

# SCHOOL SANITATION IN ODISHA

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POLICY BRIEF

## ABSTRACT

Sanitation access in schools is important to keep children, especially girl children in school. It is also important to spread the culture of safe sanitation more widely, especially among the young. Using a unique mapping of DISE (District Information System for Education) data on 0.94 million schools and Primary Census Abstract (PCA) data on village-level amenities, this brief looks at the variation in school sanitation across the state of Odisha by location and gender and the relationship between access to sanitation in schools and the access to sanitation within households of the block. It finds considerable variation, especially looking across spatial distributions, which need greater focus, going forward. However, access to school sanitation is consistently better than sanitation in the block as a whole.

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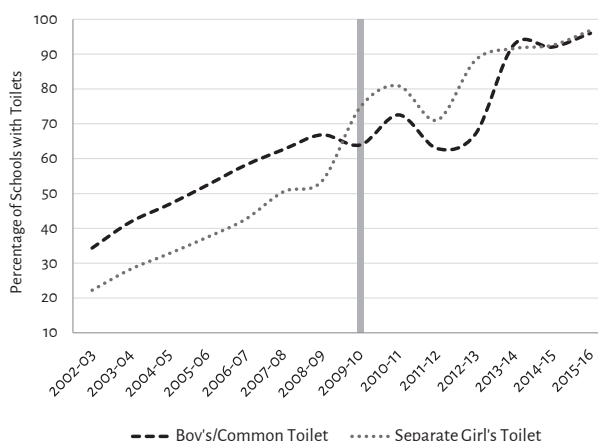
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## INTRODUCTION

The impact of poor sanitation and open defecation is well regarded on child health and the development of human capital (Black et al, 2003; Spears, 2012; Spears et al, 2013). The development of sanitary practices in school have affirmative effects not only in terms of health outcomes of children, but also important to educate them in order to generate awareness and cognitive supports for the necessity of the improved sanitation in general. As mandated by the Right to Education Act (RTE), all children are required to spend six hours at school every day and an absence of a functional toilet for such long period is a serious deterrent.

Toilet facilities at schools, since the inception of the Sarva Siksha Abhiyan (SSA) show steady improvement over time. Before the RTE, the provision of separate girls' toilet in elementary schools was visibly deficient, with 34 percent of schools that only had common toilets for boys and girls during 2002-03. In case of primary schools, the share of schools which had separate girls' toilet was only 15 percent at the same time. The RTE made it mandatory to provide separate toilets for boys and girls in all elementary schools. The post RTE phase, therefore, witnessed growth of separate toilets for boys and girls instead of common toilets, as portrayed in Fig. 1.

Fig.1: Percentage of Schools with Toilet Facilities (All Schools)



**Source:** Analytical Reports, U-DISE, various years

Co-educational schools with single toilet after 2009-10 are regarded as schools with only boys' toilet, and schools with multiple toilets are considered to have separate toilets for boys and girls.

All Schools refer to all different kinds of schools covered under the U-DISE, ranging from primary to higher secondary level.

Though the achievement of toilet access in schools seem to be universal by now<sup>1</sup>, the share of functional toilets vary a lot by management structure of schools. Only 48 percent of the Government managed schools are found to have a functional toilet, while the share for schools under all managements is near to 100 percent (U-DISE, 2015-16). There are also wide spatial variations in terms of access to functional toilets, with 76.8 percent of schools in Odisha to 96.4 percent schools in Haryana with a girl's toilet (U-DISE, 2014-15).

This brief attempts to highlight salient features of access to toilets in schools in India, and more specifically, the state of Odisha, as per the data collected by the U-DISE, or 'Unified District Information System for Education' in 2010-11 in order to permit comparison with the data from the Census. The U-DISE, or simply called DISE during the study period, is the largest repository of school level enrolment, facility, management and a bunch of other indicators, which reports educational statistics mainly for elementary schools.<sup>2</sup> The second major objective of this brief is to look at the sanitary situation of the schools in relation to its neighbourhoods in Odisha. The third question is related to the spatial variation across the state.

## DATABASE AND METHODOLOGY

As mentioned above, the two main databases that has been used for this study are the school level data of DISE (2010-11) and Census of India tables on Household Amenities and Assets (2011).<sup>3</sup> The school data of DISE reports access to toilets for each school it covers, on an annual basis, and the total number of such schools were 1.04 million in 2010-11. This brief is limited to the information of 0.94 million schools, as for some of the schools of the school level dataset enrolment information was not available.

On the other hand, the Census database reports access to toilets at household level. The following two sections of the brief constitutes the analysis of school level situation of sanitation across all India and Odisha, where only the DISE dataset have been used. The last two sections merge the census data with the DISE data for comparing the situation of toilets of the schools to the households of the neighbourhoods, mainly for Odisha. However, there is one caveat for this: the structure of information provided by Census and DISE are different. While the school level information at DISE can be aggregated up to the village/town level, there are no unique identification codes that can be used to match the villages or urban wards in census that reports access to toilets in households. Also, villages or urban wards might not be an ideal level of analysis as there may not be schools in every village or ward, and one school may be serving multiple villages or wards as well. Hence, the sub-districts are considered as the unit of analysis

for the same. The census nomenclature for sub-districts vary across the states. On the other hand, school level information from DISE can be aggregated up to only one standard unit across all India, which are blocks<sup>4</sup>, which are divided across rural and urban. Integrating the census information with DISE by blocks, therefore, required some linking instrument that identifies the jurisdictional nomenclature in both datasets. The Primary Census Abstract (PCA) dataset by CD Blocks<sup>5</sup>, which lists every village and census town<sup>6</sup> in the country by blocks similar to DISE has been used in this regard, while the urban blocks from DISE are matched separately with the PCA database of statutory towns.

