attendance are examined taking various background characteristics of the students into account. The paper also examines the reasons cited for not attending school among the out-of-school children in the age group of five to 18 years.

In the next stage, schooling continuity across the student population is examined using survival analysis. This is restricted to children aged seven to 17 years who have been to school. Life table techniques are used to arrive at the probability of entering upper primary school (fifth standard), high school (seventh standard) and higher secondary school (11th standard). This technique that enables us to

arrive at transitional probabilities is considered a valuable approach for synthesising the pattern and propensity of any event that occurs in the life of a human being (Nampoothiri and Suchindran 1987). Instead of mere schooling continuation rate (Rajaram 2000), the present analysis examines schooling continuation without being overaged. Such a refinement is undertaken because continuing up to the 10th standard is not a major issue in Kerala, which follows a very liberal promotion policy and provides subsidised education up to this level. To be precise, a survival analysis enables us to arrive at the probability of surviving from the first standard to schooling level of interest (say, high school). This can also be interpreted as the proportion reaching a certain level of schooling if they stick to ideal-age schooling continuation rates.

Results

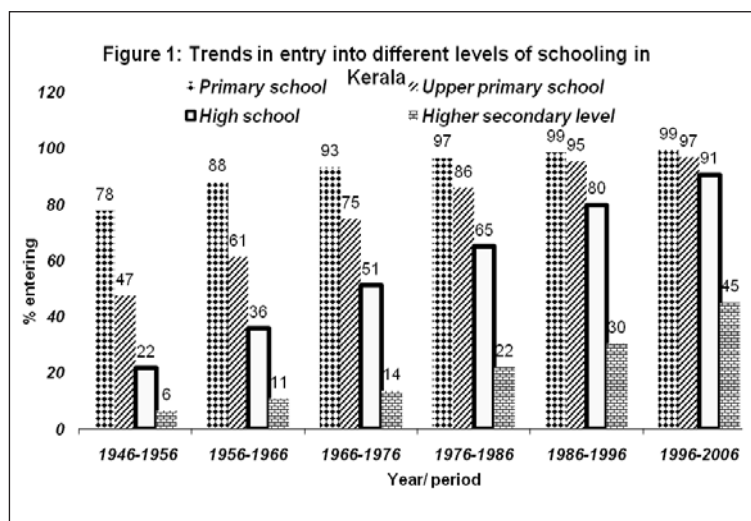
According to this study's definition, those who have completed at least one year in the school education system are treated as having effectively entered and studied in a primary school. Those who never joined a school but had informal education and those who enrolled in a school but dropped out before completing the first year of education are considered as having been unable to effectively enter and study in a primary school. The proportion entering primary schools increased from 78% during 1946-1956 to 99% by 1996-2006. In fact, near universal entry to the primary level had been in place during the last four decades examined. A child aged 11 years and above was considered to have enrolled and studied in an upper primary school if he or she had completed five or more years of school education. Data indicates that (see Graph 1 and Table 2) not even half the population was effectively enrolled in an upper primary school during 1946-1956, which increased to 97% during the decade preceding the survey (1996-2006).

The progress was even more encouraging in the case of entry to high school. Those aged 14 years and above who had completed eight

Table 2: Proportion entering each school level among various schooling cohorts by gender, Kerala

Educational level	% entering the level with each schooling cohort								No of Cases (N)	
	1946-1956	1956-1966	1966-1976	1976-1986	1986-1996	1996-2006	2006-All	1996	2006	All
Total population										
Primary school	77.7	88.0	93.3	96.6	98.5	99.3	94.2	10,860		
Upper primary school	47.4	61.2	74.8	85.7	95.2	96.8	82.5	10,174		
High school	21.7	35.9	51.1	65.0	79.8	90.6	65.7	9,613		
Higher secondary level	6.4	10.8	13.5	22.0	30.3	45.0	26.4	9,122		
Males										
Primary school	86.3	91.9	96.9	97.7	98.4	99.3	96.3	5,110		
Upper primary school	58.8	68.9	80.5	88.7	95.4	96.7	85.9	4,752		
High school	30.8	43.8	60.0	68.9	78.4	89.6	69.1	4,464		
Higher secondary level	11.1	15.7	16.2	24.6	26.8	40.7	26.4	4,218		
Females										
Primary school	70.1	84.6	90.3	95.8	98.6	99.4	92.4	5,750		
Upper primary school	37.9	54.2	69.9	83.2	95.0	96.9	79.5	5,423		
High school	14.5	28.4	43.3	61.7	81.0	91.4	62.7	5,150		
Higher secondary level	3.0	6.5	11.2	19.8	33.1	49.2	26.3	4,904		

