A PILOT STUDY OF ESTIMATING OUT-OF-SCHOOL CHILDREN IN INDIA

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RESEARCH REPORT

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LIST OF ABBREVIATIONS

ANER	Adjusted Net Enrolment Rate
AIES	All India Education Survey
ASER	Annual Status of Education Report
CPR	Centre for Policy Research
CRY	Child Rights and You
CSS	Centrally Sponsored Scheme
CTS	Child Tracking Surveys
CMF	Conceptual and Methodological Framework
DISE	District Information System for Education
EBB	Economically Backward Block
EFA	Education for All
GP	Gram Panchayat
GER	Gross Enrolment Ratio
HC+R	Headcount + Register
HT	Head Teacher
IHDS	India Human Development Survey
MDM	Mid-Day Meal
MHRD	Ministry of Human Resource Development
NGO	Non-Governmental Organisation
NHFS	National Family Health Survey
NP-NSPE	National Programme of Nutritional Support to Primary Education
NSS	National Sample Survey
NUEPA	National University for Education Planning and Administration
NBER	National Bureau of Economic Research
NSSO	National Sample Survey Organisation
OOSC	Out of School Children
RTE	Right to Education Act
SRI-IMRB	Social and Rural Research Institute – Indian Market Research Bureau
SSA	Sarva Shiksha Abhiyan
SES	Selected Education Statistics
UIS	UNESCO Institute for Statistics
UDISE	Unified District Information System for Education

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EXECUTIVE SUMMARY

The numbers of out-of-school children (OOSC) put out by various official sources in India, show wide variations. For instance, the Ministry of Human Resource Development (MHRD) survey by Social and Rural Research Institute – Indian Market Research Bureau (SRI-IMRB) estimate of this figure is around 6 million, while for the same year 2014, the National Sample Survey (NSS) figure is around 20 million. The problems lie not just in the definitions of OOSC used by each data collector but also in their systems of collecting and collating data as well as the methods of estimation. For instance, all school-level information is collected only by teachers who have a conflict of interest in relation to several indicators. They have an interest in inflating student attendance in particular for purposes such as mid-day meal allocations or even their own job security. Further, drop-outs are estimated on the basis of continuous non-attendance over a period of time that varies from state to state. Sporadic or irregular attendance is not taken into account when estimating drop out rates. This calls for a closer look at the attendance patterns of children with special emphasis on sporadic or irregular attendance. With learning outcomes dominating the policy discourse on education, unpacking the links between attendance and learning thus becomes important. This pilot study of out-of-school children was thus undertaken in order to understand the phenomena of OOSC through an intensive micro-study of all children in a single Gram Panchayat (GP or Panchayat) – the lowest unit of administration[1]. It is based on a household survey that provides the population of children in the GP who attend schools located within the boundaries of the Gram Panchayat, as well as a survey of all school located in the GP. This enables a mapping of the children from the household survey data and school administrative data to obtain a final sample of children from the Panchayat attending schools located in the Panchayat. Thereafter the attendance of these mapped children is tracked through the course of one academic year by making bi-weekly visits (before and after the serving of the Mid-Day Meal (MDM)) to capture attendance patterns of the children.

The study surveys every school age child in the selected Panchayat, who attends school in the Panchayat region2, with the intention of:

- delineating OOSC by gender, social category and other household factors that might have an impact on attendance rates
- deciphering the attendance patterns and hence the extent of real drop -out among children according to gender and social category.

The major emphasis of the current study is thus to provide a methodological framework to broaden the scope of defining OOSC by highlighting important issues that have hitherto been neglected in the estimation and analysis of out of school data.

It is our hope that the lessons from this study would lead to similar work in other areas of the country where different sets of local, household and school level factors affecting the participation of children in school may be captured and accounted for.

The tracking of attendance and the patterns it discerns tells us the following: (i) Irregular or sporadic attendance is a huge phenomena (more than twice the number of continuous absentees) that is not recorded in the official figures related to OOSC, as those account only for never enrolled as a derived category i.e. by mathematical calculation of subtracting those children enrolled in school from the total population of children, or dropped out children - determined by definitions of continuous, rather than sporadic absence. (ii) Children that are never enrolled constitute an "invisible" category as far as the system is concerned, as they are not recorded in any official document. (iii) Extremely poor birth registration records exacerbate the problem of invisibility of children not in school. (iv) There are wide variations in the attendance of children from different social groups, including gender, which need further research in order to develop strategies for mainstreaming them. (v) Various pressures – both societal and administrative – have led to overstating attendance of children in the school records to the detriment of children and their chances of improving their learning levels. This is reflected in the difference between the school records and head count data collected during the survey.

The survey results in several policy implications; first, a better data regime, that accounts for OOSC in a more robust as well as realistic manner, taking into account sporadic absence as well as the invisible children. Second, adjusting the school calendar to align it with the agricultural cycle of the area would permit children who are needed by the families in peak season to do so, without disrupting their education. Third, management of a local database by the Panchayat for purposes of data validation as well as tracking basic indicators such as student and teacher attendance. For some indicators, community authentication would also be possible and help check for anomalies that creep in, especially in instances where teachers may have an incentive in misreporting. While this authentication may not be very precise, it would help to red flag some figures, which could then be cross checked using more rigorous methods. Fourth, developing an early warning system to help identify children at the risk of dropping out so that the school administration and community may take steps early on to prevent the drop-out of children.

A PILOT STUDY OF ESTIMATING OUT-OF-SCHOOL CHILDREN IN INDIA

I. BACKGROUND

Since 2000, the progress made on access to primary education in India has been remarkable in many respects. Spurred by the Millennium Development Goals and the Education for All (EFA) goals, the government has expanded the education system in an attempt to ensure that all the children complete primary education. The National Policy on Education [1986] had resolved to ensure that free and compulsory education of satisfactory quality is provided to all children up to 14 years of age, before the beginning of the 21st century. However, as this goal was far from achieved in the time frame foreseen for it, the Parliament of India passed a Right to Education Act (RTE), in 2009, which goes one step further and puts compulsion on the government to ensure that education is provided as a right to each child in the age group 6-14 years. The RTE Act follows the 86th Constitutional amendment, making elementary education a fundamental right and thus provides the operational basis for elementary education to be delivered as a fundamental right.

From the data it is clear that child participation at the primary level has increased since 1999-2000. For instance, the gross enrolment ratio [GER] has increased from 92.9% in 1999 to 110.6% in 2013[3]. However, a more precise measure of participation of primary school age population is the Adjusted Net Enrolment Rate (ANER), as it takes into account in its calculation pupils of primary school age enrolled at a higher level than primary education (ie upper primary), which has also increased from 84.1% in 2000 to 97.7% in 2013[4]. This steady rise in participation means that the number of out of school children (OOSC) has gone down. According to the UNESCO Institute for Statistics (UIS), the number of OOSC of primary school age has reduced from 19,054,167 in 2000 to 2,886,200 in 2013[5].The number of OOSC of upper primary school age in 2013 was 11,123,214[6].

However, while enrolment in schools shows impressive increases, the retention of students remains a worrying issue. At the upper primary level, the participation remains low despite the rise in enrolment as seen from the increase in the GER from 59.6 % in 1999 to 85.2 % in 2013[7]. As indicated by the ANER, the participation is at 74.6% in 2013. Low completion rate continues to be a problem even at lower secondary (upper primary) level. The OOSC of lower secondary (upper primary) school age is around 12 million in 2013[8].

However, despite substantial reduction in the absolute number of OOSC, the country still has one of the highest numbers of children not in school in South Asia and the second highest in the world[9].

II. RATIONALE FOR THE STUDY: CURRENT ISSUES IN DATA

i) Different Sources of Data

There are two primary sources of education data- i) school level (also called administrative) data and ii) household surveys. School data, collected by the Ministry of Human Resource Development (MHRD) and National University for Education Planning and Administration (NUEPA), is collected directly from the schools as opposed from households. The administrative data are available as Selected Education Statistics (SES) and include enrolment in different grades, availability of teachers and infrastructure facilities as well as financial allocations for education at the state level. In addition, MHRD also compiles an All India Education Survey (AIES), which gives village and habitation level information on accessibility, availability and the quality of various types of recognized schools.

NUEPA on the other hand puts together the District Information System for Education (DISE), now the "official" database for school level information, which collects data annually from all government, recognized and unrecognized private elementary schools. More recently, NUEPA has also been collating the Unified District Information System for Education (UDISE), which is a unified database of students from class 1 to 12. DISE includes data on various school level parameters, such as enrolment, infrastructure, teacher deployment etc.

Household data on the other hand, is collected by various government and non-government organizations through household surveys as shown in table no.1.

In addition to the above, Panchayats[10] conduct household surveys to estimate OOSC. These Child Tracking Surveys (CTS) are conducted every year under the Sarva Shiksha Abhiyan (SSA) programme, and supposedly provide the most updated source of information, as other survey information is invariably available with a time lag. Hence, there are several sources of data now available - both governmental [official] and non-governmental – which provide estimates of OOSC. However, each of these use a different definition and method of estimation resulting in a wide variation in the estimates generated. This makes it extremely difficult to compare, verify or validate across data sources. In the next section, we discuss some of these differences in more details.

Table 1: Summary of household surveys

Household survey name	Key characteristics	Age categories for data collection
Population Census	• Decennial • Comprehensive data source for school participation of children	
National Sample Survey (NSS)	• Focus on education every 5-10 years • Rigorous sampling method and estimation procedures	• 6-11 years • 12-14 years • 5-19 years
National Family Health Survey (NHFS)	• Estimates of attendance rates • Estimates of number of children who have been enrolled and dropped out at national and state levels	• 6-10 years • 11-17 years • 15-49 years
India Human Development Survey (IHDS)	• Data on school participation, grades completed and costs of education for children between 6-14 years	• 8-11 years. • 7-9 years • 10-14 years • 15-19 years. • 7+ years • 12+ years • 17+ years • 19+ years
Annual Status of Education Report (ASER)	• Data on learning levels of children using standard testing tools • Covers rural India only	
SRI-IMRB Survey on Out of School Children (hired by MHRD)	• Estimates out of school children between 6-13 years of age	• 6-13 years

ii) Difficulties in Definitions, Methods of Estimation and Validation

The available estimates are based on a definition of OOSC that includes those who are never enrolled and those who were enrolled but dropped out. As the definition of a "drop-out" varies with data sources as well as jurisdiction [different states in India have different definitions], the estimation of OOSC also varies. For instance, in Karnataka a child is considered dropped out if s/he does not attend school for 7 days in a row, but in Gujarat the same child would have to be absent for 60 days to qualify as dropped out.

After the passage of the RTE Act, the MHRD took the view that any child absent for a period of 45 days or more was to be considered out of school. This was also the basis for identifying children for special training to enable mainstreaming of dropped-out children. However, despite fixing this as the benchmark, the issue of sporadic attendance and cumulative attendance of children has not been dealt with comprehensively. Besides, as education is a concurrent subject with states and federal government having equal jurisdiction in framing laws and guidelines, this benchmark (of 45 days) has not been universally accepted. For instance, Karnataka continues to use seven days, while for Maharashtra it is fifteen days and two months for Gujarat.

The school level/ administrative data sources, collected by MHRD and NUEPA, provides information on children that are enrolled and a list of those who discontinue or drop out after a year. In other

words it is based on enrolment in year 1 minus enrolment in year 2, taking into account those that were absent for 45 days continuously in the academic year 1.

The household surveys on the other hand base their estimates on different questions asked of the households during the surveys. For instance, the *SRI-IMRB*, categorizes a child as out of school if the child is either not enrolled in pre-primary grades or above or is enrolled but has been absent for more than two months continuously or has discontinued studies [officially dropped out], as revealed by the household. Further, the surveys relate to children in the 6-13 year old age group only and who do not attend any educational institutions - be it formal or non-formal. The National Sample Survey Organisation (NSSO), on the other hand (also based on household surveys), simply asks if the child has dropped out or discontinued studies, in the current period. The NSSO therefore, considers all children never enrolled in Class 1 or above or dropped out as OOSC, with no reference period for determining a drop-out child. The Conceptual and Methodological Framework (CMF) of the *Global Initiative on Out-of-School Children* launched by UNICEF and UIS, another household based estimate, defines OOSC children as children in the 6 to 13 year old age group who do not attend formal schools in grade 1 or higher grade. No distinction is made here between not enrolled and dropped out. The lack of a standard definition for OOSC and a standard method of estimation therefore make it difficult to compare and validate across these different sources.

Needless to say, both the school and household data sources have their strengths and weaknesses. The school sources give us the absolute number of children enrolled in school, while the household surveys give us an estimate of those who have never enrolled. Household data also gives us data on who attends, who does not attend, as well as who has dropped out from school.

The recent India report on Out of School Children, as a part of the *Global Initiative on Out of School Children* pointed out that in order to get a comprehensive picture on OOSC both data sources must be used. One of the key highlights of the report is the difference in estimating the number of OOSC, which is due to absence of standardized definitions in estimating OOSC.

iii) Neglect of Attendance Data in Out-of-School Estimations

One important lacuna in the estimation of OOSC is the neglect of regularity in attendance as a part of the conceptualization of an out-of-school child. In other words, a child may be enrolled but attending extremely irregularly. Can such a child be considered truly "in school"? The school and household data sources for attendance consider cumulative attendance of children. A child is either categorized as "non-attending" or "attending." The problem with such a mechanism is lack of accounting for sporadic absenteeism of children from school. A child might not be absent from school continuously for a stipulated time period to be considered an out-of-school child but could be present on an irregular basis. For instance,

Image courtesy: Stephanie Natalia Samuel

a child might attend school for few hours each week or only every alternate week. There might be specific reasons behind children attending school in a particular fashion. Children might attend school for few hours and depart after the mid-day meal (MDM) or assist their parents at work or at home on certain days in the week and attend school on the others. Thus, the pattern of attendance may vary quite significantly across a cohort of children, depending on socio-economic and household conditions.

The data collection mechanism for both school surveys is based on estimating year-to-year dropout of children. For administrative sources, the calculation is based on difference in number of enrolled and repeater children of a particular age in two consecutive years, taking into account how many are continuously absent according to state norms which could be 45 days, 2 months etc Similarly, the household survey also does not take into account patterns of attendance when ascertaining drop-out status. Instead it relies on asking households the current attendance status of their children/ wards. This methodology that relies on presence or absence of children in school cumulatively, does not therefore, accurately indicate the extent of a child "being in school".

Closer inspection of attendance data is also essential to estimate the potential risk of dropping out. Year-end data analysis does not allow for tracking the risk of dropping out as a student might dropout at any point of the school session making the possibility of their returning unknown. In other words, if a child shows irregular attendance or a sustained absence for a length of time, he or she is a potential drop-out or at the risk of dropping out as soon as this pattern of attendance is established. However, if accounted for only at the end of the year, it may be too late to reverse the trend. Therefore, research on dropout prevention has emphasized the need to track the students who are at risk of dropping out of school, not just those who drop out. Therefore, it is essential to trace the pattern of attendance on a continuous basis based on both cumulative and sporadic attendance. The different patterns of attendance of children could cause differences in the actual and potential "dropout" for a student.

iv) The "Invisibility" of Children in Records

The Report of the Global Initiative on Out of School Children (2014)[11] , pointed out that for a more comprehensive picture on OOSC, both school and household data sources be used. It classified OOSC as falling under one of three categories: i) visible, ii) semi-visible and iii) invisible. The visible category comprises school children registered as out of school in education databases. The semi-visible category comprises the unidentified OOSC that could be identified through an examination of government or school records. The third category is the invisible category, which consists of school age children who have never attended school and are not recorded in any government database. The third category is the hardest to capture due to poor record keeping at the village level and absence of vital registration systems. This data would also help in tracking information about the schooling status of every child at every stage irrespective of their enrolment in a school within or outside the village or non-enrolment.

An important aspect of the report is to understand the complete methodological framework for OOSC in order to focus on "visibility" of children in the school system.

III. THE PILOT STUDY AND ITS PURPOSE

In order to explore the various contours of OOSC, it was decided to conduct an intensive micro-study and rigorously examine the issues involved. These include:

- Definition of an out of school child and the inclusion of attendance patterns in the conceptualization of an out-of-school child;
- The patterns of attendance for different categories of children – male/female; SC/ST/others, migrant children etc.;
- Relationship between household factors and children's participation in school
- Links of children's attendance with teachers' attendance, MDM or other school level factors

The study intends to provide a methodological framework to broaden the scope of understanding the phenomenon of OOSC, by considering their visibility (or not) in the household, Panchayat [village register] and the school [register] data. In other words, the study tracks every school age child in the selected Panchayat through each of these data sources, with the intention of:

- Identifying when a child might become "invisible" in the system;
- Deciphering the attendance patterns and hence the extent of dropping-out of children;
- Deciphering attendance patterns according to gender and social category; and
- Delineating the structure of OOSC by gender, social category and any other factors that may exist in the area, such as migration.

The major emphasis of the current study is thus to provide a methodological framework to broaden the scope of defining OOSC by highlighting important issues that have hitherto been neglected in the estimation and analysis of out-of-school data. The intention is also to eventually expand the scope of the study to other regions of the country and to capture different sets of local, household and school level factors affecting the participation of children in school. Other important aspects of the study include the following issues:

Accounting for irregular attendance in estimation of OOSC: In the past, no other study has focused on the extent of drop-out. Most studies

on OOSC have focused on enrolment at one reference period/ point and have at best expressed concerns regarding irregularity of attendance. In view of the above-mentioned issues, the current pilot study aims at deciphering the pattern(s) of attendance and hence the extent to which, children are of out-of-school.

Early warning system: Several studies in the past have attempted to identify the children who are at risk of dropping out through recommendations to develop an early warning system. These studies have shown that early warning systems have been successful in identifying the potential risk of student drop-out.[12] However, no study has as yet done so. It is one of the objectives of this study to develop such an early warning system in order to track the children at risk of dropping out.[13]

Linking student attendance with teacher's attendance: The study will also explore the relationship of children's attendance with teachers' attendance patterns. A much-quoted study[14] in India by the World Bank (Kremer, 2006) found that teacher absenteeism was almost 25% in public schools as studied from a nationally representative sample of government schools in India. Of these, it was found that only half were teaching during unannounced visits.

IV. METHODOLOGY AND SAMPLING

An entire Gram Panchayat [GP] – a local government unit - was selected as the sample in order to differentiate between visible, semi-visible and invisible children, with the child as the unit of analysis. The GP is the lowest level of local self-government to which the responsibility of education has been devolved in the Constitution of India [73rd Amendment]. The pilot study is based in GP in Kumbhalgarh block of Rajsamand district in Rajasthan – the largest state of India in terms of area. GP Gawar consists of nine schools, 470 households and four villages, which then form the sample for the current pilot. An exhaustive household survey covering the entire GP has resulted in identification of 1038 children in the age group 5-17 years, of which 860 children were enrolled in school in 2015-16 as reported by the households. A school survey was then conducted in the nine schools of the GP to enable mapping of the household data and the school register data. This allowed the researchers to obtain the final sample of children whose attendance would be tracked. The mapping process entailed matching children from the household data to children in the school data, using common indicators such as village, child's name, child's age and parents' name. This was an important step in the study since it permitted the identification of children living and studying in the GP and hence part of the final sample and elimination of those who are enrolled in the sample schools but come from outside the GP as well as those who live in the GP but study outside it. However, this was not a simple process, as the school survey revealed that of the 860 children enrolled in 2015-16, only 677 children attended one of the nine schools in GP Gawar; and of these 56 children were enrolled in Class IX-XII (therefore excluded from the sample) and 10 children transferred in the beginning of the term to schools outside GP Gawar.

Image courtesy: Stephanie Natalia Samuel

As a result, the final sample of children enrolled in elementary education (Classes I-VIII) in GP Gawar was down to 611.

Each of these 611 children has been tracked in school for a whole academic year through unannounced visits twice a week to each of the schools to check attendance of students before and after Mid-Day Meal (MDM) In addition, the attendance of all 31 teachers in these nine schools of GP Gawar was also simultaneously tracked. The teacher attendance however was only recorded once during the visit (not before and after MDM).

Although the academic year runs from July to April (examinations are in May), attendance data has only been collected from September to April. The reasons for the delay in attendance data collection are provided in the next section on challenges faced in the field survey.
In order to collect data from households, schools and attendance of children and teachers, an online mobile application was created by the technical team for the field team to conduct each of the three surveys i.e. household survey, school survey and attendance tracking. The online application allowed getting rid of paper surveys along with providing real time data to the technical team, who had created the application.

Further, the initial plan had been to match the village register with the school register to examine the gaps between the two; identify the "semi-invisible" category; check for never enrolled children [ie., in the village register, but not in school register); and check the completeness of the village register. In other words, it is one way of checking how accurately the village and/or GP records are maintained. As the primary household survey provided the list of children in the GP, a mapping with records of births in the village or GP registers showed the discrepancies there as well. As it turned out, the village/GP registers are not well maintained and it was found that less than 20 percent of the births were recorded in the GP registers and it appears to be recorded in a random manner. . As a result, it was not possible to match the GP register with the school register.

The survey also enabled the team to understand discrepancies in school register data by comparing survey attendance data with school register data. The discrepancies in these two records arise due to intentional misreporting of data in schools. For instance, teachers are often requested by parents to keep names of children who have in fact dropped out due to long absence. Parents generally want their children to complete elementary education as it is a status symbol and marker of differentiation. However, once the name is cut off, it is difficult to enroll the child in school again. The difficulties are more from the household side, as families find the process cumbersome and if it entails repeating a year, expensive as well. If the name remains on the roster, irrespective of attendance level, the child can take year-end examination and move to the next grade in that school. There is thus enormous pressure on teachers to not remove the names of their children from the school registers. Moreover, the administration too puts pressure on the teachers to under-report dropout since it would show poor performance of the administrative unit. As a result, teachers are reluctant to strike off the names unless the children leave permanently from the village. The school register might therefore consist of misreported data on attendance and drop-out by the teachers. The mapping of the two registers brings such inconsistencies to light.

For the reasons mentioned above, it is also possible that teachers do not record daily attendance of children accurately in the school registers. Therefore, the investigators on visiting the schools, not only checked the recorded attendance, but also did a headcount of present children. As a result, the study produces two data sets for attendance, which are as follows:

- Headcount Data: Attendance data collected by the survey team twice a week in each school, before and after MDM. There are approximately 8 days of survey data in a calendar month
- Headcount + Register (HC+R) Data: A combination of the survey data and school register data. For each school, it provides attendance from the Headcount data for the days that the survey was done in that school, and data from the school register for days that the survey was not done in that school. (The survey is done in each school only twice a week). Therefore, in a calendar month, there are approximately 8 days of headcount data and 16 days of school register data to provide approximately 24 days of HC+R data.

Thus, the Headcount data is compared with the HC+R data in order to understand differences in attendance patterns and any misreporting by the school. School visits made by the investigators were done randomly and unannounced, so that mapping could be done between attendance taken in the registers and the headcount by the investigators in order to check for discrepancies between school registers and the survey. The hypothesis of the study is that if the attendance rates are higher in the HC+R data than in the Headcount data, it is plausible that teachers are misrepresenting attendance of children.

As the RTE guidelines mentioned above have prescribed, a child is considered out of school if s/he is absent for a period of 45 days or more. Since there should be 220 school days in an academic year as per RTE, this represents an absence rate of approximately 20 percent. However, as per the SSA guidelines, the 45 days of absence must be continuous and hence does not take into account the issues of sporadic attendance. This study attempts to fill that gap and considers a child to have dropped out of school if s/he is absent for

45 days in total over the entire school year, irrespective of whether the absence is continuous or not.

In order to estimate the potential risk of dropping out for a child, this study has formulated an **early warning system**, based on RTE guidelines of a dropped out child. Accordingly, the early warning system was designed to red flag a child if s/he was absent from school pre-MDM for 8 days (based on the headcount estimates) and 12 days (based on the register record) over a three month period. Since there are approximately 8 days of headcount data and 16 days of school register data in a calendar month, there are 24 days of headcount data and 48 days of school register data over a three-month period, resulting in 72 days of attendance data over a three-month period. The early warning system is applicable to children who are absent for 20 or more of 72 school days, which represents an absence rate of approximately 27 percent, and is significantly higher than the 20 percent recommended by SSA. The early warning system is thus considered as a good marker of the risk of a child dropping out from the school system.

Further, in order to estimate the probability of drop-outs on a more regular basis, a child was considered to be at risk of dropping out if in a particular month, s/he was absent for 25 percent or more of all school days as estimated by the headcount and school register data. Ideally, this represents absence of a week or more (6 school days) over a calendar month (i.e. 24 school days).

V. CHALLENGES FACED DURING THE FIELD SURVEY

i) Building Trust with the Government Officials and Other Stakeholders

Tracking attendance of children over the academic year in public schools of an entire GP requires first and foremost official permissions from relevant government authorities. The field team in Kumbhalgarh has been present in the area for approximately three years and thus has built a wide network, which includes a good working relationship with the Block Education Officer (BEO) of Kumbhalgarh as well as the rest of the local administration. However, they faced a serious challenge when the BEO who was familiar with the project and had given permission for it was transferred a month before the project began. The new BEO had to be convinced anew of the idea and purpose of the project to obtain permits for its implementation, and a new relationship had to be developed with the next appointee, to ensure its continuance through the year. This naturally took time, particularly as the general level of trust between civil society and the government administration is not very high. However, while it took time it did not present an obstacle as the field team had a good track record with public evidence of constructive work and also the new BEO fortunately was open to the study and willing to experiment with ideas for improvement in the school system. Most importantly, he understood well the nature of the problem and the opportunity that a study of this kind could offer. He thus allowed the project to start, albeit with some delays.

Once the above hurdle was crossed, the field team had to deal with officials at the school level i.e. the Head Teachers (HT) and teachers of the sample schools. While official permission from the BEO had been obtained in writing and was used to gain access to the school, the survey would not be possible without the cooperation of the HTs. Although it was difficult for the HTs to deny access, they could disrupt the survey process in various ways, if they so desired, and prevent it from running smoothly. Some of them were wary of such a survey, particularly of the use of the attendance data fearing repercussions on them and their teachers for irregular or long absences of students, and they were especially nervous about providing teacher attendance data to an external source. It was only after the 3-day pilot that preceded the survey, that their suspicions were allayed and they came on board fully. Even then the HT of one of the schools in the survey remained strongly opposed to the idea of making teacher attendance data available to the field team. A block level meeting had to be held in which a compromise was reached and the field team was permitted to take photographs of the registers, rather than handing over the registers. In fact, it was only in May that this school finally relented after an official letter was sent to that particular HT from the BEO's office reiterating the orders that stated that the field team was to be provided with the teacher attendance data.

ii) Socio-Economic and Geographical Factors Particular to Kumbhalgarh

Kumbhalgarh is a tribal block, also classified as an Economically Backward Block (EBB), with the sample GP, Gawar, mirroring the demographic of the block with a large proportion of scheduled tribes. As with EBBs and especially those with large tribal populations, poverty levels are high and a majority of the population illiterate. The latter had consequences for the survey as it was often difficult to communicate effectively the purpose of the study and hard to understand responses too.

A particular shortfall of illiteracy was that when the surveyor asked if any member of the family migrates and if the children go along with them, only one family answered in the affirmative, although it is a well-known fact that migration is a key characteristic of the region and GP. Moreover, there were at least 6 families who were migratory but this has not been captured in the data. This is known since children from migratory families were enrolled in school at a later stage and their household surveys were done in a second round. Serious thought and effort went into defining migration and training the field team on the agreed definition; yet, there has been some degree of miscommunication and/ or lack of understanding

between the field teams and the respondents. While this points to the challenges of working in areas dominated by illiterate and tribal populations where communication is difficult, it also underscores the challenges of capacities and resources and calls for a more thorough training program of field staff, not only on the manner in which to ask the questions in the questionnaires but also on the implications and rationale for every question.

The responses were also tempered by respondents' expectations of gaining access to some form of state benefit or sometimes by suspicion about the objective of certain kinds of questions. In both cases, it was difficult to ascertain the authenticity of answers. This meant that much effort at probing and cross-checking was required to ensure the validity of the responses. Besides the communication difficulties, access to parents was also not a simple matter as most of them being wage labourers were hard to find at home during the day; as a result, the surveyors had to make frequent visits negotiating the hilly terrain several times in order to complete the baseline household survey.

In addition, there were three specific challenges that put significant brakes on the study.

Lack of reliable information of children's age: Birth registration records were highly inadequate with approximately only 20% of births in the sample GP having been registered. Perhaps being illiterate, families are not aware or simply do not understand the importance of birth registrations. In addition, the GP administration system does not make the registration of birth mandatory, as a result of which few births were found registered. When added to the fact that parents seldom remember the birth date of their children, often not even remembering the year, a significant problem was posed in estimating the age of the child in order to assess whether the child was of school-going age or not and hence out-of-school or not. As this was necessary to arrive at the final sample, there was no option but to use the age of the child as given by the parent as an approximation of the correct age, leaving out those children who were considered below 5 years of age by the households. This could have resulted in underestimation of OOSC. For the children that were in school, the age provided by the school was used. This too cannot be taken as authentic as it was often estimated rather arbitrarily based on the child's physical appearance. This also means that a child might be placed in an inappropriate class (by age) affecting the analysis of trends and patterns in children who drop out.

The lack of information on age of the child also resulted in significant problems in the mapping process described earlier, as age was used as one of the indicators to map children from the household to the school. In the event that the other indicator, i.e., name was also the same between the two sources and hence could not be used as a differentiator, the lack of an accurate age proved to be a serious challenge. Moreover, due to these discrepancies, analysis of child attendance based on age was not possible.

Migration: Due to conditions of extreme poverty, a significant proportion of families in GP Gawar are daily wage-earners with one member of the family migrating to a different place for work, often for several months. In some instances, the whole family migrates. As a result, a few families were not present at the time of the household survey and therefore, when the school year started, the field team found several children from GP Gawar in the school although the household survey for these children had not been done and hence they were not part of the survey record. The surveyors thus had to do a second round of the household surveys to ensure that all households were included. This too led to delays in making the final mobile application ready and available to the investigators for collecting attendance data.