There are three steps involved in the matching procedure: i) merging the census household amenities data with the PCA blocks and statutory towns (dataset A), ii) linking the DISE block level data with the PCA blocks and statutory towns (dataset B), and iii) merging dataset A and dataset B to form the final data (dataset C). The creation of dataset A is a relatively easy process as both are part of census and shares a unique code of villages and towns. However, there are no unique codes to match DISE blocks with PCA blocks and statutory towns to create dataset B, and such process have to be done by the names of the blocks, which involved both computer-assisted fuzzy look-up techniques and manual error checking. Other than the issues of duplicate and incorrect matches, there are inconsistencies of school information across the rural-urban blocks in DISE (e.g. in some cases, there is only one school that is erroneously entered within the urban block and it had to be returned to the rural block it matches with), which have been taken care of. A detailed numerical account of the matching procedure is available on request. In addition to this matching, the villages and urban areas of DISE were also matched with the villages and towns of the census, in order to generate the boundary shapefiles for the spatial analysis at block level<sup>7</sup>.

## ACCESS TO TOILETS IN SCHOOLS: THE NATIONAL PICTURE

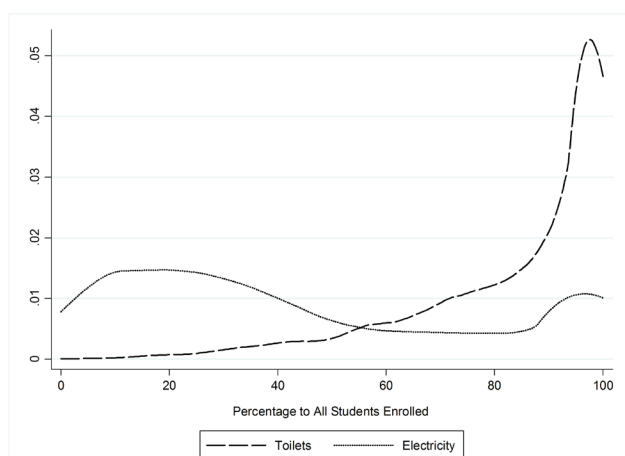
Though the aggregated reports of DISE includes both availability and functionality of toilets in schools; the school level database only reports only the total number of toilet seats available or constructed, separately for the boy and girl students. This brief shows the coverage of toilets in terms of students enrolled (the spatial coverage across schools was also calculated but is not reported)<sup>8</sup>. It is evident from Fig. 1 that access to toilets, irrespective of the fact whether they are functional, seems to be almost universal in schools. This fact is striking in comparison to another facility indicator: the access to a functional electricity connection in schools. The main objective of this analysis is to check whether there is greater focus on provision of toilets in terms of provision of

physical infrastructure in schools, as it is often been focused as the key facility influencing enrolment in schools, especially for girl students (Roy, 2011; Birdthistle, 2011; Bandopadhyay, 2012; Bhatta, 2014; Adukia, 2016).

Fig. 2 portrays different kind of distributions for access to toilet and electricity in schools. About 86 percent students have access to toilets, while only 43 percent has a functional electricity connection in schools. It is evident that while the access to toilets is high and mostly above 80 percent, the situation is very different for electricity connections.

The share of schools with toilets is 80 percent, while the share of schools with electricity is only 32 percent. The share of students having access to toilets in schools is distributed mostly at the higher end, while in case of electricity, there is either a very low share of students have access, or it is

Fig. 2: Access to Toilets and Electricity across Students (All India: DISE Blockwise)



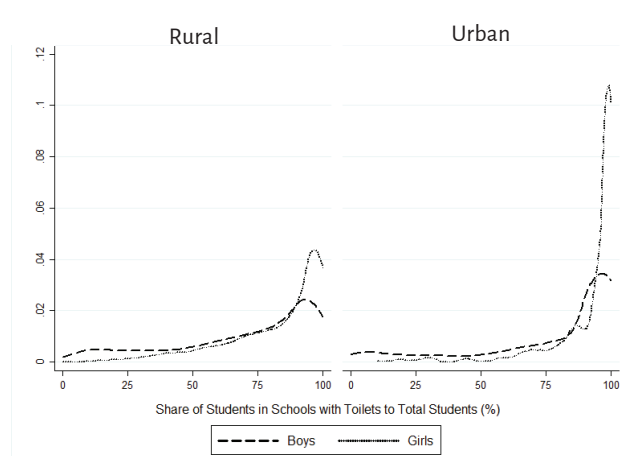
Source: School Level Data, DISE 2010-11

available in a few schools at higher proportions. There are only 29 percent schools which have both toilets and electricity connections, where 41 percent of students are enrolled.