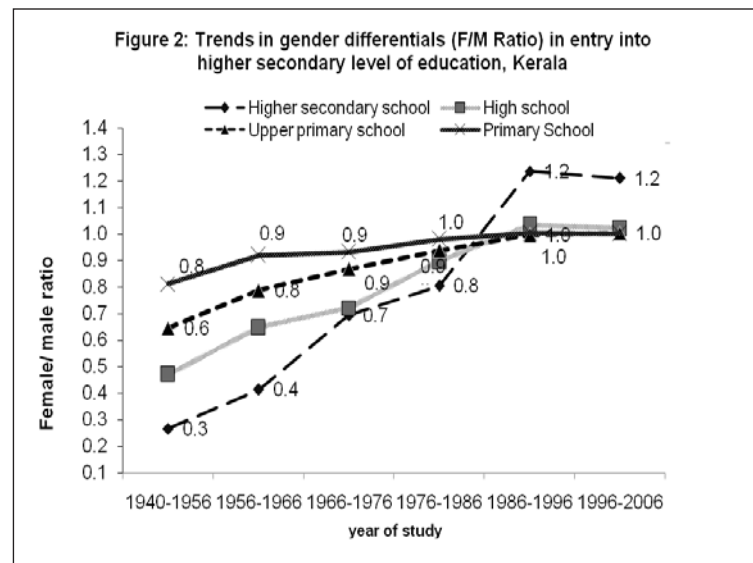
Source: Computed from National Family Health Survey-III (2005-06) data sets



or more years of education were considered to have enrolled and studied in a high school. During 1946-1956, just around a fifth of the children entered high school, which steeply increased to 91% by 1996-2006. However, such an increase has not occurred in the case of entry to the higher secondary level. Those aged 17 years and above who had completed 11 or more years of education were considered to have enrolled and studied in a higher secondary school or in an educational institution at a similar level. During 1946-1956, around 6% of the children made it to the higher secondary level or a related stage of education. This had risen to only 45% during 1996-2006. The most critical observation was that half of those entering high school were not proceeding to the higher secondary level. Even the increase observed between 1986-96 and 1996-2006 needs to be treated cautiously as it could have been due to dilution in the criteria for passing the secondary school examinations. Evidence indicates that the evaluation criteria have been liberalised for this examination and the pass percentage has increased over time due to moderation (Planning Commission 2008).

Sex differentials in school educational attainment

Historical trends reveal that male children had an advantage over female children in terms of entry to primary school until 1966-76. This sex-based differential vanished with the universalisation of primary school education in the 1970s. Compared to primary school, the sex differential was higher for entry to upper primary school during the earlier periods examined. During 1946-1956, when 59% of male children entered and studied in an upper primary school, only 38% of their female counterparts did so. This differential also became immaterial with near universal upper primary education during 1986-1996.



During the initial years, the sex differential was high in the upper levels of schooling. In the 1946-1956 high school entry cohorts, 31% were males while only 15% were females. By 1976-86, the sex differential narrowed down to 69% and 62% among male and female children, respectively. Since the mid-1980s there has been a dominance of female children in high school education. During 1946-56, the differential was

severely biased against females (3%) compared to males (11%) when it came to successful completion of high school education and entry to a higher level of education. With the overall advancement in female education over time, the gender bias has shifted in favour of female children in higher secondary education. But it is true that less than half of students from both sexes enter the higher secondary level or a related one. Among the most recent schooling cohorts examined, only 41% of the males and 49% of the females studied in a higher secondary level educational institution.

Socio-religious differentials in educational attainment

Instead of the conventional social group classification (STs, SCs, other backward classes or OBCs, forward classes) or religious categorisation (Hindus, Muslims, Christians), a new variable socio-religious group has been introduced by combining the above two variables. Since the overall share of STs and OBC Christians in Kerala's population is negligible, a sample size constraint arises in the case of estimates for these two sub-groups for some of the time periods analysed. Despite this, the present analysis adheres to the conventional categorisation because of its relevance to answering policy questions on the diffusion of educational attainments among various socio-religious groups in the State.

Earlier years (1956-1966) witnessed substantial socio-religious differentials in entry to primary school, both among male and female children. Estimates could not be arrived at for STs during this period because of the very small sample size. But their levels could be assumed to be low, given that their enrolment rates during all the subsequent periods under have been below par. In the case of male children, the proportion entering primary school was lowest among SCs (82%) and Muslims (83%). Interestingly, school enrolment of female Muslim children during this period was much lower than that of SCs. These socio-religious differentials disappeared in the mid-1970s, except in

the case of male ST children, where there was still scope for improvement. Table 3 clearly shows that there were no major differentials in the proportion of OBC Hindu, forward-class Hindu and forward-class Christian children entering primary school after Kerala came into being in 1956. Further, the sex differentials within these communities were negligible across the periods analysed.

