



Pain without gain?: Impact of school rationalisation in India

Ambrish Dongre^{a,*}, Vibhu Tewary^b

^a Indian Institute of Management (IIM), Wing 13 F, Faculty Block, Heritage Campus Vastrapur, Ahmedabad, Gujarat 380 015, India

^b 22 Panton Street, Cambridge, CB2 1HP, United Kingdom



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ABSTRACT

Alarmed by declining enrolment in government schools and potentially adverse academic, administrative and fiscal consequences associated with it, policy makers in India have initiated experimenting with closure of government schools with low enrolments ('small' schools), an exercise commonly referred to as 'school rationalisation'. However, the impact of this policy on access to schooling and learning remains empirically unexplored. Utilising ASER 2014 data, this paper asks three key questions: (a) what are the characteristics of villages in which 'small' schools are located?, (b) what options would students have if 'small schools' were to be closed, and finally (c) what are the differences in characteristics of 'small' and non-'small' schools? Results indicate that the villages which have 'small' schools are more disadvantaged in terms of essential public services such as all-weather roads leading to village, availability of government health facilities or banks and post offices. Additionally, these villages are less likely to have an alternative to the 'small' school, either government or private. Results also show that 'small schools' are much more likely to have multi-grade teaching. They are less likely to have basic infrastructural facilities. Interestingly, learning levels are unlikely to be different in 'small' schools than non-'small' schools even after controlling for child, household and village attributes. Thus, the analysis suggests that school rationalisation can potentially have severe consequences on children's access to schools without any meaningful impact on learning levels in a 'business as usual' scenario.

1. Introduction

Ensuring physical access to schools in order to achieve universal primary education has been an important objective of education policy across the developing world, as reflected in the second Millennium Development Goal (MDG 2). It has led to the establishment of government schools to ensure that distance and transport cost are unlikely to be constraints in attending school. India is no exception. It has been successful in establishing government schools in almost all habitations, making physical access almost universal (NSSO 2016). However, focusing on habitation in determining school location, especially in the rural Indian context where villages are segregated into caste-wise habitations, combined with lower population of each habitation implied that school sizes were relatively lower than what would have been 'optimal' (Kocher 2008). Further, over time, a confluence of factors such as dwindling 'quality' of government schools, increasing fraction of children attending private schools, multiple government schools in close proximity, and declining birth rates have meant that the number of students enrolled at a typical government school has shrunk dramatically (Kremer et al., 2005; ASER, 2014; NSSO, 2016; Muralidharan et al., 2017; Central Bureau of Health Intelligence (CBHI, 2018). In fact,

the proportion of schools with low enrolments, referred to as 'small' schools, has increased dramatically in India over the last decade (Kingdon, 2017).

A large number of 'small' schools can pose multiple challenges. Fewer students per school implies higher per student expenditure. A large number of 'small' schools potentially implies that each school has low levels of teaching-learning material as well as a paucity of basic infrastructure, especially in the context of budget constraints. Further, such schools also face a higher probability of having multi-grade classrooms, i.e. students from more than one grade sitting together in the same classroom and being taught by the same teacher simultaneously due to teacher allocation rules that rely only on total enrolment. Multi-grade teaching is said to reduce effective teaching time. Further, when the curriculum is more rigid and grade-specific, when teachers aren't provided relevant training and pedagogic strategies to handle such situations and when teachers focus on completion of syllabus without remedial education, multi-grade teaching can leave both, students and teachers, frustrated. This has adverse consequences for quality of teaching-learning and in turn, leads to student disillusionment, higher drop-outs and low retention rates in such schools (Blum and Diwan, 2007; Jacob et al., 2008; Nakajima et al., 2018). These

* Corresponding author.

E-mail addresses: ambrishd@iima.ac.in (A. Dongre), vibhutewary@gmail.com (V. Tewary).

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concerns have led policymakers in India to experiment with school rationalisation or consolidation (Ministry of Human Resource Development (MHRD, 2017). The state of Rajasthan has taken an early initiative and has closed (or merged) more than 10,000 government schools between 2012-13 and 2016-17 as per the official data (District Information System for Education (DISE, 2014, 2018). The draft of India's most recent National Education Policy (NEP), which is likely to set the direction for education policy across states in India in next few years, also supports creation of 'composite' schools (Ministry of Human Resource Development (MHRD, 2019).

But such a policy also increases distance to school for students in the habitations or villages where schools have been closed, thereby creating difficulties in access to schools especially for vulnerable sections of the population such as poorer or socially disadvantaged households, younger children and girls (Burde and Linden, 2013; Kazianga et al., 2013).

This paper attempts to understand *potential* consequences of closure of 'small' schools in India by analysing the 2014 round of the well-known ASER survey. While ASER has collected data every year since 2005 in a consistent manner, we use the 2014 round since a number of states have initiated school rationalisation only post 2014. We also utilise 2014-15 round of an administrative dataset known as DISE (i.e. District Information System for Education) to complement the results obtained from ASER.