Different names of children at home and school: Having separate names at home and at school is a fairly common practice in rural areas, especially in tribal regions where names common among tribal populations are unfamiliar and hard to pronounce by the predominantly nontribal teachers in schools. They thus change the names of children when they enter schools in order to make them sound more sophisticated and mainstream. As a result, a single child may end up with two names- one that is revealed in the household survey and the other that exists in the school record. This created immense confusion at the mapping stage where each child from the household survey was mapped against a child in the school record based on indicators, such as the name. This meant it was difficult to ascertain whether the child in the household survey was the same as that in the school survey (given the significant plausibility of more than one child having the exact same details). In these situations, the field surveyors had to themselves go to the schools and check if the particular child in the school could be mapped against a child from a particular household. This again delayed the mapping process significantly, leading to a further delay in starting of the survey.

iii) Hiccups in Use of the Online Mobile Application

At the conceptualization stage of the project, it had been decided that technology would be used to conduct the survey and generate analyses. There were several reasons for this: through the use of an online mobile application, it would be possible to view the data in real time, enabling a more continuous process of data collection and analysis. Moreover, there were several complex operations required such as the generation of codes and the mapping of household and school records. This could be done more easily through the use of technology. However, despite spending a significant amount of time and effort over the content and design of the mobile application, including the formats in which the data was expected, the online mobile application was unable to take account of all the situations that were encountered in the field. As a result, it had to be constantly

upgraded leading to significant delays in the timelines of the project. As it turned out, the technology was not able to map the children from the household survey to the children in the school records although data collected from the household included common indicators. As a result, the mapping had to be done manually, which was a complicated and extremely tedious process, made worse by the fact of the discrepancies in information provided by the household and available in school records. This even required manual checks in the field for several children to ascertain their identities and ensure that the child for whom the attendance would be collected was the same child in the household survey. No doubt this too was a contributing factor to the delays in getting the attendance survey off the ground.

iv) Delays in Data Collection

As a result of the hiccups in the online mobile application as well as particularities in the field, there were delays in the start of the data collection period. The academic year begins on July 1 with an enrolment drive from July 1 to July 15. Classes begin from July 16 and continue until April 30 with examinations beginning in May. Thus, the academic year consists of 9 months and 2 weeks. However, the headcount survey for this study only began on September 11, 2015, resulting in a loss of almost 2 calendar months (i.e. July 16 to September 10) of attendance data. This is because of complexities that arose in the field as well as the delays in the mapping process. The following timeline details these issues:

May, first week: Mini-pilot by the field team to test the mobile application using dummy names as well as provide training to the field surveyors

May, second week: Significant changes made to the questionnaires in the mobile application based on the mini-pilot.

May, third and fourth week; and June, first week: The household survey conducted, towards the end of which, the UIS team, comprising Shailendra Sigdel and Intern, Anisha, made a field visit. The UIS team also suggested significant changes, which were then incorporated in the mobile application.

July 16-25: Since enrolment in schools would only be complete on July 15, the school surveys could only be done after July 16, as before the completion of enrolment, one would not have a complete list of children in school.

July 25-August, first week: Transferring the household and school record data on the website created for this project. This was necessary in order to perform the mapping exercise.

August, second week: Technical team, that prepared the mobile application, is unable to conduct the mapping exercise due to differences in age and name between household and administrative data and asked CPR to do this. The names and ages given by households during the household survey in some instances did not match the names and ages in the school records. Sometimes, the teachers, being unfamiliar with the names had made arbitrary changes to them in their records.

August, third week: CPR and UIS Delhi team conduct the mapping exercise in Delhi but are unable to map over one-third of the sample. The technical team that created the mobile application thus asked the field team, which actually conducts the surveys in the field, to map these children since the field team would be able to make manual checks for confirmation of identity of a child.

August, fourth week: The CPR field team maps the children, but there are delays due to lack of electricity and internet connections in the field.

September, first, second and third week: The technical team creates the online application using the mapped data. However, since it is taking longer than expected, particularly because children keep getting added to the school on a continuous basis, the application needs to be changed. In order not to lose any more time, the field team begins with paper surveys on September 11.

In conclusion, it has thus been a learning experience, in terms of the methodology as well as caution in selecting a technical partner that understands the complexity and scope of the project as well as the unpredictability and difficulties that arise in the field, and is flexible to deal with them. However, since the architecture and step-by-step guide now exists, with knowledge of potential trouble spots including areas where human errors are more likely to arise, this has been a useful pilot. In overcoming some of the key challenges, the project has been more successful than not.

VI. STUDY FINDINGS

i) Household Characteristics in the Sample Survey

Both school and household level factors affect education performance. Among the household factors that have been studied in the literature, income poverty, parental level of literacy, number of siblings (as well as birth order of siblings), gender bias in parental motivation, migration patterns and social category of household are commonly understood to have an appreciable impact.

Social categories: Figures 1 and 2 provide the distribution of social categories in the sample population of GP Gawar. It shows that first, more than half the households are in Gawar village and constitute the student population in 5 out of the 9 schools in the sample, namely GSS Gawar, UPS Hathai ki Bhagal, PS Koliyo ki Bhagal, PS Naya Kheda and PS Sujo ka Leva. This is important because 4 out of these 5 schools are primary schools and have a significantly larger proportion of OBC students than the other schools, which have a relatively high share of ST students. Since OBC students tend to have higher attendance rates than SCs and STs, and 4 out of the 5 primary schools in the sample are in Gawar village, this perhaps results in the better performance of primary schools in the study; second, more than half the households are OBC (60%), followed by ST (26%), with the percentage of OBCs being more than double that of STs; third, General category (GN), SCs and Minorities together constitute less than 15 percent of the sample households; fourth, ompared to national averages of these populations, the distribution in Gawar is unusual. This could explain some of the unusual results seen above. For instance, the shares of the social groups in the Indian population as a whole, as per NSS 69th round (2012)[15] are as follows: Scheduled Tribes (ST) 9.02%; Schedules Castes (SC) 18.67%; Other Backward Castes (OBC) 42.91%; and General (GN) 29.41%.

Figure 1: Village distribution of sample households

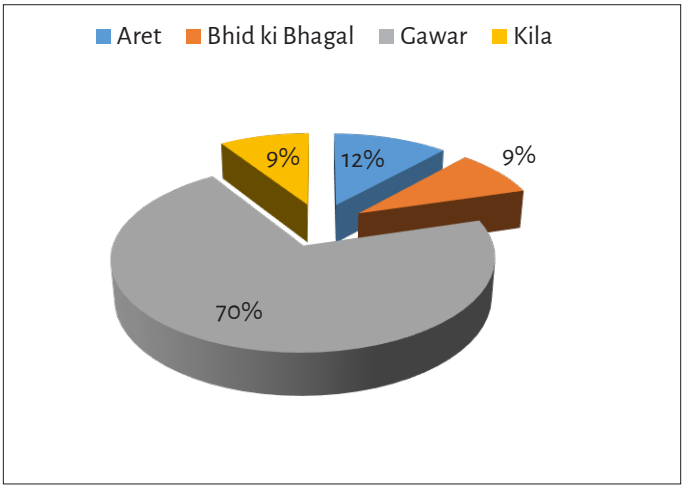
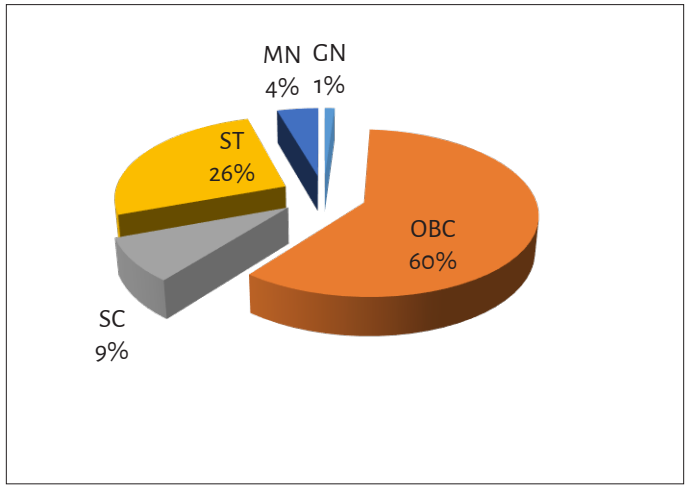


Figure 2 : Caste distribution of sample households



Proxy indicators of poverty:

1. Type of Housing: Figures 3a and 3b below show that first, less than half the households have pucca housing, which is reflective of significant poverty in the Panchayat, although every single household has a structure, which shows that poverty levels are not extreme; second, the percentage of households with serviceable kutcha[16] houses is higher than that with semi-pucca houses; third, based on residence in pucca houses, OBCs are better off than STs, as 43 percent of OBC households have pucca houses compared with 17 percent of STs.

Figures 4a and 4b show that first, roughly three quarters of the households have electricity; half of the households have official connections whereas a quarter has unofficial connections, i.e, through illegally tapping into electrical wires. In other words, one quarter of the households do not have any electricity connection; second, more than half of OBC, SC and MN and GN households have official electricity connections, compared with less than 1/3rd of ST households; third, ll General and Minority households have an electricity connection. Less than a quarter of OBC and SC populations do not have electricity connection compared with almost half the ST population.

Figure 3a : Type of housing (Total)

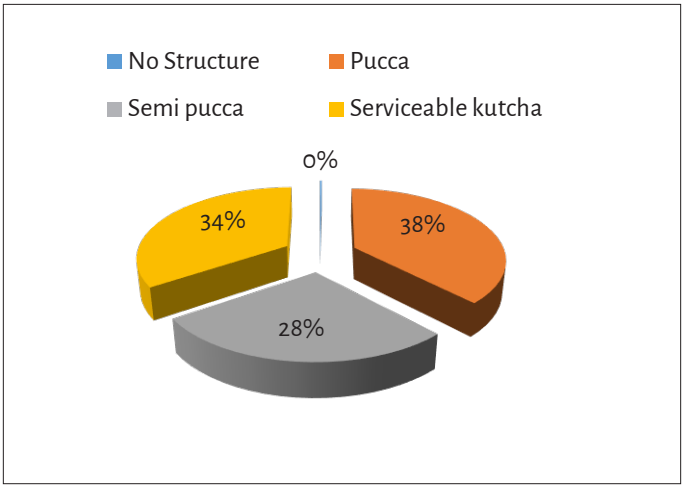


Figure 3b: Type of housing, by caste

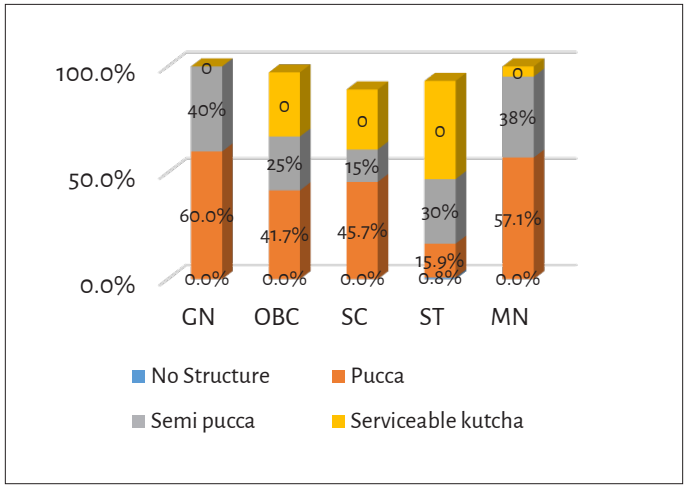


Figure 4a : Type of electricity connection

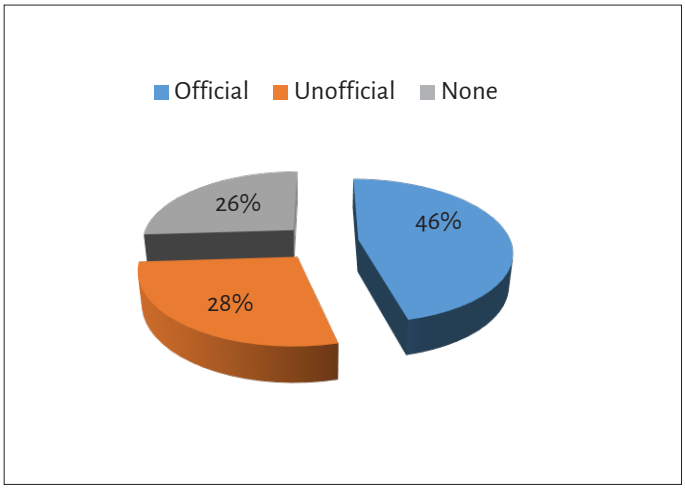


Figure 4b : Type of electricity connection by caste

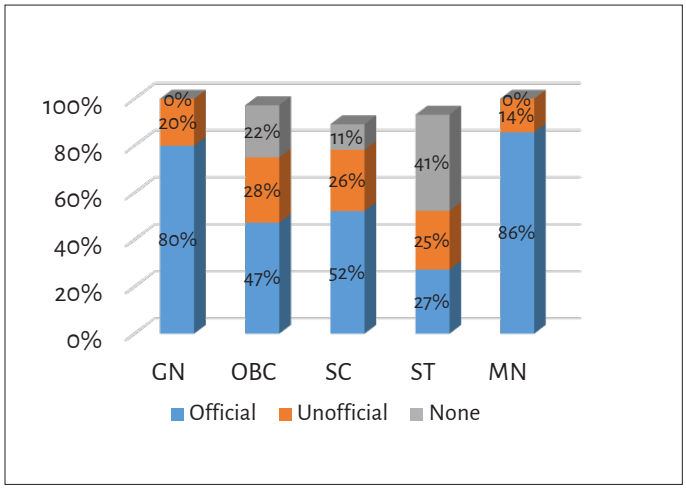


Figure 5a : Sanitation facilities

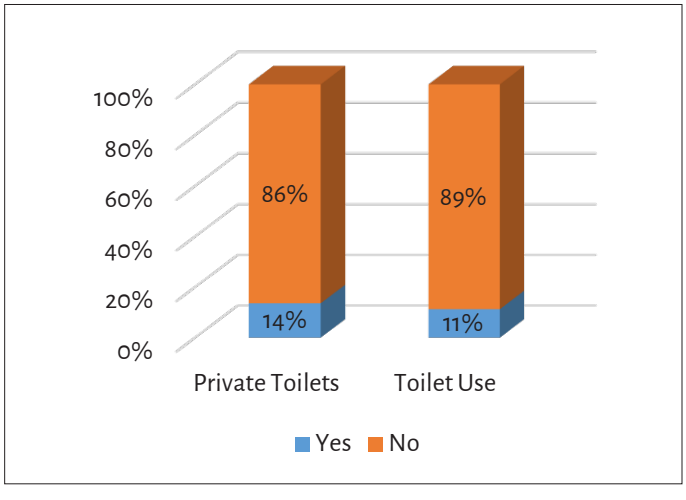


Figure 5b: Toilet use by caste

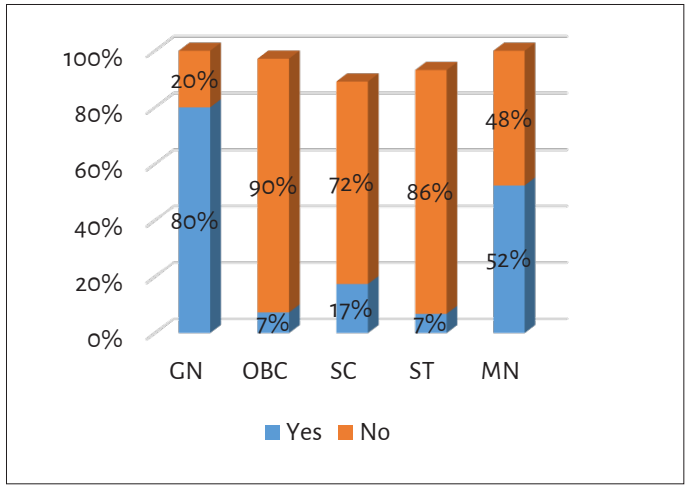
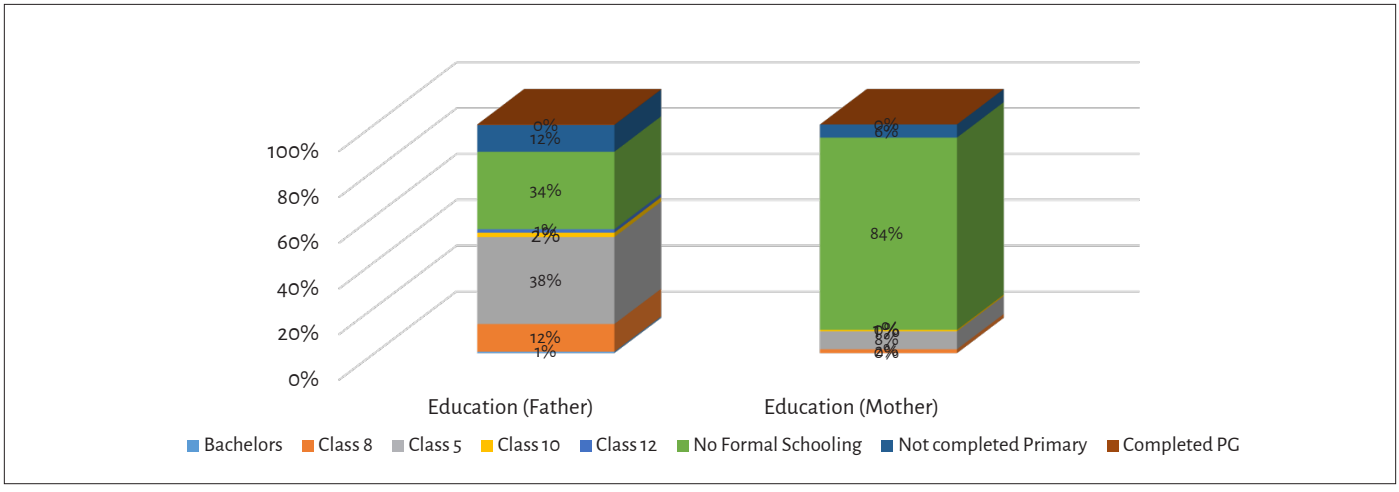


Figure 6 : Education level of parents



2. Household Sanitation Facilities: As seen from Figures 5a and 5b, first, almost 90 percent of households do not have private toilet; second, not all households that have private toilets actually use them (11 households have private toilets but do not use them; third, The likelihood of using a toilet is higher for MN and SC categories, as almost 50% of MN and 19.5% of SC but only 7.5% of OBC households use toilets (Fig. 10b).

3. Education Levels of Parents: Figure 6 shows that first, more than 80 percent of the mothers in the sample have no formal schooling; second, more than 1/3 of the fathers have no formal schooling; and roughly another 1/3 have completed primary education; third, roughly 12 percent of fathers and 2 percent of mothers have completed elementary education; fourth, less than 2 percent of fathers have completed secondary school or received a Bachelor's degree.

3a. Distribution of Education Attainment Among Parents by Social Category: Figures 7a and 7b show that first, OBC, SC and ST mothers are more than twice as likely to have had no formal schooling compared with OBC, SC and ST fathers; second, the likelihood of having had no formal schooling and of completing primary education is roughly equal for SC and ST fathers. The likelihood of completing primary education is higher than having no formal schooling for OBC and MN fathers.

4. Household Occupational Patterns: From Figure 8, it can be see that first, agriculture and daily wage in non-agricultural activities

Figure 7a: Education level of father by caste

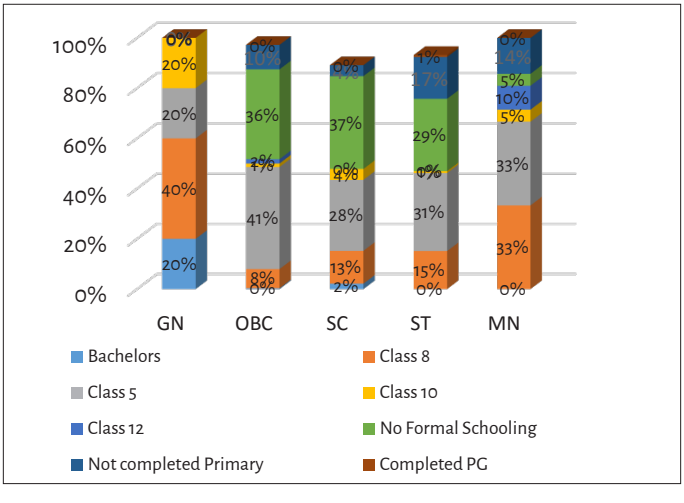


Figure 7b: Education level of mother by caste

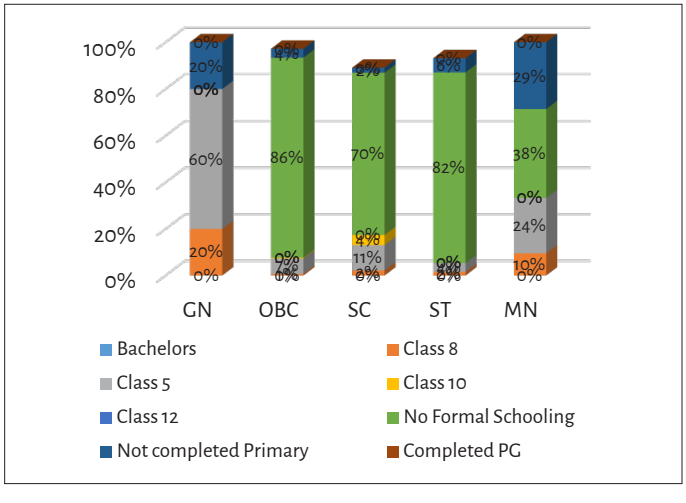
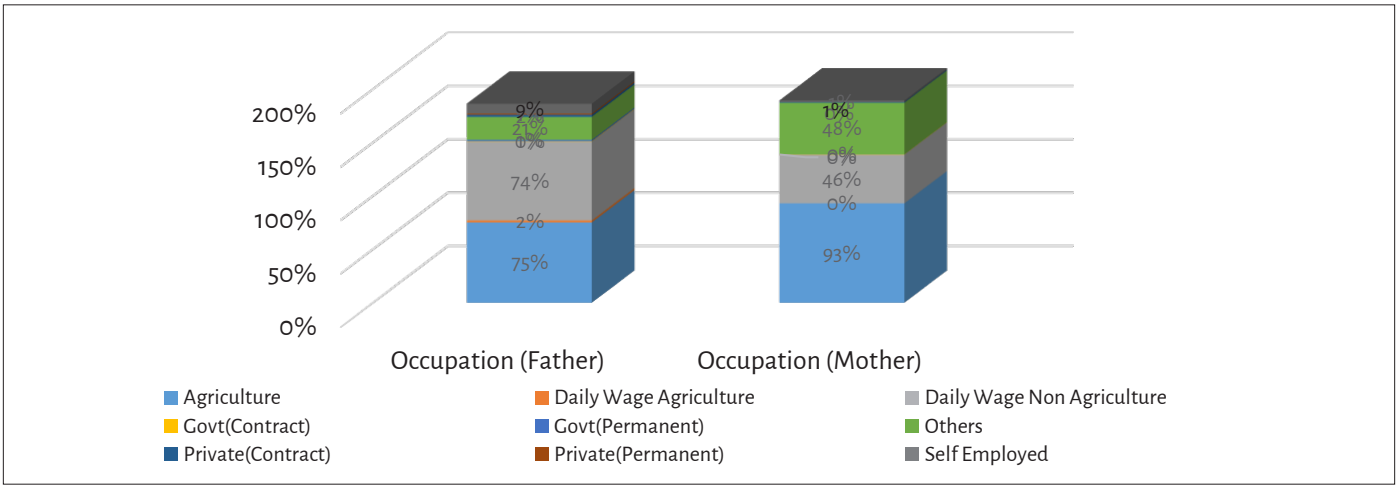


Figure 8 : Occupation of parents



make up the primary occupations of parents – mothers as well as fathers; second, whereas mothers are more likely to be involved in agriculture than fathers, none of them work as daily wage labourers in agriculture; third, fathers on the other hand work in both agriculture and as daily wage workers in the non-agriculture sector, with very few as daily wage labourers in agriculture.

4a. Occupational Patterns by Social Category: Figures 9a and 9b show that first, OBC parents (mothers and fathers) are more likely to be occupied in agriculture than any other occupation; second, ST fathers are more likely to be employed in non-agricultural activities as daily wage workers rather than employed in agriculture. But the reverse is true for ST mothers. In other words, ST mothers are more likely to be employed in agriculture rather than as daily wage earners in non-agricultural activities. This reflects the fact that STs perhaps have smaller landholdings making it necessary for fathers to find non-agricultural work. It reflects the higher poverty levels among the STs; third, SC fathers are equally likely to work in agriculture and as daily wagers in non-agricultural activities compared with SC mothers who either work in agriculture or in other occupations. Few work as daily wage workers in non-agricultural activities, reflecting that they are probably better off than STs; fourth, Minority fathers are either self-employed or work as daily wage labourers in non-agricultural activities whereas half of Minority mothers work in other occupations and a quarter in agriculture. The fact that Minority fathers do not work in agriculture but as daily wage workers reflects their lack of land ownership and higher poverty levels.

Figure 9a: Occupation of father by caste

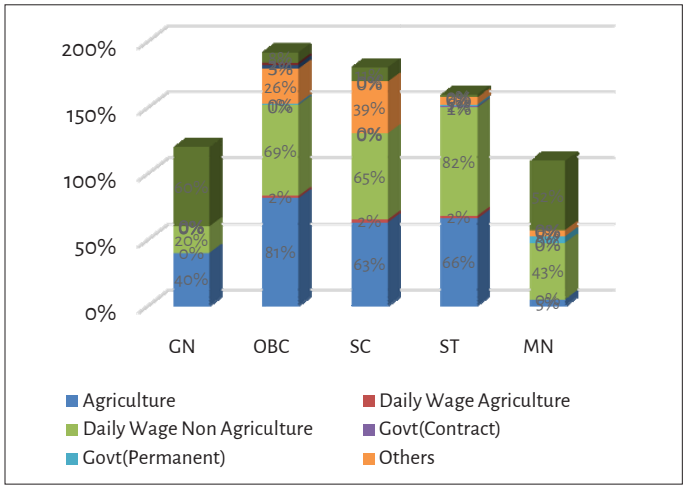
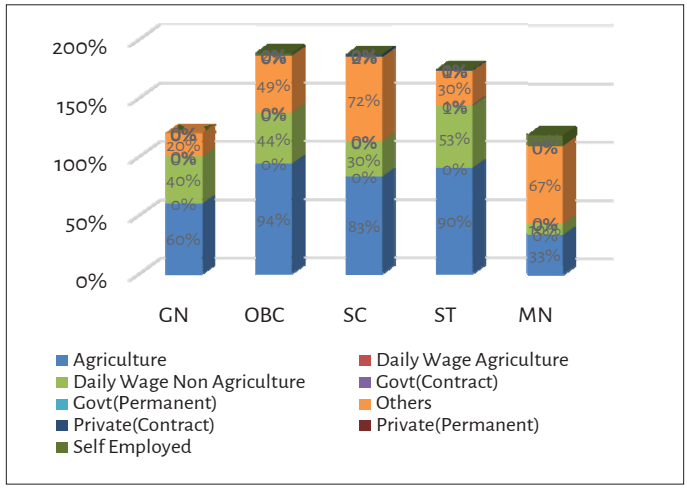


Figure 9b: Occupation of mother by caste



ii) Invisibility of OOSC

As mentioned earlier, the Global Initiative on OOSC by UNICEF and UIS pointed to the need to categorise OOSC as (i) visible, (ii) semi-visible and (iii) invisible in the school and administrative system, for which it is necessary to use both household surveys and school registers.

In order to estimate the number of children in each of these three categories, data collected from the household surveys was used to first estimate the number of children enrolled and dropped out at the beginning of the academic year 2015-16. Table 2 and Figure 10 below summarise the results:

Table 2: School enrollment for sample population as per Household Survey (2014-15 and 2015-16)

Status of the children	School Year 2015-16 (% in paranthesis)	
Total Enrolment	860 (82.85)	
	Enrolled in government schools (Class I-VIII)	611 (71)
	Enrolled in government schools (Class IX-XII)	56 (6.6)
	Enrolled in private schools or schools outside the Panchayat	193 (22.4)
Non-Enrolled	178 (17.15)	
Total	1038 (100)	

Figure 10 : School status of children in the panchayat in the beginning of 2015-16

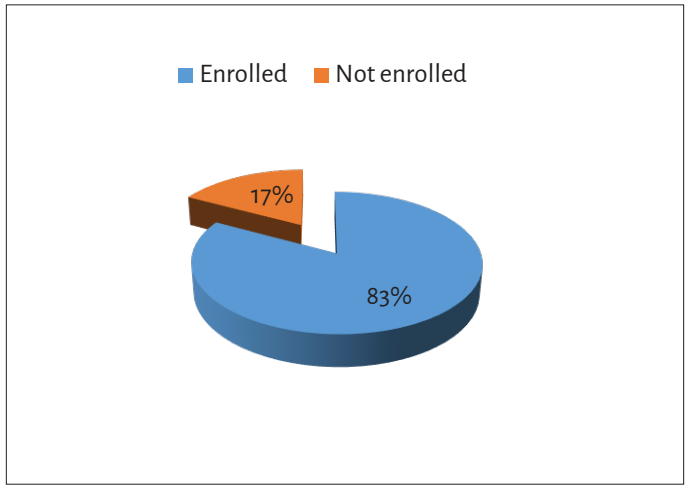


Table 3: Total OOSC using official definition

Dropped out (before beginning of 2015-16) (household survey)	Dropped out (during 2015-16) (school registers)	Total drop out for 2015-16 (household survey and school registers)	Never enrolled (household survey)	Total drop out at the end of 2015-16 (household survey and school register)
131	24 (15+9)	155 (131+24)	47	202 (155+47)

As per official definition (of 45 days continuous absence), the status of OOSC in 2014-15 and 2015-16, as reported by the household data, is provided in Table 3.

Drop-outs before the beginning of 2015-16: As per the household survey, 131 children had dropped out before the beginning of 2015-16. The household survey had two specific questions related to enrolment i.e. if the child was enrolled in 2014-15 and if the child was enrolled in 2015-16. The children who had dropped out before the beginning of 2015-16 are thus those children who were enrolled in 2014-15 but not enrolled in 2015-16 as reported by the household.

Drop-outs during 2015-16: As per school registers, during the course of the academic year 2015-16, 15 children officially dropped out (their names were removed from school registers) and 9 children dropped out as per SSA guidelines but their name remained in the school registers

Drop-outs at the end of 2015-16: The dropped out children at the end of 2015-16 were drop-outs before the beginning of 2015-16 and drop-outs during 2015-16 as per household survey and school registers i.e. 155 (131+24)

OOSC at the end of 2015-16: The OOSC at the end of 2015-16 are the children who were never enrolled as per the household survey and the drop-outs at the end of 2015-16 as per household survey and school registers i.e. 202 (47 + 131+ 24) However, this does not include the irregularly attending children i.e. children who were absent for 45 days or more sporadically.

Thus, from the study the following estimates were arrived at for the invisibility of OOSC:

- **Visible: 146**
  These were the 131 children that dropped out before the beginning of the academic year 2015-16 in addition to the 15 children who had officially dropped out during the academic year 2015-16 (i.e. their names were removed from school registers). These children are visible OOSC as they were recorded as out of school in government records, and referred to as being in the dropped out category.
- **Semi-visible: 302**
  This category contains those children, who are not officially recognized or identified as OOSC, but who may be considered as such on examination of school attendance records. In the study, as mentioned before, a child is considered dropped out if s/he is absent for 45 days or more, over the course of the academic year, irrespective of whether the absence is continuous or not. The study identifies 317 children on the basis of this definition, of which 15 children have been identified and removed from the school registers. The remaining 302 children are thus the semi-visible children. It is significant to note here, however, that of the 302 semi-visible children, 9 children have been absent in accordance with SSA guidelines i.e. they have been absent for a continuous period of 45 days or more.
- **Invisible: 47**
  This category contains children who are not present in official records anywhere in the education system. In the study, the 47 children who have never enrolled thus form the invisible category of children. The issue is exacerbated by the fact that the GP does not record births, and thus decreases the probability of identification of never enrolled children. Clearly the CTS, to be conducted annually, by GPs (in conjunction with schools) has also failed to identify the never enrolled or is not recording their numbers in the system.