### Rural-Urban Differences

The rural-urban distribution of toilets across students<sup>9</sup> also shows variation, with urban doing better than the rural at higher end. In rural areas 76 percent of students had access to a toilet compared to 88 percent in urban areas. In rural areas, the share of schools with available toilets is 79 percent, while it goes up to 89 percent in schools of urban areas. The share of students with toilets is 84 percent in rural, while it is 93 percent in urban areas. On the other hand, the share of students with a functional electricity connection is 35 percent in rural areas, while it is 82 percent in case of urban areas. Hence, the gap between rural and urban is higher in case of electricity than toilets.

Fig. 3: Access to Toilets among Students by Location and Gender (All India: DISE Blockwise)



Source: School Level Data, DISE 2010-11

Table 1: Distribution of Enrolled Students in India by Type of Toilets, Location of Schools and Gender of Students (as a share of students with access to toilets)

Sector	Gender	Only Boys	Only Girls	Both Boys & Girls	Only Common	Boys, Girls & Common	Boys & Common	Girls & Common	Total With Toilets (mn)	No Toilets (mn)
Rural	Boy	2.0%	-	27.3%	30.2%	12.0%	0.9%	27.6%	28.73	13.24
	Girl	-	21.5%	21.1%	24.5%	9.0%	0.4%	23.5%	34.00	6.57
Urban	Boy	6.2%	-	29.4%	16.8%	19.0%	3.2%	25.5%	3.91	0.81
	Girl	-	21.9%	21.0%	14.7%	13.8%	0.2%	28.4%	4.15	0.27

Source: School Level Data, DISE 2010-11

Note: It should be noted that 0.6% of girls enrolled were in schools with only boys' toilets, and 15% of boys enrolled were in schools with only girls' toilets.

### Gender Differences

Though the RTE Act made the construction of separate girls' toilet mandatory in schools in 2009, schools in rural and urban India are distributed across a variety of structures during 2011, as described in Table 1. About 29 percent of the schools had only common toilets, while 32 percent had separate toilets for boys and girls along with common toilets. The share of students using a common toilet was 20 percent, while it was 27 percent in the schools where separate toilets for boys and girls were present along with the common toilets. The share of schools which have separate girl's toilet was 68 percent, while the same for boys was 34 percent. In terms of students, the share of boy students with a separate boys' toilet is 31 percent to all boy students, while it is 65 percent for girl students. Hence, it is evident that two years after the RTI Act was enacted, many girls' toilets were constructed, while the construction of separate boys' toilet was lesser. The high share of common toilets tend to serve the purpose of separate boys' toilet in many schools and across many students, as evident from Table 1. The share of boy students without any toilet is double (30 percent) than share of girl students with no toilet (15 percent). From Figure 3, it is also evident that there is a focus on the provision of toilet facilities for girls, especially in urban areas. However, the urban areas are marginally better if gender equality in access to school sanitation is concerned. The share of only common toilet goes down in urban areas for both boy and girl students, with more share of separate boys' toilet going up in comparison to rural. The share of boy students with an exclusive boys' toilet to all boy students who had a toilet was 42 percent in rural areas, and rose up to 58 percent in urban areas.

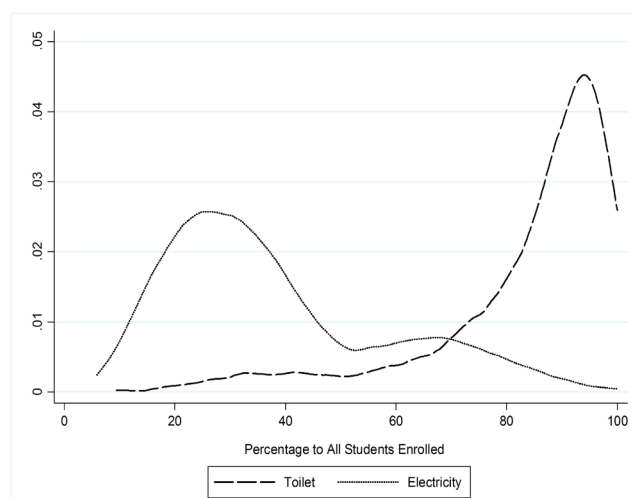
### SCHOOL SANITATION IN ODISHA

Odisha ranks considerably low in the ladder of development hierarchy in the country, especially if education is considered. Despite having very high potential in terms of mining reserves and it's frequently dotted industrial landscape, the state ranks one of the lowest in terms of real per capita income (Rs. 61,678 in 2016-17), which is substantially lower than the national average (Rs. 81,805 in 2016-17). It also has one of the high poverty head-counts in the country, with 32.59 percent of its population living below poverty line, as per the latest estimates (2011-12)<sup>10</sup>. The state also homes a substantial proportion of population belonging to socially marginalized groups, with 17 percent of its population are scheduled castes (SCs) and 23 percent belonging to scheduled tribes (STs). The human development profile of the state is also equally sombre, and is subjected to wide spatial and social disparities. The overall literacy rate dips down to as low as 46.43 percent in case of Nabrangpur district (Census 2011). Literacy rate among the SCs and STs are also quite low, and the difference with the Non SC-ST population is high as 20 percentage

