A comparative study of government and private schools in Jammu and Kashmir

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Abstract
This paper used survey data from government and private schools in two districts of Jammu & Kashmir-Pulwama and Srinagar. To explore systematic differences between the two school types. Private school students have higher test scores than government school students. However, in both private and government schools the overall quality is low and learning gains from one grade to the next are small. There is large variation in the quality of both school types and observed school and teacher characteristics are weakly correlated with learning outcomes. Most of the variation in teacher effort is within schools and is weakly correlated with observed teacher characteristics such as education, training, experience. There is considerable sorting among students; those from higher socio-economic strata select into private schools. Private schools have lower pupil-teacher ratios and five to six times lower teacher salaries but do not differ systematically in infrastructure and teacher effort from government schools. After controlling for observed student and school characteristics, the private school advantage in test scores is not robust. Given the large salary differential, private schools would clearly be more cost effective even in the case of no absolute difference in test scores.

Keywords: Study, government schools, private schools, learning outcome

1. Introduction
Private schools offering primary education have grown at a rapid rate in India. According to recent estimates, 25% of all enrolment in primary education in India is in private schools (SRI, 2005; DISE 2006-07). Attendance in these schools is not limited to the non-poor or children in urban areas. A large number of children belonging to poor households study in private schools which charge low fees; nearly 30% of villages in India have access to a private school within the village itself (Kremer and Muralidharan, 2006) [9]. Parents value good quality education and are willing to pay for it. Apart from tuition fees, parents incur considerable expenditure to send a child to a private school spending money on uniforms and textbooks, which they can otherwise avail for free in a government school. Poor quality of education in government schools is considered as a major reason for the rapid growth in the number of private schools. Parents perceive private schools to be more accountable and offering better quality education. The Probe Report (1999) notes that “In a private school, the teachers are accountable to the manager (who can fire them), and, through him or her, to the parents (who can withdraw their children). In a government school the chain of accountability is much weaker, as teachers have a permanent job with salaries and promotions unrelated to performance. This contrast is perceived with crystal clarity by the vast majority of parents.” Evidence from surveys in a number of developing countries including India, show that learning outcomes in private schools, as measured by test scores, are on average better than government schools. In most studies, the private school advantage remains even after controlling for a large set of observable student family, school and teacher characteristics (Goyal 2006a and b; Kremer and Muralidharan, 2006; Kingdon, 1996a and b) [3, 4, 6, 7, 8].

Evidence on the comparative quality of public and private schools has led to a strong policy debate on the conditions of provision of education by the government. It is argued that the government school system is expensive and wasteful and fails in imparting even minimum skills to students; private schools not only do better but also provide learning at a much lower unit cost.
The set of reforms advocated for government schools range from making teachers and schools accountable for performance (using sticks or carrots or both) to making government schools compete for students with private schools (for example, by giving students vouchers to be used in a school of their choice). While there is a strong case to be made for reforming the government school system, it is important to note that the evidence on private schools comes mostly from studies (including this one) based on data that show correlation and not causation between school type and outcomes. Any private school effect cannot be attributed to the school if students select into schools. However with lower per student cost private schools would still have a cost advantage. We use data from government and private schools in two districts of Jammu & Kashmir i.e, Pulwama and Srinagar, to explore the differences between the two school types.

2. Methodology

Data for this study come from school surveys conducted in the two districts-Pulwama & Srinagar of J&K. In each district, two blocks were randomly selected and in each block six gram panchayats and urban wards were randomly selected. The ratio of urban wards and gram panchayats were kept the same as the ratio of urban and rural population in the state. All primary schools, government or private, were surveyed in each gram panchayat and urban ward in the sample. Fifteen students randomly selected from each of the grades 4 and 5 in the sample schools were tested in language and mathematics. Data on teacher attendance and activity were collected by making three unannounced visits to a school. Data on school and teacher characteristics were also collected. Data on sample student characteristics were collected from parent interviews conducted in their homes in the presence of the student.

The tests were based on the National Council of Educational Research and Training (NCERT) tests for grade 4 in language and mathematics. The language tested is Urdu, the language in use in both districts. All the tests were in the multiple choice format. Both grades 4 and 5 students took the same test.