Table 4: Total OOSC using New Definition (% in paranthesis)

Categories	Visible	Semi-visible	Invisible	Total OOSC
	146 (30)	302 (61)	47 (9)	495 (100)

Figure 11 : School Status of Sample Population

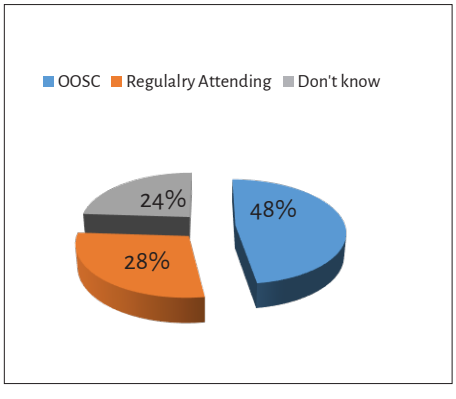


Figure 12: Visibility of out of school children

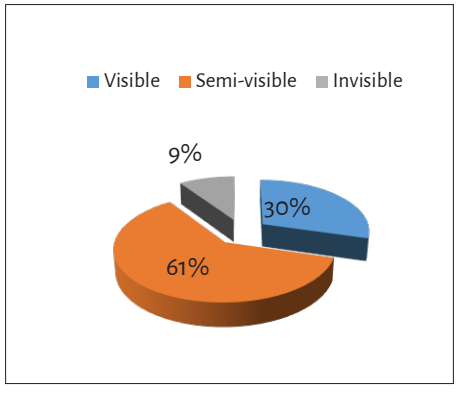
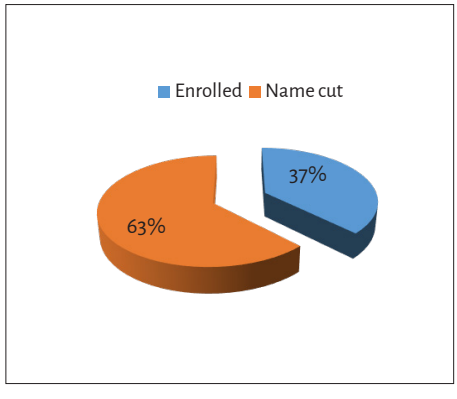


Figure 13: Enrollment status of students absent for 45 days continuously (Total, pre MDM)



Figures 11 and 12 show the proportions of OOSC in the study while Figure 13 shows the enrolment status of children dropped out as per official definition

The total OOSC in the sample is 495 of 1038 children (48%). Those regularly attending are children who are absent for less than 45 days during 2015-16 as per school registers i.e. Children whose attendance is being tracked – Children absent for 45 days or more either sporadically or continuously = 294 (611-317). The "Don't know" category in Figure 2 represents the children studying in Classes IX-XII in government schools, children studying in private schools and children studying in schools outside the Panchayat i.e. 249 (56 + 193) as per Table 2. As all these fall outside the scope of this study the attendance of these children has not been tracked. It is possible therefore, that the percentage of OOSC (visible, i.e, in records) as well as of OOSC (semi-visible) may in fact be higher.

Moreover, Of the 24 children who are absent for more than 45 days continuously, and therefore qualify as dropped out, only 15 (63%) are recorded as such and 9 (37%) continue in the system as enrolled, as shown in Figure 4.

Nevertheless, from the figures shown above, it may be concluded that first, almost half the population is out-of-school; second, semi-visible children form the majority of OOSC, followed by visible and then invisible OOSC; third, given that a significant proportion i.e. 37% of children who have dropped out as per the official SSA definition, continue in the system as enrolled. This corroborates the statement made earlier about the pressure on schools to keep names on the rolls.

Is caste a factor?: It is commonly believed that educational uptake is lower among children from the lower castes, i.e, the Scheduled Castes (SC) and Scheduled Tribes (ST) and also the marginalized communities, such as religious Minorities (MN). In addition to the fact that these social groups form the majority of the poor in the population, exclusionary practices in schools and classrooms by teachers as well as peer groups belonging to the upper castes are also cited as reasons for children dropping out. Hence, recording the distribution of dropouts or OOSC from the different social categories is useful to corroborate this understanding and thus to find ways of addressing this phenomena.

According to the Figures 14a, 14b and 14c, it is found that first, Other Backward Castes (OBC) and ST children are more likely to be OOSC; second, OBC children constitute more than half of the visible OOSC; third, emi-visible and invisible OOSC are almost equally constituted of OBCs and STs; fourth, SC and Minority children constitute the least numbers of OOSC in all categories – visible, semi-visible and invisible.

In light of the observations made above, these findings are very interesting especially as SC and Minority children constitute a small percentage of OOSC as opposed to OBC. The reason for this counter-intuitive finding could be that the share of population of SC and Minority children is too small and that of OBC children too large, resulting in skewed results, particularly since weights have not been created to take into account the share of each category in the sample.

Distribution of OOSC by Caste:

Figure 14a: Visible OOSC by caste

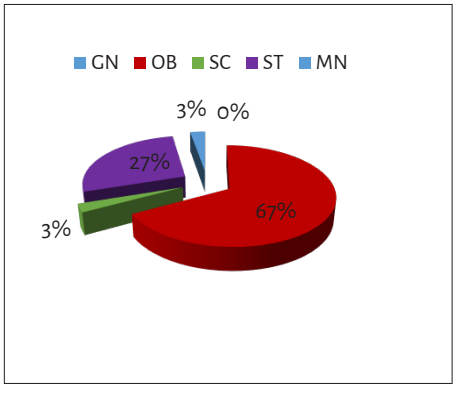


Figure 14b: Semi Visible OOSC by caste

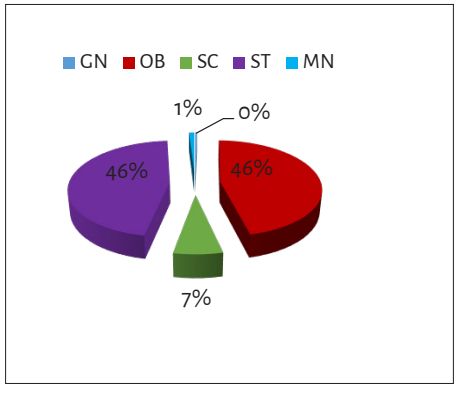
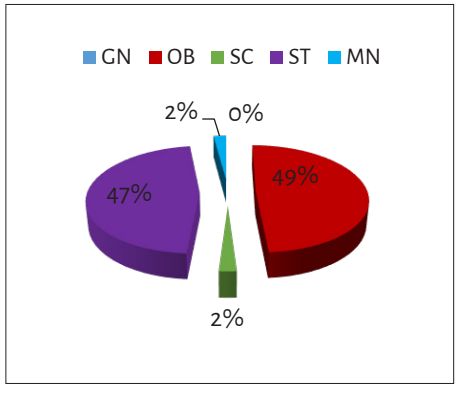


Figure 14c: Invisible OOSC by caste



iii) School Level Factors

Profiles of the sample schools: There are 9 schools in the sample survey. Figures 15 to 22 show the infrastructure facilities in these schools. There are five main findings: first, roughly half the schools do not have a boundary wall, electricity connection or access to classrooms for the disabled; second, more than half the schools have no functional toilets; third, not a single school has a playground; fourth, clean drinking water is not available in roughly a quarter of the schools; fifth,all schools provide MDM.

Iv) School-Going Children in the Sample Survey

The mapping of the household and school survey data revealed a sample population of 611 students between 5-17 years of age studying in Classes I-VIII in the nine schools of GP Gawar, whose attendance was regularly tracked. These children will be called the sample students. Their distribution by caste, gender and school is shown in the following graphs.

Distribution of school going children by social category: Figures 23 to 28 show that first, of the students enrolled in school, more than half are OBCs. While ST children constitute the next largest group there is a huge gap between the two; second, GN, SC and MN students make up less than 15 percent of the students enrolled in school, which is consistent with their population shares in GP Gawar; third, an equal percentage of males and females attend school i.e. there is no gender differential in enrolment of children. Also, the distribution of boys and girls across schools is roughly equal; fourth, the number of students in each grade is roughly equal until Grade

Figure 15 : Type of school building

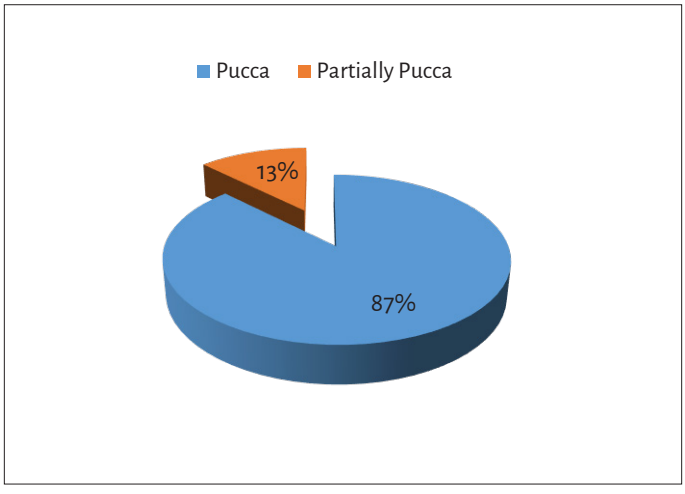


Figure 16 : Type of boundary wall

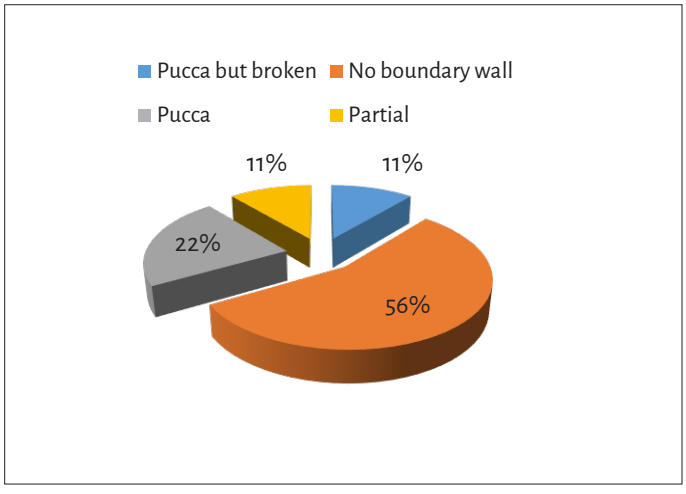


Figure 17a: Available toilet seats

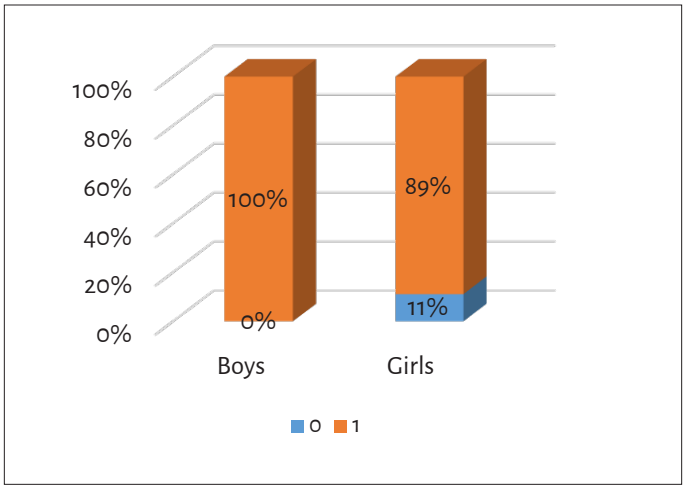


Figure 17b: Functional toilet seats

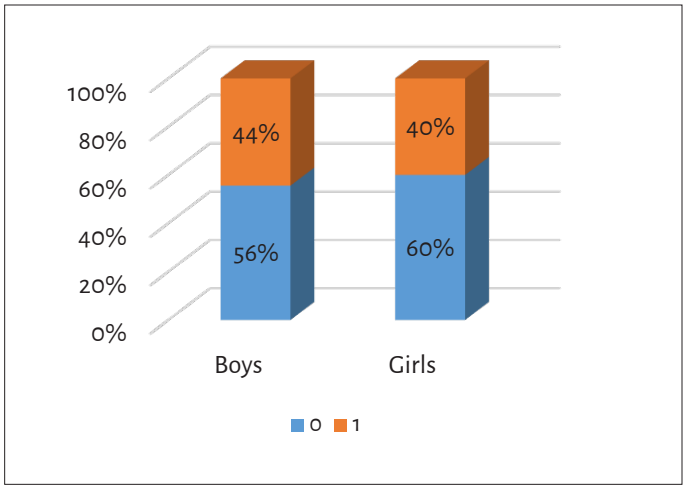


Figure 18 : Source of drinking water

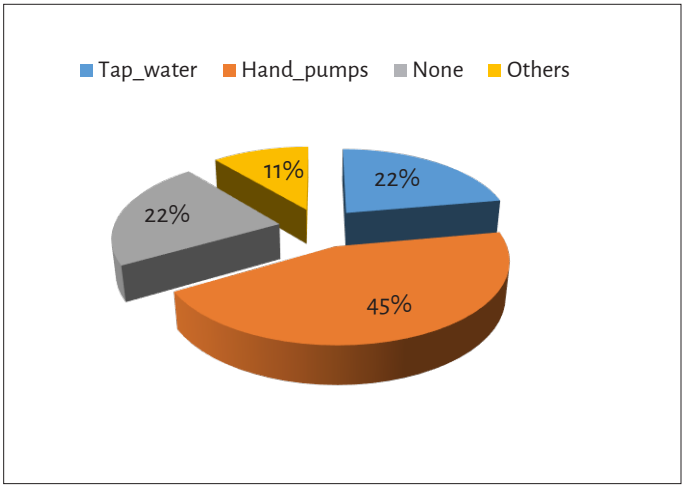


Figure 19 : Playground

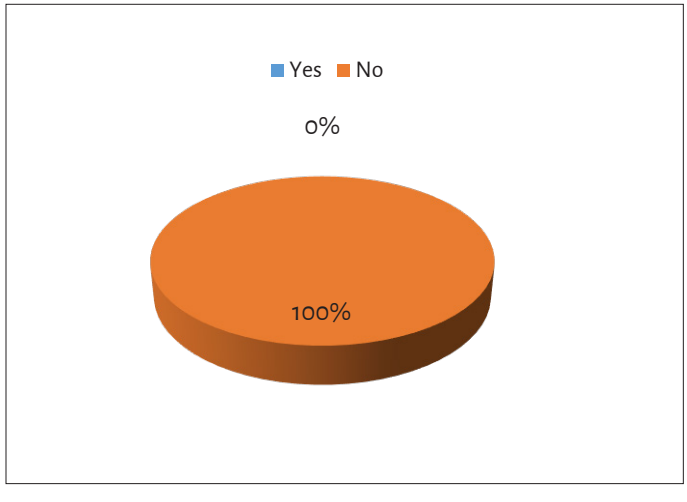


Figure 20a: Electricity connection

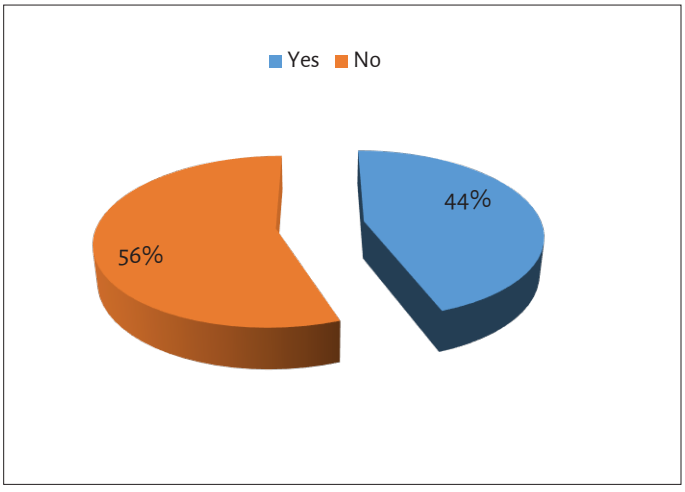


Figure 20b: Type of electricity connection

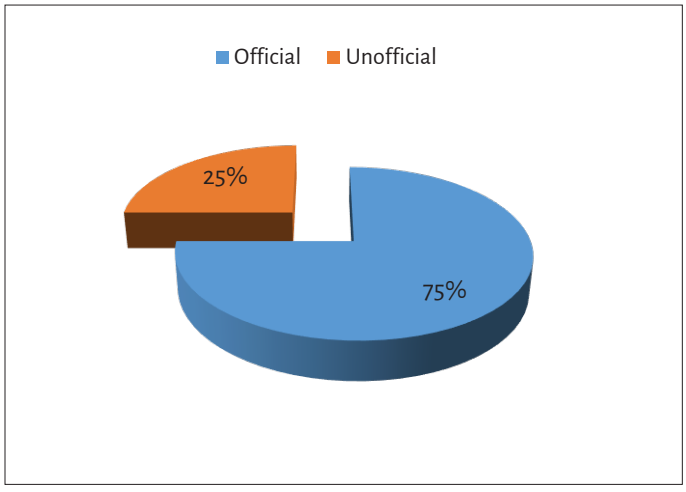


Figure 21 : Classroom access to differently abled

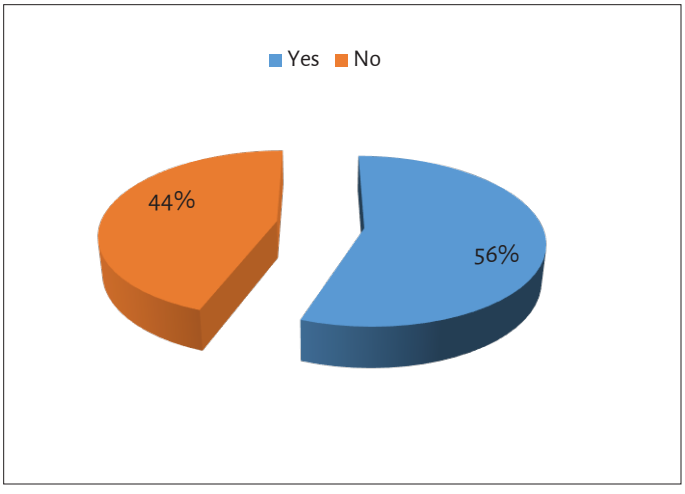


Figure 22 : Provision of MDM

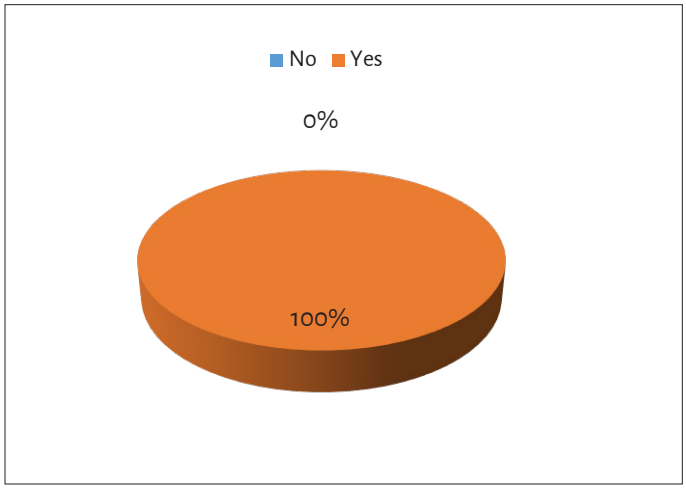


Figure 23 : Sample student distribution by caste

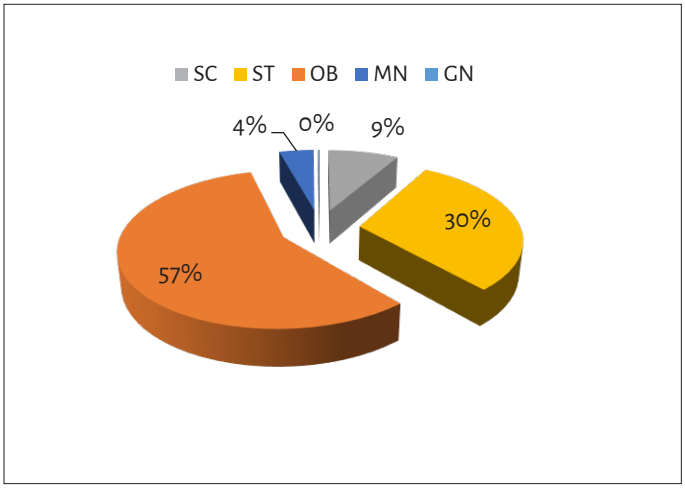
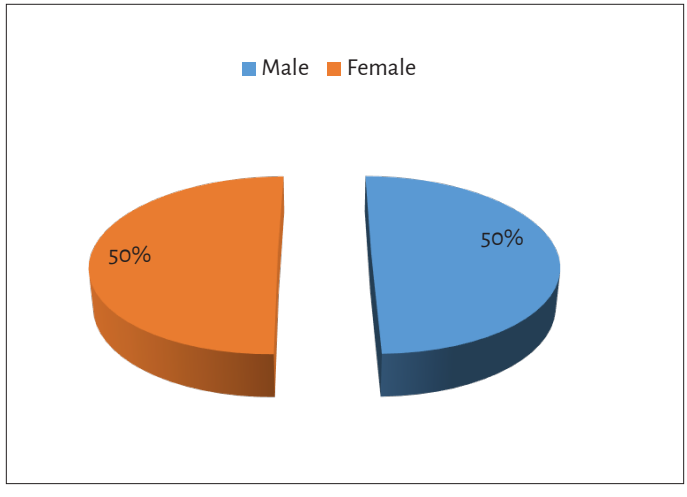


Figure 24 : Sample student distribution by gender



VI, except in Grade III, when there is a drop. It is unclear why this might be the case. The number of students in Grade VII and VIII then show a major drop again; fifth, most schools have heterogeneous student populations i.e. students in that school belong to more than one social category. Two schools however, are dominated by OBC students, and are as such, less heterogeneous; sixth, two schools account for more than 1/3 of enrolled sample student

v) Attendance Patterns of School-Going Children

Average attendance rates were calculated for:

- 611 children, in the age group of 6-14 years were (as reported by either the school or household) enrolled in the nine schools in Gawar Panchayat in the academic year 2015-16. While a majority were enrolled at the beginning, a few enrolled over the course of the year, up until September
- Age groups of the children are not known definitely for reasons discussed earlier.

The sample size remains the same at the beginning and end of the survey, irrespective of the child's attendance rates. The 24 children who were absent continuously for 45 days or more, and thus fall into the category of drop-out in accordance with RTE guidelines, were not excluded from the analysis, even though 15 of these children were removed from the school registers at different points in time. Continuing to include them in the sample was in order to prevent any improvement in average attendance rates had they been

Figure 25 : Sample school distribution by caste

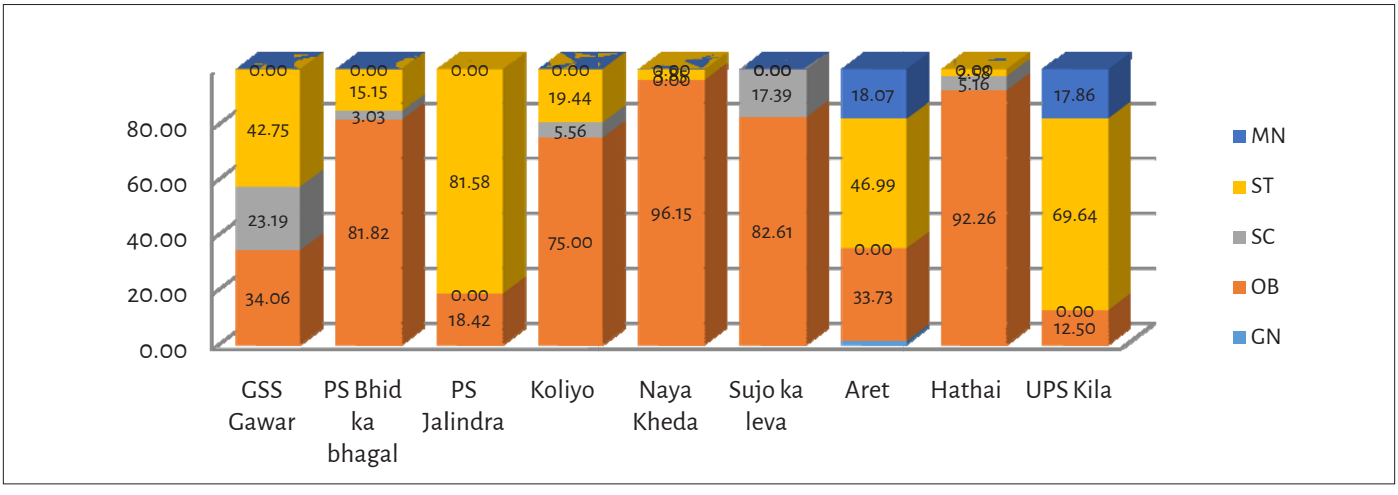
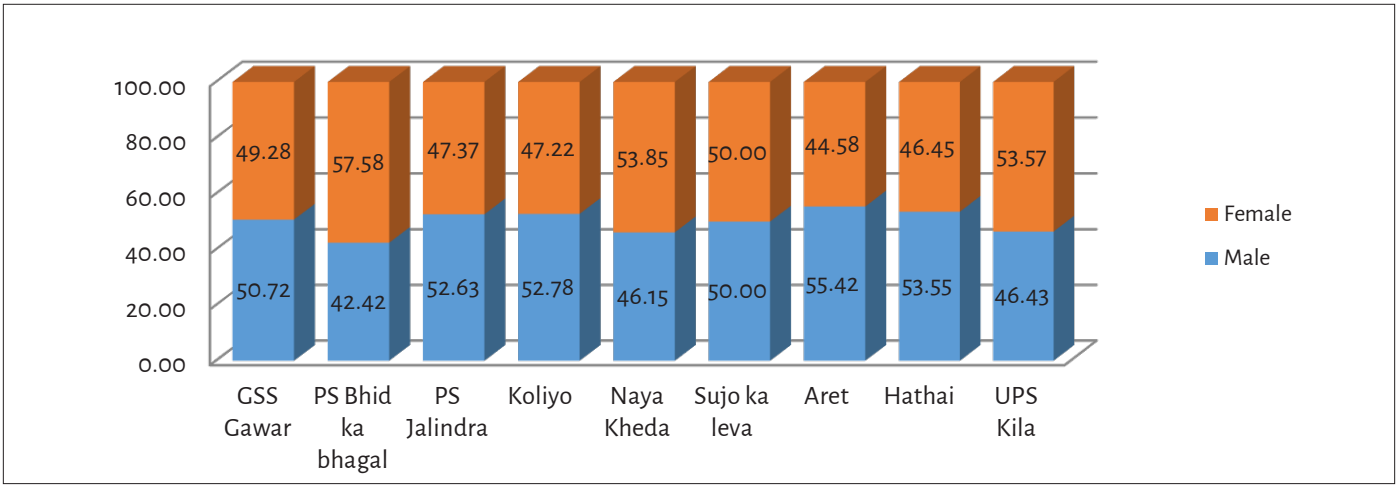


Figure 26 : Sample school distribution by gender



excluded from the sample. Removing children from the sample, as and when they dropped out during the year, would have had the effect of increasing the average attendance rates as those with poor attendance would have been excluded from the sample and also because our denominator, ie, the total number of children in eths ample would have decreased. Thus, the sample student population remains the same at the beginning and end of the study, with average attendance being calculated for 611 children.

The formulas used to calculate the average attendance rates are as follows:

Headcount

- For each child, the total days of absence and presence were calculated. These were added to calculate the total number of days that each child was surveyed since surveys were conducted on different days in different schools.
- For each child, Average Attendance Rate = (Days of Presence/ Survey Days)*100
- For each child, Average Absence Rate = (Days of Absence/ Survey Days)*100
- For each group i.e. total sample, each caste category and each gender category, a summation of the number of days of presence and survey for each child (in that group) gave the total number of days of presence and total number of survey days.
- Average Attendance Rate for each group = (ΣDays of Presence/ Σ Survey Days)*100 Eg. Average Attendance Rate for SC (There are 51 SC children in the sample)= (ΣDays of Presence of 51 children/ ΣSurvey Days of 51 children)*100
- For each group i.e. total sample, each caste category and each gender category, the total number of days of absence and total number of survey days were calculated by summing the individual days of absence and survey days for each child.
- Average Absence Rate for each group = (ΣDays of Absence/ Σ Survey Days)*100

Register Data

School register data was taken for all school days i.e. days that the surveyors went to school and did a headcount of attendance as well as days that surveyors did not visit the school and collect attendance data by headcount. The purpose of collecting register data was to allow a comparison of the recorded attendance with the head count. However, the Register data was consistent with the HC+R data (explained below); for instance, in March, average attendance rate of the sample was 65.67% as per register data and 65.35% as per HC+R data. Therefore, the analysis has only been done for Headcount data and HC+R data.

Headcount + Register (HC+R) Data

The exercise of estimating average attendance rates was repeated using HC+R data as well, which is a combination of data from the survey and the school registers, and thus includes all school days.

Gap in attendance data between pre MDM and post MDM: The National Programme of Nutritional Support to Primary Education (NP-NSPE)

Figure 27 : Sample student distribution by school

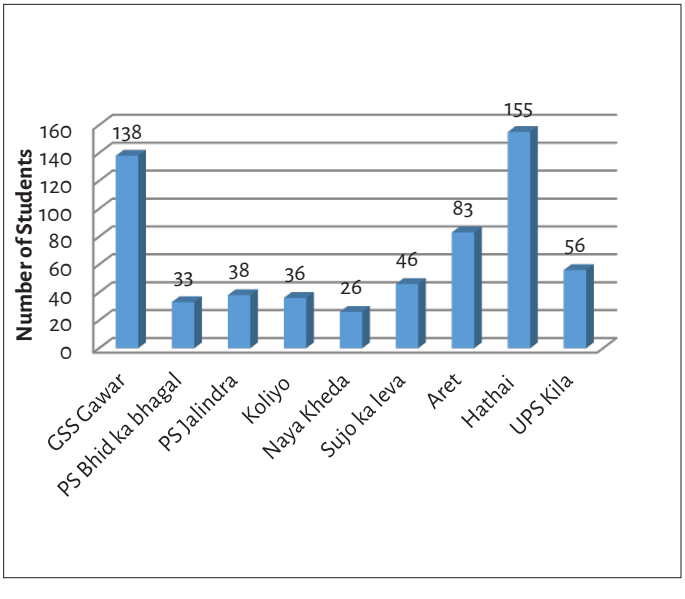
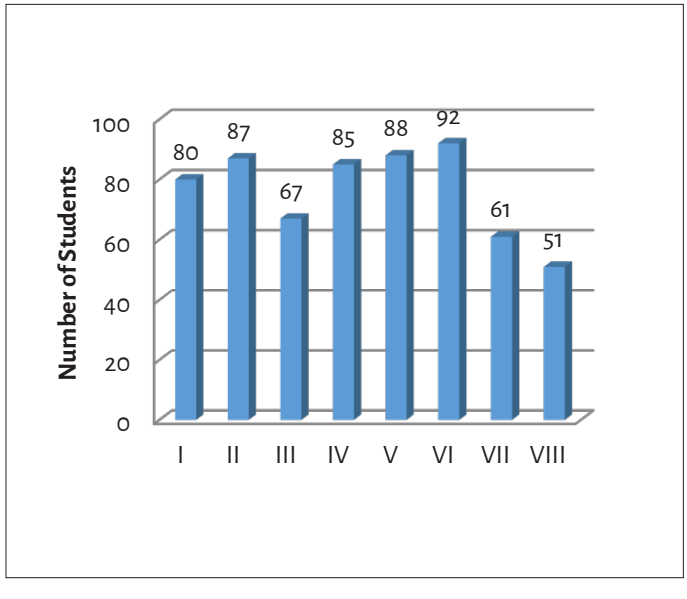


Figure 28 : Sample student distribution by grade



–commonly known as the Mid-day Meal [MDM] programme was launched as a Centrally Sponsored Scheme (CSS)[17] in 1995. One of the major objectives of the scheme was to stimulate enrolment and attendance .[18] Studies show that the MDM scheme has been successful in enhancing enrolment and attendance in primary schools. They reveal that the enrolment and attendance for both boys and girls have been higher in schools that provide MDM as compared to schools that do not in both urban and rural areas[19]. However, no claim can be made about the status of sporadic attendance from this result. Children might attend school for few hours before MDM is served and depart thereafter. Thus, one cannot clearly state the impact of MDM on a child's attendance in school.