points, as per Census 2011. Drop-out rates in primary schools are about 2.82 percent in general, but rises up to 3.30 percent for SCs and 7.07 percent for STs (Economic Survey of Odisha, 2016-17). Access to in-house tap water is only 5.47 percent to total households, while the share of households defecating in the open was also quite high, which is about 76.6 percent (Census 2011). The committee for delineating a composite index of development of Indian states for receiving special financial assistance by the Ministry of Finance, GoI, ranked Odisha as India's most lagged behind state (MoF, 2013)<sup>11</sup>. Also, eight backward districts of the state have been shortlisted for Prime Ministers New India Mission for 2022, which aims at an integrated social and economic development of these areas<sup>12</sup>.

One of the major objectives of this brief is, therefore, to check if the national trends and patterns in school sanitation changes in the educationally deprived landscape of Odisha. It is notable that despite of its low educational outcomes, toilets in the schools of Odisha are a common phenomenon, like all India. About 80 percent of the schools and 84 percent of students in Odisha have access to toilets. On the other hand, only 20 percent of schools and 34 percent of enrolled students have access to a functional electricity connection at schools. Hence, it is evident that while the access to toilet is equivalent to the national picture, in case of electricity, the situation is worse. This higher gap between toilet and electricity provision in schools is also evident from Figure 4 and which compares the distribution of these two basic facilities across students of Odisha. While the toilet access resembles much of the all India situation, electricity shows a distribution attributed leftwards, indicating much lower access than the all India coverage.

Fig. 4: Access to Toilets and Electricity across Students (Odisha: DISE Blockwise)



Source: School Level Data, DISE 2010-11

Table 2: Distribution of Enrolled Students in Odisha by Type of Toilets, Location of Schools and Gender of Students (as a share of students with access to toilets)

Sector	Gender	Only Boys	Only Girls	Both Boys & Girls	Only Common	Boys, Girls & Common	Boys & Common	Girls & Common	Total With Toilets (mn)	No Toilets (mn)
Rural	Boy	0.5%	-	11.7%	46.5%	14.7%	0.9%	25.6%	2.44	0.53
	Girl	-	4.9%	10.9%	44.4%	13.9%	0.7%	25.2%	2.35	0.46
Urban	Boy	0.7%	-	11.8%	43.7%	12.9%	0.5%	30.4%	0.31	0.10
	Girl	-	8.1%	9.4%	41.3%	10.4%	0.2%	30.6%	0.32	0.05

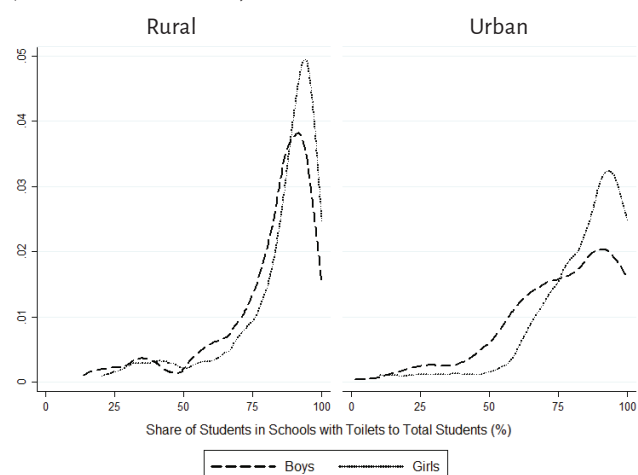
Source: School Level Data, DISE 2010-11

Note: It should be noted that 0.3% of girls enrolled were in schools with only boys' toilets, and 4 % of boys enrolled were in schools with only girls' toilets.

### Rural-Urban Differences

The rural-urban distribution of toilets, is slightly different in Odisha in comparison to the national picture. Unlike all India, rural blocks in Odisha performed better in comparison to urban, both in terms of availability of toilets at schools and across students. The share of schools with toilets is 80 percent in rural blocks of Odisha, while for the urban blocks, this share is 78 percent. On the other hand, the share of students availing toilets in schools to all students are 83 percent in rural areas, while it is 81 percent for urban. The share of urban students are in blocks were access to toilets was less than 75 percent were 30 percent, while the corresponding share for rural areas is only 21 percent.

Fig. 5: Access to Toilets among Students by Location and Gender (Odisha: DISE Blockwise)



