

## **Do private schools improve learning outcomes?**

### **Evidence from within-household comparisons in East Africa and South Asia**

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A contentious debate in academic as well as policy circles relates to the growth in private schooling in Sub-Saharan Africa and other low-income regions. While proponents highlight the superior learning outcomes of pupils in private schools, others have argued that this is merely a reflection of the more advantaged family background of private school pupils, rather than an effect of private schooling itself. We contribute to this debate by providing estimates derived from household fixed-effect models, which control for any observed or unobserved differences between government and private school pupils at the household level. We argue that these can be interpreted as an upper bound estimate of the effect of private schooling on learning. We rely on large-scale, comparable household survey data from Kenya, Uganda, India and Pakistan, focusing on children enrolled in grade 2 to 6 of primary school. Private school attendance ranges from 12% in Kenya to 33% in rural India, with substantial within-household variation. Preliminary findings show that controlling for family background almost eliminates the positive effect of private schooling in rural Pakistan and reduces it by around half in rural India, Kenya and Uganda, to about a quarter of a standard deviation. Subgroup analyses show that the effect of private schooling does not differ substantially between high- and low-SES families. We discuss implications for educational policy.

**Key words:** Private schools, educational inequality, family fixed effect, learning crisis, India, Pakistan, Kenya, Uganda

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## Introduction

Private school attendance is increasing rapidly in the global South. Between 2000 and 2017, the share of primary school pupils enrolled in private institutions is estimated to have increased from 9.9% to 17.5% in low- and middle-income countries (The World Bank, 2019). The true share is likely to be even higher: some private schools operate informally and official figures therefore undercount private school enrolment (Härmä, 2019).

The merits and downsides of the rise in private schooling are subject to intense debate in academic and policy circles. Proponents argue that private schools are a valuable and cost-effective instrument to improve learning outcomes in low-income contexts, where public systems often perform poorly (Bold, Kimenyi, Mwabu, & Sandefur, 2011; Tooley & Dixon, 2005). Critics highlight negative implications for equality of opportunity and the right to access free basic education, which is enshrined in various international conventions (Klees, 2018; Srivastava, 2016). They also suggest that the learning gains associated with private schools tend to be overstated, and merely reflect their more socio-economically advantaged pupil body (Klees, 2008).

Several studies have sought to identify empirically the learning gains associated with attending a private school. These studies have been plagued by selection effects, however: children attending private schools tend to be advantaged on various measurable and unmeasurable aspects of family background, and it is often not possible to disentangle the effect of the family on learning outcomes from that of the (private) school. A systematic literature review therefore highlighted "the need for more studies using rigorous methodologies accounting for pupil social background to attempt to identify more rigorously the true extent of the private school effect on pupil learning outcomes" (Ashley, Engel, Batley, Nicolai, & Rose, 2014, p. 48).

Our study follows this call, looking at the effect of private schooling in four lower and lower-middle-income countries. We address three main questions:

1. How does access to private schooling in India, Pakistan, Kenya and Uganda differ by socio-economic background?
2. What is the effect of private schooling on learning outcomes?
3. Does this effect differ by socio-economic background?

Our study contributes to the literature on private schooling in the global South in several ways. First, we use recent data from a very large sample of children collected from households rather

than schools. Because our sample is collected at the household level, it covers children attending unregistered private schools, who might be excluded from surveys relying on the school register as their sampling frame. More importantly, the coverage of multiple children in the same household allows us to employ household fixed-effect models to estimate the effect of private schools controlling for all family and community-level characteristics. These models compare the learning outcomes between children in the same household, where one attends a government school and the other a private school. Finally, whereas most existing studies use data from a single country or province, we use harmonized data from four countries in two continents.

Before discussing the data and analytical procedures in more detail, we provide an overview of the current state of the evidence with respect to our three research questions, and we introduce our conceptual framework.

## **Background**

### *Access to private schooling*

Our first research question relates to socio-economic inequalities in access to private schooling. Although there are a wide variety of private (or non-government) schools—including not-for-profit NGO and religious schools—recent growth in the global South has been largely driven by 'low-fee' private schools. These are funded through direct tuition fees that are typically far lower than those at elite private institutions (Heyneman & Stern, 2014). Although most low-fee private schools are locally owned businesses, in recent years corporate 'chains' of schools have become increasingly prominent (Srivastava, 2016).

Parental demand for private schooling is often attributed to failures in government provision. Baum, Abdul-Hamid and Wesley (2018) note that a lack of places in government schools is a strong predictor of the size of a region's private school sector. This factor is likely to be especially important in urban slums where the supply of government schools is often insufficient (Oketch, Mutisya, Ngware, & Ezeh, 2010; Tooley, Dixon, & Stanfield, 2008). Although a scarcity of places in government schools is important, the literature also emphasises that many parents are choosing to pay for private provision because they believe it offers a better quality education (Härmä & Adefisayo, 2013; Kingdon, 2020; Nishimura & Yamano, 2013; Oketch, Mutisya, Ngware, Ezeh, & Epari, 2010; R. Singh & Bangay, 2014; Tooley & Dixon, 2005). In the absence of information about student learning, parental judgments of

quality often rely on a range of readily visible schooling conditions (Heyneman & Stern, 2014): commonly cited factors include class size (Mehrotra & Panchamukhi, 2006; Zuilkowski, Piper, Ong'ele, & Kiminza, 2018), teacher engagement, stricter discipline (Oketch, Mutisya, Ngware, & Ezech, 2010), and language of instruction, especially English (Alcott, Bhattacharjea, Ramanujan, & Nanda, 2019; Endow, 2018; Joshi, 2019).

Although the demand for private schooling may not differ substantially between poorer and wealthier households (Härmä, 2011), disparities in the ability to pay result in unequal access. Despite the growth of low-fee private schools, the costs of private schooling have been found to be prohibitive for poorer families in a number of countries, including Kenya (Zuilkowski et al., 2018) and Uganda (Sakaue, 2018). In India, it has been noted that children in private schools are more likely to come from wealthier, more highly-educated households (Chudgar & Quin, 2012; Härmä, 2011; Woodhead, Frost, & James, 2013), and this rich-poor gap appears to have widened over time (Chudgar & Creed, 2016). This is despite legislation aiming to improve access to private provision: India's Right of Children to Free and Compulsory Education Act of 2009 mandates that 25% of places in private schools be reserved for children from marginalised backgrounds. In practice, however, it has remained difficult for children from low-income families to gain access to these schools (Srivastava & Noronha, 2016).

Disparities in the ability to access private schools are also driven by geography. Despite the growing number of rural private schools in South Asia and Sub-Saharan Africa, urban children are still much more likely to live near a private school (Muralidharan & Kremer, 2009; Sakaue, 2018). Moreover, where private schools exist in rural areas, they are often established in wealthier villages with better infrastructure (Andrabi, Das, & Khwaja, 2008; Chudgar & Quin, 2012; Pal, 2010). As a consequence, socioeconomic disparities may be greatest in rural areas (Chudgar & Creed, 2016): in rural Uttar Pradesh, private school attendance is 10% among the poorest quintile and 70% among the wealthiest (Härmä & Rose, 2012).