Upper primary school education has also become nearly universal across all social groups, save STs. Though substantial improvements in school educational attainment have been made by male ST children (76%), the situation is stagnant among ST females with around half of them not attending school even in 1996-2006. The rate of entry of Muslims to upper primary schools was worse than that of SCs until the early 1970s. But since the 1980s, the Muslims have made rapid progress in upper primary schooling and are almost close to the levels attained by other OBCs and the forward classes. Above 90% of forward-class Christian children were in upper primary school during 1966-76 while the same level was attained by OBC Hindus and forward-class Hindus during 1976-86.

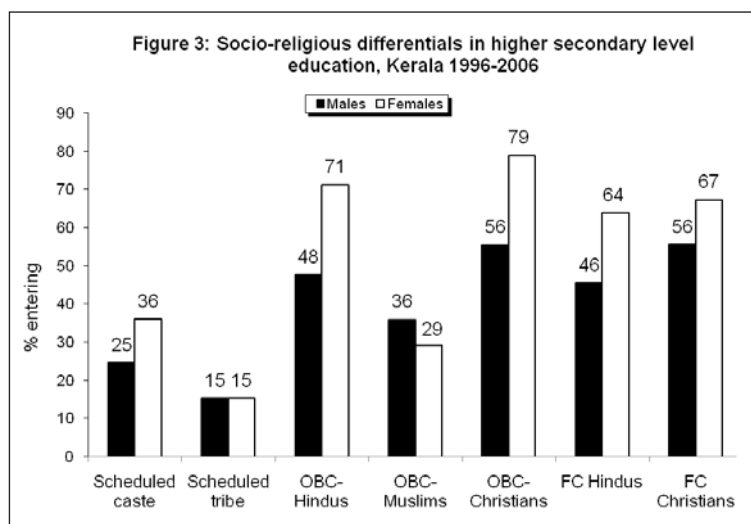


Table 3: Proportion entering each school level among various schooling cohorts by socio-religious background, Kerala

Caste/ Religion/ School level entered	% of schooling cohorts entering the respective level												No. of cases (N)			
	Males						Females									
	1956- 1966	1966- 1976	1976- 1986	1986- 1996	1996- 2006	1956- 1966	1966- 1976	1976- 1986	1986- 1996	1996- 2006	Males	Females				
Scheduled castes																
Primary school	81.7	96.8	96	97.5	99.3	74.4	73.9	89.9	96.8	99.2	547	562				
Upper primary school	45.3	68.2	80.6	88.5	92.1	35.4	51.2	75.2	89	97.6	506	546				
High school	24.6	33.8	55.6	66.4	81.5	15.4	22.6	50.4	65.2	86	482	509				
Higher secondary level	7.3	5.6	15	16	24.6	1.8	3.5	16.3	18.1	36.1	478	504				
Scheduled tribes																
Primary school	—	(100.0)	(93.7)	80.9	96.7	—	(56.3)	80.0	77.2	95.2	92	92				
Upper primary school	—	(56.2)	(72.2)	60.0	75.8	—	(38.4)	(42.1)	65.5	55.0	84	84				
High school	—	(41.7)	(18.8)	(31.2)	51.8	—	(9.1)	(23.5)	26.9	52.1	77	79				
Higher secondary level	—	—	(0.0)	(6.3)	15.4	—	—	(0.0)	(7.3)	15.4	72	85				
OBC-Hindus																
Primary school	95	96	100	98.8	99.1	93.4	95.1	98.1	100	100	868	937				
Upper primary school	83.5	85.6	92.9	98.8	98.1	60.9	79.7	91	98.5	98	826	916				
High school	58.4	65.5	79.2	85	95.3	32.8	57.2	73.9	92.2	95.9	788	884				
Higher secondary level	19.6	17.3	23.7	34.1	47.7	6.3	12.6	18.7	43.6	71.3	774	867				
OBC-Muslims																
Primary school	82.5	93.3	97.4	98.7	99.3	65.7	85.7	95.9	99.7	99.3	1,253	1,559				

cont'd....