Source: School Level Data, DISE 2010-11

### Gender Differences

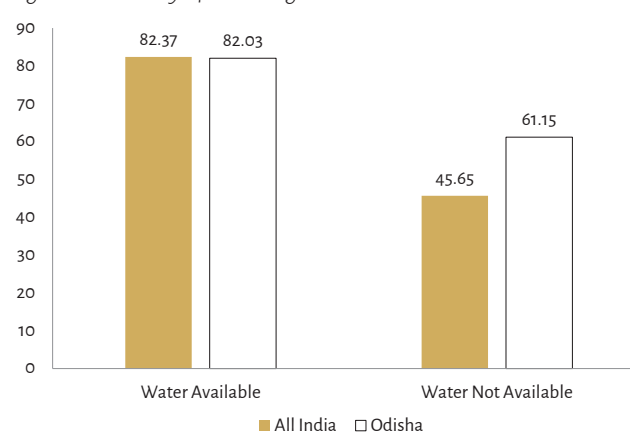
The gender-wise decomposition of toilets in Odisha shows a higher proportion of common toilet than all India (Table 2). The better situation of girls in terms of a separate toilet than boys is also evident like the national picture, but, unlike the

national situation, urban areas fare worse in Odisha (Fig. 5). Across the four groups of rural and urban, and boys and girls, urban boys have least coverage of toilets in Odisha. The share of rural girl students who have access to toilets is 84 percent, while the share of urban boys with toilets is 76 percent. Urban girls, the access ratio is 86 percent and it is 82 percent for the rural boys.

### Water and Toilets

The absence to the provision of water is often cited as a main determining factor of not having in-house toilets in households (Bhol, 2017). This brief also examines whether a similar relationship holds for schools. The school level data of

Fig. 6: Availability of Drinking Water and Toilets in Schools



Source: School Level Data, DISE 2010-11

DISE only reports sources of drinking water, which restricts the scope of this analysis in some sense that even if drinking water is not available, there might be water for all other uses like toilets. Fig.6 shows that the share of schools with toilets drops by almost half if drinking water is not available, in case of all India. In case of Odisha, there are more schools present where water is not available in comparison to the national scene, but is substantially lower than schools where water is available.

Fig. 7a: Access to Toilets in Schools & Neighbourhood of Odisha (Rural)

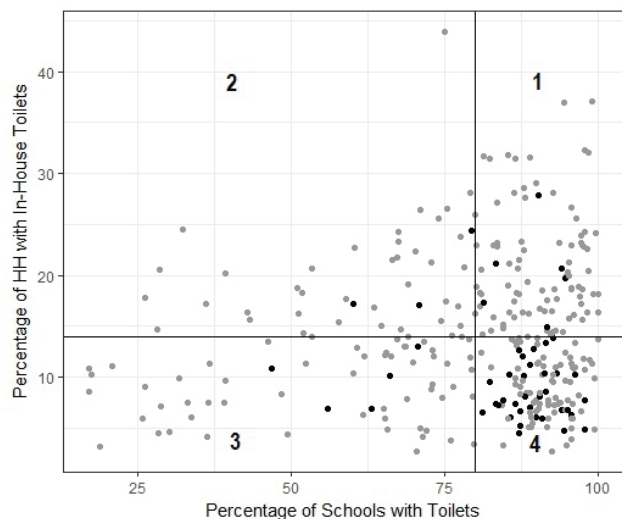
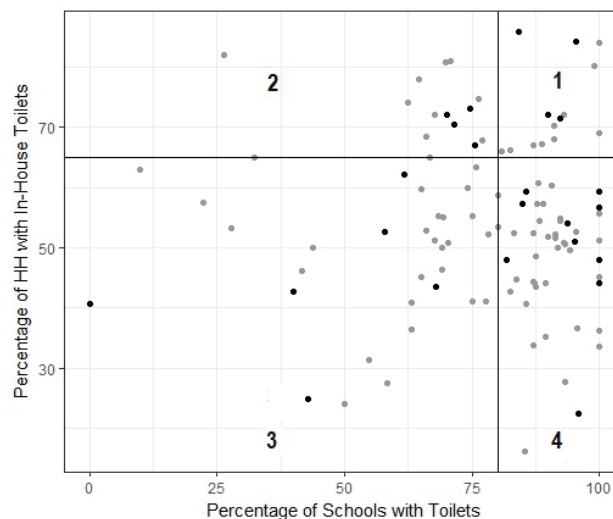


Fig. 7b: Access to Toilets in Schools & Neighbourhood of Odisha (Urban)



Source: School Level Data, DISE 2010-11 & Census of India Household Amenities and Assets, 2011

### ACCESS TO TOILET IN SCHOOLS AND ITS NEIGHBOURHOOD

Though the access to toilets in elementary schools of Odisha was almost 80 percent during 2010-11, only 22 percent of the households had access to in-house latrines during the same period of time (Census of India, 2011). Even within the households who had access to latrine, about 29 percent in rural areas used un-improved mode of sanitation.

This striking difference of access to sanitation in schools and the homes of the children is interesting, and gives rise to several questions, especially in the case of a state like Odisha which performs poorly in terms of enrolment related indicators over the past few years. It is usually conceived that the introduction to improved sanitation at school fosters the need for it at a longer temporal scale. It also can have important cognitive effect over the sanitary habits of children, and can essentially escalate the attendance of girl students in schools if they have access to toilets in their schools but not at their homes. It is important, therefore, to check if an association exists between the two, at a granular level<sup>13</sup>. This brief attempts to check this association with a previously unexploited dataset. In the course of this exercise, it also attempts to map these associations spatially, so that inferences can be drawn regarding the school sanitation depending upon the spatial distribution of social and demographic characteristics across the blocks of Odisha.