### *The effect of private schooling on learning outcomes*

Our second research question refers to the effect of private schools on learning outcomes in low-income contexts. The research literature has offered several reasons for a potential private school advantage in pupil achievement. One of the most prominent is that private schools are more directly accountable to parents, and thus more responsive to their concerns, than

government schools. This translates into greater teacher 'effort' and lower rates of absenteeism, as well as smaller class sizes (Andrabi et al., 2008; Härmä & Adefisayo, 2013; James & Woodhead, 2014; Mbiti, 2016). Another commonly-cited reason is cost efficiency (Heyneman & Stern, 2014; Tooley, Dixon, Shamsan, & Schagen, 2010): in a particularly extreme example, the median fee of private schools in Uttar Pradesh, India, is less than a tenth of the per-pupil expenditure in government schools (Kingdon, 2019). This efficiency is primarily driven by low-cost private schools paying far lower teacher salaries than government schools (Heyneman & Stern, 2014; Kingdon, 2020; Muralidharan & Sundararaman, 2015). Lower salaries may lead also to higher levels of turnover and lower levels of qualification and training among private school teachers, however, with potentially negative implications for the quality of teaching (Mehrotra & Panchamukhi, 2006; Srivastava, 2007a; Zuilkowski et al., 2018).

These competing arguments on the relative quality of private schools versus government schools remain difficult to verify because of the empirical challenge in establishing a meaningful counterfactual. There is ample evidence that private schools have higher average learning outcomes than government schools across a range of contexts, including the countries we study (Alcott & Rose, 2016; Andrabi et al., 2008; Bold et al., 2011; Gouda, Das, Goli, & Pou, 2013; Rolleston & Moore, 2018). However, it remains difficult to establish how much of this difference is attributable to private school practices and how much to the composition of their pupil body. As we mentioned earlier, private school pupils are, on average, more socio-economically advantaged and therefore more likely to achieve higher learning outcomes even if they had attended government schools.

Researchers have deployed a range of methods—including experimental, quasi-experimental, value-added and regression models—to control for family background. Some of these studies have found substantially improved learning outcomes even when accounting for differing student backgrounds (Amjad & MacLeod, 2014; Aslam, 2009; Azam, Kingdon, & Wu, 2016; Baum & Riley, 2019; Desai, Dubey, Vanneman, & Benerji, 2009; French & Kingdon, 2010; R. Singh & Sarkar, 2015; Wamalwa & Burns, 2018) while others have found negligible or insignificant effects (e.g. Chudgar & Quin, 2012; Crawford, Patel, & Sandefur, 2019; Eigbiremolen, Ogbuabor, & Nwambe, 2020; Muralidharan & Sundararaman, 2015; Zuilkowski, Piper, & Ong'ele, 2020). It remains unclear whether these discrepancies reflect genuine variation across contexts in the nature or effectiveness of private schools, or differences in sampling, measurement and research design.

In the countries we study, several studies have found substantial learning differences between private and government schools. For example, Andrabi et al. (2008) found a private school advantage of between 0.5 and 1 Standard Deviation (SD) in Math, Urdu and English among grade 3 pupils in three rural districts in Pakistan, which can be considered a large effect. Moreover, the gap in learning between students in private and government schools hardly narrowed when controlling for family socio-economic status. Looking at middle school pupils in Pakistan, Aslam (2009) found that private schools outperformed government schools by 0.35 SD after controlling for family background. In rural India, Muralidharan and Kremer (2009) found an effect of 0.4 SD, net of family background, school facilities, and village fixed effects. These findings were contradicted by Chudgar and Quin (2012), who found no significant differences between government and private schools in either rural or urban India after propensity score matching. In Kenya, Baum and Riley (2019) found a private school advantage of between a quarter and one half of a SD using propensity score matching as well as a Heckman selection model, while Bold et al. (2011) found an effect equivalent to 1 SD, using a different dataset and identification strategy.

A well-known limitation of both regression and propensity score methods is the conditional independence assumption: selection into private schooling is only affected by variables included in the model, typically a limited number of proxies for household socio-economic status (Vandenberghe & Robin, 2004). Many important elements of social origin, however—such as social and cultural capital, neighbourhood characteristics, the wider family network, and parental commitment to schooling—are almost impossible to measure in survey research. It is plausible that these unobserved characteristics affect selection into private schools as well as learning outcomes. As a result, the private school effect observed in much of the literature remains confounded with unobserved aspects of family background.

Studies that employ more robust strategies to control for selection effects tend to find less impressive private school effects on learning outcomes. For example, a recent study using value-added models to control for initial ability found that private schools in Nairobi did not produce higher learning gains than government schools (Zuilkowski et al., 2020). Using a similar approach with data from rural and urban districts in Andhra Pradesh, Singh (A. Singh, 2015) found no effect on math in rural or urban areas and a positive effect on English in rural areas only. In Kenya, Wamalwa and Burns (2018) found a modest private school effect of 0.12 SD using a household fixed-effect model. Finally, using a voucher lottery experiment in the Indian state of Andhra Pradesh, Muralidharan and Sundararaman found that private schooling

had no significant effect on Math, Telugu and English scores, in spite of large cross-sectional differences (2015).

In summary, evidence on the impact of private schooling on learning is far from conclusive, and more robust evidence is only available for a small number of contexts, which are often not nationally representative.

### *Differential effects by socio-economic background*

Our third research question asks whether the effect of private schooling differs by socio-economic background. Prior research has emphasised the considerable diversity of private provision across both rural and urban areas (for example Chudgar & Quin, 2012; Maluccio et al., 2018). Mirroring socioeconomic disparities in access to private education, there are socioeconomic disparities in who accesses different forms of private education (Baum et al., 2018; Siddiqui, 2017). Cameron (2011) found that social stratification is visible even in the poorest neighbourhoods of Dhaka, with the relatively well-off more likely to attend larger, longer-established schools.

There is good reason to assume that these differences in intra-private sector enrolment will matter to equitable educational provision. In a privatised market, higher-quality providers are likely to charge higher fees, which may be unaffordable for most parents. In Lagos, where most children attend private schools, teachers in registered private schools—which tend to serve relatively advantaged children—are far more likely to hold professional qualifications and higher education degrees (Baum et al., 2018). In India, it appears that high-quality provision in the private sector is typically restricted to wealthier urban areas (Chudgar & Quin, 2012; A. Singh, 2015).

Assuming that quality is more evenly distributed in the public sector, this suggests that high socio-economic status (SES) children benefit most from private schooling, because their parents can afford to pay for the best schools (Fennell & Malik, 2012). On the other hand, it could be argued that private schools have stronger incentives to tailor their teaching to the actual learning level of their pupils, whereas teaching in government schools often appears to benefit higher-performing, more advantaged pupils while leaving others behind (Pritchett & Beatty, 2015). There is little empirical evidence on differential returns to private schooling by socio-economic background, although Alcott and Rose (2016) suggest that the benefits are roughly similar in three East African countries.

## Conceptual framework

In choosing the best school for their child, parents are motivated by a range of factors, as discussed in the previous section. Depending on the context, (perceived) quality, medium of instruction, school climate, safety, proximity and the composition of the student body may all play an important role in parents' considerations. At the same time, parents' choices are constrained by two main factors: school availability and affordability (see also Srivastava, 2007b). Availability primarily refers to the kinds of schools available within a reasonable distance from the home, although it might also be affected by caps on the number of places in certain schools. Affordability refers to the formal and informal fees charged by schools, as well to indirect costs such as transportation and school uniforms. Fees for public primary education have been abolished in each of the countries we study, although the remaining informal and indirect costs of government schools may be substantial, especially for poor families. On average, however, it can be assumed that government schools are more affordable to parents than fee-charging private schools. This suggests that private schools must outperform local government schools in terms of performance—or other selling points—in order to overcome their disadvantage in affordability.