Upper primary school	45.8	61.6	81.3	95.8	97.7	27	46.7	72.5	95.4	97.2	1,144	1,443
High school	17.5	35.9	49.4	73.5	90.2	5.1	13.7	34.7	72	90.6	1,056	1,344
Higher secondary level	2.5	3.8	10.0	14.3	36.0	2.1	1.7	6.1	12.9	29.2	969	1,248
OBC-Christians												
Primary school	(100)	91.6	—	(100)	(100)	(94.1)	(94.7)	85.7	100.0	(100)	85	97
Upper primary school	(80.0)	(88.9)	(94.4)	—	100.0	(75.0)	80.9	(78.9)	100.0	(100)	79	93
High school	(41.7)	(76.5)	(71.4)	—	94.7	—	40.0	59.1	(100)	92.6	78	92
Higher secondary level	—	(11.1)	25.0	—	(55.5)	—	(17.6)	(15.8)	57.2	79.1	73	88
FC Hindus												
Primary school	96	98.8	97.8	99.1	99.3	90.9	94.8	98.3	98.4	98.9	1,208	1,327
Upper primary school	75.1	86.7	92.4	97.8	97.8	69.5	78.8	89.9	97.6	98	1,173	1,293
High school	50.6	68.2	74	84.9	91.3	37.3	50.8	74.9	91.4	94.2	1,110	1,248
Higher secondary level	20.1	21.8	29.3	33.5	45.6	7.5	13.6	22.9	42.0	64.4	1,070	1,221
FC Christians												
Primary school	99.1	99.2	96.7	100	100	97.7	97.1	97.7	98.9	100	594	630
Upper primary school	84.5	90.7	94.9	97.9	96.7	69.9	89.6	91.2	95.7	97.4	572	607
High school	57	80.5	85.9	84	90.6	45.3	72	83.8	88.9	93.6	559	591
Higher secondary level	23.8	27.8	44.7	38	55.6	13.9	23.2	43.4	58.9	67.9	549	576

Source: Computed from NFHS-III 2005-06; N includes also those without religion and caste

() Based on less than 20 observations; — indicates figures not presented as number of observations less than 10
OBC-Other backward class; FC-Forward class

Trends in entry to high school show noteworthy achievements made by male children from among the OBC Hindus and OBC Christians. It needs to be highlighted that the high school educational attainment was highest among forward-class Christians until they were replaced by OBC Hindus and OBC Christians in the mid-1990s. No differentials could be noted among Muslims, forward-class Hindus and forward-class Christians. Hence the progress of the Muslim community on this front among both sexes has been commendable. Around half the male children belonging to ST communities were not entering high school even in the early 2000s. There exists room for improvement among the SCs (82% among males and 88% among females) as well. One can see that in the period 1956-1966, the possibility of high school education was limited among SCs, STs and OBCs. But more than 57% of male forward-class Christians and 45% of females in this community attended a high school even during that period. They were closely followed by forward-class Hindus until 1966-76, after which the pole position was taken over by OBC Hindus, who began giving more importance to schooling. The educational progress of the Muslim community, especially females, has taken a major turn since the 1970s and of late they almost match other OBC communities and the forward classes in terms of entry to high school. That OBC Hindus and OBC Christians now pay extra attention to education of their female children is also encouraging.

Higher secondary education was negligible among the SCs, STs and Muslims in the initial period examined. Even in early 2000, it was much below among STs than what it had been among forward-class Hindus and forward-class Christians during 1956-66. Of late, Christians (both forward class and OBCs) have a certain advantage over all other communities in terms of entry to higher secondary school. Another interesting observation is that OBC Hindus (48%) are marginally ahead of forward-class Hindus (46%) in higher secondary level education. The historical advantages that the forward-class Hindus had in higher education seem to have run their course. As for higher secondary

education among female children, the traditional position held by forward-class Christians and forward-class Hindus has been taken over by OBC Christians and OBC Hindus. Higher secondary education is quite low among female children from ST communities (15%), followed by Muslims (29%) and SC communities (36%). The high enrolment of Muslim females in high school but low turn-out in higher secondary school needs to be investigated and addressed at the policy level.

School attendance status

Table 4 underlines that the problem of never enrolling in a school is virtually non-existent in Kerala. Only 6% of the children aged six to 17 years do not attend school, according to this study's definition. But a substantial share of population aged 6-17 years are overaged students continuing their studies in schools. Nearly 16% of children in the age group under study were found to be overaged and continuing in school. Despite being admitted to school at the right age, the proportion of overaged children in different classes increases from about 9% among the six to nine age group to 23% among the 16 to 17 age group. This hints that at least one-fourth of children studying in higher secondary schools are overaged. In addition, 24% in the 16 to 17 age group have dropped out of the education system.