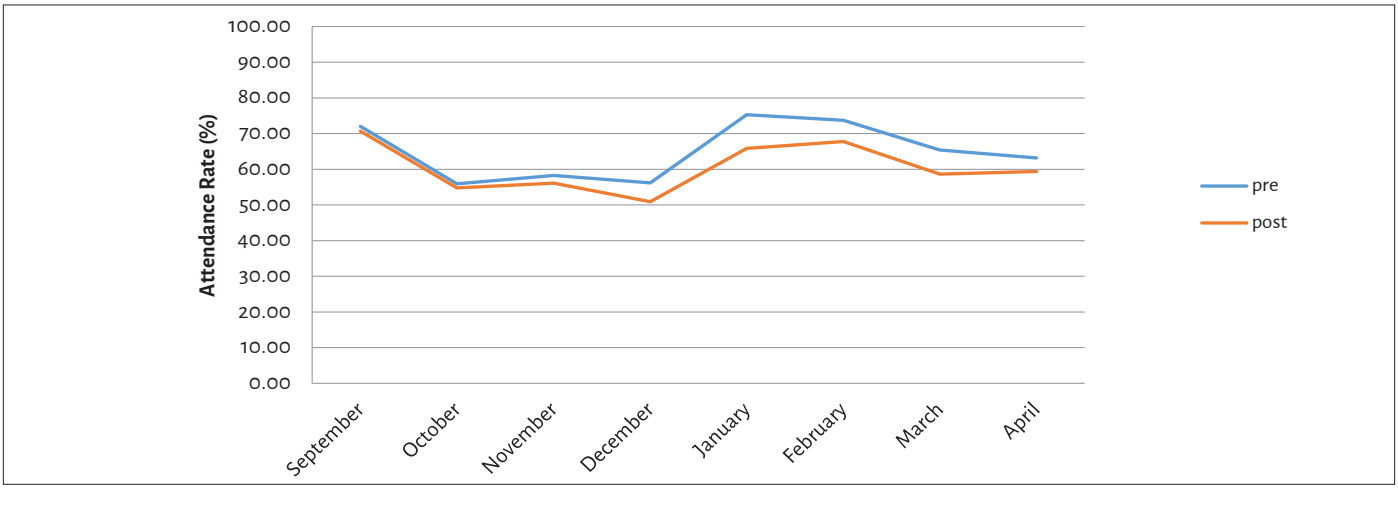
Although there is a perception that attendance rates tend to differ pre and post MDM the survey results do not corroborate this perception, for the first half of the academic year. Pre MDM attendance is marginally higher than post MDM, with the gap widening only in December, even then, however, the gap is too small to be significant. In fact, the difference in pre and post MDM attendance was so negligible for the first half, that based on this data, it was decided to eliminate post MDM attendance data from analysis of attendance rates as well as comparisons with school register data.

Therefore, all future analysis is based only on pre MDM attendance data for both Headcount and HC+R. As seen in Figure 29, attendance rates decline from October to December, improve in January but begin to decline in February with a steep drop in March and April. Further, a gap appears between pre and post MDM in January and March, although it narrows in February and April. The local context and agricultural patterns for each month could be the reason for these low attendance rates. These reasons are first, in October and November, lentils, maize, corn and custard apple are harvested; second, the custard apple fruit, which is a staple fruit in the region is harvested in November and sold in December, for which children are often required. December is also the period for sowing of seeds of wheat; third, in January, there is inertia after a long month's holiday resulting in children leaving school after MDM; fourth, in February, the entire area is busy in cutting fodder (grass) for their cattle from the hills. This is also the period to remove juice from sugarcane as well as make jaggery[20]; children are required to help in all of these activities; fifth, March is harvesting season for the wheat sown in December, and households employ their children in the fields; sixth, there are examinations in May and children either remain at home to study or leave after MDM in April

Further, looking at differences in attendance pre and post MDM by social category, as shown in Figures 30a and 30b, it is found that first, all caste and gender categories are more likely to attend school more often pre MDM than post MDM; second, the difference in average attendance rates pre and post MDM is slightly higher for the GN (General) and Minority category students, compared with other caste categories; third, the difference in average attendance rates pre and post MDM is slightly higher for males than for females. Not immediately clear why that may be the case. Requires further research

Gap in attendance data between survey and school register: As mentioned earlier, the headcount data has been compared with the school register data in order to check for discrepancies in reporting student attendance by teachers, who often face pressure from parents to ensure that their child's name is not cut off from the register as well as pressure from the administration to ensure low rates of dropouts. In order to ensure comparability, the Headcount + Register data was created, which consists of survey data for the days of survey and

Figure 29 : Average student attendance rate according to headcount



school register data for the rest of school days. The assumption was that the survey data is representative of actual attendance patterns and must therefore follow closely with the school register data if the school register data is in fact accurate. The hypothesis was that in the event that attendance patterns are different in the HC+R data, there may be two possibilities. One, if the attendance is higher in HC+R data, there might be plausibility of misrepresentation of attendance by teachers. Second, if the attendance is higher in the Headcount data, this would have to be due to coincidental factors such as the child happening to be in school on the days when the survey was taken, but remaining absent for the rest of the days. Further, since the number of data points are much fewer in the Headcount data compared with the HC+R data, it is plausible that there is some overestimation in the former when extrapolating to all school days. Figure 31 shows that except for October and November, average

Figure 30a: Average student attendance rate by caste (September- April, Headcount)

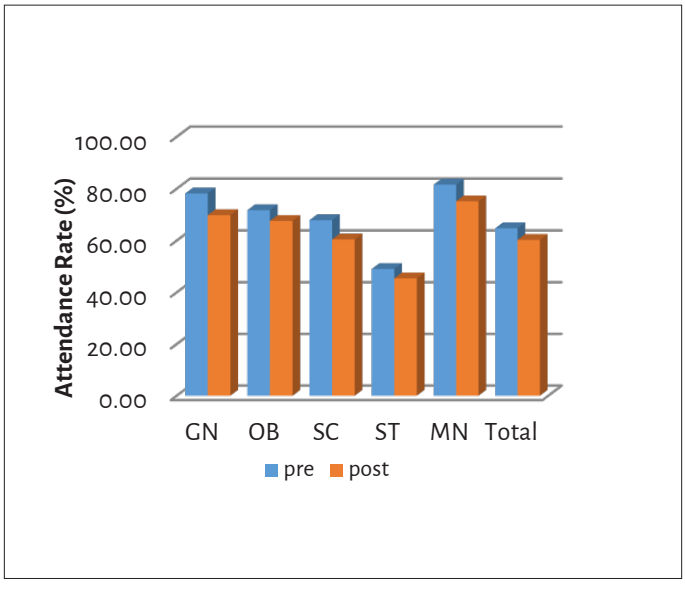
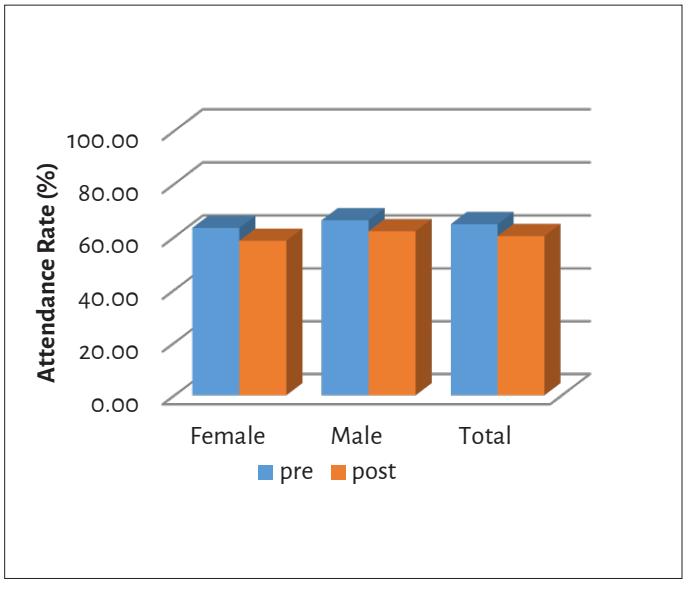


Figure 30b: Average student attendance rate by gender (September- April, Headcount)



attendance rates in the HC+R data are consistently higher than those in the Headcount data. This indicates that there is misrepresentation, particularly through exaggerated attendance of students, by teachers, who probably give in to pressure by parents and administration. Moreover, since October happens to be the month with the lowest attendance rates, and there are very few working school days in November due to local holidays, it is plausible that there is over-representation of attendance in the Headcount data, particularly if it was a coincidence that a child happened to be present on the day of the survey.

Further, Figures 32a and 32b below show that first, a higher percentage of students have an average attendance rate of 75-100% in the HC+R data compared with the Headcount data, which once more confirms the above hypothesis of misrepresentation by teachers; second, a much smaller percentage of students have an average attendance rate of 0-25% in the Headcount + Register data compared with the Headcount data, which is also in line with the hypothesis that teachers attempt to hide low attendance rates; third, in both data sets, the percent of students who attend school regularly improve from September until November, with a drop in December that continues at a staggering pace until February until it begins to marginally improve in March and April.

Figure 31 : Average student attendance rate(Total, Pre MDM)

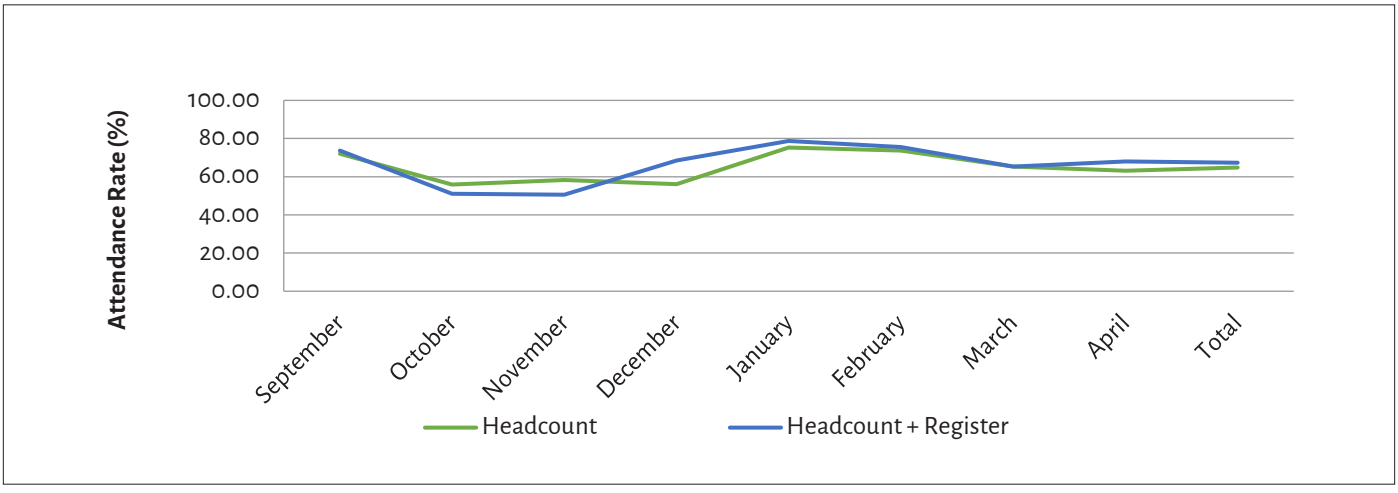


Figure 32a: Percentage of students present by attendance category (Total, Headcount, pre MDM)

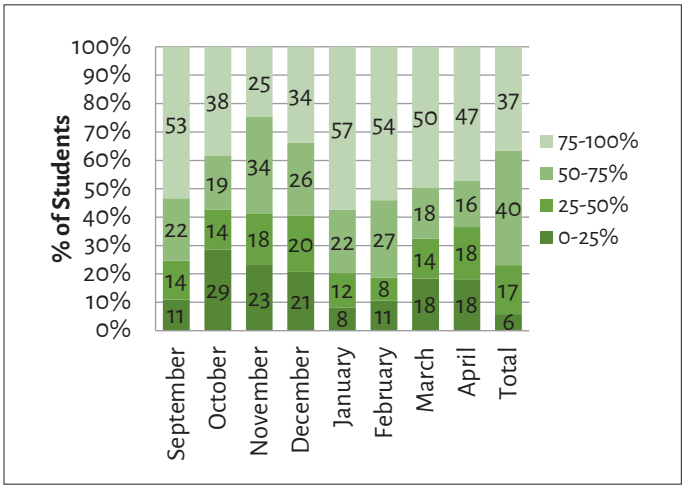
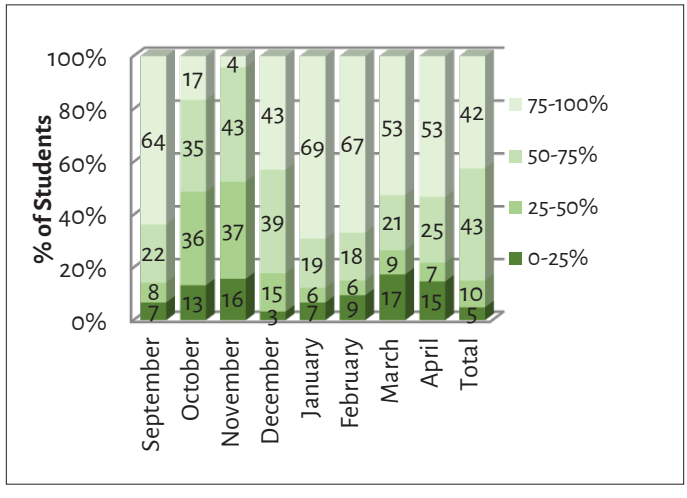


Figure 32b: Percentage of students present by attendance category (Total, Headcount+ Register, pre MDM)



By social category: As Figure 33a and 33b show, caste appears to have a significant impact on attendance. First, not only are the average attendance rates of STs the lowest, they are also the most variant over the period in both data sets; second, the attendance rates of SC students are second from the bottom, followed by OBC students in both data sets; third, Minority students have the highest average attendance rates in both data sets; fourth, General students have high but variant attendance rates in both data sets. It must be noted here, that there is only one child in the General category, which may account for the high attendance rates and may not be accurately representative of the caste category. Although this is a limitation of the study, it has been included since the sample is not a selected sample but includes all children in the GP; fifth, attendance rates as measured through Headcount data drop in October and in December for more or less all categories of children, but the drop is more severe in the case of SC students and ST students. This is because October is harvesting season and December is sowing season for custard apple – the main fruit crop grown in Kumbhalgarh. While all children are expected to help, SC and ST students are being the poorest and are probably needed by their families, not only on the fields but also in going to the market and selling the fruits, resulting in a dramatic drop in attendance. Thus, the particularities of the local context affect attendance patterns of children. In the HC+R data as well October shows the lowest attendance rates.

Figure 33a: Average student attendance rates by caste (Headcount, pre MDM)

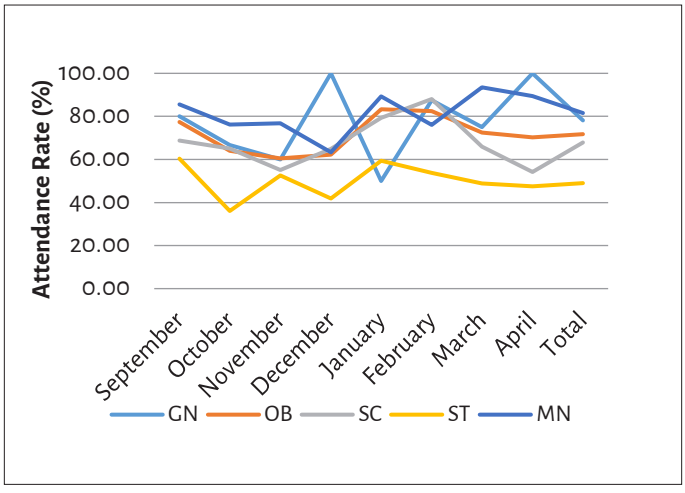
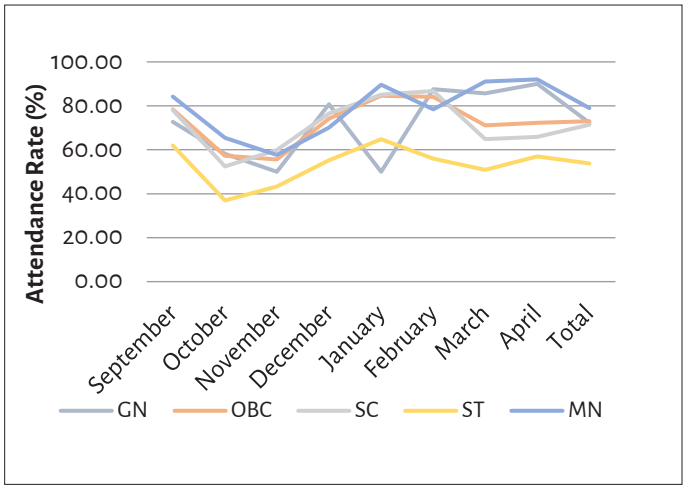


Figure 33b: Average student attendance rates by caste (Headcount+ Register, pre MDM)



Figures 34a -c show that first, there are differences in attendance rates between Headcount data and HC+R data for all caste categories; second, attendance rates in HC+R data is usually higher than in Headcount data for all caste categories. The reverse is true for October and November months. Perhaps since attendance rates are very low in these months, it could be a coincidence that the sporadic attendance of a child happened to be on survey days rather than days that the survey was not taken. For example, see Figure 34c; third, the gap between the attendance rates in the two data sets tends to close after January, although there is a slight widening again in April. See Figure 34d, for instance

Figure 34a: Average student attendance rates (General, pre MDM)

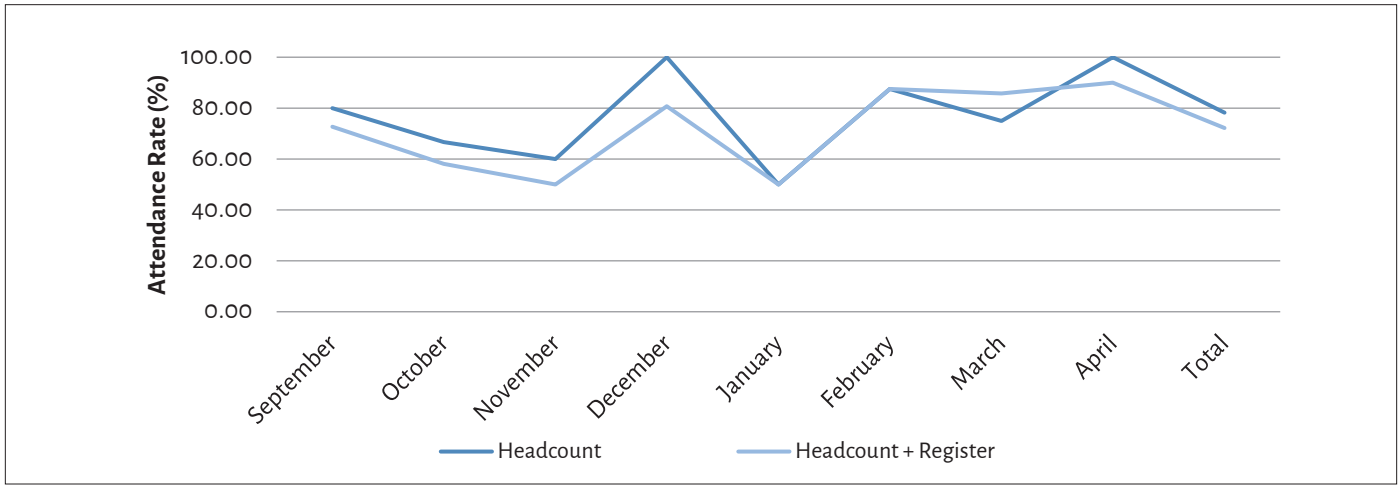


Figure 34b: Average student attendance rates (OBC, pre MDM)

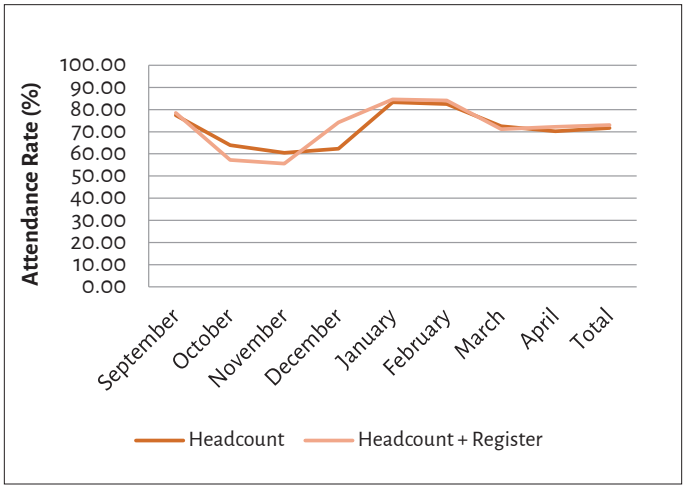


Figure 34c: Average student attendance rates (SC, pre MDM)

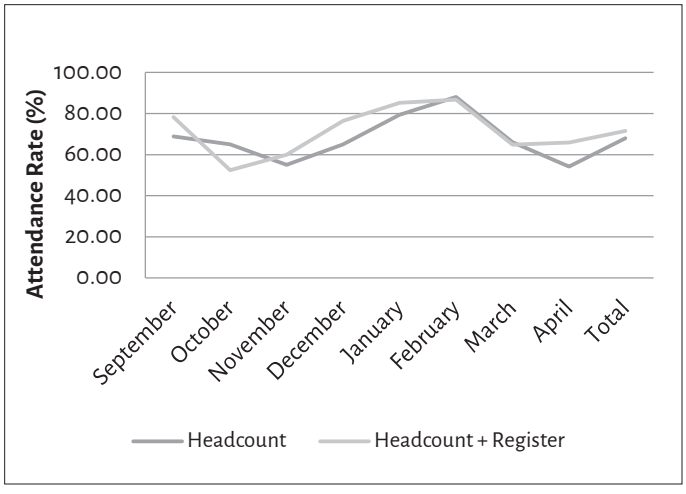


Figure 34d: Average student attendance rates (ST, pre MDM)

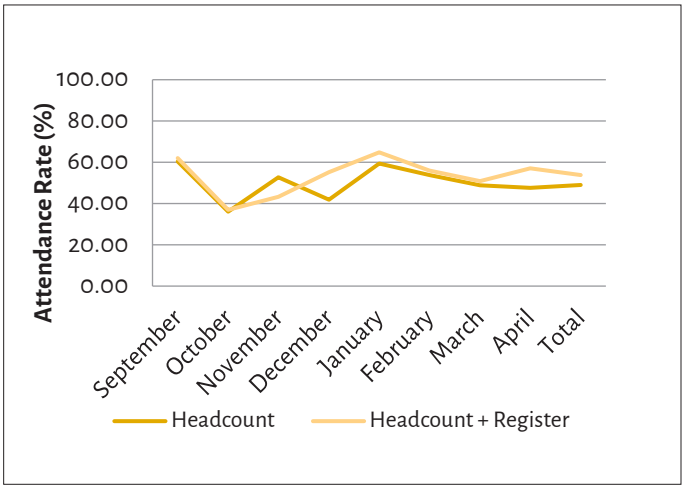
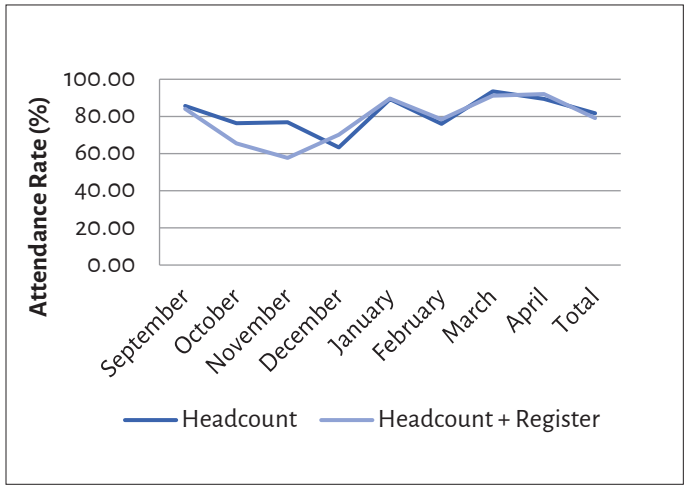


Figure 34e: Average student attendance rates (MN, pre MDM)



Figures 35a-j show that first, the HC+R data has more students with average attendance rates between 75 and 100 percent than the Headcount data. For example, Figures 35c and 35d show that the percent of students with attendance rates between 75-100 percent is consistently higher in the HC+R data than in the Headcount data for all months from December onwards; second, the HC+R data has fewer students with average attendance rates between 0 and 25 percent than the Headcount data. For example, Figures 35g and h show that the percent of ST students with attendance rates between 0-25 percent is consistently lower in the HC+R data than in the Headcount data for every single month; third, ST students are less likely to have high attendance rates compared to any other social category

Figure 35a: Percentage of students present by attendance category (General, Headcount, Pre MDM)

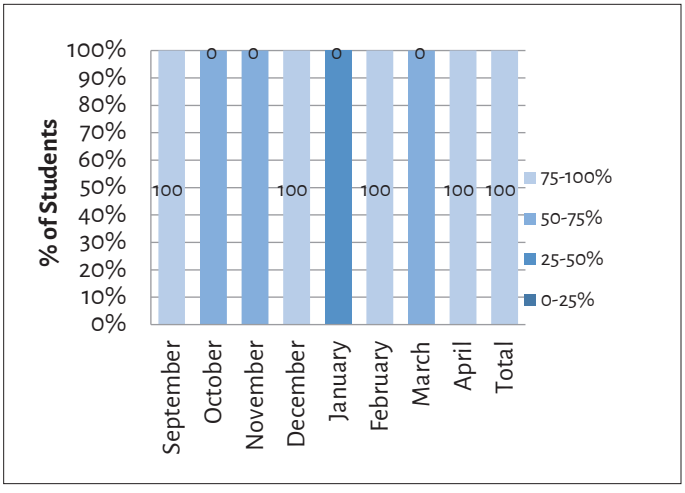


Figure 35b: Percentage of students present by attendance category (General, Headcount+ Register, Pre MDM)

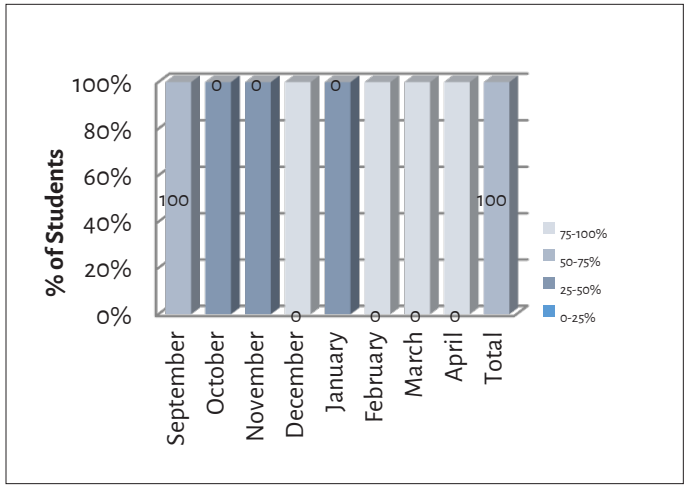


Figure 35c: Percentage of students present by attendance category (OBC, Headcount, Pre MDM)

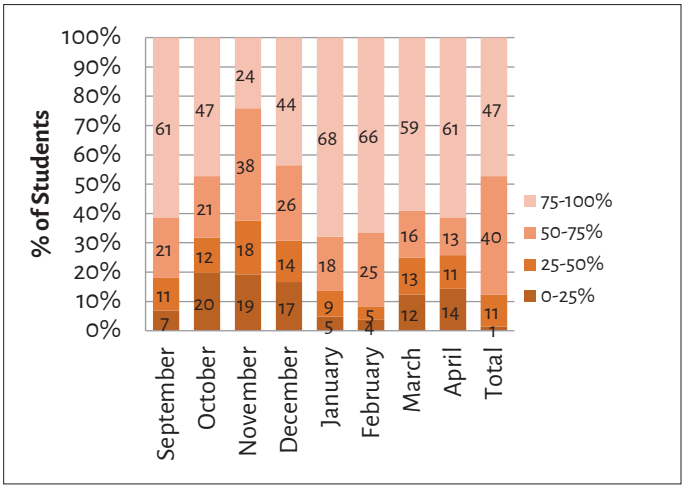


Figure 35d: Percentage of students present by attendance category (OBC, Headcount+ Register, Pre MDM)

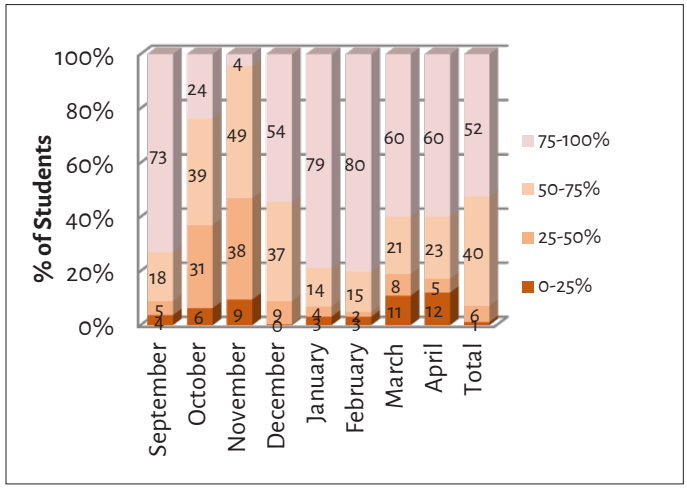


Figure 35e: Percentage of students present by attendance category (SC, Headcount, Pre MDM)