High-SES children are likely to be overrepresented in private schools because their parents can more easily afford the fees, and because the higher availability of private schools in wealthier areas. The extent to which such inequality in access to private school is present in the four countries we study is the focus of our first research question. As discussed previously, the overrepresentation of children from advantaged backgrounds is likely to create an upward bias in the private school effect.

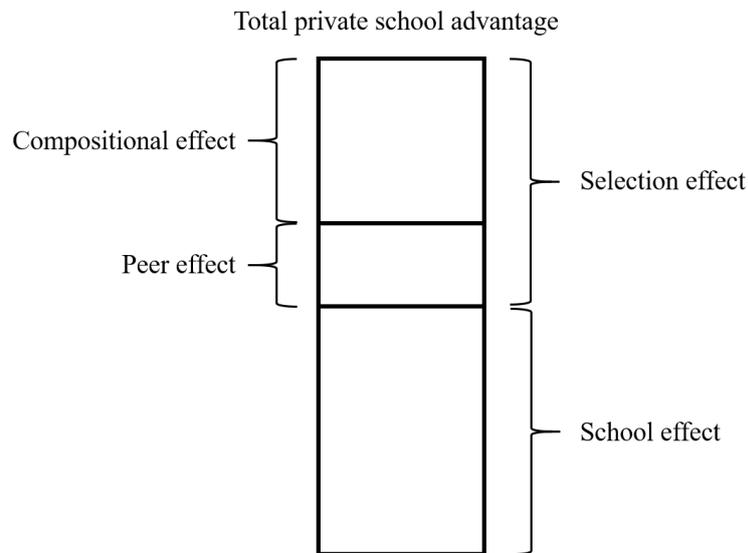
In estimating the extent to which private schools contribute to learning outcomes, we therefore need to distinguish between two components: a selection effect resulting from the higher average socio-economic status of private school students, and the effect of private schooling itself. The selection effect can be further divided into a pure compositional effect and a peer effect resulting from the positive externalities resulting from the clustering of high-SES pupils in private schools<sup>4</sup> (see Figure 1). We are primarily interested in the effect of the private school itself, also described as 'Type B' effects in the school effectiveness literature (Raudenbush & Willms, 1995). Type B effects arise because of differences in resources,

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<sup>4</sup> or negative externalities resulting from the clustering of low-SES pupils in government schools.

practices or efficiency between government and private schools (Somers, McEwan, & Willms, 2004). It is important to note that we cannot make claims about the cost-effectiveness of private schools in this study because we do not have information on the respective resources and investments of government and private schools.

**Figure 1:** The private school effect (illustration)



Note: This is a hypothetical illustration in which peer effects, compositional effects and school effects all work to the advantage of private schools

In terms of policy implications, the conceptual framework described above suggests that private schools contribute to overall learning levels in the population to the extent that the total private school advantage is due to school effects rather than selection effects. Even if that is the case, however, the improvement in overall performance levels may come at the cost of increasing inequality in learning outcomes between low- and high-SES children.

## Method

### *Data*

All analyses are based on the 2013-2018 People's Action for Learning (PAL) Network data (see <https://palnetwork.org/>). Stemming from the initial work of the Indian NGO Pratham, the PAL Network is a South-South collaboration that uses citizen-led assessments to assess basic literacy and numeracy competencies of all children. Each country's assessments are tied to their curriculum and are the same for all children, regardless of age. PAL Network data are household, rather than school, surveys. This is important for our study because it enables us to

locate children attending schools that might not appear on official records. Surveyors cover all children living in the same home, and also collect basic data on household wealth—in the form of an asset index—and parental education.

We use data from four of the country members: ASER India, ASER Pakistan, Uwezo Kenya, and Uwezo Uganda. Every country member's survey used a stratified sampling frame of 600 households per district. Data for Kenya and Uganda are nationally representative, whereas data from Pakistan and India are representative of rural areas only (see Table 1). For Kenya and Uganda, we combine cross-sectional surveys from several years to increase the sample size.

**Table 1:** Data and sample

| <b>Country</b> | <b>Year(s)</b> | <b>Coverage</b>      | <b>Total sample</b> | <b>Within-HH sample</b> | <b>% of Total</b> |
|----------------|----------------|----------------------|---------------------|-------------------------|-------------------|
| Kenya          | 2013–2015      | National             | 194,089             | 8,830                   | 4.6 %             |
| Uganda         | 2013–2015      | National             | 118,976             | 14,379                  | 12.1 %            |
| Pakistan       | 2018           | National, rural only | 66,927              | 2,522                   | 3.8 %             |
| India          | 2016           | National, rural only | 182,839             | 11,282                  | 6.2 %             |

Compared to other international learning assessments, the PAL Network data have several advantages. First, because the data are collected at the household level, we can compare multiple children within the same family; which is key to our analytical approach. Second, information on household characteristics is based on information from the household head rather than on self-reports by children, which are notoriously prone to measurement error (Engzell, 2019). Finally, the large sample size (see Table 1) allows us to estimate the effect of private schooling with a high degree of precision, both at the country level and for specific groups of children.

#### *Analytical approach*

As discussed previously, controlling for the effect of family background is the key challenge in estimating the difference in learning outcomes between private and government schools. Various methods have been employed in prior research, including regression-based methods, propensity score matching and value-added models. Most of these methods rely on strong assumptions or do not control for unobserved aspects of family background. The latter is

problematic because it is well known that a large proportion of the total family effect on educational outcomes results from factors that are not covered in typical household surveys (Björklund, Lindahl, & Lindquist, 2010).

This study relies on a simple yet effective approach: estimating the difference between children in the same household, where one attends a private school and the other attends a state school (see French & Kingdon, 2010; Newhouse & Beegle, 2005; Wamalwa & Burns, 2018):

$$Learning_{ij} = \beta_1 * Private_{ij} + \beta X_{ij} + a_j + e_{ij}$$

for children  $i$  in households  $j$ . *Private* is a dummy variable indicating whether the child attended a private school and  $X_{ij}$  is a set of child-level control variables<sup>i</sup>. The household fixed effects  $a_j$  control for all factors that are shared between children in the same household, whether observed or unobserved. This includes not only family attributes—such as parenting—but also genetic similarities and community or neighbourhood characteristics. It is important to note though that they do not control for unobserved confounders at the child level.

We limit our sample to children enrolled in grades 2 to 6 of primary school<sup>ii</sup>. To assess the extent to which family background confounds the effect of private schooling, we compare these household fixed effect (FE) estimates to a simple Ordinary Least Squares (OLS) regression excluding controls for family background.

Our estimation strategy requires that households have at least one child who attends private school and another child who attends government school. This was the case for 4.6% of sampled children in Kenya, 12.1% in Uganda, 3.8% in rural Pakistan and 6.2% in rural India (see Table 1). Although these figures might appear high, it is not uncommon for parents in low-income countries to send their children to different schools, for example if they have insufficient resources to send all their children to private schools. We discuss this phenomenon in more detail later in this study.