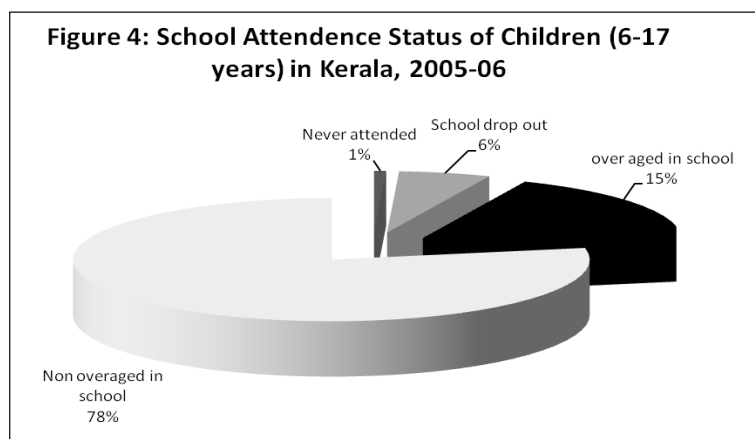


Table 4: School attendance status during 2005-06 by selected background characteristics, Kerala

	Not attending school		Attending school		Total	No. of cases
	Never attended	Dropped out	Overaged	Ideal attendance		
Age of the child**						
6-9	1.4	1.5	8.6	88.5	100	922
10-12	0.3		16.2	83.5	100	661
13-15	0.3	5.1	19.3	75.3	100	647
16-17	0.7	24.2	23.3	51.8	100	438
Place of residence						
Urban	0.8	4.9	14.6	79.7	100	869
Rural	0.7	6.1	15.9	77.2	100	1,800
Sex of the child**						
Male	0.9	6.5	19.0	73.7	100	1,345
Female	0.6	5.0	11.9	82.5	100	1,323
Caste/religion**						
Scheduled caste	0.7	6.9	17.3	75.1	100	277
Scheduled tribe	2.0	19.6	33.3	45.1	100	51
OBC-Hindus	0.6	4.5	12.0	82.8	100	465
OBC-Muslims	1.0	6.5	19.7	72.8	100	909
OBC-Christians		2.4	9.8	87.8	100	41
Other Hindus	0.5	4.7	11.4	83.4	100	616
Other Christians	0.7	4.6	11.9	82.8	100	302
Type of family						
Nuclear	0.4	5.8	16.3	77.5	100	1,414

cont'd...

Non-nuclear	1.1	5.7	14.6	78.6	100	1,254
Head of household						
Male	0.8	6.1	14.6	78.5	100	1,944
Female	0.6	4.8	18.0	76.6	100	724
Household education level**						
Without an adult graduate	0.7	6.3	16.8	76.1	100	2,300
With adult graduate	0.8	2.2	7.1	89.9	100	368
Female educational status in household**						
Without SSC completed adult female	0.7	7.6	18.4	73.3	100	1,482
With SSC completed adult female	0.8	3.5	11.9	83.9	100	1,186
Mother's education**						
Primary incomplete	1.6	14.4	26.8	57.2	100	250
Primary complete but high school incomplete	0.5	2.2	16.4	80.9	100	1,290
High school complete & above	0.8	1.2	9.7	88.3	100	866
Father's education**						
Primary incomplete	1.7	9.6	24.0	64.6	100	229
Primary complete but high school incomplete	0.5	2.8	15.1	81.6	100	1,030
High school complete & above	0.7	0.8	9.9	88.6	100	597
Wealth quintile**						
Lowest	0.9	11.4	20.6	67.0	100	552
Second	0.6	5.8	15.5	78.1	100	515
Middle	0.7	4.6	13.6	81.1	100	560
Fourth	0.7	3.6	16.4	79.3	100	556
Highest	0.8	2.9	10.7	85.6	100	485
Total	0.7	5.7	15.5	78.0	100	2,668

Source: Computed from National Family Health Survey-III (2005-06) data
 Chi-square tests performed to test significance of these risk tests, * < P< 0.05, ** P<.01

Rural-urban differentials are insignificant. The relative risks of dropping out of school and being overaged are significantly higher among male children than female ones. Nearly a fifth of the male students are overaged. The socio-religious background of the children is found to be a significant indicator of their schooling status. One fifth of tribal children are found to be out of the schooling system. One third among ST and a fifth among Muslim students are overaged. Schooling continuity among Muslim children is worse than that of the SC children in the State. Differentials across other communities are nominal, except in the case of OBC Christians, who are noted to be well ahead of all their counterparts in schooling continuity.

Variables like type of family of the child (nuclear or non-nuclear) or sex of the head of the household in which the child resides do not have any significant bearing on the status of school attendance. However, the association between education of adults (18 years and above) and schooling status of children in a household are highly significant. In households having adult graduates, 90% of the children are not overaged students while the same is only true of 76% of the students from households without a graduate. The proportion of school dropouts as well as overaged children is comparatively less among children from households with a graduate than those without one. Similarly, a higher level of education among adult females in a household has a positive effect on the schooling continuity of its children. Again, the status of a child's school attendance is found to be dependent on his or her parents' education. Only 57% of the children with mothers having less than primary education continued normally in school and were not overaged in comparison to 88% among those with mothers who had completed high school education. A similar relationship is observed between the father's education and a child's school attendance status.