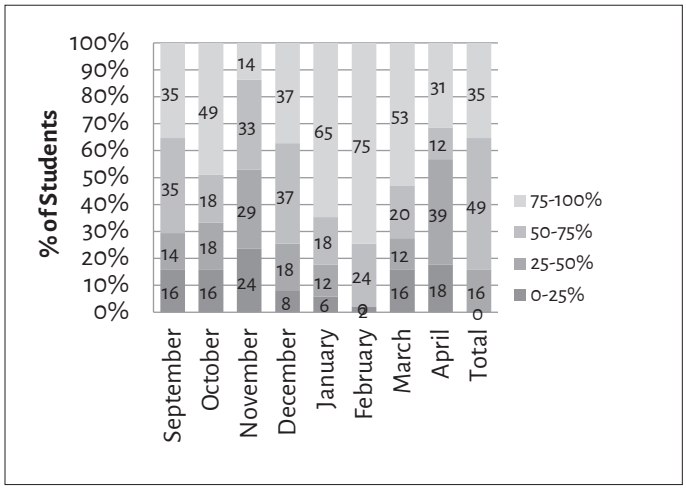


Figure 35f: Percentage of students present by attendance category (SC, Headcount+ Register, Pre MDM)

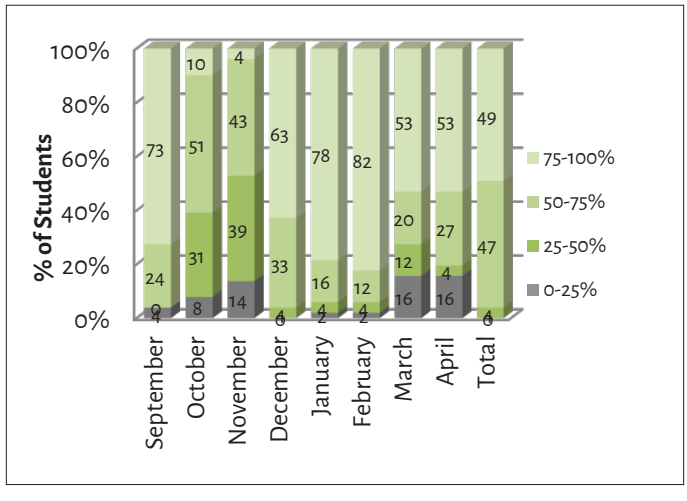


Figure 35g: Percentage of students present by attendance category (ST, Headcount, Pre MDM)

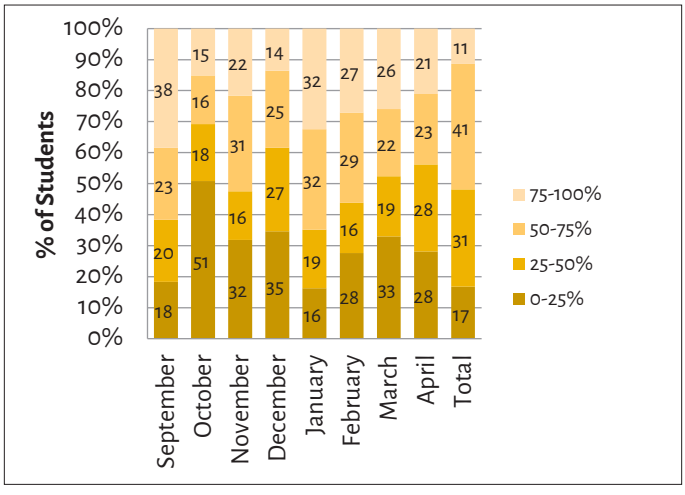


Figure 35h: Percentage of students present by attendance category (ST, Headcount+ Register, Pre MDM)

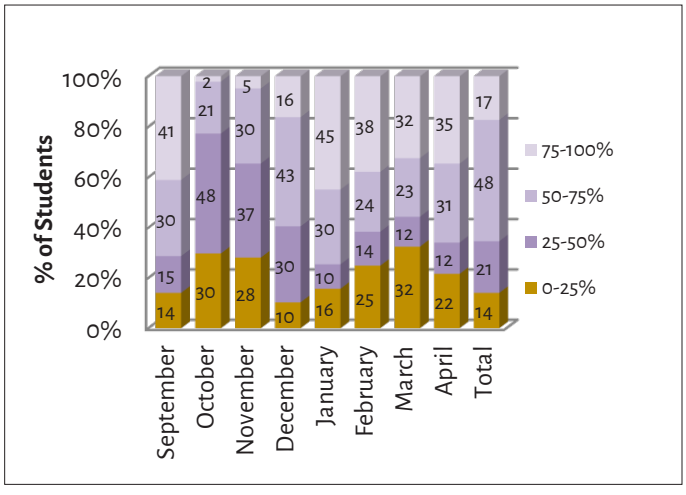


Figure 35i: Percentage of students present by attendance category (Minority, Headcount, Pre MDM)

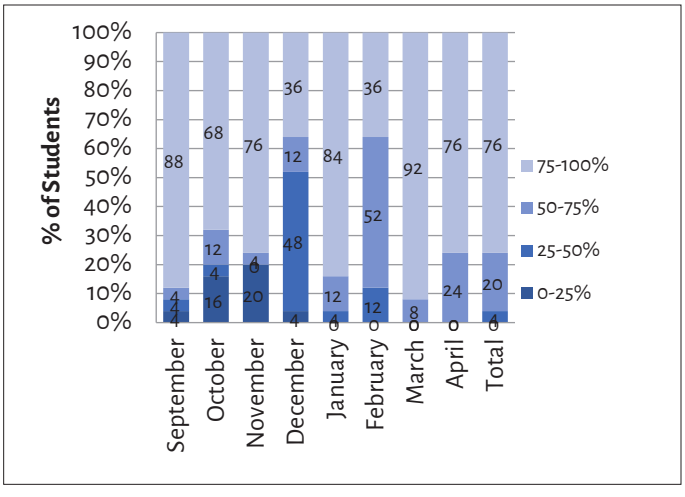
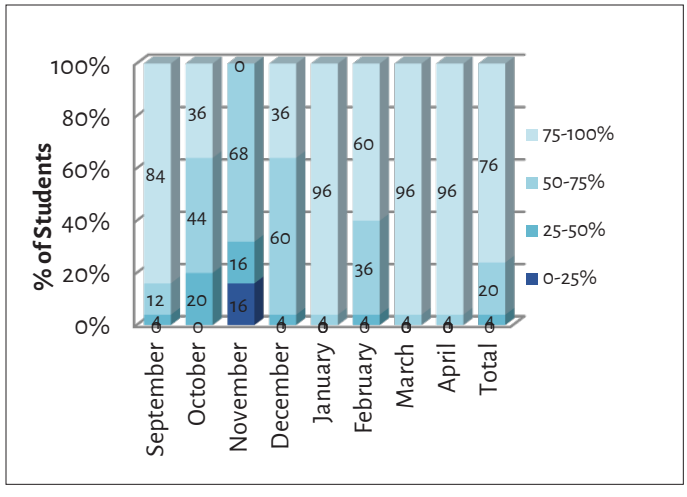


Figure 35j: Percentage of students present by attendance category (Minority, Headcount+ Register, Pre MDM)



Figures 36a to 38b show that first, ST students are less likely than any other caste category to be present in school, at every level of attendance. This is true for both data sets, as is evident from Figures 36a and 36b; second, roughly half of ST students attend less than 50 percent of the time, compared with less than 20 percent of students in other caste categories; third, OBC and Minority students are more likely to attend school at least 90 percent of all school days, as is evident from Figure 37a; fourth, the likelihood of students attending school increases from January onwards, as is evident from Figures 38a and 38b

Figure 36a: Percentage of students present by caste (Sept-Apr, Headcount, Pre MDM)

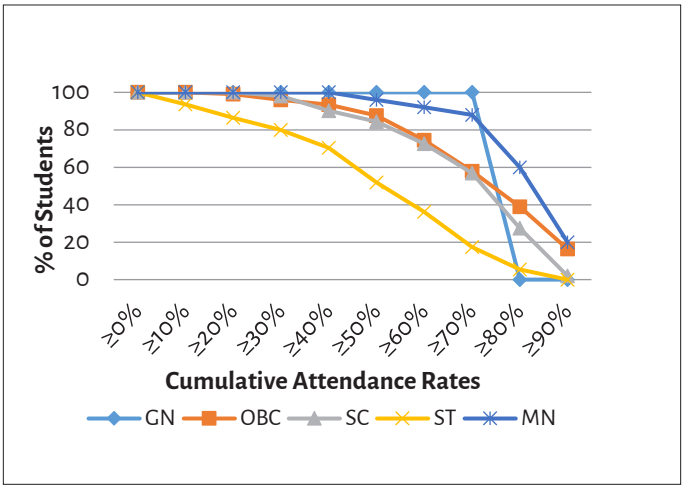


Figure 36b: Percentage of students present by caste (Sept-Apr, Headcount+ Register, Pre MDM)

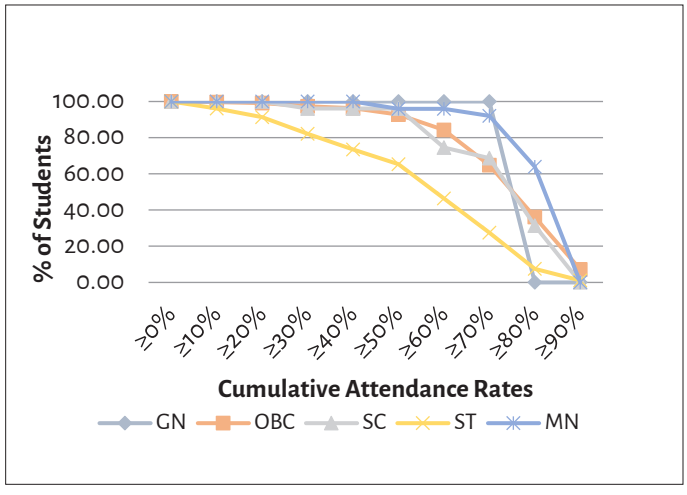


Figure 37a: Percentage of students present 90% of all school days by caste (Sept-Apr, Headcount, Pre MDM)

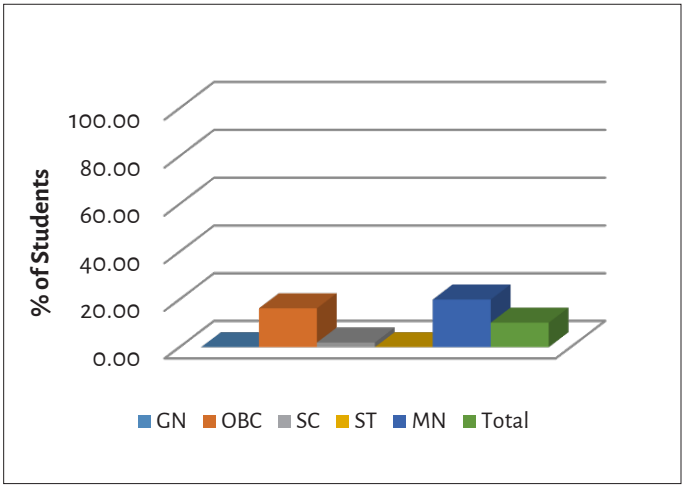


Figure 37b: Percentage of students present 90% of all school days by caste (Sept-Apr, Headcount+ Register, Pre MDM)

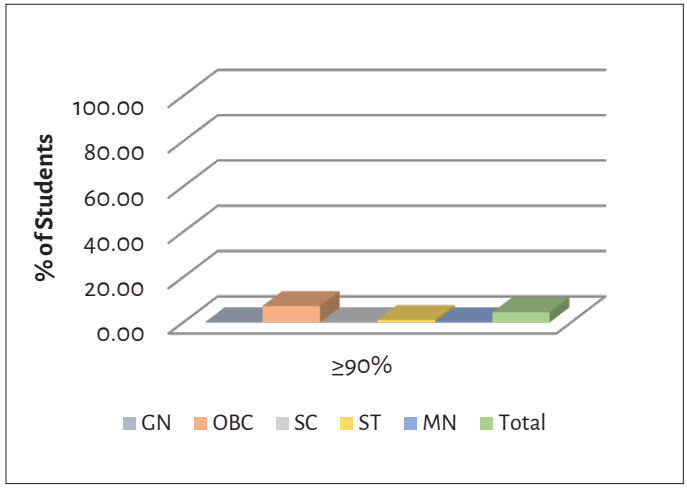


Figure 38a: Percentage of students present 90% of all school days by caste (Headcount, Pre MDM)

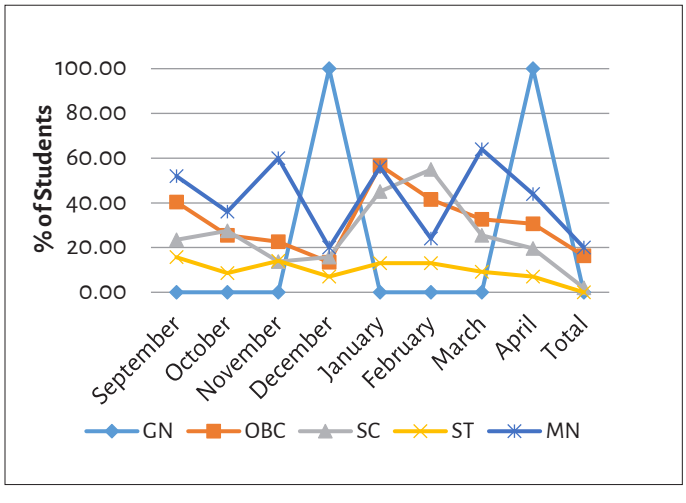
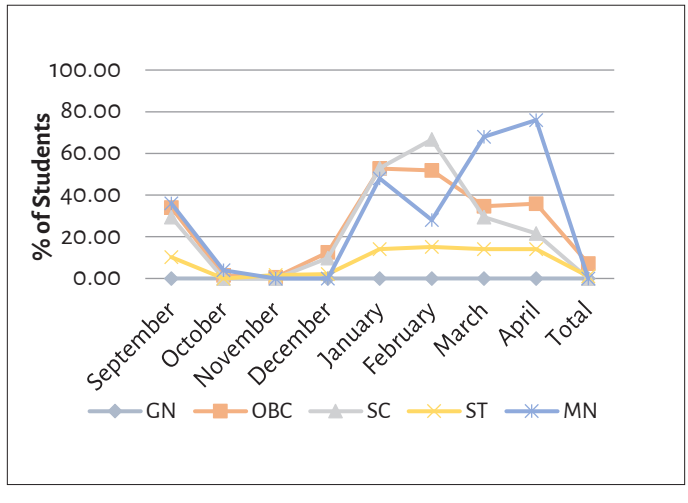


Figure 38b: Percentage of students present 90% of all school days by caste (Headcount+ Register, Pre MDM)



By gender: Education of girls has traditionally not been a priority especially in rural areas and the costs involved have served to act as a further barrier to their education. In addition, the engagement of girls in various household chores such as taking care of sibling has also prevented their regular attendance in school. As found in a study demonstrating schooling in rural India,[21] girls are less likely to complete formal schooling as compared to their male counterparts. The rationale cited by the study is the perception that girls are unlikely to be earning income for their parental families and hence expenditure on girl education is not regarded as economically wise. It is even considered a "waste".

However as the data increasingly shows, this trend has been changing and motivation levels for girls education have been steadily climbing up. First, attendance Rates of Males and Females are more or less the same, although males are consistently but marginally more likely to attend school more often than females; second, the gap in attendance rates between Headcount and HC+R data is minimal for both males and females, except for the period from October to December; third, the gap in attendance rates between the two data sets is higher for females than for males, suggesting higher pressure on teachers to overestimate female students' attendance. (Figures 39a, 39b, 39c and 39d).

Figure 39a: Average student attendance rates by gender (Headcount, pre MDM)

Figure 39b: Average student attendance rates by gender (Headcount+ Register, pre MDM)

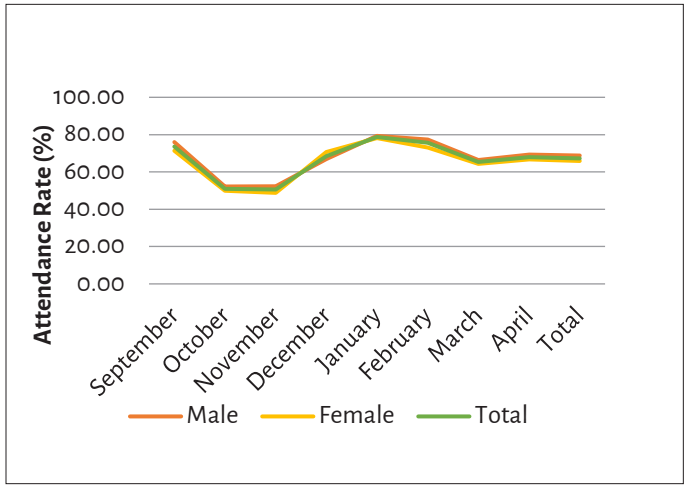


Figure 39c: Average student attendance rates (Male. pre MDM)

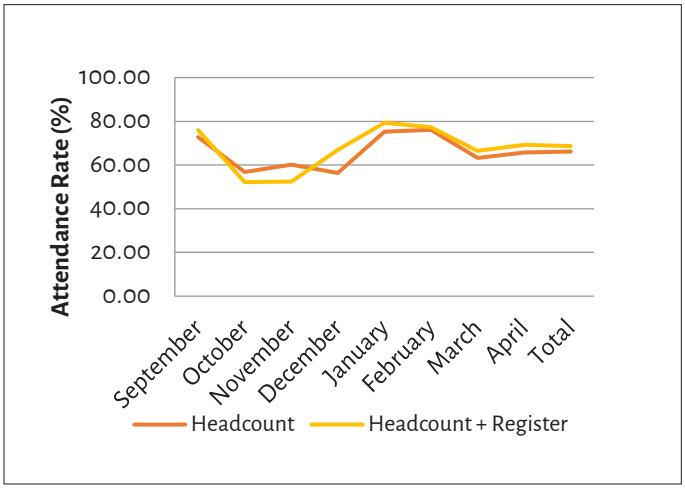


Figure 39d: Average student attendance rates (Female. pre MDM)

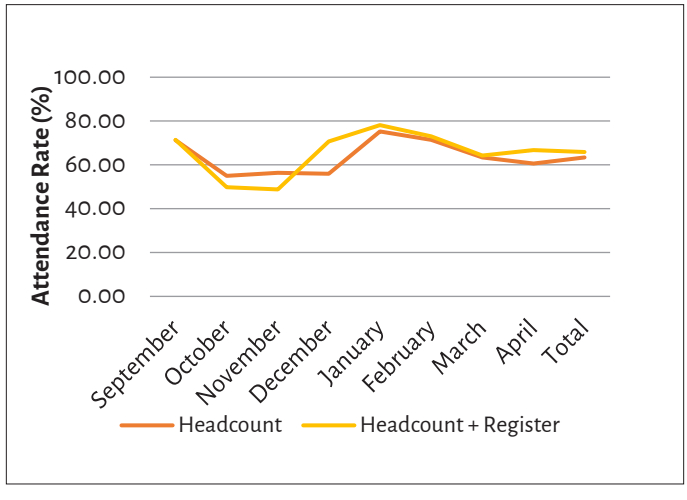


Figure 40a: Percentage of students present by attendance category (Male, Headcount, pre MDM)

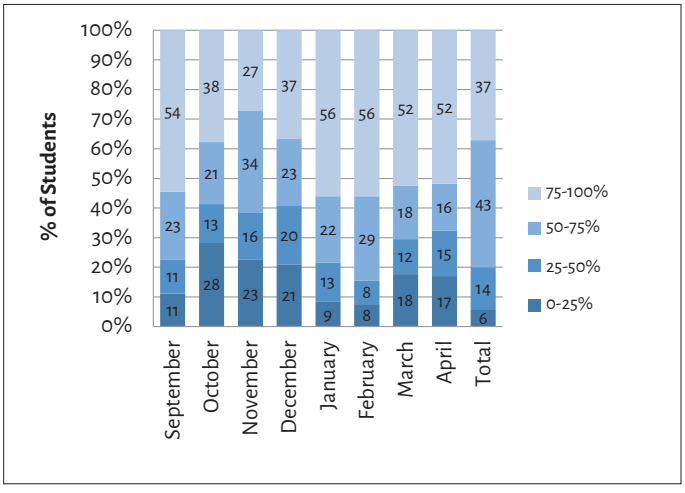


Figure 40b: Percentage of students present by attendance category (Male, Headcount+ Register, pre MDM)

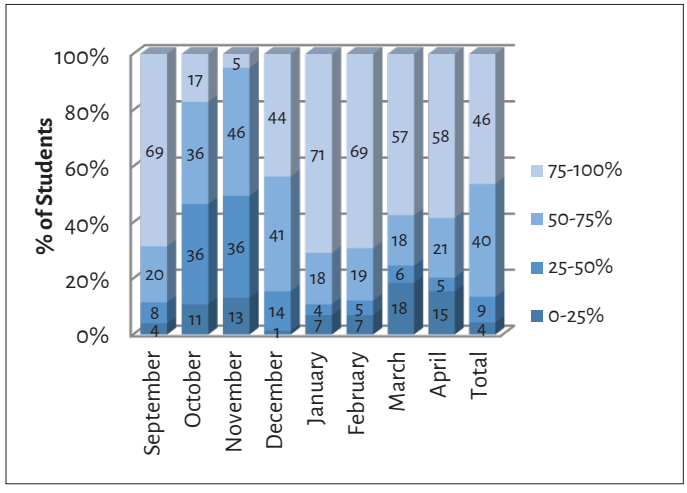


Figure 40c: Percentage of students present by attendance category (Female, Headcount, pre MDM)

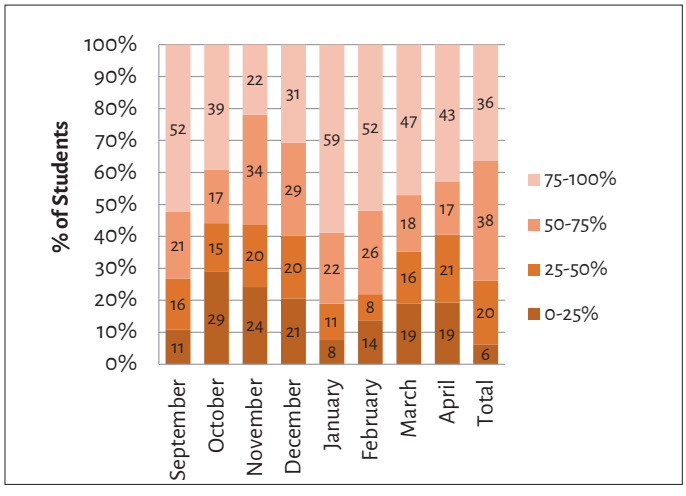


Figure 40d: Percentage of students present by attendance category (Male, Headcount+ Register, pre MDM)

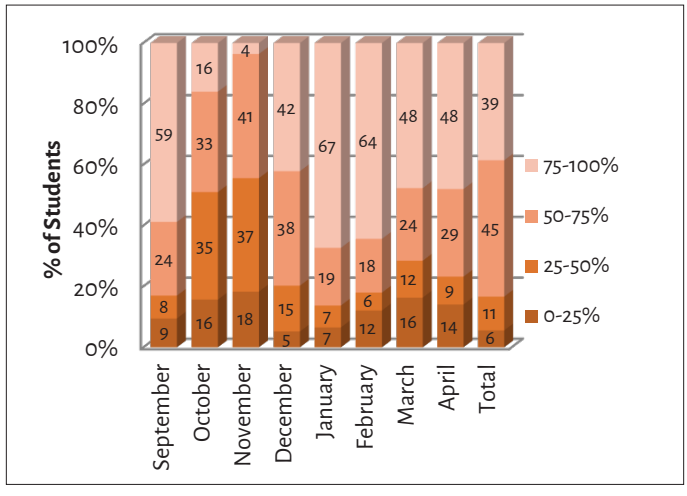


Figure 41a: Percentage of students present by gender (Sept-Apr, Headcount, pre MDM)

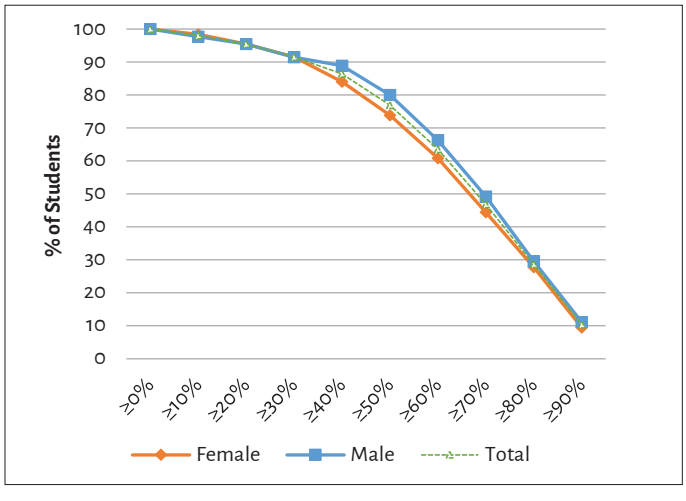
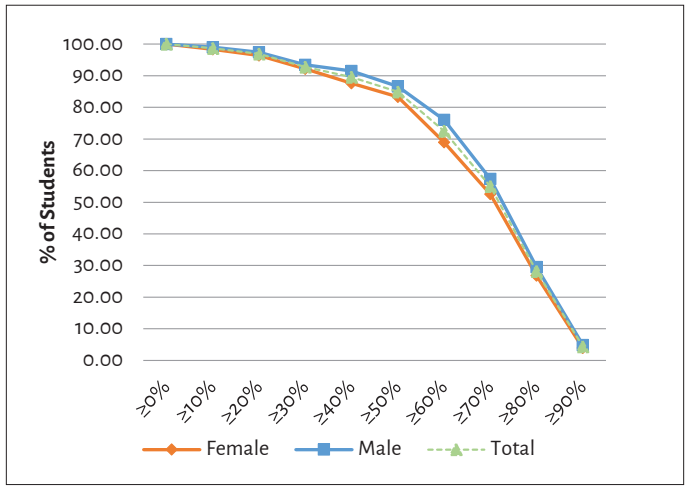


Figure 41b: Percentage of students present by gender (Sept-Apr, Headcount+ Register, pre MDM)



Analysis of attendance rates across gender (Figures 40a-d) show that first, the percentage of students attending school between 75 to 100 percent of the time, is higher in HC+R data compared with Headcount data, for both males and females, suggesting misrepresentation in an inflated fashion of attendance by teachers; second, the percentage of students attending school between 0 to 25 percent of the time, is lower in HC+R data compared with Headcount data, for both males and females, suggesting under-representation of low attendance by teachers; third, males are more likely than females to have high attendance rate. This is consistent with the finding above, which shows that the gap in attendance between Headcount and HC+R is greater for females and hence the pressure to misrepresent the attendance for female students is also greater.

However, as seen in Figures 41a and 41b, females are less likely to attend school than males, at every level of attendance. Females are also less likely than males to have high attendance rates, as shown in Figures 42a and 42b.

However the likelihood of having high attendance rates increases from January onwards for both boys and girls. But, there is a significant difference between Headcount data and HC+R data in October and November, perhaps due to the coincidental factors explained earlier.

Figure 42a: Percentage of students present at least 90% of all school days by gender (Sept-Apr, Headcount, pre MDM)

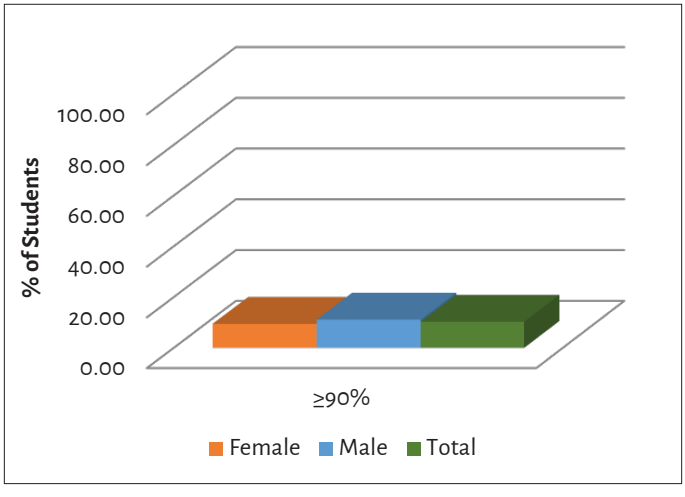


Figure 42b: Percentage of students present at least 90% of all school days by gender (Sept-Apr, Headcount+ Register, pre MDM)

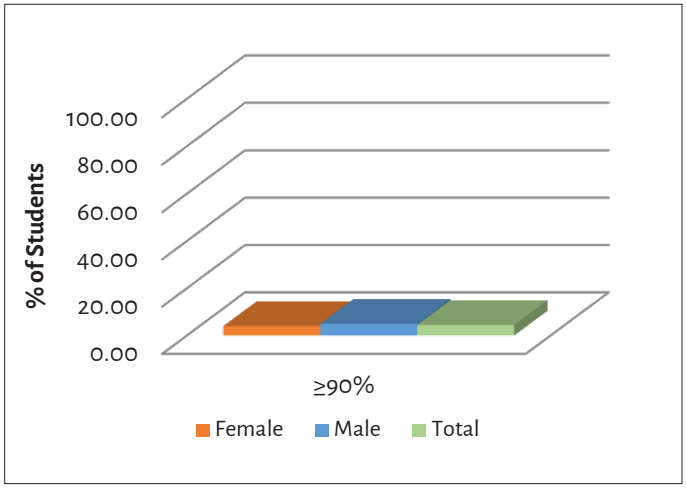


Figure 43a: Percentage of students present at least 90% of all school days by gender (Headcount, pre MDM)

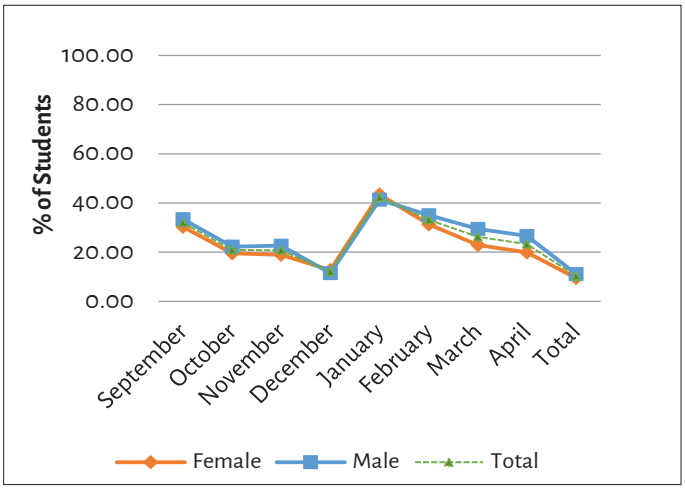
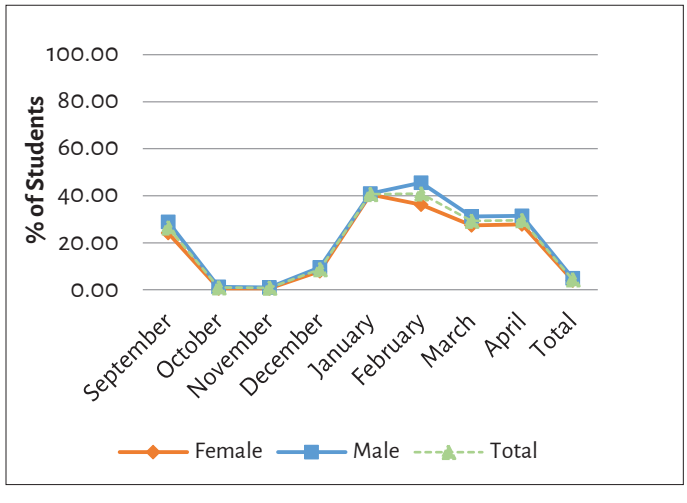


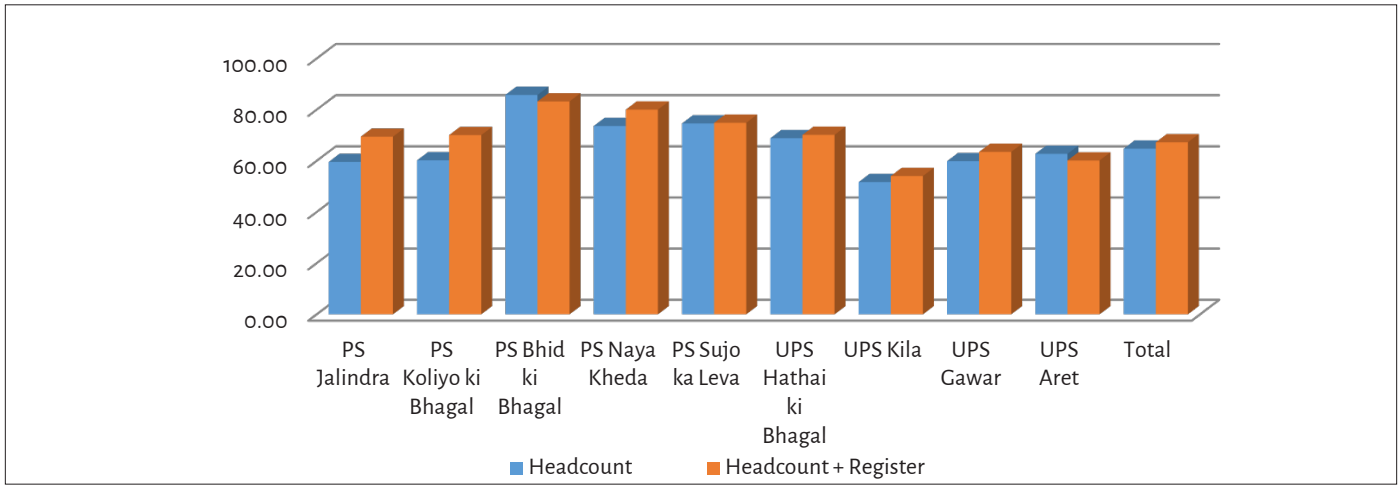
Figure 43b: Percentage of students present at least 90% of all school days by gender (Headcount+ Register, pre MDM)



By school: There is evidence in the literature that corporal punishment, often bordering on abuse is a trigger for student dropouts. According to a study on reasons behind dropout[22] based in Kolkata, out of 105 dropouts being interviewed, 21% of students dropped out of school due to poor school environment. Of these, around 50% gave corporal punishment as the reason for dropping out. The National Commission for Protection of Child Rights [NCPCR] has also reported corporal punishment as a major factor in determining children's dis-affection with schools leading to their dropping out. This element exacerbates the poor learning environment that exists in the public school system and often serves to provide the last nail in their decision to exit schools. Poor quality of teaching and failing in the school examinations is another cause of student dropout. According to the study cited above, 16.2% of students dropped out of school of due to poor quality of teaching-learning processes. Out of these, 47% of children dropped out because they could not pass the school examination.