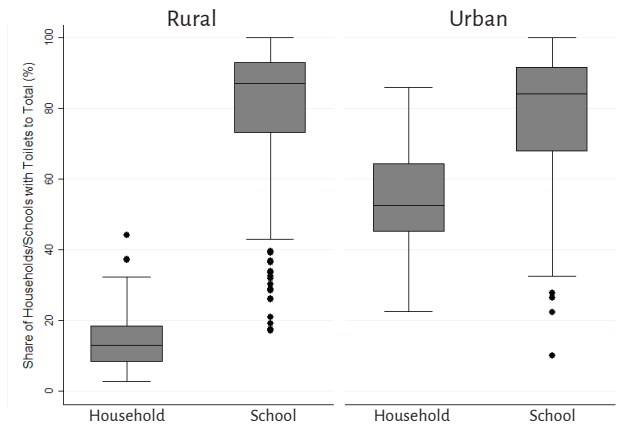
Fig. 7a and 7b plots the access to toilets in schools of a particular block of Odisha in x-axis and access to in-house toilets in the households of the same block in y-axis, separately for the rural and urban blocks. It also attempts to measure the influence

of this association over the girls' enrolment in the respective blocks. However, the gross or net enrolment ratio for the girls cannot be computed as the age-group wise data by gender is not available at block level. Hence, the ratio of girls' to boys' enrolment in a block is plotted as a third variable. The blocks which have higher girls' enrolment than boys' are marked as black, in comparison to usual grey markers where the boy enrolment is higher than the girls' enrolment. The whole plot is divided into four quadrants, depending upon the state average of school and household access to toilets. Hence, the upper right quadrant implies the blocks which have higher access to toilet in schools and households, where 'higher' refers to more than the state average. The quadrants are numbered anti-clockwise from the upper right corner, and each of them signifies as: a) Quadrant 1 refers to high access to both schools and households, b) Quadrant 2 refers to high access to households but low in schools, c) Quadrant 3 refers to low access in both and d) Quadrant 4 refers to high access in schools but low in households. It is interesting to note that while the state average for toilet access in schools is nearly the same in rural and urban blocks of Odisha (about 80 percent), there is a significant difference in household access to in-house toilets in rural and urban blocks (14 percent for rural and 65 percent for urban).

The results show that in most cases, the access to toilets in schools are much higher than its neighbourhoods, which is evident from the heavily populated Quadrant 4 from both rural and urban blocks. There are also substantial number of observations in Quadrant 1, especially in case of rural blocks. However, the number of blocks with higher girls' to boys' enrolment is more in Quadrant 4, especially in rural



Fig. 8: Distribution of Schools and Households with Toilets across Blocks and Rural/Urban



Source: School Level Data, DISE 2010-11 & Census of India Household Amenities and Assets, 2011

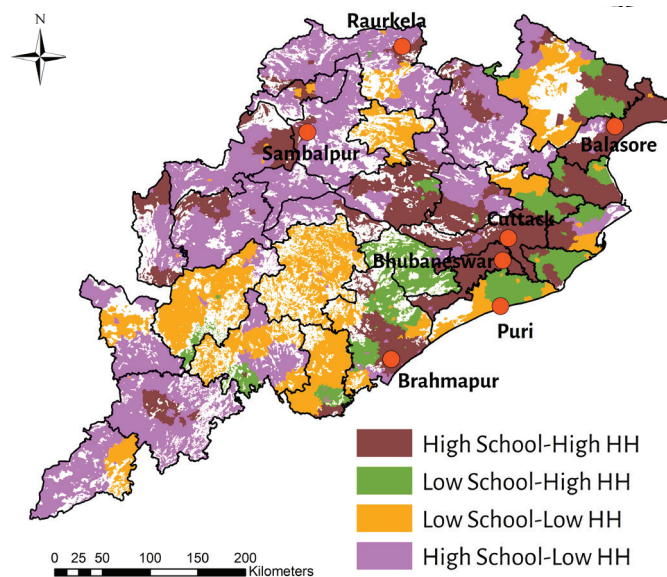
areas. About 58.6 percent of blocks in Quadrant 4 (68 out of 116 blocks) of rural areas reports higher enrolment of girls' than boys'. This indicates the fact that higher toilet access in schools in comparison to their homes might be one of the facts behind higher girls' enrolment in schools in the villages, at least if a simple bivariate association is considered. Further elaboration on this fact requires more analysis. The urban blocks, on the other hand, have not shown any such association where the blocks with higher girls' enrolment is evident in all four quadrants.

### THE SPATIAL PICTURE OF ODISHA

The spatial distribution of school and household sanitation, as plotted across the rural and urban blocks of Odisha, shows a lot of variation, which is more in case of rural blocks than the urban. The rural blocks which shows higher share of toilets in schools are not necessarily the spaces where the access to toilets in households are high as well (Fig. 8). The median share of toilets in schools in rural blocks of Odisha are 87 percent, which is only 13 percent in case of the schools. The urban blocks, on the other hand, shows lesser gap of toilets in schools and households. The median share of household toilets is 53 percent in urban Odisha, while it is 83 percent for schools. Hence, there is more difference in household sanitation across rural and urban parts of the state than the schools.