Wealth quintile-wise differences suggest that there exist certain differentials between the richest and the poorest quintiles in terms of

Table 5: Main reason reported for not sending children (aged 7-18 years) to school, Kerala 2005-06

Main reason	Male(%)	Female(%)	Total(%)	No. of cases
Further education not considered necessary	6.9	7.6	7.2	11
Required for household work	2.3	3.0	2.6	4
Required for work on farm/family business	1.2		0.7	1
Required for outside work for payment in cash or kind	8.1	3.0	5.9	9
Costs too much	6.9	15.2	10.5	16
Not safe to send girls		1.5	0.7	1
Not interested in studies	36.8	15.1	27.5	42
Repeated failure	17.2	12.1	15.0	23
Got married		10.6	4.6	7
Did not get admission	4.6		2.6	4
Other	14.9	27.3	20.3	31
Do not know	1.2	4.6	2.6	4
Total	100 (87)	100 (66)	100 (153)	153

Source: Completed from National Family Health Survey III (2005-06) data Set

school attendance status. The proportion of children with ideal schooling attendance is 67% among the poorest quintile while it is 86% among the wealthiest quintile. One can observe a step-by-step decline in the share of school dropouts from the poorest to the richest quintile. Figures for the proportion of overaged students indicate a fifth of them are from the poorest quintile. Even one out of every 10 in the richest quintile falls into the overaged category.

Reasons for not attending school

The NFHS-III records the main reasons for children aged five to 18 not attending school or college during the 2005-06 academic year. Children aged five to six years have been omitted from this analysis as they have just become old enough to enter school and their reasons for not joining the first standard are irrelevant in many cases. Since the overall dropout rate is low in Kerala, the number of school dropouts in the sample is only 153 (for all age groups combined). It needs to be understood that these 153 cases may not be adequate to undertake an in-depth examination of the reasons for some children not attending school. But they do give us some hints about the prominent reasons for not attending school among children aged seven to 18 years, which are presented in Table 5.

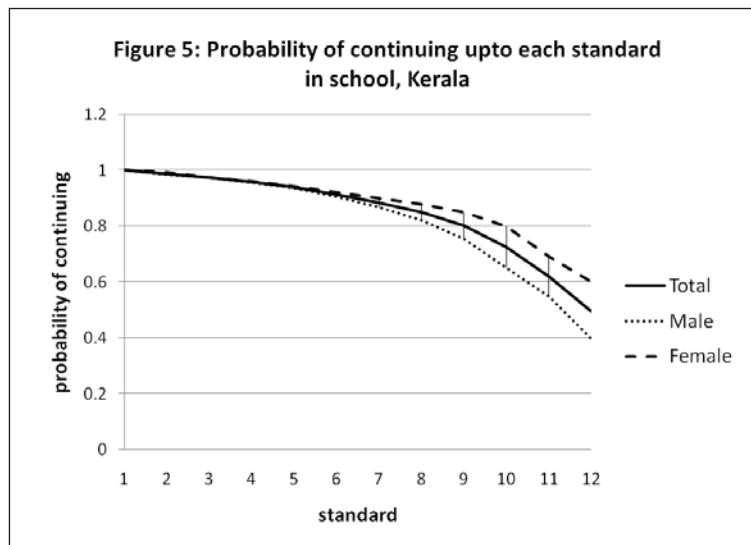
Disinterest in studies and/or repeated failure were cited as the major reason for male children not going to school. Employment-related reasons were reported in the case of some male children who had dropped out. Lack of interest in studies and repeated failure were reported as the main reasons among more than one-fourth of the female children who are not in schools. The cost of education as a reason for not attending school figured more among female children than male ones.

Continuity in school education

It has been pointed out that uninterrupted continuity in school is more a concern than enrolment in Kerala. Schooling in the State is

plagued by overaged children at all levels. Therefore an examination of dropout rates, which is very low in Kerala (Rajaram 2000; IIPS and Macro International 2007), does not reveal the problems related to continuity in school education.

Given this background, this section attempts to understand the differentials in actual schooling continuation rates (without students being overaged) across the population. The analysis is restricted to children aged six to 17 years who are enrolled in schools. The probability of surviving from the first standard to the following levels has been worked out using life table techniques. Thus, from the policy point of view, we are not examining the probability of surviving up to a school level, but the actual schooling continuation rate after discounting for the possibility of overaged students.