In this pilot study, twelve out of the 24 children who have been absent for 45 days or more continuously, have dropped out because of school related issues such as the school being very far away from the home, corporal punishment, discrimination and because the child "does not like going to school". The last reason subsumes issues of violence in school as well as poor performance leading to a deep sense of inadequacy and frustration. While this represents only approximately 2 percent of the sample, there are 302 more children who have been absent for 45 days or more over the entire academic year and are considered as dropouts by this study. Given that 50 percent of the children who have been absent for 45 days continuously have done so due to factors related to school functioning, it is plausible that for the students who were sporadically absent too similar issues might apply. There could also be other factors which could only be known after interviews.

Figure 44 : Average student attendance rates by school (Sept-Apr, Headcount, pre MDM)



Attendance by level of schooling – Primary and Upper Primary

Figure 44 shows that attendance rates tend to be higher in primary schools than in upper primary schools and in HC + R data than in Headcount data

Figures 45a and 45b below show that first, STs attend school the least regularly in all schools in both sets of data; second, average attendance rates in schools with heterogeneous populations i.e. students belonging to different caste categories tend to be lower than schools with homogeneous populations. PS Bhid ki Bhagal is an exception; third, STs in schools with heterogeneous populations tend to have lower attendance rates than STs in schools with homogeneous populations. This may be due to increased probabilities of discrimination .

Figures 46a and 46b show that first, females attend schools less regularly than males in all schools in both sets of data. UPS Kila is an exception; second, upper primary schools have a larger gender differential in attendance rates than primary schools .

By grade: The results for non-attendance and hence drop-out found in the study are in line with the education literature which has shown that attendance, tends to reduce at the upper primary levels. Accordingly, Figure 47 shows that first, the likelihood of attending school decreases with the increase in grade; second, attendance rates in HC+R data are higher than Headcount data, particularly until Grade V. This may be due to pressures to ensure children are in school until at least primary level; third, there is a sharp drop in attendance rates in Grade VIII. This is probably because children are more likely to be needed for work as they grow older.

Figures 48a and 48b show that first, STs are the least regular in any grade; second, attendance rates of STs and SCs are higher in HC+R data than Headcount data, particularly up to Grade V; third, attendance rates of Minority students are higher in Headcount data than in HC+R data for most grades

Figures 49a and 49b show that first, females attend school less regularly than males. The opposite is true for Grades VII and VIII; second, the gender gap begins to close after the primary level; third, HC+R data records higher attendance rates than Headcount data for both males and females.

Risk of Dropping out:

1. Early Warning System: As explained earlier, the early warning system was created to flag children at the risk of dropping out, signaled every quarter, i.e, every three months. It is a method to

Figure 45a: Average student attendance rates by caste and school (Sept-Apr, Headcount, pre MDM)

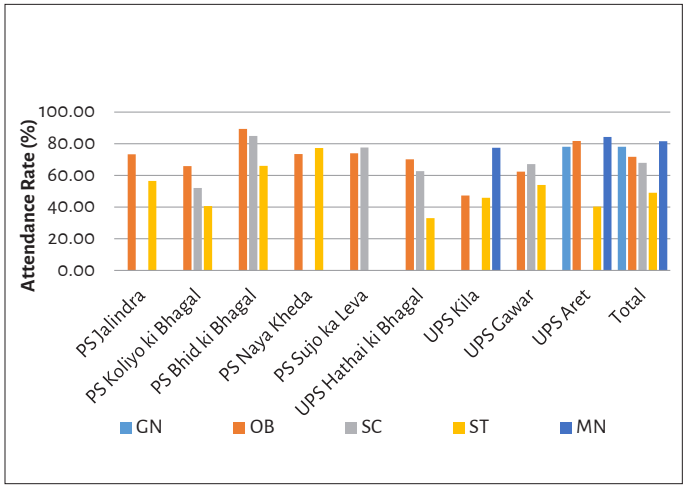


Figure 45b: Average student attendance rates by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

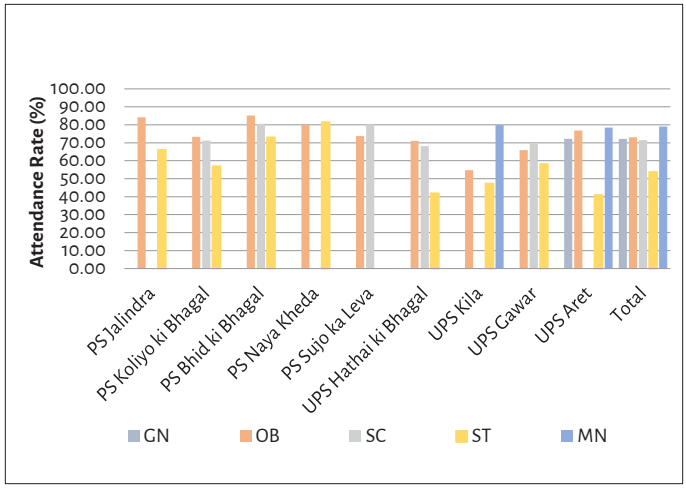


Figure 46a: Average student attendance rates by gender and school (Sept-Apr, Headcount, pre MDM)

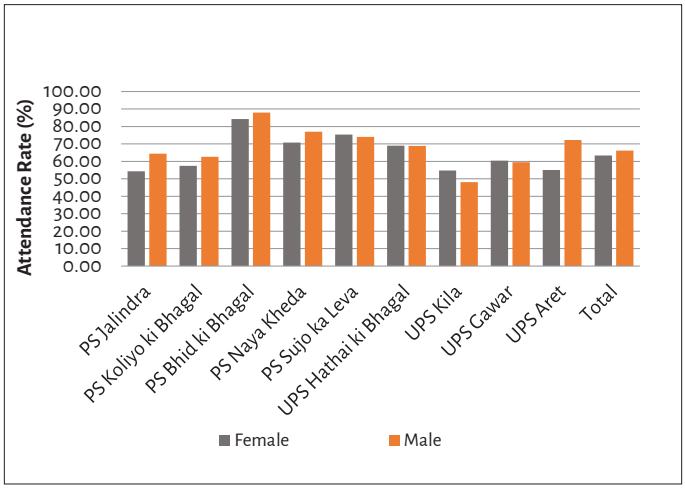


Figure 46b: Average student attendance rates by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

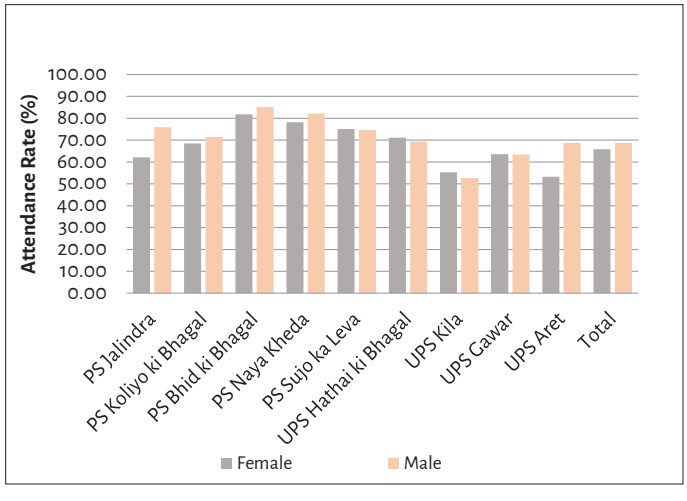


Figure 47 : Average student attendance rates by grade (Sept-Apr, pre MDM)

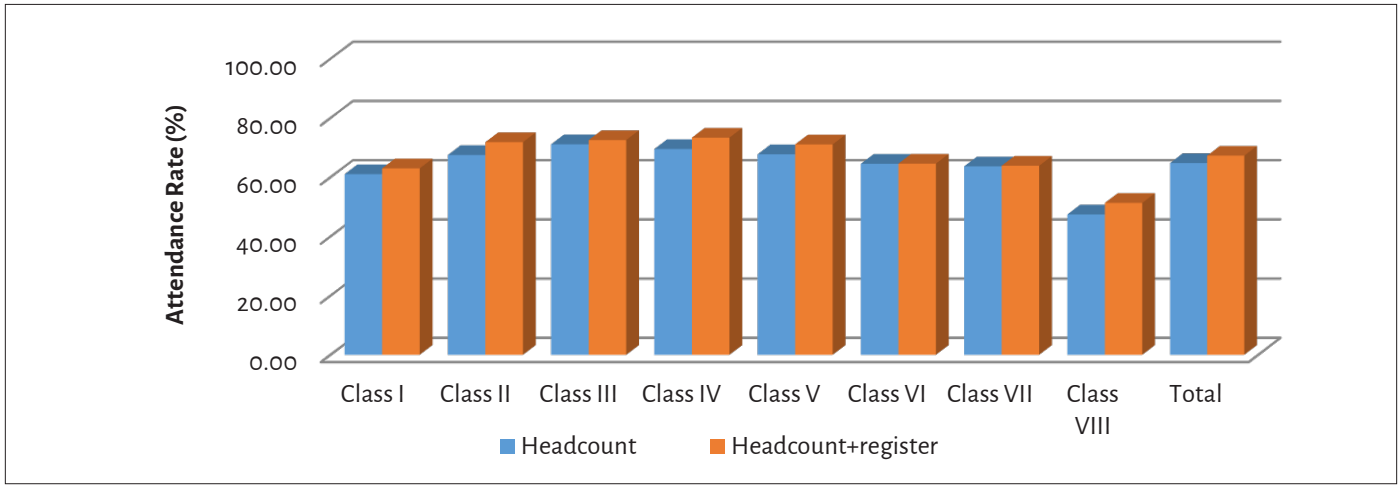


Figure 48a: Average student attendance rates by caste and grade (Sept-Apr, Headcount, pre MDM)

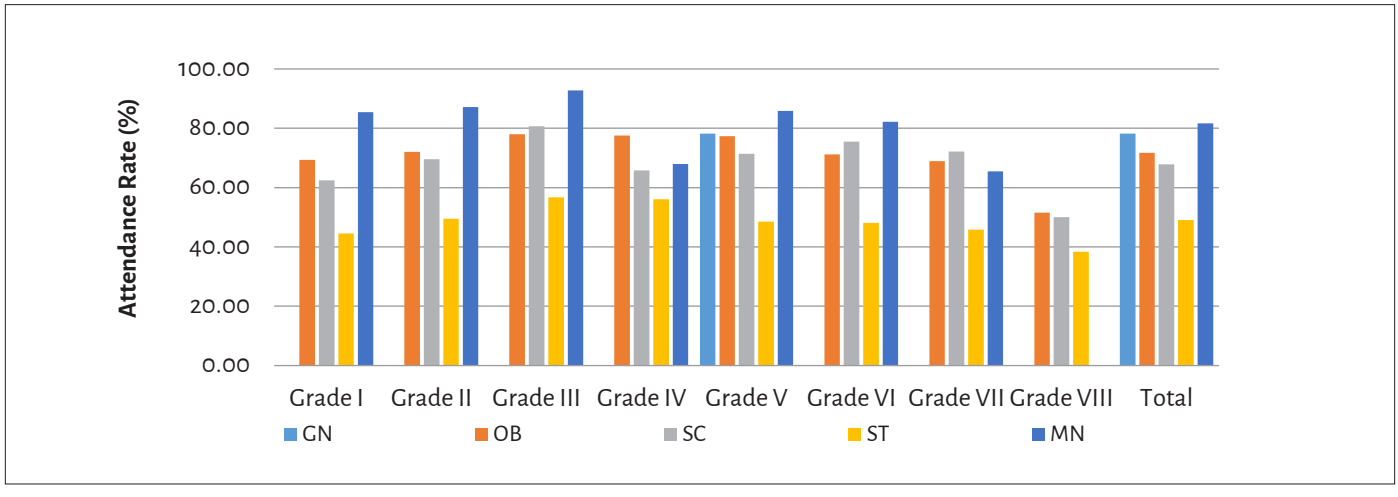
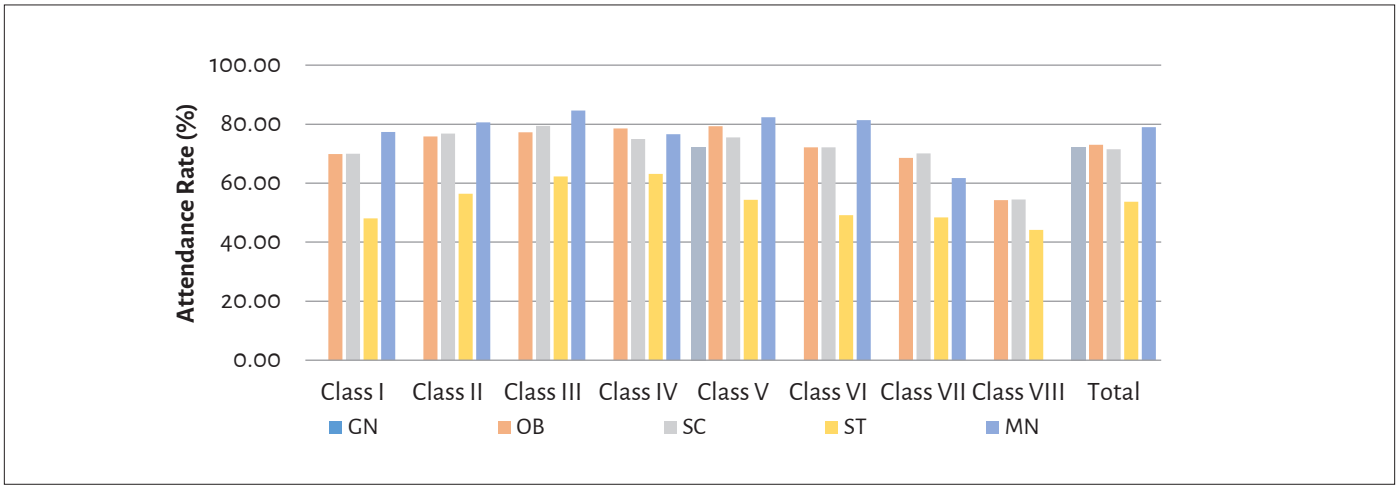


Figure 48b: Average student attendance rates by caste and grade (Sept-Apr, Headcount+ Register, pre MDM)



bring to notice those children who are absent for 20 or more days over a period of 72 school days, as discussed above.

In order to red flag non-attendance for 20 days over a 3-month period, once the actual survey began, it was found that in fact there were less than 24 school days in a month due to holidays and that using the 20 days of absence would exclude a lot of children from being potential dropouts. Thus, the number of days that the schools were actually open was used to determine the cut off days for being categorized as a potential dropout. Therefore, a weight of 1/3, which is what 8 out of 24 days represents was applied to the number of days of headcount data for each child for each period. An average was then calculated, which represents the minimum number of days of headcount data that a child must be absent to be categorized as a potential dropout. This process was repeated for each period. However, in the third period, i.e. March-April, since the data is for 2 months only,a weight of 2/3 was applied to the above calculated average. This number was then used as the cut off.

Using school register data, the original cut off is 12 out of 48 days. This represents a weight of ¼, which was applied to the number of days of school register data for each child for each period. A similar process was then adopted, as with the headcount data. Like in the headcount data, in the third period, i.e. March-April, since the data is for 2 months only, an additional step was added, wherein a weight of 2/3 was applied to the above calculated average. This number was then used as the cut off. The cut off days for each period, using the different data sources are summarized in Table 5:

For each child and each period, the above cut off days were applied to the days of absence in order to estimate the potential dropouts for each period are summarized in Table 6.

(For example, in Sep-Nov, all children absent for 5 or more days in the Headcount data and 10 or more days in the school register data were considered to be at the risk of dropping out)

Figure 49a: Average student attendance rates by gender and grade (Sept-Apr, Headcount, pre MDM)

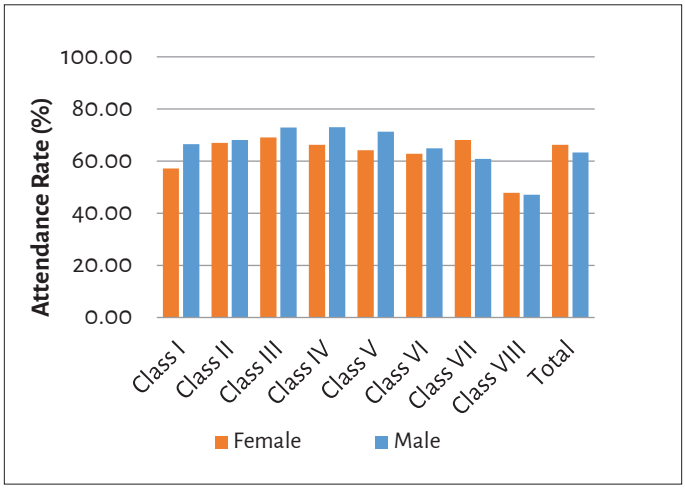


Figure 49b: Average student attendance rates by gender and grade (Sept-Apr, Headcount+ Register, pre MDM)

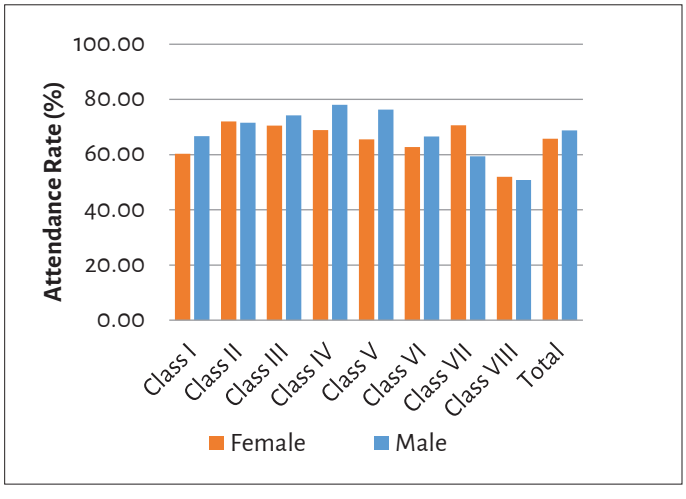


Table 5:

	Headcount	School Register	Number of Days of Absence considered for drop-out
Sep-Nov	5	10	15
Dec-Feb	6	12	18
Mar-Apr	5	7	12

Table 6: (% in parenthesis)

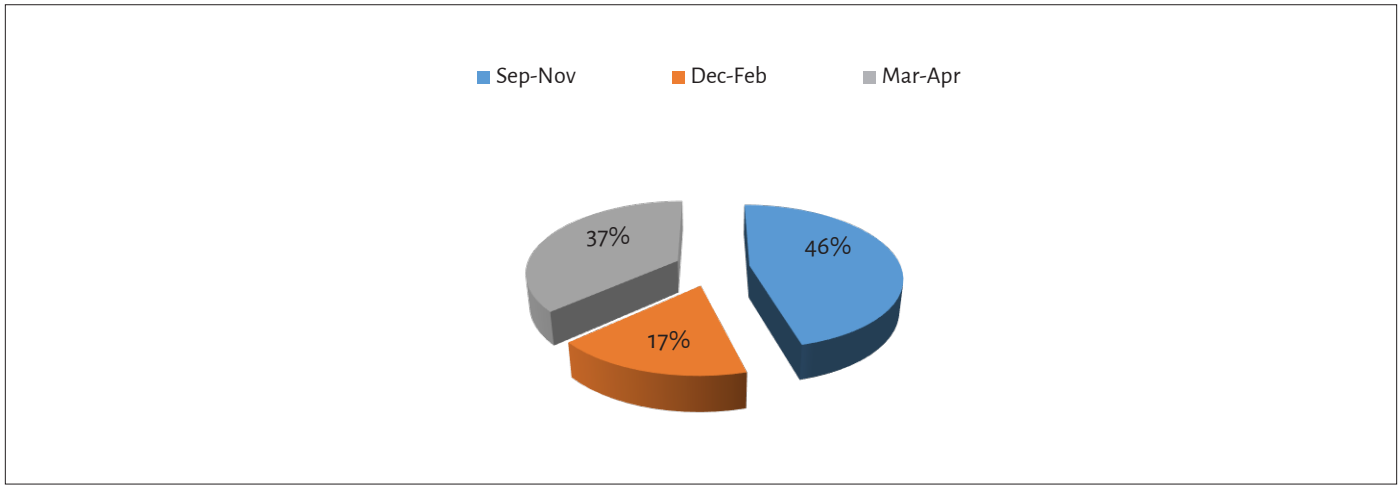
Sep-Nov	Dec-Feb	Mar-Apr
280 (45.83)	107 (17.51)	224 (36.66)

Figures 50 to 51f show that first, the percentage of potential dropouts in the sample is least in the second quarter and most in the first; second, while potential dropouts constitute both STs and OBCs in equal measure in the first period, a higher proportion of STs are likely to dropout in the second period compared with OBCs. The reverse is true for the third period; third, females constitute a marginally higher percentage of potential dropouts in all three periods.

The potential dropouts by caste and gender for each period are shown in the graphs below:

2. Absence of 25% or more: Using HC+R data, Figures 52a and 52b show that first, STs are most likely to be absent more than 25 percent of all school days, followed by SCs and OBCs; second, Minority students are least likely to be absent more than 25 percent of school days. However, this varies greatly from month to month; third, females are more likely than males to be absent more than 25 percent of all school days. However, this is only marginally so

Figure 50 : Potential dropouts as percentage of sample student population (Total, pre MDM)



Sep-Nov

Figure 51b: Potential dropouts by gender (Sept-Nov, pre MDM)

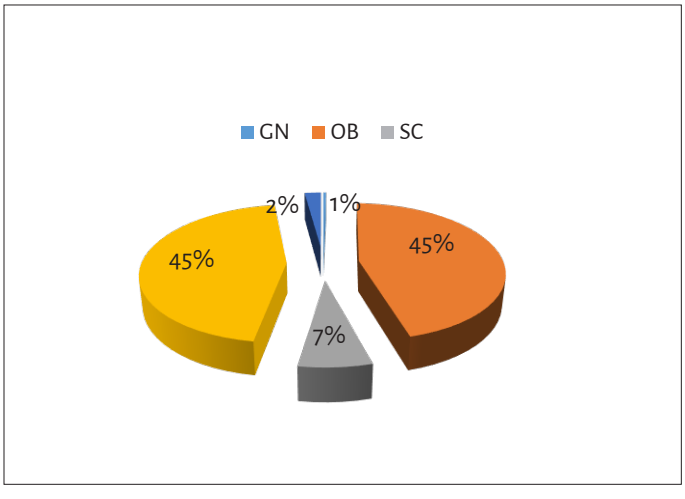
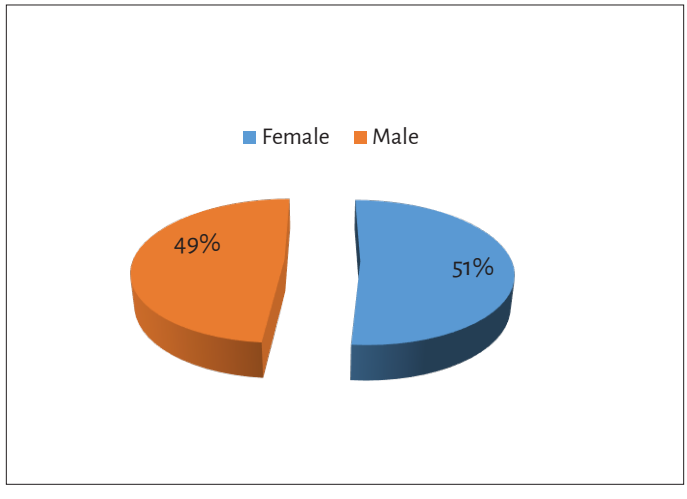


Figure 51a: Potential dropouts by caste (Sept-Nov, pre MDM)



Dec-Feb

Figure 51c: Potential dropouts by caste (Dec-Feb, pre MDM)

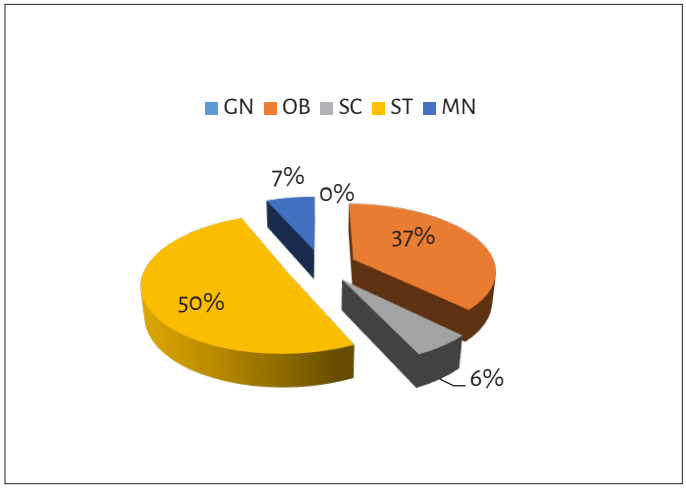
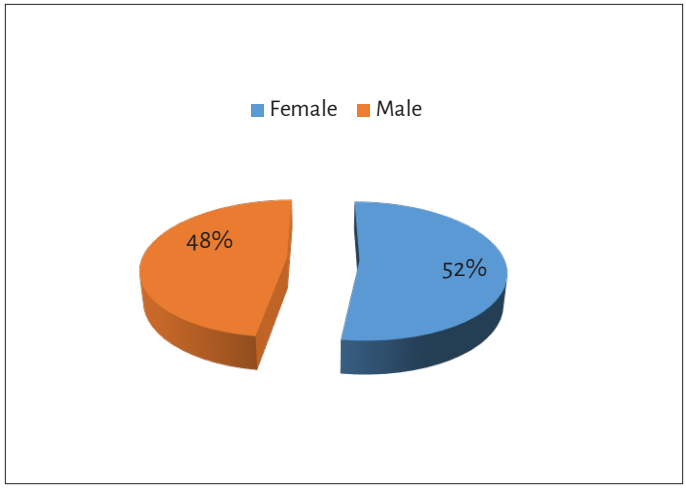


Figure 51d: Potential dropouts by gender (Dec-Feb, pre MDM)



Mar-Apr

Figure 51e: Potential dropouts by caste (Mar-Apr, pre MDM)

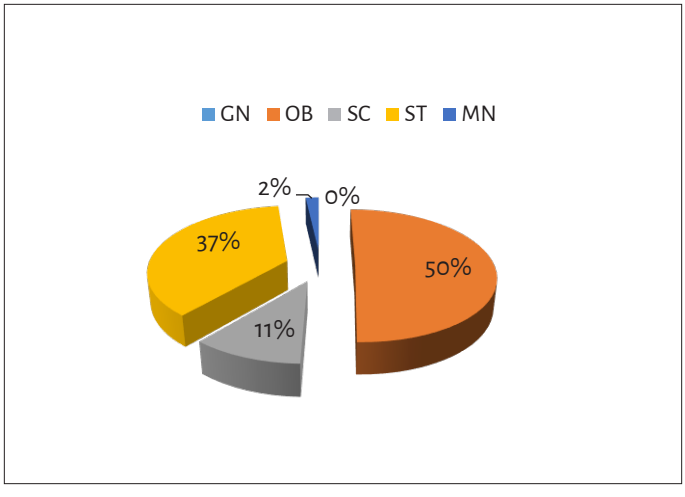


Figure 51f: Potential dropouts by gender (Mar-Apr, pre MDM)

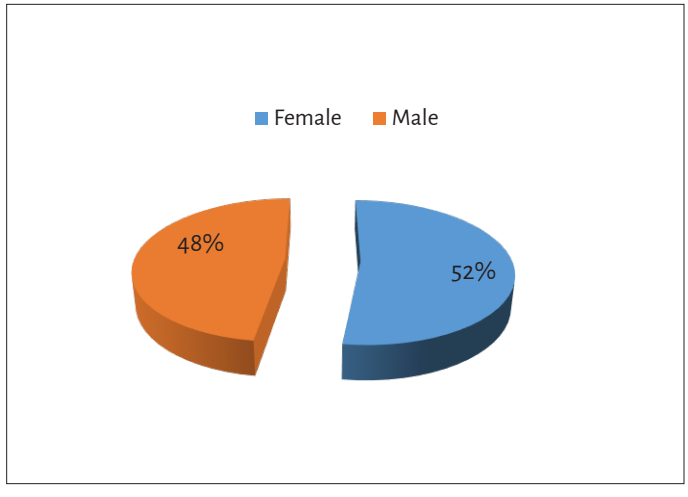


Figure 52a: Percentage of students absent at least 25% of all school days by caste (Headcount+ Register, pre MDM)

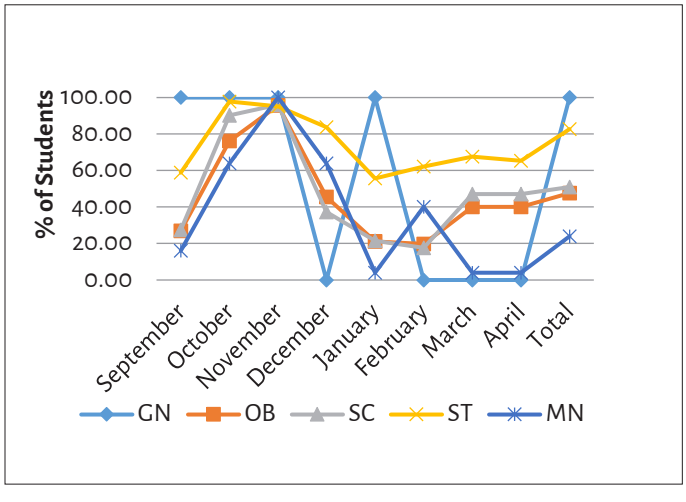
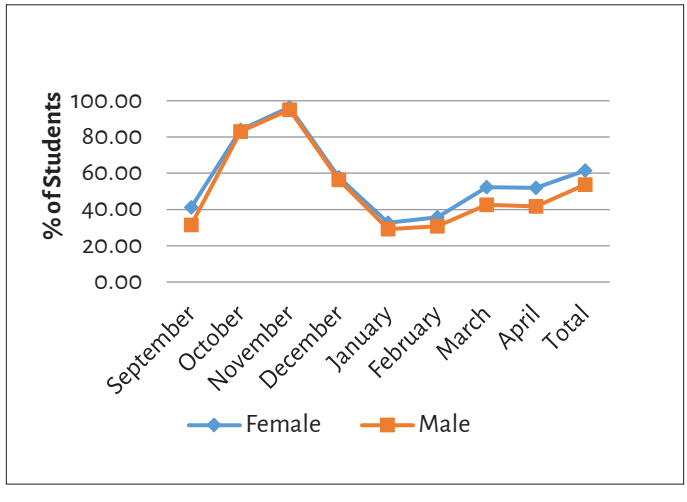


Figure 52b: Percentage of students absent at least 25% of all school days by gender (Headcount+ Register, pre MDM)



3. Absence of 45 days or more: Figures 53a and 53b show that first, more than half the sample is absent for at least 45 days in the school year, implying a dropout rate of 52 percent; second, of those absent for at least 45 days in the school year, only 8 percent have been absent continuously for 45 days, while a whopping 92 percent have been sporadically absent indicating high levels of irregular attendance. The difference between number of children who are sporadically absent for 45 days and those absent for 45 days continuously shows the lacuna in policy, and highlights concerns of taking into account sporadic absence in the definition of a drop out child.