The association between school and household sanitation, as portrayed through the Quadrants in Fig. 7a and 7b, has also been plotted in the map to bring out their spatial distribution (Fig. 9). It can be observed that most of the blocks in the districts of Baleshwar, Bhadrak, Cuttack, Khordha, Dhenkanal and Anugul show higher access to toilets in both schools and households. Blocks in some other districts of coastal and near-coastal Odisha, namely Jajpur, Jagatsinghpur, Puri, Nayagarh and Ganjam shows higher access to toilets in households but lower access in schools. Most blocks in the districts of Mayurbhanj, Deogarh, Kandhamal, Gajapati, Kalahandi and Rayagada shows up in Quadrant 3, where the access to sanitation is poor in both schools and households. The largest

Fig. 9: Spatial Distribution of Association of School and Household Sanitation



Source: School Level Data, DISE 2010-11 & Census of India Household Amenities and Assets, 2011

chunk of blocks, as portrayed in Fig. 8a and 8b, is concentrated in Quadrant 4, and are distributed across mostly western, middle and southern Odisha, which includes districts of Balangir, Bargarh, Baudh, Jharsuguda, Kendujhar, Koraput, Malkangiri, Nabarangpur, Nuapada, Sambalpur, Subarnapur and Sundargarh, whose share of SC and ST population is 53.5 percent, which is more than the state average (40 percent). A distribution of toilets in schools and households of Odisha have provided in Appendix Table 1.

Hence, it is evident that there's a lot of variation even within the districts which shows higher availability of toilets in schools and/or households. Some districts of inland Odisha, such as Rayagada, shows impressive share of toilets in case of schools, performs poorly when compared with the household access to sanitation. On the other hand, even within the coastal districts, which are relatively more developed in terms of basic amenities and infrastructure, there are districts like Puri or Nayagarh, which shows up as poor performers in terms of school sanitation.

## CONCLUSION

This brief presents an overview of school sanitation in India, with special reference to Odisha. It finds that nationally, toilet as a facility indicator in schools has been prioritized in comparison to other infrastructural variables like electricity, and this difference is higher in an educationally backward state like Odisha. There is relatively little difference in terms of availability of sanitation in schools between rural and urban, unlike household access to sanitation. It is also notable that even within toilets, access to toilets for girls have been given higher priority than boys nationally and this holds true in Odisha as well.

Since 2010-11, there has been extensive efforts on bridging the gap in household sanitation under the Swachh Bharat Mission. In urban areas, as of May 2018, the applications for in-house toilets approved account for almost half (48.3 percent) of the households without toilets in the Census. In rural areas, this is 56 percent. So, there is still some distance to travel. On the other hand, in Odisha schools, coverage for boys' toilet is 94 percent and girls' toilet is 98 percent, as per U-DISE 2015-16, as compared to 81 percent and 84 percent respectively in 2010-11. Even the worst district in Odisha with respect to school sanitation in 2015-16 (Malkangiri), has

a coverage for boys' toilet of 72 percent and girls' toilet of 90 percent. Thus, the gap between household and schools is likely to have increased.

One of the limitations of this brief that it is unable to focus on the qualitative aspect of sanitation in schools. There are gaps in terms of provision of functional toilets across management of schools. The ASER report of 2013 shows that only 49 percent of schools had usable toilets across India, which is in stark contrast with DISE (72.6 percent for boys and 80.9 percent for girls, all schools). Also, there are issues like even if a usable toilet is available, it is often locked or exclusively used by the teachers than students, or the day to day maintenance is a problem (Scraufnagel, 2016).

With respect to policy, there are two issues that need to be highlighted. There is often greater emphasis on building toilets, rather than getting more people to use them. Maintenance of toilets is an important issue, and there ambiguity on whose responsibility it is to ensure functional toilets in schools. Indeed, even data on functionality is not collected. The SSA has the provision of constructing the toilets while ensuring water and sanitation facilities is the domain of the Ministry of Drinking Water and Sanitation (MDWS), in concurrence with the respective state Governments. If these two departments do not work together, it will have implications on the provision of water in schools and maintenance of toilets.

The second issue, highlighted in this brief, is the divergence of sanitation provision in schools and homes for children. There have been efforts to ensure the availability of toilets in schools of the socially and educationally backward blocks of Odisha, but not enough appears to have been done to improve the sanitary facilities at the household level. An example in this regard are the blocks of Nabrangpur district, which have a female literacy of 35.8 percent, and a ST literacy of 38.2 percent (Census of India 2011). Toilet access might have improved girls' enrolment in some blocks, but in long term might be ineffective in terms of promoting the good sanitary behaviour and a push to use safe sanitation, if the toilet is not available at the houses of the children. While school sanitation has the potential to change the sanitation landscape of the country, there's need for efficient and integrative planning to ensure that this potential is realised.