The probability of enrolling in an upper primary school at the right age is 0.94, which declines to 0.85 for entry to a high school and further to 0.62 for entry to a higher secondary school. This means that among all children in the State enrolled in the first standard, only 62%

Table 6: Non over-aged Schooling Continuation Rate for Kerala (6-17 years) by background characteristics

	Probability of continuing up to		
	Upper Primary School (5th Standard)	High School (8th standard)	Higher Secondary School (11 th Standard)
Sex of the Child			
Males	0.94	0.82	0.55 **
Females	0.94	0.88	0.69
Place of residence			
Urban	0.95	0.84	0.65
Rural	0.93	0.85	0.61
Caste			
Scheduled caste/tribe	0.89	0.74	0.46 **
OBC	0.94	0.85	0.58
Others	0.95	0.88	0.74
Religion			
Hindus	0.94	0.85	0.66
Muslims	0.94	0.83	0.52
Christians	0.94	0.89	0.76 *
Family Structure			
Nuclear family	0.95	0.86	0.64 *
Non-nuclear family	0.93	0.83	0.59
Head of household			
Male	0.94	0.85	0.63
Female	0.94	0.84	0.58

Household education level				
Without an adult graduate	0.94	0.84	0.58 **	
With an adult graduate	0.95	0.92	0.86	
Education of females in the household				
Without SSC completed adult female	0.94	0.82	0.52 **	
With SSC completed adult female	0.94	0.88	0.76	
Mother's education				
Primary incomplete	0.89	0.69	0.35 **	
Primary complete but high school incomplete	0.95	0.87	0.61	
High school complete & above	0.93	0.87	0.81	
Father's education				
Primary incomplete	0.92	0.73	0.36 **	
Primary complete but high school incomplete	0.94	0.86	0.63	
High school complete & above	0.94	0.89	0.80	
Wealth quintile				
Lowest	0.92	0.72	0.40 **	
Second	0.94	0.87	0.61	
Middle	0.96	0.90	0.68	
Fourth	0.92	0.86	0.65	
Highest	0.96	0.89	0.76	
Total	0.94	0.85	0.62	

Source: Based on survival analysis using NFHS-III (2005-06) data set.
Significance tests are carried out for probability of continuing up to higher secondary level,
* < P<0.05, ** P<.01

proceed to higher secondary school at the right age. The probability of continuing up to the higher secondary level is significantly higher among females (0.69) than males (0.55). It is encouraging to observe that rural-urban differentials in this respect are insignificant in the State.

Caste and religion-wise differentials in entry to high school and higher secondary school are significant. Only three-fourths of the SC and ST children enter high school at the right age and the probability of their entering higher secondary school is as low as 0.46. Schooling continuity among Muslims is closer to that of SCs and STs. Christians (76%) are well ahead of all other communities in terms of continuing up to higher secondary school at the right age, followed by Hindus (66%) and Muslims (52%). The sex of the head of a household is found to be insignificant with respect to schooling continuity. The probability of entering higher secondary school without delay is higher among children from nuclear families than from non-nuclear ones. But this relationship is insignificant in the case of continuity up to the upper primary and high school levels.

However, the presence of a graduate among the adult members of a household has an association with the educational attainment of its children. The probability of continuing up to the higher secondary level at the right age is 0.86 for children from households having a graduate but only 0.58 for those from households without a graduate. Female educational status is gauged on the basis of the presence of an adult female who has completed the 10th standard in a household. The probability of continuing up to higher secondary school at the right age is significantly higher for children from households with an educated woman (0.76) than those from without one (0.52).

We move on to explore the association between parents' education and schooling continuation among children. Children whose parents are not alive or those whose parents are not usual residents of a household

are excluded from this analysis. The education status of both the father and mother has a positive relationship with a child's schooling continuation. This analysis clearly indicates that the educational history or background of a household is a significant predictor of schooling continuation of a child. In effect, the generations or communities who have benefited from education in previous years are ahead in schooling their children than their counterparts with limited exposure to education.

Wealth quintile-wise differentials noted in schooling continuation are also highly significant. Differentials in the probability of continuing up to the higher secondary level at the right age ranged from 0.40 among the poorest quintile to 0.76 among children belonging to rich households. Data clearly reveals that the rich-poor divide widens when children proceed to higher levels of schooling. This demonstrates the economic inequalities that exist in access to school education in Kerala.