Of the children who have officially dropped (based on the SSA guidelines), the reasons given are summarized below:

(vi) Teacher Attendance

According to a World Bank study[23] teacher absenteeism was almost 25% in public schools as studied from a nationally representative sample of government schools in India. The absenteeism ranged from 15% in Maharashtra to 42% in Jharkhand. The study also concluded that high teacher salaries were not related with lower absenteeism. In fact, factors like better school infrastructure such as electricity connection, library, and covered classrooms had a

Figure 53a: Percentage of students absent for at least 45 days over the academic year 2015-16 (Total, pre MDM)

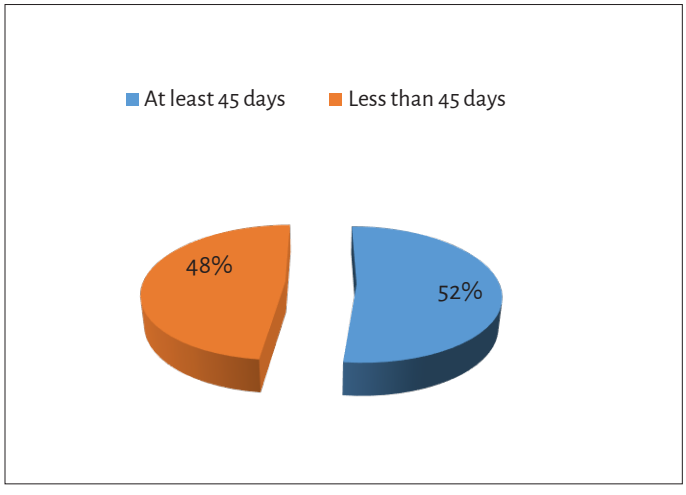


Figure 53b: Percentage of students absent for at least 45 days (Total, pre MDM)

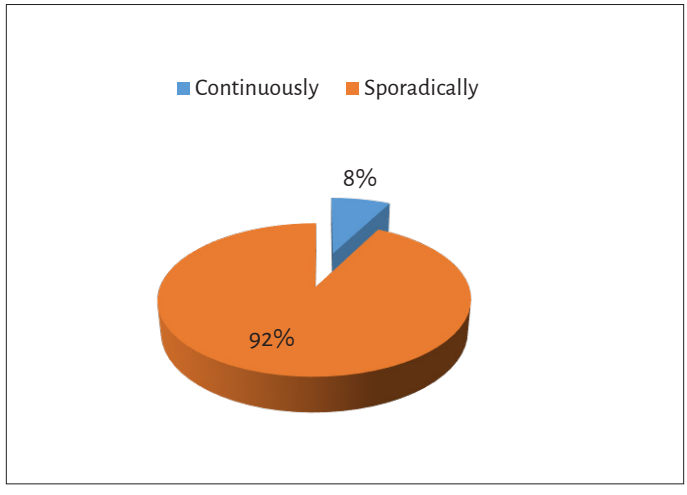


Table 7:

S. No.	Reason for Dropping out	No. of children	No. of children removed from the school register
1.	Marriage	1	0
2.	School is far away	4	3
3.	Discrimination	1	0
4.	Domestic work	6	4
5.	Child Labour	3	2
6.	Corporal Punishment	1	0
7.	Migration	2	2
8.	Does not like studying	4	2
9.	Not accessible for disabled	2	2
	Total	24	15

positive impact on teacher attendance. However, a study by NBER[24] shows that with 23.6 percent of teachers in public schools across rural India being absent during unannounced visits to schools, there was no correlation found between school infrastructure and teacher absence. The study points out that increases in the frequency of school inspections are strongly correlated with lower teacher absence, and suggest that among all the investments in improving school quality, the improved administrative monitoring of schools and teachers was most effective in reducing teacher absence.

In this study however, as shown in Figure 54, it is found that first, teacher absenteeism was quite low despite the fact that school visits were unannounced; second, attendance rates were lowest in January, perhaps due to the start of the new school session; Third, attendance rates were higher in the HC+R data than in the Headcount data, indicating some misrepresentation of teacher attendance data as well.

By social category: As Figures 55a and 55b show, ST teachers have the lowest and most variant attendance rates in both sets of data, whereas Minority teachers, like minority students have the highest attendance rates in both sets of data. Attendance rates of General and SC teachers run along the sample average although occasionally falling below it.

Figures 56a to 56e show that first, the variation between Headcount and HC+R data is most stark for the period between November and February for all caste categories except ST and Minority, and largest

Figure 54 : Average teacher attendance rates (Total, pre MDM)

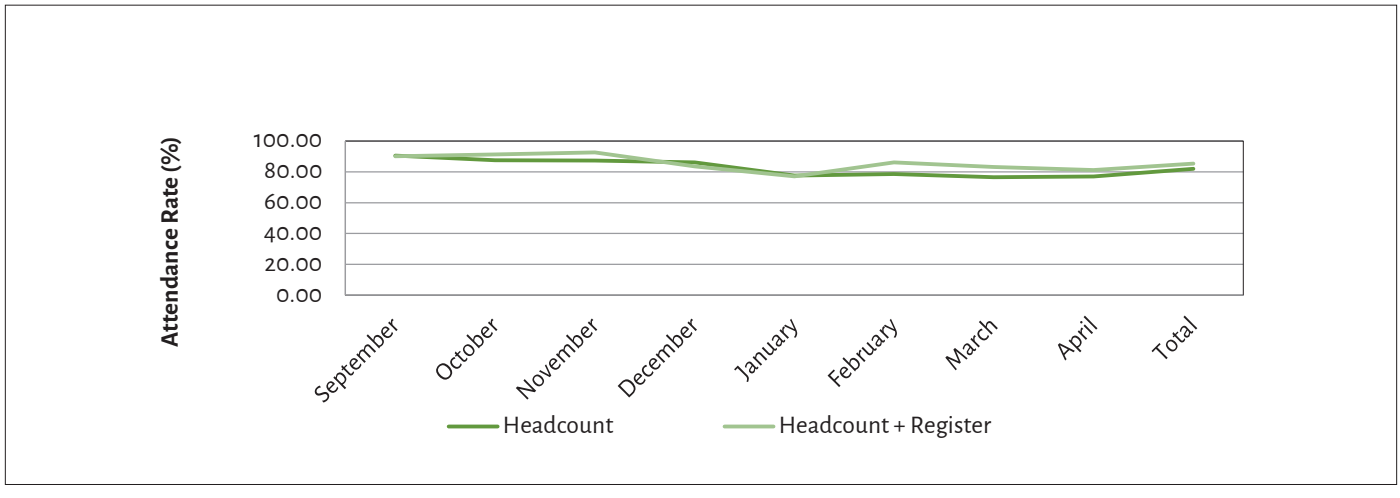


Figure 55a: Average teacher attendance rates by caste (Headcount, pre MDM)

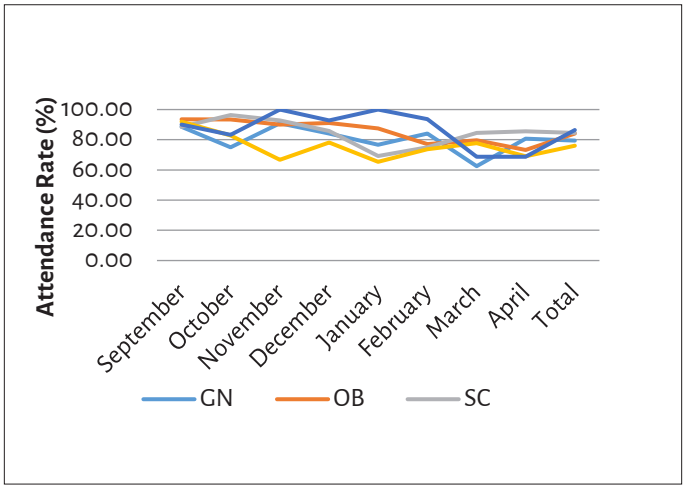
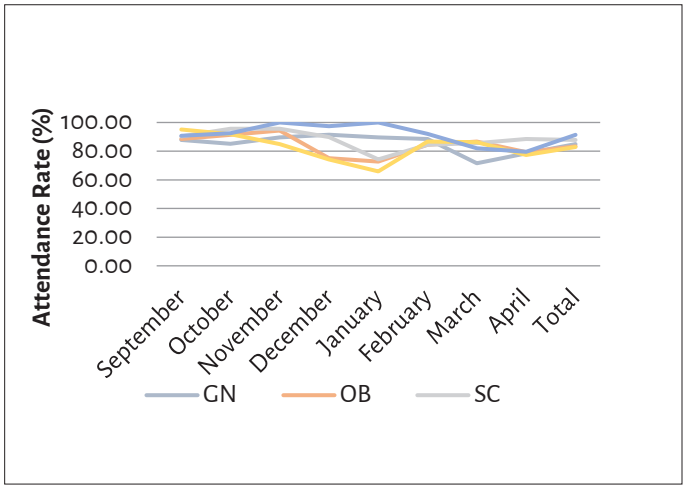


Figure 55b: Average teacher attendance rates by caste (Headcount+ Register, pre MDM)



for the General category teachers; second, OBC and SC teachers have the least variant attendance rates

By gender: Figures 57a to 57d show that first, female teachers attend school more regularly than their male counterparts, but there are larger variations in attendance pattern of teachers; second, the difference in attendance rates between Headcount and HC+R data is larger for female teachers. However, the data may be skewed due to the presence of only 3 female teachers in the sample compared with 28 male teachers.

Figure 56a: Average teacher attendance rates (General, pre MDM)

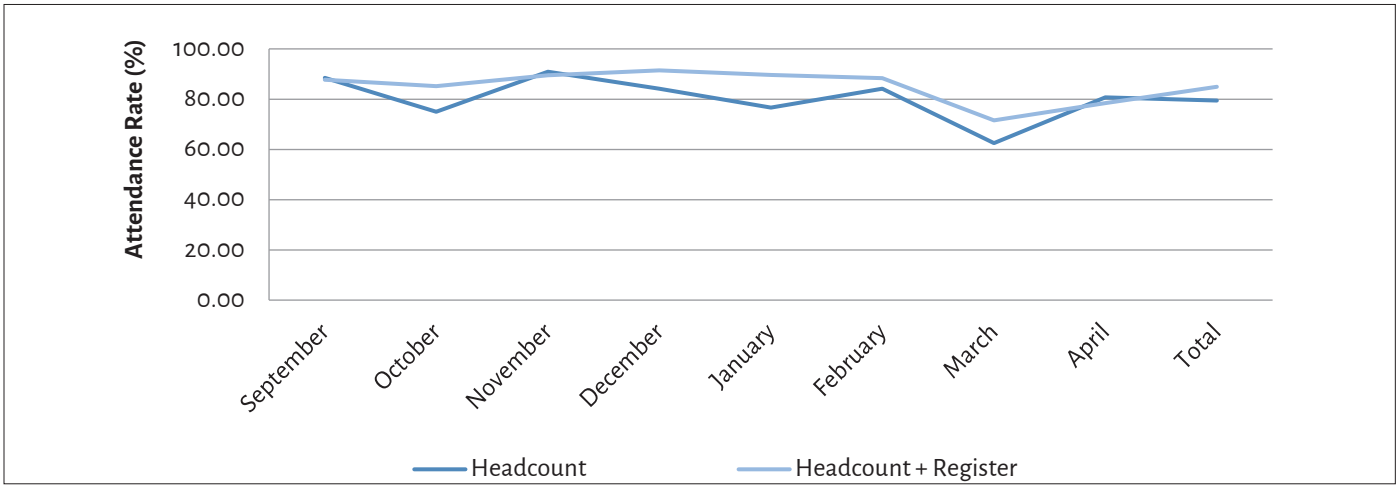


Figure 56b: Average teacher attendance rates (OBC, pre MDM)

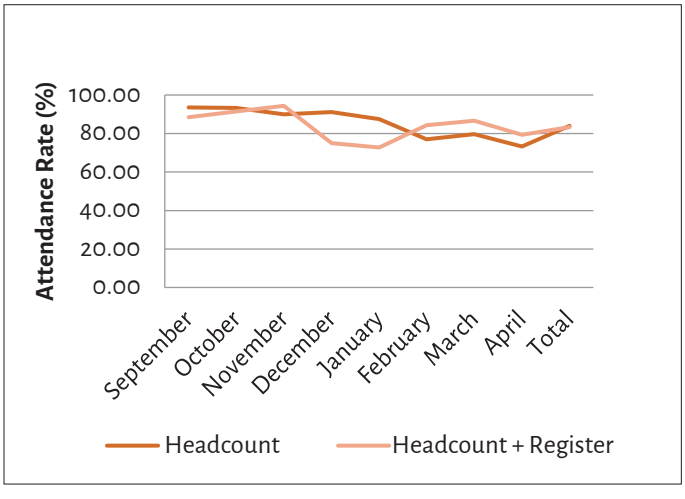


Figure 56c: Average teacher attendance rates (SC, pre MDM)

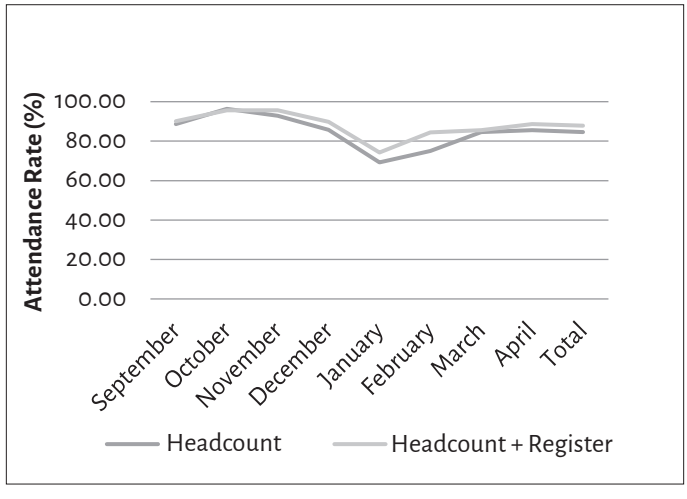


Figure 56d: Average teacher attendance rates (ST, pre MDM)

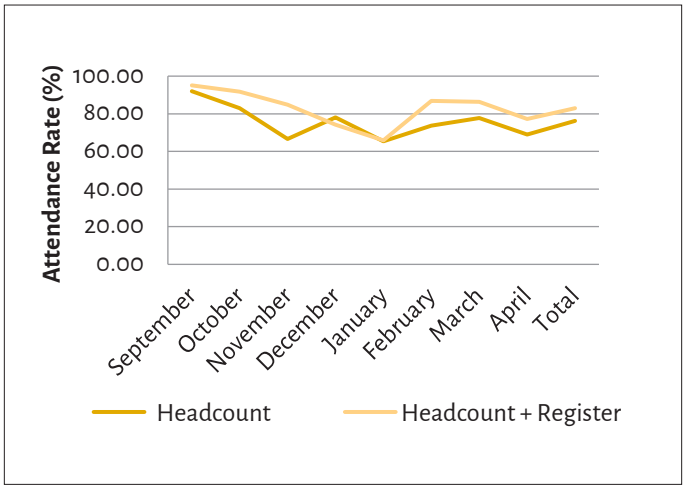


Figure 56e: Average teacher attendance rates (Minority, pre MDM)

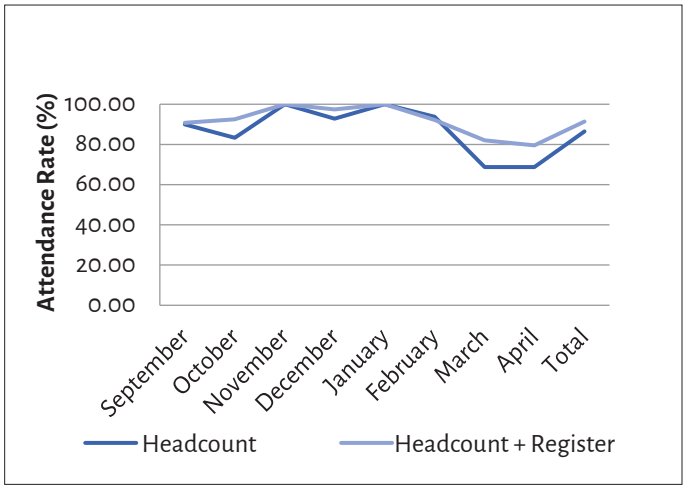


Figure 57a: Average teacher attendance rates by gender (Headcount, pre MDM)

Figure 57b: Average teacher attendance rates by gender (Headcount +Register, pre MDM)

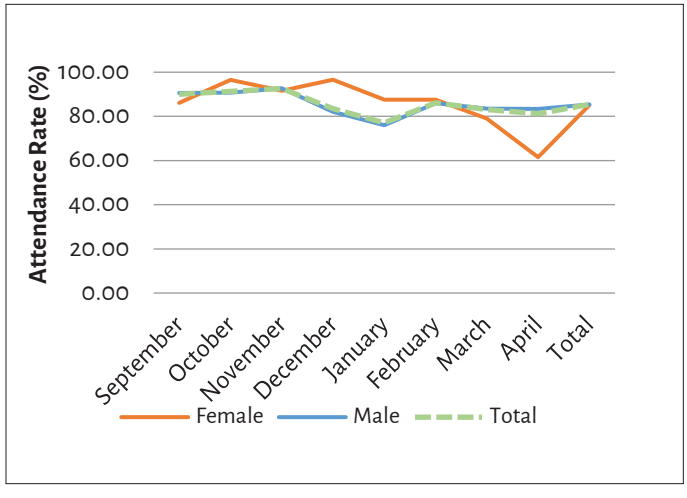
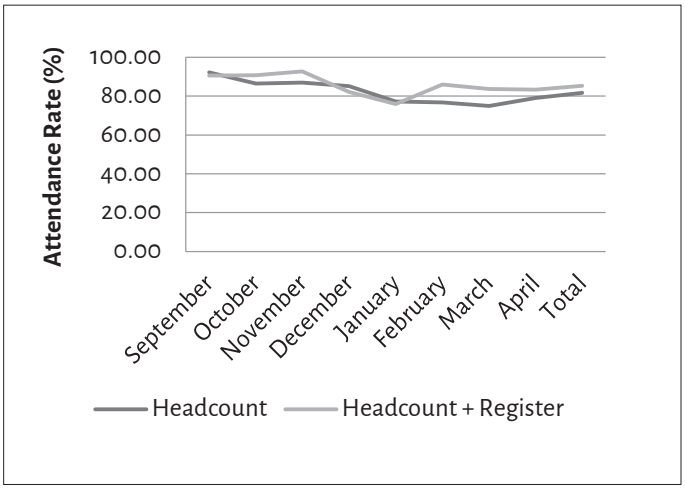
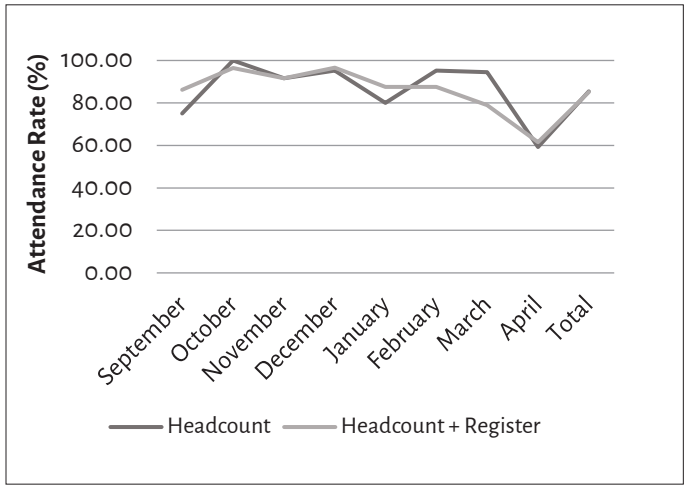


Figure 57c: Average teacher attendance rates (Male, pre MDM)



Figures 57d Figure 57d: Average teacher attendance rates (Female, pre MDM)



By school: Figure 58 shows that first, attendance rates in Headcount data is lower than in HC+R data. PS Koliyo ki Bhagal is an exception. This gap is more pronounced in primary schools; second, teacher attendance rates are higher in primary schools than in upper primary schools.

This too shows that by under reporting teacher absence, the recording of attendance in registers may be biased upwards, in favour of teachers. It is unclear however why the attendance is higher in primary compared to upper primary schools.

Figures 59a to 60b below show that first, teacher attendance is highest in schools with only one caste category; second, attendance rates of SCs in HC+R data is higher than in Headcount data; third, females have higher attendance rates than males

vii) Migration

Seasonal migration is one of the most important reasons for children dropping-out.[25] In this study, at least two children have dropped out of school due to migration. There may be many more, as discussed earlier, it is hard to assess the impact of migration on a child's attendance in this study since the question was misunderstood in the household survey, resulting in only one household responding positively to whether any family member migrates. This data has thus not been used since the field staff knows for a fact that there is more than one household that migrates. In fact, a second household survey had to be done because 8 children who were admitted in school after the enrolment drive had in fact been late since they had seasonally migrated with their family.

Figure 58 : Average teacher attendance rates by school (Sept-Apr, pre MDM)

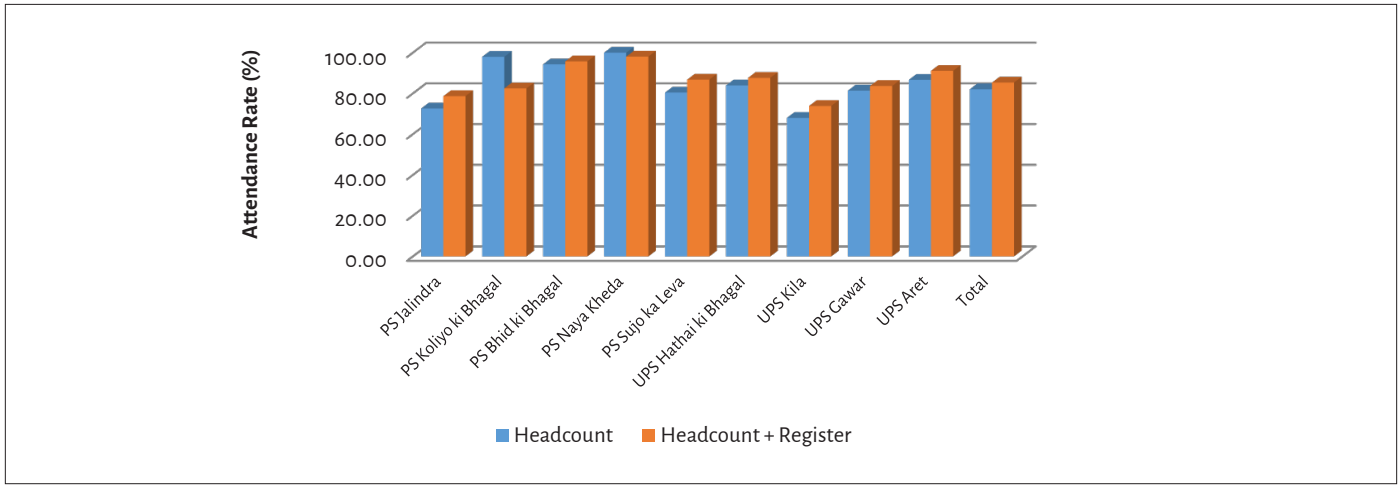


Figure 59a: Average teacher attendance rates by caste and school (Sept-Apr, Headcount, pre MDM)

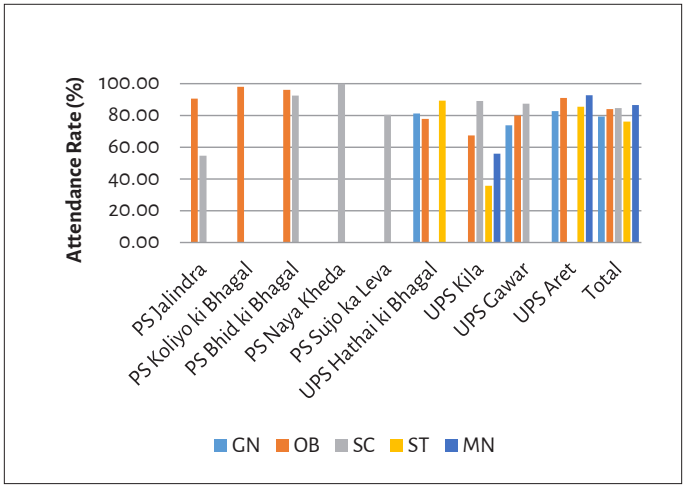


Figure 59b: Average teacher attendance rates by caste and school (Sept-Apr, Headcount +Register, pre MDM)

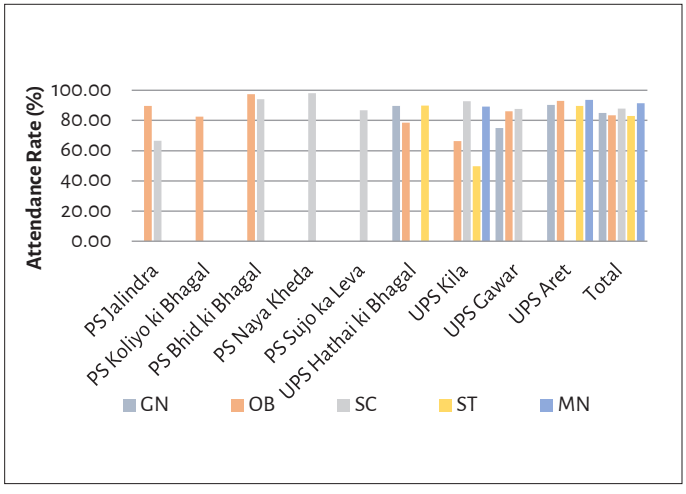


Figure 60a: Average teacher attendance rates by gender and school (Sept-Apr, Headcount, pre MDM)

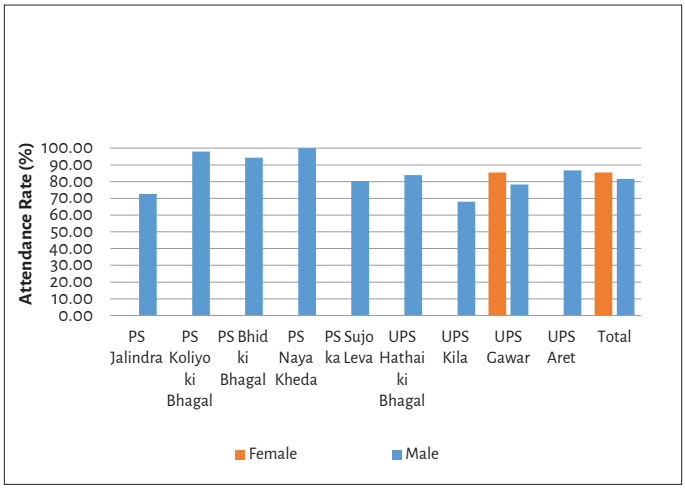
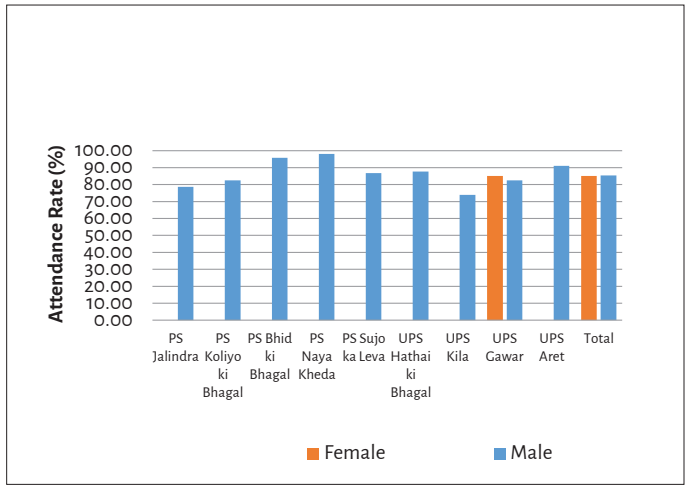


Figure 60b: Average teacher attendance rates by gender and school (Sept-Apr, Headcount+ Register, pre MDM)



VII. ANALYSIS OF MAIN FINDINGS

An econometric model has been developed to study the impact of effective school variables such as type of school building, source of electricity, number of functional toilets etc. and variables describing social status of child such as gender, caste and mother's occupation on average school attendance of the child.

$$Average\ Attendance_i = ß0 + ß1\ Gender_i + ß2\ Caste_i + ß3\ Type\ of\ School\ Building_i + ß4\ Source\ of\ Electricity\ in\ building_i + ß5\ Father's\ Education_i + ß6\ Mother's\ Education_i + ß7\ Father's\ Occupation_i + ß8\ Mother's\ Occupation_i + ß9\ Highest\ Class\ in\ School + ß10\ Boundary\ of\ Wall + ß11\ Functional\ toilet\ in\ School + ß12\ Distance\ of\ Block\ from\ School + u_i$$

The objective of the multivariate regression analysis is to study the factors that have significant impact on student attendance in order to evaluate policy implications based on the empirical exercise.