We argue that the private school effect observed in a household fixed-effect model should be interpreted as an upper bound on the causal effect of private schooling, for a number of reasons. First, even though parent and community-level characteristics are controlled for, the private school effect in household fixed-effect models includes peer effects, e.g. the effect of classmates' social background and ability on a child's learning outcomes. Such peer effects may be desirable from the perspective of parents when choosing a school for their child, but they should not be considered part of a school's effectiveness (Raudenbush & Willms, 1995). The

magnitude of peer effects on learning is highly disputed in the literature (Angrist, 2014; Sacerdote, 2011) but, to the extent that they exist, they are likely to contribute to the private school effect. Second, anecdotal evidence suggests that some private schools select on ability, even at the primary level. Finally, within-household selection may result in higher-ability children attending private schools. We discuss this possibility in more detail in the section 'Robustness checks'. Again, to the extent that within-household selection is present, it is likely to bias the private school effect upwards.

In addition to estimating the overall private school effect, we assess whether the effect differs between low- and high SES families, by conducting separate household fixed-effect models for each wealth group.

### *Measures and Descriptives*

The PAL Network data contain scores on three basic skills tests: numeracy, English literacy and local language literacy<sup>iii</sup>. The tests are designed to assess Grade-2-level knowledge, using a set of tasks of increasing difficulty. As an indicative example, ASER Pakistan's Urdu literacy tool assesses children's ability to: (1) recognise letters, (2) recognise words, (3) read a short sentence, (4) read a short story and (5) demonstrate comprehension of the story). For more information, see Jones, Schipper, Ruto and Rajani (2014).

From the numeracy and literacy tests, we compute two measures of learning outcomes. The first is a country- and age-standardised measure of the combined numeracy and literacy scores, following Anand et al. (2018). The second is a dummy variable indicating whether the child achieved the expected literacy level for grade 2, e.g. being able to read and comprehend a simple story (the highest competence level on the PAL network literacy scale).

Our key independent variable indicates whether the child was enrolled in a private school or a government school<sup>iv</sup>. The PAL network surveys do not distinguish between different types of private school (such as for-profit, religious or NGO schools). Prior research shows that most private schools in the countries we study operate on a commercial basis (e.g. funded by fees), although not necessarily with an exclusive profit motive (Kingdon, 2017; Tsimpo & Wodon, 2014).

All models control for demographic factors that may differ between children in the household, notably age, grade attending and gender. In the fixed-effect models, we also control for whether the child received paid tuition. We do not control for tuition in the OLS models because they

seek to establish the effect of private schooling without adjusting for family background, and extracurricular tuition may serve as a proxy for household wealth.

Research question 1 and 3 refer to children from different socio-economic backgrounds. Following established practice (Bollen, Glanville, & Stecklov, 2002), we use an asset index as a proxy for household wealth. The asset index was computed using multiple correspondence analysis on a country-specific set of housing characteristics and household assets, and then divided into quintiles.

Descriptive statistics for all covariates are presented in Table 2. Private school attendance for children enrolled in Grade 2 to 6 was 12.4% in Kenya, 23.5% in Uganda, 17.7% in rural Pakistan and 32.5% in rural India, which is broadly in line with other sources (The World Bank, 2019). Girls are underrepresented in the rural Pakistan sample, which is due to a combination of gendered non-response and gender differences in school enrolment. Additional private tuition is fairly common in the countries we study, ranging from 13% in rural Pakistan to 26% in Kenya.

**Table 2:** Covariates for the full analytical sample, by country

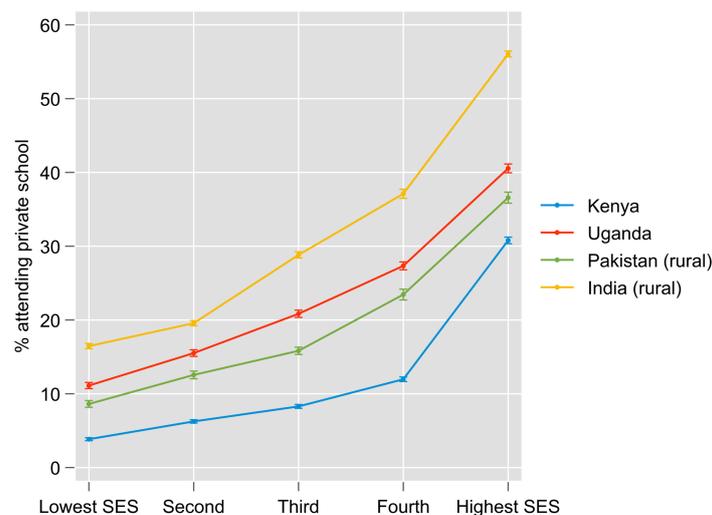
| Country          | Kenya      | Uganda     | Pakistan<br>(rural) | India<br>(rural) |
|------------------|------------|------------|---------------------|------------------|
| School type      |            |            |                     |                  |
| Government       | 87.6%      | 76.5%      | 82.3%               | 67.5%            |
| Private          | 12.4%      | 23.5%      | 17.7%               | 32.5%            |
| Mean age (SD)    | 10.4 (2.3) | 11.1 (2.5) | 9.4 (2.0)           | 9.4 (1.9)        |
| Grade attending  |            |            |                     |                  |
| Grade 2          | 20.9%      | 24.4%      | 31.0%               | 21.6%            |
| Grade 3          | 20.5%      | 22.9%      | 27.1%               | 20.2%            |
| Grade 4          | 21.2%      | 21.9%      | 19.7%               | 19.6%            |
| Grade 5          | 19.2%      | 17.5%      | 22.2%               | 20.1%            |
| Grade 6          | 18.2%      | 13.3%      | NA                  | 18.5%            |
| Child's gender   |            |            |                     |                  |
| Male             | 50.9%      | 50.2%      | 61.5%               | 51.3%            |
| Female           | 49.1%      | 49.8%      | 38.5%               | 48.7%            |
| Tuition          |            |            |                     |                  |
| No tuition       | 73.8%      | 84.2%      | 86.9%               | 78.0%            |
| Receives tuition | 26.2%      | 15.8%      | 13.1%               | 22.0%            |
| Observations     | 194,089    | 118,976    | 66,827              | 182,839          |

## Results

### *Access to private schooling*

In Figure 2 we plot private school attendance by wealth quintile in each of the countries we study, based on the full sample of children enrolled in Grade 2-6 of primary school. Access to private schooling is highly unequally distributed in each of the four countries, although the overall share of private school enrolment is different. In India, a child in the top wealth quintile is 3.4 times more likely to be enrolled in a private school than a child in the bottom quintile. In Uganda and Pakistan, a rich child is 4.4 times more likely to be in private school, and in Kenya, 8.2 times.

**Figure 2:** Private school enrolment, by country and SES quintile



Note: PAL Network data, all children enrolled in Grade 2-6 of primary school  
Spiked bars indicate 95% confidence intervals

Access to private schooling is non-negligible even among the poorest strata, however. It is highest in rural India (which also has the highest enrolment in private schools overall), where 16.5% of children in the poorest quintile attend private schools. In Kenya, the corresponding figure is 3.8%, with Uganda and rural Pakistan somewhere in between. Among the wealthiest 20%, however, private schooling is far more prevalent, ranging from 56.1% in rural India to 30.6% in Kenya. It is important to keep in mind that, for India and Pakistan, these figures are for rural areas only: private schooling is likely to be even more common in urban neighbourhoods.

In a supplementary analysis (see Appendix Figure 1) we find that boys are more likely to attend private schools in rural India, regardless of parental wealth. In rural Pakistan, Uganda and Kenya gender differences are negligible, however, even among the poorest<sup>v</sup>. For a more in-depth analysis of gender inequalities in private schooling, see Aslam (2009), Maitra, Pal & Sharma (2016) and Srivastava (2006). In subsequent analyses, we control for gender differences.