3. Learning Decomposition

The distribution of scores of government schools is to the left of private schools. But learning is poor in all school types. If we take scoring 50-60% on a test as a benchmark of acceptable levels of learning (NCERT uses 60%), government schools in both the districts achieve this standard somewhere between the 90th and 95th percentile, whereas private schools do so between the 75th and 90th percentile. The total variation in test scores is the sum of variation arising due to differences between schools and variation within schools. What share each source of variation contributes can be computed using ordinary least squares regression analysis with test scores as the dependent variable and the school attended as the only independent variable. The amount of variation ‘explained’ in this case is the share of the variation coming from differences between schools. The remaining (out of 100 percent) is that due to sources of differences within schools (i.e. what happens if all the schools were identical). Variation between schools accounts for 30-56% of the total variation in scores. The remaining variation in scores is within schools. We repeated the above analysis separately by school type. The results (available with the authors) are not very different from those of the overall sample. This implies there are good and bad schools within all school types. School quality differences matter, however differences across students within schools also matter considerably for test scores. From the point of view of policy, there is opportunity for improving education outcomes both by pursuing polices that improve school quality and also policies directed towards students. We analyze the private school effect before and after controlling for differences in observed student and school characteristics. The adjusted differences in mean test scores are the remainders (differences after controlling for a set of characteristics. Scores have been adjusted using two models: the model uses as controls child and family background characteristics, school characteristics, location dummies and rural location. The remaining effect of school type is not totally unbiased because there is a likelihood of systematic selection into various types of school correlated with unobserved children.

Child and family background characteristics included as controls are child’s age, gender and caste, sibling size, whether the child takes private tuition or not, mother’s and father’s education levels, father’s occupation, and land ownership. School characteristics included as controls are infrastructure, mid-day meal provision, free textbook provision, and average teacher characteristics at the school level – female, education level, training and experience, and family characteristics. If more able or motivated students select private schools then any private school advantage over government schools in test score, after controlling for observed student and school characteristics, cannot be attributed to school-type. In fact, as we see later, there are reasons to believe that ‘better’ students attend private schools and this may be partly responsible for the higher average private school test scores. To obtain an unbiased private school estimate when selection is going on, one needs a way to correct for selection bias. In the commonly used approaches to correct for selection bias, one needs a valid instrument which belongs in the selection equation but not in the outcome of interest equation. Since we do not have a convincing instrument, we do not correct for selection bias. Without adjusting there is a significant private school effect in every test and grade. Results change once controls are included. The advantage varies by district, type of private school and grade. In Srinagar, private schools have an advantage in grade 5. Private schools having a greater number of significant differences from government schools. In Pulwama, there is no robust private school advantage in either grade.

4. Findings

- We present unadjusted and adjusted mean differences in the socio-economic characteristics of students, school and teacher characteristics between government and private schools using two different model specifications. In the first model we control for the town and rural dummies. In the second model we adjust for the village where the school is located. *Socio-economic characteristics of students in government and private schools. For both districts, most factors of disadvantage are less represented in the private school, and all the differences across government and private
schools are significant at the 1% level. Private schools have fewer students from SC and ST households, are more likely to be male, have parents educated above primary school. They also are more likely to have fathers who are not agricultural labourers, and come from households that own more than the median landholding in the sample. The adjusted mean differences in these characteristics between school types become larger in magnitude, and are larger for private schools. These results suggest considerable sorting of students across school types. It is likely that sorting is also going on along unobserved family and student characteristics such as attitude and motivation.

- School Inputs: There are few consistent differences in infrastructure between private and government schools but private schools have significantly lower pupil-teacher ratios. Mean teacher attendance and activity at the school level do not differ between private and government schools, even when district or village effects are included.

- Demographics: Teachers in private schools are more likely to be younger than teachers in government schools. The Private teachers are also more likely to be from the local area than teachers in government schools.

- Professional credentials and salary: Overall, teachers in government schools are more likely to be trained, have greater experience and a higher salary than teachers in private schools. Teacher salary in government schools is six times that in private schools. The differences in these characteristics are bigger between regular teachers in government schools and teachers in private schools.

- Teacher Effort: Government and private schools are similar in rates of teacher attendance, but differences in rates of teacher activity vary by district and by the type of school. Private schools have higher rates of attendance and higher rates of teacher activity compared to government schools. After controlling for teacher characteristics and town or village fixed effects, teachers in private and government schools are similar in mean attendance and activity rates. Private schools are similar to government schools in rates of teacher attendance and activity, before and after controlling for teacher characteristics and district/village fixed effects.