Discussion

This empirical exercise provides certain clues about the kind of progress in school education that Kerala has been able to achieve since 1956. Notable achievements when compared to other Indian states include more than 95% of the children studying in primary and upper primary schools since the mid-1970s and the 1980s respectively and more than 90% attending high school since the mid-1990s. In addition, female children are ahead of male children in schooling except among STs (at the primary and upper primary levels) and Muslims (at the higher secondary level). Schooling, especially at the primary and upper primary levels, has reached all socio-religious groups, barring STs. The situation of STs is today, in all the four schooling levels analysed, worse than what it was among OBC Hindus and forward castes in 1956. Thus the present results corroborate criticism of the so-called "Kerala Model of Development" (Kurien 2000; Chatukulam and John 2006) on how far

the State's tribal population has benefited from it. Altogether, this is a clear indication that the ongoing efforts to attract children from these vulnerable communities to school have a long way to go.

As mentioned in the beginning, a variety of factors have contributed to the spread of school education in Kerala. The massive enrolment in primary and upper primary schools before the State was formed could be attributed to historical factors and progressive rulers. But universal enrolment in these two levels across all sub-groups, apart from STs, was to a large extent due to the policies pursued by successive State governments. As Dreze and Sen (2002) acknowledge, the equitable provisioning of services in the State played a major role. Part of the progress noted in high school education since the 1990s has been due to an education policy that has diluted the criteria for promotion from one class to another (Thomas 2001; Planning Commission 2008). This, to some extent, contradicts the theory of equitable provisioning of services improving high school and higher secondary schooling. Factors like improved physical accessibility to schools, redistributive policies, remittances from abroad and public-private partnerships in education have also contributed significantly to advancing schooling in Kerala.

This paper clearly indicates social exclusion in educational attainment in Kerala, especially among ST, SC and Muslim females. A reason for this could be their inability to meet the rising expenditure on school education, which has been an issue in Kerala (Nair 2004; Nampoothiri 2004). Besides, higher secondary education continues to be a weak link in the State's school educational system. Not even half the children entering high school proceed to the higher secondary level. The extent of socio-religious differentials in higher secondary education is also quite high.

The analysis on the whole points to what could be termed a "community effect" in school education in Kerala. The forward-class Hindus were traditionally in an advantageous position (next to forward-

class Christians) in terms of school educational attainment. Whatever progress is noted among SC students was largely due to state intervention through targeted schemes. Similar targeted intervention has failed in the case of ST communities. The OBCs and Christians were more active in setting up new educational institutions than the forward-class Hindus. In addition, these classes benefited more from land reforms and remittances from abroad. As a result, the forward-class Hindus were unable to hold on to the historical advantage they had in school educational attainment during the study period. This type of community effect is likely to prevail in populations where community-based organisations play a major role in the delivery of school education services. Mohammed (2003) has highlighted the role of educational institutions run by religion-based organisations in the expansion of education among the Muslim community. In the short run, communities running institutions could play a role in the expansion of education, especially among the communities they represent. But in the long run, such domination of the education scene may lessen the overall access to secular education in the State if organisations begin restricting admission to only students belonging to their communities.

Historical factors (Mohammed 2003) still play a part in the educational backwardness of Muslims. This study reveals that this community has made remarkable progress in schooling up to the high school level. However, Muslim students lag behind at the higher secondary level and the situation far worse among females than males. High Muslim enrolment in high schools but low enrolment in higher secondary schools is an important issue that needs to be further investigated at the policy level.

The continuity analysis reveals that female children in Kerala have a definite lead over male children. This female advantage in schooling is due to their better performance in terms of schooling continuity and also due to an erosion of the bias against female education.

The transformation that has occurred in the last three decades needs to be welcomed and efforts have to be made to understand how the female gain in school educational attainment is being translated into benefits at higher levels of education.

The socio-religious transformation in school education observed in the cohort-based and schooling continuity analyses is to be treated cautiously. In cohort analysis, we are only examining the proportion or probability of proceeding to higher levels of schooling. We are neither examining the quality or performance of students in terms of marks obtained. Perhaps a disproportionately large number from the higher socio-religious groups come in the top-most category in terms of quality of learning and marks obtained than those from the lower social groups. Unfortunately this could not be verified using the NFHS-III data set. However, schooling continuity rates hint that such a situation is possible—Christians and the forward classes are well ahead in terms of schooling continuity. Thus some of the positive aspects related to diffusion of school education across social-religious groups are due to liberal promotion policies than improvement in the qualitative aspects of schooling. Hence public policy should focus on really improving continuity rates, especially among the more backward socio-religious groups.

Though inequality in higher secondary education is lowest in Kerala compared to other Indian states (World Bank 2009), wealth-based inequalities in access to higher secondary education are significant in the State. Concern has already been raised by researchers about the recent shift in Kerala's inclusive education system to one with many exclusive characteristics (Kumar and George 2009). This analysis finds it to be true, in particular in higher secondary school education. Parity in schooling across socio-economic groups holds true only up to the high school stage. In the present situation, such inequalities are probably even higher the more one ascends the education ladder.

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