### *Effects on learning outcomes*

Our second research question relates to the average effect of private schools on learning outcomes. As discussed in the previous section, we use household fixed-effect models to fully control for household- and community-level characteristics. We compare these estimates to

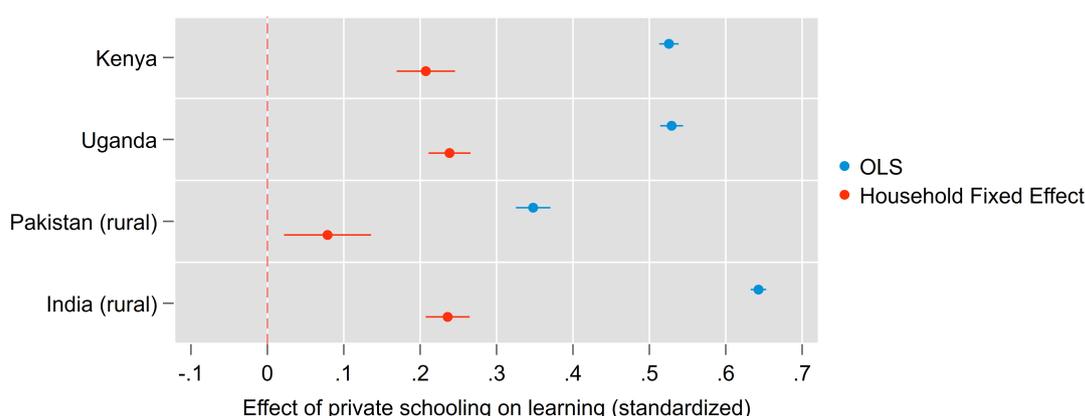
OLS regression estimates without any controls for family background, to assess the extent to which any private school advantage is driven by selection effects. The results for age-standardized learning outcomes are presented in Table 3 and visually displayed in Figure 3.

**Table 3:** Results from OLS and household fixed effect regressions on age-standardised learning outcomes

|                | Kenya    |          | Uganda   |          | Pakistan (rural) |          | India (rural) |          |
|----------------|----------|----------|----------|----------|------------------|----------|---------------|----------|
|                | OLS      | FE       | OLS      | FE       | OLS              | FE       | OLS           | FE       |
| Private school | 0.53***  | 0.21***  | 0.53***  | 0.24***  | 0.35***          | 0.08**   | 0.64***       | 0.24***  |
| Grade 2 (ref.) |          |          |          |          |                  |          |               |          |
| Grade 3        | 0.30***  | 0.23***  | 0.26***  | 0.21***  | 0.26***          | 0.18***  | 0.14***       | 0.13***  |
| Grade 4        | 0.62***  | 0.50***  | 0.48***  | 0.42***  | 0.54***          | 0.44***  | 0.26***       | 0.24***  |
| Grade 5        | 0.76***  | 0.55***  | 0.73***  | 0.57***  | 0.84***          | 0.65***  | 0.31***       | 0.31***  |
| Grade 6        | 0.89***  | 0.67***  | 0.96***  | 0.70***  |                  |          | 0.40***       | 0.46***  |
| Female         | 0.10***  | 0.08***  | 0.03***  | 0.06***  | 0.03***          | 0.03     | -0.01**       | -0.08*** |
| Tuition        |          | -0.00    |          | 0.07**   |                  | 0.02     |               | 0.24***  |
| Constant       | -0.61*** | -0.39*** | -0.56*** | -0.36*** | -0.43***         | -0.28*** | -0.42***      | -0.33*** |
| Observations   | 194,089  | 8,830    | 118,976  | 14,379   | 66,827           | 2,522    | 182,870       | 11,282   |

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Figure 3:** The effect of private schooling on age-standardised learning outcomes



Note: Based on children enrolled in grade 2-6. Controls (not shown): age, gender, grade (all), tuition (FE only)  
Data from UWEZO (2013-15), ASER Pakistan (2018) and ASER India (2016)

We find an overall effect of private schooling of 0.21 SD in Kenya ( $p < 0.001$ ), 0.24 SD in Uganda ( $p < 0.001$ ), 0.08 SD in rural Pakistan ( $p < 0.01$ ), and 0.24 SD in rural India ( $p < 0.001$ ).

The associations found in OLS models are approximately twice as large, suggesting that about half of the association between private schools and learning outcomes is due to confounding by household- or community-level factors. It is striking that this result holds across each of the four countries, despite their widely different institutional context.

Although these standardised estimates give an effect size that is comparable to previous research, it is difficult to interpret them in terms of practical learning gains. We therefore repeated the previous analysis with a dichotomous outcome that indicated whether the child was able to read and comprehend a simple story. This outcome is estimated using a linear probability model.

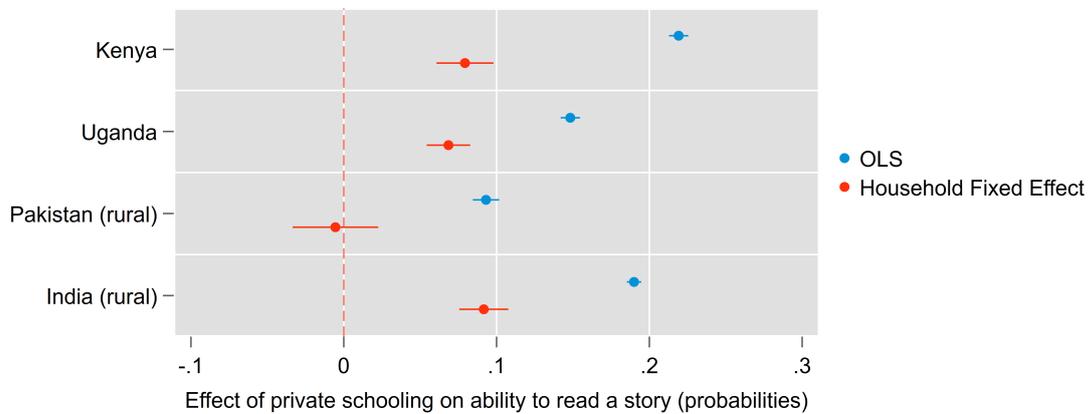
The findings (presented in Table 3 and Figure 3) show that before controlling for family background, private school children had a 10 percentage-point higher probability of being able to read in Pakistan, increasing to 22 percentage points in Kenya. As in the previous model, this effect is reduced by about half after fully controlling for family background: to 8 percentage points in Kenya ( $p < 0.001$ ), 7 points in Uganda ( $p < 0.001$ ) and 9 points in India ( $p < 0.001$ ). In Pakistan, the effect turns slight negative and non-significant.