## NOTES

1. The share of girl students who have not enrolled/dropped out due to unavailability of girl's toilet in schools are less than 1 percent, as per NSS 71st Round survey on Education (2014-15). However, this figure is true if only the absence of toilet is cited as major reason to leave schools.
2. Since 2012-13, DISE is also collecting information on secondary schools as well, and renamed as 'U-DISE'.
3. An older version of DISE been used here to make the time frame of the datasets comparable. The schools that are covered by the present analysis are, therefore, elementary schools.
4. There were total 4757 DISE blocks in the 2010-11 data, out of which 434 belonged to Odisha. As per the DISE information manual, a block was considered as rural if it only had schools which are situated at villages/census towns, while an urban block usually composed of schools in municipal areas (statutory towns). Though every block of DISE throughout the country cannot be classified as fully rural or urban (see footnote 10); in case of Odisha, such classification was complete.
5. Accessed from [http://censusindia.gov.in/pca/cdb\\_pca\\_census/Houselisting-housing-OR.html](http://censusindia.gov.in/pca/cdb_pca_census/Houselisting-housing-OR.html).
6. Census towns (CTs) are functionally urban but administratively rural areas, and considered part of rural blocks as well in DISE.
7. Out of the 434 DISE blocks of Odisha, 422 (97.2%) could be matched with the census data; and 315 of these are rural blocks and 107 are urban blocks.
8. The distributions across schools will be available on request.
9. Out of the 4757 DISE blocks across the country during 2010-11, 1896 (39.9%) were only having rural schools, 236 (5%) were having only urban schools, and 2625 (55.1%) were containing both rural and urban schools. Most of these mixed category blocks contained an overwhelming proportion of schools belonging to only one category (either rural or urban), and very few observations of the other. These anomalies were carefully checked and some mixed blocks were reallocated to either rural or urban category, depending upon the fact that how little information was pertained to the other category. The revised distribution after this adjustment was 3207 (67.4%) for the rural and 458 (9.6%) for urban. The remaining 1092 (23%) of the blocks could not be classified and have not been considered for the Rural-Urban analysis.
10. As per Tendulkar Committee methodology (Economic Survey of Odisha, 2016-17). The HCR of India during the same time period was 21.9%.
11. Accessed from [http://finmin.nic.in/sites/default/files/Report\\_CompDevState.pdf](http://finmin.nic.in/sites/default/files/Report_CompDevState.pdf).
12. Accessed from <http://odishatv.in/odisha/body-slider/eight-backward-districts-of-odisha-find-place-in-modis-new-india-mission-2022-258058>.
13. Arguments were made that no correlation could be found between the presence of toilets and learning levels of children in school; therefore toilets are an unnecessary expense. Some others claimed that since most poor rural children did not have toilets at home, they would not miss them in school either. These different viewpoints are put together by Bhatta (2014) and it is important to check the association between the household and school sanitation access for the same.

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Appendix 1: Distribution of Toilets in Schools and Households across Districts of Odisha (2010-11)

Districts	Rural		Urban	
	Schools with Toilets (%)	Households with Toilets (%)	Schools with Toilets (%)	Households with Toilets (%)
Anugul	87.08	16.74	82.05	64.01
Balangir	93.08	10.11	87.68	58.13
Baleshwar	85.19	22.72	77.55	67.98
Bargarh	92.90	12.32	66.97	54.16
Baudh	92.98	8.99	100.00	51.29
Bhadrak	79.17	16.03	59.29	51.76
Cuttack	98.08	22.37	94.77	78.00
Debagarh	59.88	5.94	67.74	51.28
Dhenkanal	91.17	14.21	82.69	59.80
Gajapati	70.89	12.65	74.55	56.71
Ganjam	76.86	19.07	78.77	65.27
Jagatsinghapur	76.29	22.11	64.10	44.84
Jajapur	73.42	19.89	64.52	61.18
Jharsuguda	87.77	9.39	74.40	53.63
Kalahandi	48.62	8.24	65.00	58.84
Kandhamal	37.62	6.28	41.51	56.54
Kendrapara	83.22	15.79	66.00	57.82
Kendujhar	92.43	9.30	85.03	50.75
Khordha	97.03	18.30	97.92	76.55
Koraput	93.74	8.18	87.30	64.92
Malkangiri	86.27	5.96	84.44	47.66
Mayurbhanj	76.20	15.03	77.95	64.05
Nabarangapur	84.06	5.82	81.43	53.38
Nayagarh	62.54	15.90	76.47	55.82
Nuapada	86.22	12.73	79.07	48.42
Puri	31.95	15.62	25.77	73.35
Rayagada	80.09	6.63	84.11	60.55
Sambalpur	94.47	8.56	85.93	59.47
Sonapur	91.36	7.87	89.71	38.99
Sundargarh	91.00	8.37	74.85	65.50
ODISHA	80.10	14.08	78.20	64.78

Source: School Level Data, DISE 2010-11 &amp; Census of India Household Amenities and Assets, 2011

### SCALING CITY INSTITUTIONS FOR INDIA: SANITATION (SCI-FI: SANITATION)

This policy brief has been produced by the Scaling City Institutions For India: Sanitation (SCI-FI: Sanitation) research programme at the Centre for Policy Research (CPR) which focuses on inclusive and sustainable urban sanitation. The programme seeks to understand the reasons for poor sanitation, and to examine how these might be related to technology and service delivery models, institutions, governance and financial issues, and socio-economic dimensions. It also seeks to support national, state and city authorities develop policies and programmes for intervention with the goal of increasing access to safe and sustainable sanitation in urban areas.