ASER's household and child-level information including data on learning outcomes has always been the focus of attention for researchers and policymakers. Very few papers (such as Chudgar (2012) and this paper) have utilised its school and village-level data too. Availability of school-level data allows us to identify 'small' schools and analyse their characteristics, while availability of village-level data allows us to analyse the characteristics of villages in which these 'small' schools are located. We also combine household, school and village level data to compare learning levels of students attending 'small' schools to those who attend non- 'small' schools.

Consistent with literature on school size in the Indian context, we define a school as a 'small' school if its total student enrolment is less than 21 (Diwan, 2012; Kingdon, 2017; Jolad and Vijayanti, 2018). We then explore characteristics of villages where 'small' primary schools are located. The villages which have 'small' schools are more disadvantaged in terms of basic public services such as *pucca* (all-weather) roads leading to the village, availability of government health facilities or banks and post offices. Critically, these villages are also less likely to have alternative government or private schooling options. These findings indicate that unless a free, reliable transport facility is provided to students in the villages with 'small' schools, they will find it difficult to access alternative schooling options and may drop-out as a result. The consequences are likely to be more severe for disadvantaged households, for younger students and girls due to transport cost and safety concerns. Then we analyse the difference between 'small' primary schools and other (i.e. non- 'small') primary schools. A key difference between the two is that 'small' schools are much more likely to have multi-grade teaching. They are also less likely to have basic infrastructural facilities such as usable toilet for girls, computers, playground and kitchen/shed for cooking when we use a census of schools and employ more rigorous village fixed effect estimations. Interestingly, we also find a somewhat counter-intuitive result that math and reading levels of students studying in 'small' government schools in a village are actually better than the students studying in non- 'small' government school in another village. This is unlikely to be causal relation as there might be unobservable village-level factors that could drive the result. Comparing estimated coefficients on 'small' school in specifications with and without village fixed effects is suggestive of magnitude of the bias. Tentative comparison between magnitude of bias and estimated coefficients on 'small' school in specification for learning outcomes indicate that learning outcomes in non- 'small' schools are unlikely to be significantly different to learning outcomes in 'small' schools. In other

words, learning outcomes may not necessarily improve for the students who will have to attend a different school if their original ('small') school is closed.

To sum up, school rationalisation might ensure larger enrolment, bigger class sizes, one teacher per class and overall efficiency. But it is likely to worsen drop-out rates for vulnerable students due to distance, safety and cost concerns. Further, it is not clear whether learning levels will improve for those who might manage attending schools which are still functioning if no attention is paid to reforming the nature of classroom transactions and pedagogy.

The rest of this paper is structured as follows. Section 2 briefly reviews the relevant literature. Section 3 describes the datasets in detail. Section 4 discusses methodology. Findings are reported in Section 5. Section 6 concludes.

1.1. Literature review

Most of the literature which examines the impact of school closures or more broadly, school consolidation, pertains to the developed countries. We discuss a few important and more recent papers below.

Schools and school districts in the US underwent dramatic consolidation in the middle of the 20th century, driven by the 'progressives' of the day. Average school size increased five times during this short period. Berry and West (2008) exploit variation in the timing of school consolidation across the states and show that students educated in states with smaller schools have higher returns to education and more completed years of schooling. In more recent times, the impetus for school closures and consolidation in the US has come from declining population (especially in some of the metropolitan cities), competition from charter schools and accountability policies which target schools with consistently low achievement as measured through standardised tests. Engberg et al. (2012) examine the case of an urban district which was facing declining enrolment for some time and needed to close schools due to cost concerns. Using a student-level panel dataset, the authors find negative impact on attendance of students who previously attended closed schools and now have to attend a different school. But this impact disappears after the first year. Their main finding is that the impact on achievement depends on whether the students from the closed schools are transferred to a better performing school (as compared to the closed school which they attended). They also find no adverse effect on students in the schools that receive the transferred students. Thorsen (2017) explores effect of closure of 76 schools in rural Norway between 1989 and 2009 using data from education administration which provide school details, and Norwegian register data which provide student-level details. In the author's words, '*the results leave no reason to believe that school consolidation is either detrimental or beneficial for affected students.*' Beuchert et al. (2018) study the effect of massive school exercise of school closures, mergers and expansions (together referred to as consolidation in the paper) in Denmark in 2010 and 2011, which affected close to 15 % of the students. Utilising detailed student-level data on enrolment and test scores before and after this exercise, the authors find that the overall effect of school consolidation was negative though insignificant. This overall negative and insignificant impact is driven by negative and statistically significant impact of school closures, zero effect of expansions and small and insignificant effect of mergers. Students from disadvantaged family background, students who were enrolled in relatively smaller schools and students enrolled in 'better' performing schools prior to consolidation exercise suffer the most due to school closures. Brummet (2014) examines 246 school closures between 2006 and 2009 in the state of Michigan (US) which were driven primarily by declining enrolments. Their results indicate that school closures had no sustained impacts on displaced students as far as learning outcomes are concerned. The authors also note that there was substantial variation in the performance of the closed schools and in some cases, closed schools were above the state average. This allows them to investigate whether

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