**Table 4:** Results from OLS and household fixed effect regressions on the ability to read a story (linear probability models)

|                | Kenya   |         | Uganda  |         | Pakistan (rural) |         | India (rural) |         |
|----------------|---------|---------|---------|---------|------------------|---------|---------------|---------|
|                | OLS     | FE      | OLS     | FE      | OLS              | FE      | OLS           | FE      |
| Private school | 0.22*** | 0.08*** | 0.15*** | 0.07*** | 0.07***          | -0.01   | 0.19***       | 0.09*** |
| Grade 2 (ref.) |         |         |         |         |                  |         |               |         |
| Grade 3        | 0.13*** | 0.12*** | 0.05*** | 0.01    | 0.05***          | 0.01    | 0.10***       | 0.05**  |
| Grade 4        | 0.37*** | 0.33*** | 0.16*** | 0.10*** | 0.26***          | 0.16*** | 0.22***       | 0.13*** |
| Grade 5        | 0.53*** | 0.43*** | 0.36*** | 0.23*** | 0.47***          | 0.30*** | 0.32***       | 0.19*** |
| Grade 6        | 0.67*** | 0.53*** | 0.58*** | 0.39*** |                  |         | 0.42***       | 0.27*** |
| Female         | 0.03*** | 0.03**  | 0.01**  | 0.02**  | 0.01***          | 0.02    | 0.02***       | -0.00   |
| Tuition        |         | 0.02    |         | 0.04**  |                  | 0.02    |               | 0.04*   |
| Constant       | 0.04*** | 0.09*** | -0.00   | -0.02   | -0.00            | -0.08   | -0.07***      | 0.03    |
| Observations   | 194,089 | 8,830   | 118,976 | 14,379  | 66,827           | 2,522   | 182,839       | 11,282  |

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Controls for child age included but not shown here.

**Figure 4:** The effect of private schooling on the ability to read a story (linear probability models)



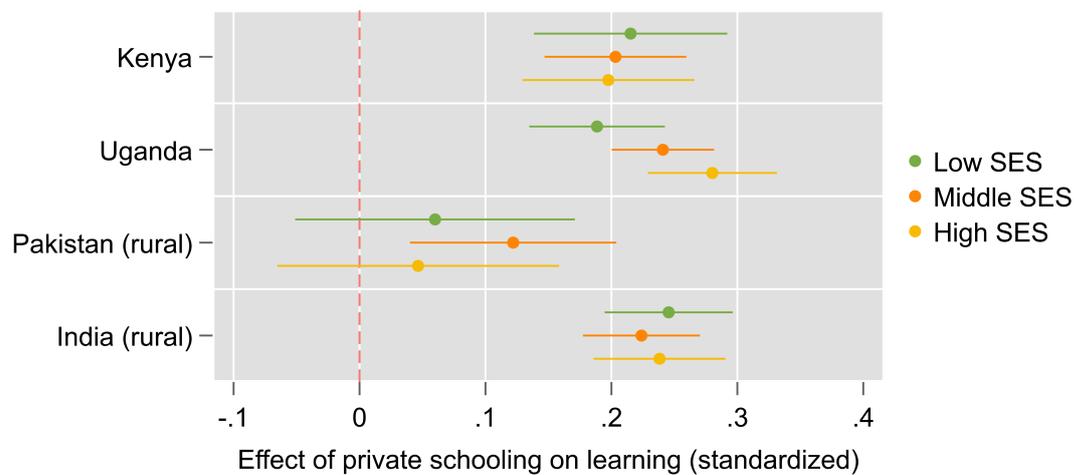
Note: Based on children enrolled in grade 2-6. Controls (not shown): age, gender, grade (all), tuition (FE only)  
 Data from UWEZO (2013-15), ASER Pakistan (2018) and ASER India (2016)

As a reference, the average probability of being able to read a story among children in Grade 2-6 was .50 Kenya, .27 in Uganda, .27 in rural Pakistan and .35 in rural India (please note that due to differences in the survey instruments, these proportions are not strictly comparable between countries).

#### *Differential effects by socio-economic background*

Finally, we assessed whether the private school advantage observed in the household FE models differed by family background. We ran the household FE models presented in Figure 3 separately for households in the bottom two wealth quintiles, the second and third quintiles and the top quintile. The results, presented in Figure 5, suggest that there were no major differences in the effect of private schooling for poorer and wealthier children. This finding can be interpreted in different ways. It could be that government and private schools are roughly equally good at teaching children from different social backgrounds. It could also be the case that both government schools and private schools are socially segregated, with wealthier children attending the better private schools but also the better government schools (see Fennell & Malik, 2012).

**Figure 5:** The effect of private schooling on age-standardized learning outcomes, by SES (household FE models)



Note: Based on children enrolled in grade 2-6. Controls (not shown): age, gender, grade, tuition  
 Low SES is bottom two wealth quintiles, middle SES is third and fourth quintile, high SES is top wealth quintile.  
 Data from UWEZO (2013-15), ASER Pakistan (2018) and ASER India (2016)

### *Robustness checks*

Chudgar and Quin (2012) highlight two concerns with using household fixed-effect models to estimate private school effects. First, households that send one child to a government school and another child to a private school may not be representative of the overall population, which means the findings from the fixed-effect sample may not be generalizable to the population at large (sample selection). Second, households that send their children to different schools may practice some form of favouritism with respect to the child that gets to attend private school (within-household selection).

We consider the first concern to be less serious than the second because there is no reason to assume that private schools will be either more effective or less effective in the population of households that are part of the fixed effect sample. In general, there are many reasons why parents might send one child to a government school and another to a private school. Lack of funds to pay private school fees for each child is likely to be a major reason. Some private schools also provide concessionary spaces to poor children, either as an act of goodwill or because of government regulations, such as the Indian Right to Education Act (Heyneman & Stern, 2014). In some families, only one child might be able to obtain such a place. In a supplementary analysis (see Appendix Figure 4) we found that the household FE sample had somewhat lower SES than the sample of households that sent all their children to private

schools—in fact, this makes them more representative of the overall population. Moreover, we have seen previously that the effect of private schooling is relatively constant across SES quintiles.

To address Chudgar and Quin's second concern, we need to consider whether and how within-household selection might have affected our results. Within-household selection would bias our estimates if the criteria for selection are both unobserved and correlated with the child's innate ability for reading and math. For example, if selection is based on the children's age or gender this does not affect our findings, because we control for both age and gender in all models. If selection is based on practical considerations (such as the availability of government-school spaces in the relevant grade) this is also not a problem, because such criteria are unlikely to be associated with the children's relative ability. We would overestimate the private school effect, however, if some parents decide to send their most academically promising child to a private school. Similarly, the FE estimates would be biased upwards if families favour the privately schooled child in other educationally relevant ways, for example in terms of nutrition or support with homework. A review of the literature on school choice in low-income contexts shows that parents may have various reasons to send their children to different schools. Safety concerns related to the age and gender of the child often play a role. For example, parents might prefer the nearest school for younger children or girls (Andrabi et al., 2008; James & Woodhead, 2014; Srivastava, 2006). There is some evidence that parents make strategic schooling decisions to maximise the family's returns in terms of expected future earnings, which may lead them to prioritise sons' education in patrilineal cultures (Maitra et al., 2016).

Further analysis (Appendix Table 1) shows that in the household FE sample, the child attending private school was more likely to be younger, male and receiving extracurricular tuition. Each of these aspects is controlled for in our regression models. Although we cannot directly assess whether ability plays a major role in within-household school selection, it is questionable whether parents would be able to accurately predict their child's academic potential at such a young age, considering the complexity of children's developmental trajectories (Vereijken, 2010).

Finally, we checked whether the private school effect differed between the numeracy, English literacy and local language literacy skills tests. In many locations, private schools are more

likely to teach in English than government schools, which may affect our results<sup>vi</sup>. The findings (Appendix Figure 3) show that the findings were substantively similar for each subject.