- Variation in teacher effort between and within schools: Differences between schools explain 40 percent or less of the variation in teacher effort. This implies more than 60 percent of the variation in rates of teacher attendance and engagement in teaching is within schools. Only a small fraction of the variation in effort within schools is explained by observed teacher characteristics. The r-square from a regression of teacher attendance (and activity) on school fixed effects gives the percentage of variation in teacher effort that is due to differences across schools and villages. The remaining variation would be attributable to variation in within school variables such as observed and unobserved teacher characteristics, classroom characteristics, etc. We then add observed teacher characteristics to the school fixed effect regression to see how much of the within school variation can be explained by these. The vector of teacher characteristics includes age, gender, caste, education, whether teacher has pre service training, number of years of service, number of days of in-service training in last school year, whether teacher’s appointment is on a contract basis and whether teacher is a resident of the village. There are two main themes here. First, most of the variation in teacher effort is within schools. Variation in teacher attendance that is explained by differences between schools and villages is 13% in Pulwama and 14% in Srinagar. Variation in teacher activity that is explained by differences between schools and villages is 42% in Pulwama and 22% in Srinagar. In particular, whether the school is government or private contributes less than 2 percent of the variation in teacher effort. Secondly, observed teacher characteristics explain very little of the variation in teacher effort within schools. These observations are consistent with the findings of other studies, although mainly from developed countries, that find: a) substantial variation in teacher quality within schools, and b) observed teacher characteristics explain very little of the variation in teacher quality within schools.

- Are teachers rewarded for their effort differently in government and private sectors? The unadjusted salary difference for presence compared to absence seems highest for regular teachers in government schools. We then compute the adjusted salary difference due to attendance by regressing salary on attendance and other teacher characteristics such as education, experience, residence, gender and age. Salaries of teachers in private schools and of regular teachers in government schools are not correlated positively with attendance. Salaries of contract teachers in government schools are positively correlated with attendance. The salary difference is 13 percent of salary between an always present contract teacher and a never present contract teacher who is otherwise similar.

5. Discussion

This study looks at the performance of government, and private schools in Pulwama and Srinagar. We find that mean test scores are low in both districts. Although students in private schools perform better than students in government schools, the average score as well as the gain in learning from one grade to the next are low for both school types. The test is in a multiple choice, subject to random guessing. If a child was randomly guessing every answer, he or she can score an average of 20-25%. Accounting for guessing will imply even lower actual learning. There is a great degree of variability in test scores within and between schools for government as well as private schools. Observable school and teacher characteristics are weakly correlated with test scores. Most of the variation in teacher effort is within schools and has weak links with observed teacher characteristics that are commonly used by school administrators as indicators of teacher quality such as training, experience and education. This suggests rewarding teachers on the basis of their credentials may not be effective in raising effort. Existing salary structure is related to effort neither in government nor in private schools, except for contract teachers in government schools. It fails to reward those more present and active in the classroom. After controlling for student and school characteristics, the private school advantage in scores varies by district, type of school, grade and subject. The sources of private school advantage lie in the types of students choosing these schools, lower pupil teacher ratios and much lower teacher salaries. Private
schools differ considerably in the types of students who attend even within the same district or village. Students in these schools are less likely to belong to low caste. They are likely to have educated and wealthier parents. It is likely that sorting is also going on along unobserved family characteristics such as attitude and motivation. Private and government schools do not differ in physical facilities but private schools have a lower pupil-teacher ratio which implies greater teacher-time per student. Teachers in private schools are less likely to be trained and are less experienced. Teacher attendance and activity are similar for private and government schools. Teacher salary in private schools is between one-fifth and one-sixth of government schools. Since data indicate considerable sorting among students into school types, it is not surprising that the private school effect is less systematic after controlling for observed student and school characteristics. In the cases where the private school effect remains, we cannot be sure this effect is attributable to school type as there may be sorting on unobserved characteristics. Nevertheless, as teacher salaries in private schools are one-fifth or one-sixth of government schools and assuming salaries form a large fraction of the operating cost as is the case for government schools, private schools would unambiguously be more cost effective even in the case of no absolute advantage in test scores. Our results may suggest at first that government regulations are redundant, and it is the market in schooling that is more effective in determining quality: In both districts, evidence suggests that learning standards are not strictly enforced either in government or in private schools. Government schools have a minimum level of learning framework, but no functioning mechanism that ensures this standard. Private schools can pay bribes to get recognition without meeting the required criterion for obtaining formal registration. The market does not ensure good quality education either since the un-regulated schools are also way off the mark in basic competencies; moreover, we cannot disentangle the sorting effect from school quality effect on learning outcomes. Private schools may choose to locate above but close to government schools along the quality spectrum because it is rational for them to do so given supply side (government regulations, enforcement) and demand side (poverty and illiteracy of parents) characteristics. It is costly for schools to adhere to enforced standards of quality. We speculate that if the government were to enforce learning standards on all schools, there would be a change in the composition of supply of private education with low cost (and low quality) private schools likely leaving the market.

6. References
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