## Discussion

The purpose of this paper was threefold: to (1) assess socio-economic inequality in access to private schools, (2) evaluate the effect of private schools on learning outcomes, and (3) assess whether any effects differ between children from poor and wealthier families. In line with previous research (Chudgar & Quin, 2012; James & Woodhead, 2014; Zuilkowski et al., 2018), we found that access to private schools is highly stratified by parental wealth, although even some of the poorest children attended private schools. After fully controlling for family background, we found an upper bound private school learning advantage of 0.21 SD in Kenya, 0.25 SD in Uganda, 0.06 SD in rural Pakistan, and 0.24 SD in rural India. In practical terms, a learning gain of a quarter of an SD equates to a 0.07 – 0.09 higher probability of being able to read a simple story. There is no indication that the effect of private schooling differs by parental background.

The private school effect we observe is substantially lower than the estimates of Bold, Kimenyi, Mwabu and Sandefur (2011) for Kenya, and those of Andrabi et al. (2008) and Aslam (2009) for Pakistan. Although part of this might be due to differences in samples and time frames, our findings highlight the need to control for unobserved as well as observed characteristics when estimating private school effects. Further analyses show that private school effects remain substantially overestimated when controlling for observed parental characteristics only (see Appendix Figure 2). As discussed previously, we interpret our findings as an upper bound on the average causal effect of private schools in these four countries. This is because our estimates might be affected by within family-selection and because they incorporate peer effects, which are not an effect of the school itself. It could thus be there is no 'true' private school advantage in these four countries, as suggested by some recent studies (Muralidharan & Sundararaman, 2015; A. Singh, 2015; Zuilkowski et al., 2020).

In each of the countries we study, public primary education is, ostensibly at least, free of charge. Why would parents pay often burdensome fees to send their children to private institutions, if the average learning gains their children experience there are modest? One explanation is that parents may not realise that much of the private school advantage in graduation and exam

scores is a selection effect rather than an effect of the school itself. Private schools also tend to perform better on indicators that are most visible to parents, such as teacher absenteeism. Moreover, private schools may offer various non-academic benefits, such as proximity, security, networks and social status (Joshi, 2014).

It is sometimes suggested that policymakers should embrace the expansion of private education as a potential solution to the 'learning crisis' (Heyneman & Stern, 2014; Tooley, Bao, Dixon, & Merrifield, 2011). Our findings suggest that a more cautious approach is warranted. Much of the aggregate performance difference between private and government schools is simply a reflection of the more advantaged family background of private school pupils, rather than of differences in school management or teaching practice. The effect that remains after controlling for family background is not negligible, but—considering the very low baseline—insufficient to bring performance standards near acceptable levels, as defined by the national curriculum of the countries we study. Our conceptual framework suggests that parents choose schools subject to constraints of accessibility and affordability. For many low-income parents in the global South, this implies a choice between grossly underperforming government schools and only marginally better private schools. When government schools in a given locality perform poorly, their profit-driven competitors have little incentive to outperform them by a large margin. Even if private schools were able to substantially improve the quality of teaching, the costs involved would result in tuition levels that are unaffordable for most families.

Moreover, policymakers should take into account the potential negative externalities of private expansion on government provision. If elites can opt out of public schooling by sending their kids to private alternatives, what incentive do they have to enhance the quality of the public system? In his seminal work 'Exit, Voice and Loyalty' (1970), Daniel Hirschmann uses private schools as a case in point:

"Suppose at some point, for whatever reason, the public schools deteriorate. Thereupon, increasing numbers of quality-education-conscious parents will send their children to private schools. This "exit" may occasion some impulse toward an improvement of the public schools, but here again this impulse is far less significant than the loss to the public schools of those member-customers who would be most motivated and determined to put up a fight against the deterioration if they did not have the alternative of the private schools." (p. 45-46)

Joshi (2014) found that in Nepal, government schooling has become associated with social stigma: "middle-class parents thought that sending their children to public schools would signal that they did not care about them" (p. 425). Educational privatisation thus becomes a self-

reinforcing process, with the exit of wealthier parents from the state sector lowering its status and perceived quality, thereby fuelling further demand for private schooling. The long-term effect of private school growth on the quality, coverage and reputation of public provision in low-income contexts needs to be investigated in more detail.

Perhaps even more worrisome is that the ongoing trend towards privatisation comes at the cost of increased social inequality and between-school segregation (R. Singh & Bangay, 2014). Our analyses have shown that access to private schooling is highly stratified by socio-economic status. Stratification also exists within the private sector, with wealthier parents sending their children to more prestigious, better resourced elite schools (Fennell & Malik, 2012). Even though stratification also exists within the state sector (Gruijters & Behrman, 2020), privatisation is likely to increase class-based segregation and reinforce the association between family background and educational outcomes. In a largely privatised system—which countries such as India are approaching—children obtain the quality of education that their parents can afford: a situation that is deeply unmeritocratic and at odds with policy objectives of equity and economic efficiency.

The analyses presented here are subject to certain limitations, some of which we have discussed already. We are not able to fully address potential concerns about within family selection, which is why our household fixed effect estimates should be interpreted as an upper bound on the true effect of private schooling. Moreover, data limitations prevent us from distinguishing between different types of private schools, or to assess the relative resources of government and private schools. To better understand the implications of the rise of private schooling in the global South, there is an urgent need for more and better data. Instead of treating private schools as a uniform category, surveys such as ASER could distinguish between different types of private schools. Future research could focus on parents' schooling decisions and the—government and private—schooling options available in different areas.

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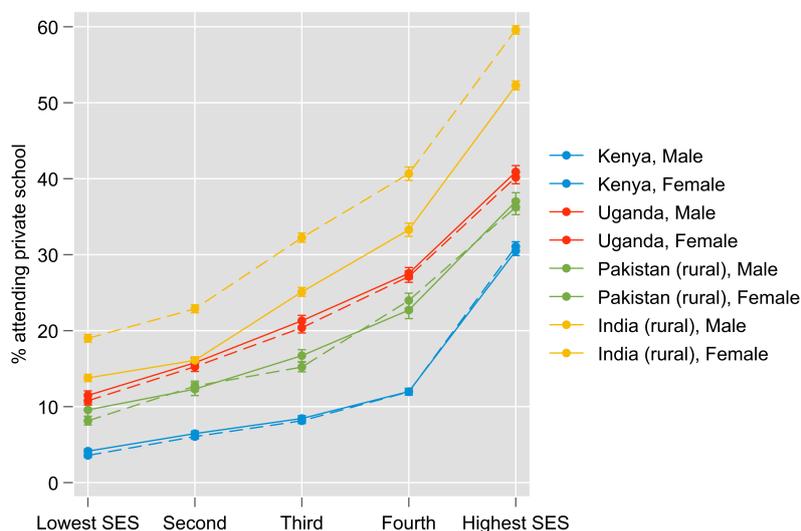
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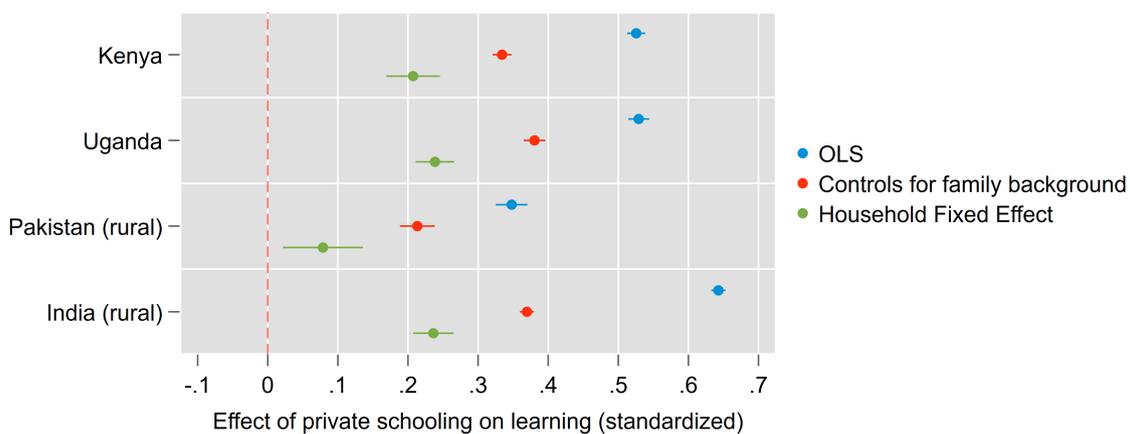
## Appendix

**Figure A1:** Gender differences in private school attendance, by SES quintile



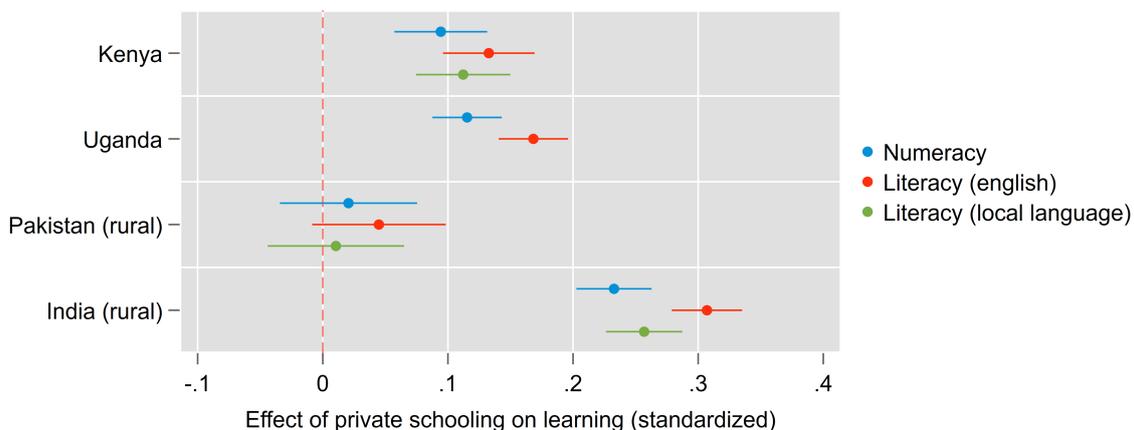
Note: PAL Network data, all children enrolled in Grade 2-6 of primary school  
Spiked bars indicate 95% confidence intervals

**Figure A2:** Controlling for family background using observed covariates vs. household FE



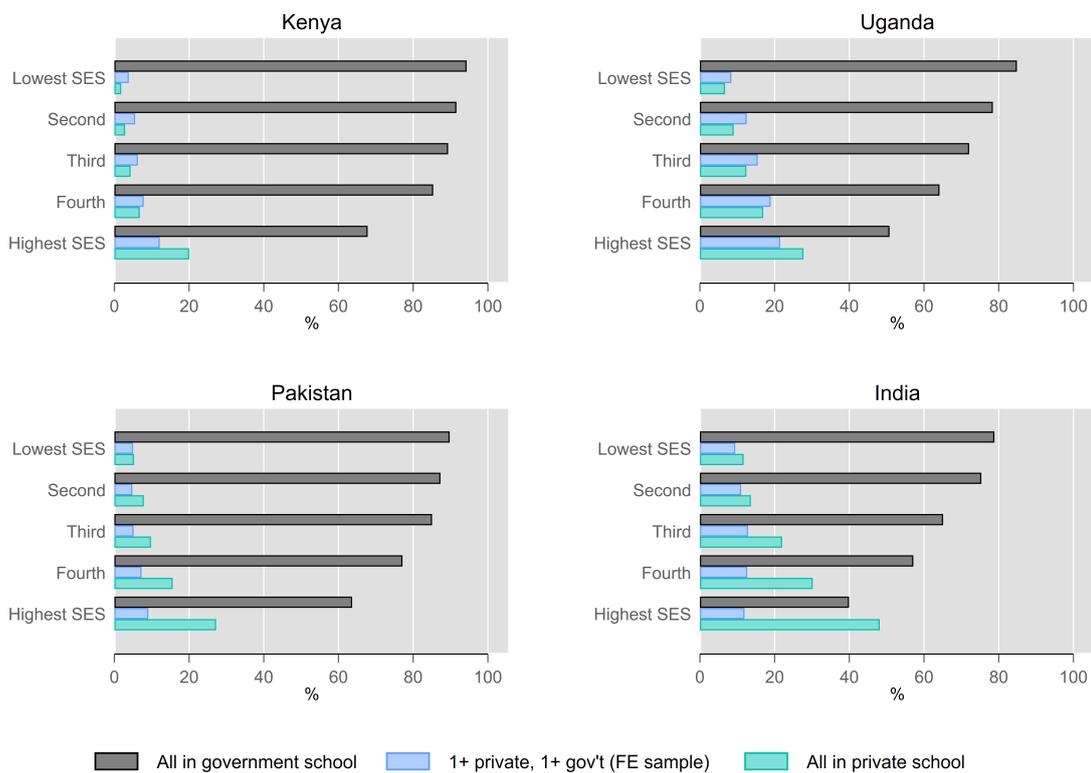
Note: Based on children enrolled in grade 2-6. Controls (not shown): age, gender, grade  
Data from UWEZO (2013-15), ASER Pakistan (2018) and ASER India (2016)

**Figure A3: Private school effects, by subject tested**



Note: Based on children enrolled in grade 2-6. Controls (not shown): age, gender, grade  
 Data from UWEZO (2013-15), ASER Pakistan (2018) and ASER India (2016)

**Figure A4: School choice, by household wealth quintile**



Based on households with at least 2 children in Grade 2-6

**Table A1:** Selection into private school (household fixed-effect model)

|                  | Kenya    | Uganda   | Pakistan (rural) | India (rural) |
|------------------|----------|----------|------------------|---------------|
| Age              | -0.09*** | -0.05*** | -0.07***         | 0.04***       |
| Female           | -0.04**  | -0.02    | -0.16***         | -0.34***      |
| Receives tuition | 0.62***  | 0.57***  | 0.52***          | 0.18***       |
| Constant         | 1.25***  | 0.94***  | 1.15***          | 0.20***       |
| Observations     | 8,830    | 14,379   | 2,522            | 11,282        |

Dependent variable: child attends private school

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Controls (not shown): tuition info missing

## Endnotes

<sup>i</sup> All models are estimated using the xtreg command in Stata 15, using the appropriate household weights.

<sup>ii</sup> In Pakistan grade 5 is the final year of primary school, so we use grades 2 to 5.

<sup>iii</sup> In Uganda local language literacy was not tested, because it is not part of the primary school curriculum.

<sup>iv</sup> In India and Pakistan, a small number of children were enrolled in Madrassa's (Koran schools) or 'other' schools. These children (2.02% of sample in Pakistan, and 0.64% in India) were not considered in the analyses presented here.

<sup>v</sup> It is important to remember that our sample only includes children enrolled in school. Especially in Pakistan, there are strong gender inequalities in enrolment.

<sup>vi</sup> Please note that Uganda did not have a local language test