The school characteristics such as school infrastructure, distance from block, availability of female teachers and so on determines whether the child attends school or not. There are various such factors that have been taken into account. These include the ones indicating the status of school infrastructure such as type of school building, source of electricity, number of functional toilet seats for boys, number of functional toilet seats for girls, private toilet, type of boundary wall, number of classrooms in school.

Other school factors are distance from block, distance from cluster, highest class in school and whether or not female teachers are present in school or not. Most of these variables[26] are qualitative variables. Therefore dummy variables have been constructed for each of such variables. For instance, a dummy has been generated for specifying the child gender.

Di= 1 for males,
Di=0 for females where 'D' denotes the dummy variable and 'i' stands for the child id.

The benchmark category is female. A benchmark or base category refers to the one with respect to which comparisons are made. All the variables for which no dummies appear in the regression are contained in the benchmark group. The dummies and benchmark categories for each of the variables have been listed in Annexure V.

Variables that specify the social status of the child also indicate whether a child attends school or not. The factors that relate to social status and other personal characteristics included in the study are caste, gender, education of father, education of mother, occupation of father, occupation of mother, class in which the child is studying and toilet use by child. As demonstrated earlier, all these variables are qualitative variables, which necessitate generation of dummies for each to carry out statistical analysis. The description of dummies and benchmark categories has been given in Annexure V. Heteroskedasticity has been accounted for by taking robust standard errors. Multi-collinearity between the variables has been examined using the Pearson correlation

Table 8: Regression results

Variable F statistic: 11.37 Prob> F 0.00 R squared 0.37	Coefficient	Robust Standard Error	t value	P> Itl
Male Student (gender)	-2.78*	1.46	-1.90	0.058
Minority Category	12.11***	4.60	2.63	0.009
OBC category	2.76	2.81	0.98	0.326
ST category	-15.68***	3.28	-4.78	0.000
Official Electricity	4.83*	2.52	1.92	0.056
Unofficial Electricity	2.39	2.32	1.03	0.304
Father Completed Senior Secondary Education	-10.01	6.65	-1.50	0.133
Father did not obtain formal Schooling	0.16	1.85	0.09	0.929
Fathers Occupation- Agriculture	-4.22	3.54	-1.19	0.234
Father's Occupation- Daily Non-Agricultural Wager	-0.88	2.82	-0.31	0.754
Mother not completed formal schooling	-3.00	2.39	-1.26-	-0.210
Mother's Occupation- Agriculture	3.79	2.69	1.41	0.160
Mother's Occupation- Daily Non-Agricultural Wager	21.56	8.19	2.63	0.009
Distance from Block	0.20	0.56	0.37	0.715
Number of Classrooms	14.79***	3.11	4.75	0.000
Functional Toilets available for Boys	-60.98***	20.21	-3.02	0.003
Functional Toilets available for Girls	11.06	8.19	1.35	0.178
Child belonging to class 1	14.94***	3.37	4.44	0.000
Child belonging to class 2	18.14***	3.24	5.60	0.000
Child belonging to class 3	22.83***	3.18	7.18	0.000
Child belonging to class 4	22.03***	3.14	7.00	0.000
Child belonging to class 5	20.61***	3.11	6.66	0.000
Child belonging to class 6	19.41***	3.24	5.98	0.000
Child belonging to class 7	16.62***	3.88	4.28	0.000
Private Toilet Use	-1.41	2.28	-0.62	0.536
Pucca Building	3.50**	1.67	2.10	0.037
Female teachers in school	40.78***	13.82	2.95	0.003
Highest class in School: fifth	12.06***	4.53	2.66	0.008
Highest class in School: eleventh	-71.75***	19.23	-3.73	0.000
constant	10.23	11.36	0.90	00.368

Interpretation of Regression Results

The results of regression analysis show that if the school building is a pucca building, then the average attendance is significantly more as compared to when the school building is semi-pucca, serviceable but kaccha or with no structure. If the school has official electricity, then it has a positive significant impact on average child attendance as compared to school with no electricity. The unofficial electricity is not registered; hence the impact on the average attendance is insignificant as compared to no electricity. Number of classrooms has a positive significant impact on average attendance of child. As the number of classrooms increase, more students tend to attend the school.

In sum, the regression results show that school infrastructure has a positive impact on average child attendance. However, the coefficient on functional toilets for girls is insignificant. This is a counter intuitive result, as is the negative impact of availability of functional toilet in school on average child attendance. These results require further probing.

The distance of the school from the block has no significant impact on average school attendance either.

But if there are female teachers in school, the average attendance tends to be more as compared to the schools with no female teachers.

The coefficient on gender is only significant at 10 % level of significance and negative. Thus, the impact of person being a male is negative and significant as compared to the person being a female. In other words, the average attendance of male students is lower as compared to female students over a period of seven months. It must be noted here that these results present a different picture from the average attendance rates for gender in the earlier sections. It is difficult to ascertain why this may be the case.

As for caste, the coefficient on minority category is positive and significant at 1% level of significance. This means that being from minority has a positive impact on average child attendance as compared to being from the SC category. However, the negative coefficient of ST category shows that being from a scheduled type background has a negative impact on average attendance of child as compared to being from SC category. The coefficient on OBC category is insignificant indicating that there is no impact on average attendance of child whether the child is SC or OBC.

The impact of mother being employed as a daily wager in non-agricultural activity is positive and significant on the average attendance of child as compared to the base category. However, this is not true for the mothers employed in agricultural sector. The impact of mother's employment in agriculture has no significant impact on average attendance of student as compared to the base category. If the mother has no formal schooling as compared to having completed primary or secondary education, then there is no significant impact on the average child attendance. Similarly, difference in father's education or occupation has no significant impact on child attendance. These results also go against the received wisdom on these issues and bear further research.[27]

The grade in which a child is studying has a significant positive impact on average attendance. The results show that the impact of grade on average attendance increases until Grade III as compared

Image courtesy: Stephanie Natalia Samuel

to base category. However, after the third grade, there is a decline in impact of grade on students' attendance, compared to the base category. In other words, a child studying in Grade I, II or III is more likely to have better attendance rates than higher grades. This points to the increasing importance of other factors in determining student attendance as a child progress through the school system. These factors might be availability of female teachers, school infrastructure, say number of classrooms, and so on.

The differences in the highest class in school also have a significant impact on child attendance. If the highest class is fifth, then it has a positive significant impact on child attendance as compared to the highest class being eighth, while if the highest grade in school is eleventh, then it has a significant negative impact on average child attendance of child as compared to highest class being eighth. Thus, there is a significant positive impact of being a primary school on average attendance rates.

The variables private toilet and toilet use are highly correlated. Therefore, only private toilet has been considered in the regression. It is found that availability of private toilet has no significant impact on average attendance of child.

VIII. CONCLUSIONS

- The most significant conclusion of the study is that the concept of "out of school", as currently defined needs to be revisited and the sporadic absence of children included in its purview. As seen from the study results the number of children who are irregular is very large.
- In terms of attendance patterns of social groups, the STs are clearly the worst off, with attendance rates are much lower than that of other social groups. Their attendance also shows the maximum variance, further indicating their poor performance in educational uptake.
- Contrary to popular perception, the attendance of Minority children is the highest, followed by the OBC. The SC attendance is only slightly lower than that of the OBC children.
- Attendance of Female children is only slightly lower than that of male children.
- Attendance patterns vary greatly with agricultural seasons. This has implications for setting the school calendar in accordance with these cycles.
- There is a significant difference between headcount and headcount +register data showing misrepresentation of attendance by teachers.

IX. LIMITATIONS OF THE PILOT STUDY

- Social Groups with different population numbers have been treated equally i.e. no weights have been assigned to these different social groups, which could have an effect on average attendance rates, especially since certain groups have very few number of children in the sample population.
- The field surveyors were forced to intervene in four cases or else they would not have been able to continue collecting data on attendance. In the field, the boundaries between researcher

Image courtesy: Stephanie Natalia Samuel

and social worker/ community leader are often blurred, especially in the perception of those being researched. Thus, when the HTs found the field surveyors regularly coming to school for research and had begun trusting them, they also requested them to help in four cases, notwithstanding which, they provided an ultimatum to stop the data collection process. While this has interfered with the data for four children in the sample, it is also a reminder of the choices that need to be made in the field. These cases do not alter the validity of the survey and its results.

X. CASE STUDIES

'Student who dropped out due to financial reasons"

A child in Grade 6 of Government Senior Secondary School Gawar, has a tragic story. His house is situated on the other end of the village. After the demise of his father, his mother abandoned him. He was left with 3 siblings, 2 sisters and a brother. He is the eldest of them all. They can hardly manage to make their two ends meet. Their aunt takes care of them, but, as she has her own family, it gets difficult for her to spare much time for these kids.

Thus, to provide for the family, Naresh dropped out of school and started working in a hotel near Kumbhalgarh. His siblings attend the school. His aunt was worried about managing the expenses of the children on her own if this child stopped earning. Since, he is the eldest of them all, she expects his help.

It is saddening that the child was bright and willing to study, but due to financial conditions and responsibilities, he had to drop out of school.

XI. POLICY RECOMMENDATIONS

The policy recommendations that follow from these findings relate to several different aspects of the education system. On the one hand they suggest the need to strengthen the data regime, especially as it relates to a robust local data system and the need for streamlining definitions and methods of estimation and on the other hand it points to larger changes in the system relating to strategies for keeping children in school. Specifically, the following changes are suggested:

- Developing a standard definition of out-of-school that includes an understanding of drop-out / attendance that uses the child's regularity of attendance as the benchmark. Unlike the myriad definitions that currently exist in India a time period for regular attendance needs to be determined in consultation with educationists, on the minimum days of instruction required for a child to sustain learning.
- Data on enrolment and attendance must be collected with the help of the community to ascertain the authenticity of the numbers. While this would not guarantee the most reliable data, it would be a step forward in terms of a) including the "invisible" category in the records; b) cross checking school records and c) facilitating child tracking.
- Management of a local database on children possibly maintained at the Panchayat level and cross-verified with the school, would help greatly in tracking children's school participation.
- Related to the above, birth registration records need to be strictly maintained. Registering births must be made mandatory and Panchayat officials charged with updating their records.
- Having a system of red flagging irregular attendance would also go a long way in reducing potential drop-outs. This coupled with better linkages with the household to determine reasons for poor attendance, such as migration, domestic chores or other forms of child labour and poverty, would enable the school/ administration to develop better strategies for bringing children back to school. While this would require resources set aside for the purpose, they are likely to be less than what would be required to mainstream dropped out children.
- Setting the school calendar in accordance with eth agricultural cycle, to enable children, who help with household chores during peak season to not be absent for long stretches when their families need them.

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NOTES

1. The 73rd and the 74th Amendments to the Indian Constitution, provided a structure of local governance down to the village level
2. Those children who reside in the Panchayat boundary but attend school outside of it have not been tracked.
3. UIS Database: last accessed, July 2016, http://data.uis.unesco.org/
4. ibid.
5. ibid.
6. ibid.
7. ibid.
8. UIS Database: last accessed, July 2016
9. Status, Trends and Challenges of Education for All in South sia (2000-15): A Summary Report, UNESCO New Delhi Cluster Office
10. Lowest administrative unit of India
11. Global Initiative on Out of School Children: A Situational Study of India, , UNICEF and UNESCO Institute for Statistics, August 2014
12. Researchers in Philadelphia for instance have used early warning systems based on indicators like low attendance, poor behavior in terms of out of school suspension and failure in subjects like Mathematics and English. They found that students in grades 6-8 who have scored on any one of these early warning indicators had only a 15% probability of graduating high school. Project U Turn-A Promise Worth Keeping: Advancing the High School Graduation Rate in Philadelphia, a collaborative study by School District of Philadelphia (SDP), Mayor's Office of Education (MOE), Department of Human Sciences (DHS), Philadelphia and Philadelphia Youth Network (PYN), May 2015.
13. Identifying Potential Drop-outs: Key Lessons for Building and Early Warning Data System, Jerald 2006.
14. Teacher's absence in India: A snapshot, Kremer et al (2005-06)
15. "Key Indicators of Drinking Water Sanitation, Hygiene and Housing Condition in India", National Sample Survey Office, Ministry of Statistics and Programme Implementation, Government of India, 2012
16. Definition in Annexure II (a)
17. Centrally Sponsored Schemes are schemes that are wholly funded by the Central government. The Constitution of India has deemed education a concurrent subject, which implies that both the center and the State governments have jurisdiction over it. However, due to differential distribution of resources across States the Central government runs Centrally Sponsored Schemes [CSS] towards fulfilling social objectives. In this case it is to improve food security for children as well improve attendance rates.
18. http://mhrd.gov.in/mid-day-meal
19. Singh.S et al, Impact of Mid Day Meal on Enrollment, Attendance and Retention of Primary School Children, International Journal of Science and Research,2013
20. Jaggery is a traditional non-centrifugal cane sugar, consumed in Asia and Africa. It is a concentrated product of cane juice without separation of molasses and crystals and can vary from golden brown to dark brown in colour.
21. Hickey M. and Stratton. M., Schooling in India: Effects of Gender and Caste, Issue 1, Spring, 2007
22. Study on 'reasons of dropping out from schools' A study with children who dropped out from Mother Project of Tomorrow's Foundation ;Goswami, 2009
23. Teacher's absence in India: A snapshot, Kremer et al (2005-06)
24. Muralidharan, K. et al, (2014) The Fiscal Cost of Weak Governance: Evidence from teacher absence in Indiia, NBER Working paper Series , July
25. According to a study by Tomorrow's Foundation, seasonal migration is a crucial issue behind child dropout in Jharkhand. Though, this fact does not have a direct effect on the current study, however, the information is revealing. The survey shows that thousands of children are denied their right to education in Jharkhand due to inter and intra-state seasonal migration. The children who are affected by seasonal migration are out-of-school as they leave for different states and districts for 7-8 months of the year with their parents and other family members (A survey on children affected by seasonal migration in Jharkhand: Children who do not enjoy their right to education," Tomorrow's Foundation in collaboration with Association for Social and Human Awareness).
26. Except for distance from block, distance from cluster, number of functional seats, number of classrooms
27. The observations for 'general' category under caste, 'bachelor completed' under father education, 'no structure' under type of building and 'completed 10th class' under mother education have not been considered for the regression analysis due to presence of very small number of observations for each of them.

ANNEXURE I: CONCEPT NOTE FOR PILOT STUDY

BACKGROUND AND PURPOSE

As per the UNESCO Institute for Statistics (UIS), India had 1.3 million out-of school children (OOSC) of primary school age and 16.3 million of lower secondary age in 2011[1]. There are two primary sources for estimating the number of out-of school children, namely, administrative and household survey. Both sources have their own strengths and limitations. The recent India report on OOSC by UNICEF and UIS pointed out that to get a comprehensive picture on the OOSC both data should be used[2]. One of the key highlights of the report is the difference in estimating the number of OOSC which is due to absence of standardized definitions and other methodological differences on estimating/identifying OOSC.

Out of school children can be classified as those who were never enrolled or those who were enrolled but dropped out due to various reasons. The pattern and extent of the dropout is not common for all students. The students can dropout at any point of the school session and whether they come back or not is uncertain. In the absence of robust data collection system at the school level it is not possible to get idea on patterns and extent of the dropout.

Earlier this year, in order to identify children for special training, any child absent for 45 days was considered out of school by the Ministry of Human Resource Development (MHRD). Despite this cutoff, the issue of sporadic and cumulative attendance of a child has not been dealt with. It may be the case that a child is absent for periods after the mid-day meal is served on a particular day. Also, the child may not be continuously absent for the stipulated time to be considered as an out-of school child but his/her absence may be sporadic. There have been provisions in many states to strike off the names of students who are absent for a period that is more than the cutoff duration introduced by MHRD.

However, there are two problems with the implementation of this provision. Firstly, seldom the names are struck off in the middle of a session and secondly, these cutoffs are different from one state to another in India. For instance, the cutoff date for state of Karnataka is seven days, Gujarat is three months and Maharashtra is fifteen days.

In the past, no study has focused on the extent of dropout. The present pilot study aims to decipher the attendance patterns and hence the extent of dropout of a child. It will try to monitor attendance through a school level register in order to understand whether the child is a dropout for some days or as the school day progresses.

The second aspect of this study aims to focus on the visibility of a child in the school system. Out of school children can be classified as visible, semi-visible and invisible in the school system. It is the third category i.e. the "invisible"[3] children who are the hardest to capture because of poor record keeping at the village level and absence of vital registration system. In this regard, the study aims to develop a village level register that captures data on children at every age. This data will help in tracking information about the schooling status of every child at every stage irrespective of their enrolment in a school within or outside the village or non-enrollment. The school register and village register will be matched to get an idea on school enrolment.

Most studies on out-of school children (OOSC) have focused only on the enrolment of students and have at best expressed concerns regarding irregular attendance of students. This study aims at not only bringing out evidence on attendance pattern of children but will try to explore its relationship with teacher's attendance pattern. A study[4] by World Bank found that 25% of teachers were absent from school. It was found that only about half were teaching, during unannounced visits to a nationally representative sample of government schools in India.

OBJECTIVES OF THE STUDY

The aims of this study are:

- To identify the number of school going children at village level by developing a village register that captures data on age, enrolment status etc.
- To identify the extent of attendance on a particular day/periods and over the period of time
- To identify the extent of dropout, whether the child's absence is sporadic or cumulative
- To explore if there is any plausible relationship between the attendance of teachers and students

SCOPE OF THE STUDY

The study will be piloted in the Kumbalgarh region of Rajasmand district of Rajasthan state in western India. A team from the Centre for Policy Research has already been working on different projects in this region and would facilitate the field work required for the study. A sample of ten villages and ten schools will be selected for the pilot survey. It will be a joint project of UNESCO, New Delhi and the Centre for Policy Research.

ANNEXURE II(A): QUESTIONNAIRE FOR HOUSEHOLD SURVEY

Annexure II(a): Questionnaire for Household Survey

UNESCO Institute for Statistics (UIS) and Centre for Policy Research (CPR)

A study on school attendance in Rajasthan state of India

Household Number: ☐☐☐☐☐☐

Section 1: Survey Details					
1.	Investigator Name		3.	Investigator ID	☐☐
2.	Date of Visit	☐☐/☐☐/☐☐☐☐	4.	Time of visit	☐☐:☐☐
5. Name of Respondent:					

Section 2. General Information					
1.	Village		4.	Block	Kumbhalgarh
2.	Cluster		5.	District	Rajsamand
3.	Panchayat		6.	State	Rajasthan
7.	Type of Building Pucca[5] = 1 Semi - pucca[6] = 2 Serviceable katcha[7] = 3 Unserviceable katcha[8] = 4 No structure = 5		8.	Electricity connection? None = 0 Official = 1 Unofficial = 2	
9.	Does the household have any type of toilet used by only this household Yes =1; No=0 **If yes, go to Q10, if no, go to Q11**		10.	If yes in Q9, do members of the household use this toilet? Yes=1; No=0	

Household Number: ☐☐☐☐☐☐

11.	Name of the Head of Household?	12. Age of Head of Household ☐	13.	Educational level of Head of Household: No formal schooling==1 Not completed Primary level=2 Completed Primary level (Class 5)=3 Completed Elementary (Class 8)=4 Completed Secondary (Class 10)=5 Completed Senior Secondary (Class 12)=6 Completed Bachelor=7 Completed Post-Graduation=8	☐
14	Social group of household: SC= 1 ST= 2 OBC = 3 SBC = 4 General = 5 Minority = 6	☐	15.	If Q14=6, please specify: Muslim=1 Christian=2 Sikh=3 Jain= 4 Parsi = 5 Buddhist = 6 Other = 7 (Please Specify)	☐
16	**Occupation of household head** Agriculture= 1 Daily Wager (Agricultural) =2 Daily wager [non-agricultural] =3 Government Employee (Permanent)=4 Government Employee (Contract)=5 Private employee (Permanent)=6 Private Employee (Contract) =7 Self- Employed=8 Other = 9 (Please specify)				☐
17.	Total Number of children in this household of school going age (5-17 years)? ☐☐	☐	18	Does any adult (more than 17 years) and school going aged children (5-17 Years) in the family migrate temporarily (more than one month and less than six months) to another place every year? Yes=1 No=0	☐

19. If Yes in Q18, where do they migrate ?

Name of adults	Month(s)	Village	City/ Town	District	State

UNESCO Institute for Statistics (UIS) and Centre for Policy Research (CPR)

A study on school attendance in Rajasthan state of India

Section 3: Child Details

(Please provide information of all children (4 to 17) in the household

1. S. No.	1	2	3	4	5
2. Name					
3. Date of Birth (DD/MM/YYYY)	☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐	☐☐☐☐ ☐☐☐☐
4. Age in completed year only (if Date of Birth is not available)					
5. Gender Male=1 Female=2 Third =3	☐	☐	☐	☐	☐
6. Relationship of respondent to child: Father = 1 Mother = 2 Grandfather= 3 Grandmother =4 Uncle =5 Aunt =6 Elder sibling =7 Other = 8 (Please specify)	☐	☐	☐	☐	☐
7. Educational level of father of child: No formal schooling=1 Not completed Primary level=2 Completed Primary level (Class 5)=3 Completed Elementary (Class 8)=4 Completed Secondary (Class 10)=5 Completed Senior Secondary (Class 12)=6 Completed Bachelor=7 Completed Post-Graduation=8	☐	☐	☐	☐	☐
8. Educational Level of mother of child: No formal schooling==1 Not completed Primary level=2 Completed Primary level (Class 5) 10)=5 Completed Senior Secondary (Class 12)==3 Completed Elementary (Class 8)=4 Completed Secondary (Class 6 Completed Bachelor=7 Completed Post-Graduation=8	☐	☐	☐	☐	☐
9. Occupation of child's Father: Agriculture= 1 Daily Wager (Agricultural) =2 Daily wager [non-agricultural] =3 Government Employee (Permanent)=4 Government Employee (Contract)=5 Private employee (Permanent)=6 Private Employee (Contract) =7 Self- Employed=8 Other = 9 (Please specify)	☐	☐	☐	☐	☐

1. S. No. (continue from above)	1	2	3	4	5
2. Name (continue from above)					
10. Occupation of child's Mother: Agriculture= 1 Daily Wager (Agricultural) =2 Daily wager [non-agricultural] =3 Government Employee (Permanent)=4 Government Employee (Contract)=5 Private employee (Permanent)=6 Private Employee (Contract) =7 Self- Employed=8 Other = 9 (Please specify)	☐	☐	☐	☐	☐
11. Does this child migrate ? Yes=1; No=0	☐	☐	☐	☐	☐

12. If yes in Q11,

Month(s)	Village	City/ Town	District	Town

13. Did the child enrol in school during the school year 2014 – 2015? Yes = 1: No = 0: (If Yes, go to Q.14, If no, go to Q. 18)	☐	☐	☐	☐	☐
14. If yes in Q13, in which type of school did the child enrol in the 2014-15 school year? Public = 1 Private = 2	☐	☐	☐	☐	☐
15. If yes in Q13, School Name? (If school not in Gavar Panchayat, please mention village and school name)					
16. If yes in Q13, distance to school from home (in km)	☐	☐	☐	☐	☐
17. If yes in Q13, which Class was the child enrolled in?					

1. S. No. (continue from above)	1	2	3	4	5	6
2. Name (continue from above)						
18. If No in Q13, was the child Never enrolled = 1 Dropped out = 2	☐	☐	☐	☐	☐	☐
19. If Q18 = 2, please mention the highest grade attended	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐
20. If Q18 = 1 or 2, Refer to the key given below (Answers could be multiple)	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15 Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please Specify)=15	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15	Teacher was not regular= 1 Poor teaching=2 Corporal Punishment=3 School was too far=4 School in a conflict zone=5 Disability related=6 Illness=7 Illness in the family=8 Sibling care=9 Household chores=10 Marriage=11 Labour=12 Poverty=13 Migration=14 Others (please specify)=15

21. Will the child enrol in school during the school year 2015-16 ? Yes =1 No= 0 (if yes go to 22)	☐	☐	☐	☐	☐	☐
22. If Yes, in Q20, School Name ? (if school is not in Gavar Panchayat, please mention village and school name)	☐	☐	☐	☐	☐	☐
23. If Yes, in Q20, Class ?	☐	☐	☐	☐	☐	☐
24. Will the child be enrolled in school for the first time? Yes=1; No=0	☐	☐	☐	☐	☐	☐

ANNEXURE II(B): QUESTIONNAIRE FOR SCHOOL PROFILE

UNESCO Institute for Statistics (UIS) and Centre for Policy Research (CPR)

A study on school attendance in Panchayat Gavar, Block Kumbhalgarh, State Rajasthan in India

School Code: ☐☐☐☐☐☐☐ Academic Year: ☐☐☐☐-☐☐

SCHOOL PROFILE		
PART A. SCHOOL INFORMATION		
1.	School Name:	
2.	Village Name :	
3.	Name of Cluster Resource Centre (CRC)/ URC:	
4.	Panchayat Name	
5.	Educational Block/ Mandal/ Taluk Name (if applicable)	
6.	Habitation name (for rural area)	
7.	Assembly constituency (if applicable)	
8.	Contact of Head of School :	
	8A. Landline No. (With STD Code): ☐☐☐☐☐-☐☐☐☐☐☐☐☐	8B. Mobile No: ☐☐☐☐☐☐☐☐☐☐
9.	Distance of school in Kms.	
	9A. From Block Head Quarter: ☐☐	9B. From Cluster Resource Center (CRC) ☐☐
10.	Year of establishment of school	☐☐☐☐
11.	Location of school: Rural = 1 Urban = 2	☐
12.	Type of school: Only boys = 1 Only girls = 2 Co-educational = 3	☐
13.	School category: Primary = 1 Upper Primary = 2 Secondary = 3 Higher secondary = 4	☐
14.	School Management: Department of Education = 1 Tribal/ Social Welfare Department = 2 Local Body = 3 Private Aided = 4 Private Unaided = 5 Others = 6 Unrecognized = 7	☐
15.	Lowest Class in School	☐
16.	Highest Class in School	☐☐

17. Medium of Instruction (Check all that apply)

Yes = 1; No = 0

(1) Assamese ☐	(6) Kashmiri ☐	(11) Nepali ☐	(16)Tamil ☐	(21)Dogri ☐	(26)Lepcha ☐
(2) Bengali ☐	(7) Konkani ☐	(12) Oriya ☐	(17)Telugu ☐	(22)Khasi ☐	(27)Limboo ☐
(3) Gujarati ☐	(8) Malayalam ☐	(13) Punjabi ☐	(18)Urdu ☐	(23)Garo ☐	(28)French ☐
(4) Hindi ☐	(9) Manipuri ☐	(14) Sanskrit ☐	(19)English ☐	(24)Mizo ☐	(29)Others ☐
(5) Kannada ☐	(10) Marathi ☐	(15) Sindhi ☐	(20)Bodo/ Mising ☐	(25)Bhutia ☐	

PART B. SCHOOL BUILDING, EQUIPMENT, FACILITIES, FURNITURE AND OTHER DATA

1. **Details of classrooms and other rooms (not to be filled for schools without building)**

1A. Total Classrooms used for instructional purposes:	1B. Total other rooms:	1C. Status of Building(Check all that apply) Private = 1 Rented = 2 Government = 3 Government school in a rent free building = 4	☐
☐☐	☐☐	No building = 5 Dilapidated = 6 Under construction = 7	

1D	**Type of building**	**No. of classrooms used for instructional purposes**			**No. of other rooms**		
		Need no repair	Need minor repair	Need major repair	Need no repair	Need minor repair	Need major repair
a.	Pucca						
b.	Partially pucca						
c.	Kuccha						
d.	Tent						

2. No. of classrooms under construction ☐☐

3. Separate room for Head Master available?

Yes=1 No=0 ☐

4.

Toilets	**Total**	**Boys only**	**Girls Only**	**Common**
No. of Toilet Seats Available				
No. of Toilet Seats Functional: *(Minimal Odour, unbroken seat, regularly cleaned, working drainage system, accessible to users, closable door*				

5. Source of drinking water (Check all that apply)

No=0; Yes=1; Yes but not functional = 2

(a) Hand pump ☐	(d) None ☐
(b) Well ☐	(e) Others ☐
(c)Tap water ☐	(Please Specify)

6. Electricity connection in schools: (Check all that apply)

No = 0; Yes = 1; Yes but not functional = 2,

(a) Official ☐

(b) Unofficial ☐

7. Boundary wall (Check all that apply)

Pucca = 1

Pucca but broken = 2

Barbed wire fencing = 3 ☐

	Hedges = 4 No boundary wall = 5 Others = 6 Partial = 7	
8.	Availability of following facilities: (Check all that apply) Yes = 1; No=0 (a) Book Bank ☐ (b) Library ☐ (c) Reading Corner ☐	
9.	Playground Yes = 1; No=0	☐
10.	10A. Total Number of computers available ☐☐	10B. Total Number of computers functional *(Installed with operating software and used for academic purpose)* ☐☐
11.	Do the children use the computers? ? No=0; Yes=1;	☐
12.	Medical check-up of students conducted last year? Yes=1; No=0	☐
13.	Are all classrooms accessible to children with disabilities? Yes=1; No=0	☐
14.	Common Desk for teachers? None=0; All=1; Some=2	☐
15.	Desk and benches available for students? None=0; All=1; Some=2	☐
	PART C: MID-DAY MEAL (MDM) INFORMATION	
1.	1A. Is mid-day meal provided? ☐ Yes=1; No=0 (if yes, go to 1B; if no, end questionnaire here)	1B. If yes in 1A, is mid-day meal provided (yes=1; no=0) Everyday ☐ Alternate Day ☐
2.	Is mid-day meal provided on school premises? Yes=1; No=0	☐
	(if yes, continue with 3; if no, go to 4)	
3.	Where is the mid-day meal prepared? Kitchen shed = 1 Classroom = 2 Other = 3 (please specify)	☐
4.	Source of mid-day meal (ask only if no to Q2) Nearby school =1 NGO = 2 Self – help group = 3 PTA/MTA = 4 Other = 5 (please specify)	☐

Figure 61a: Percentage of students present by caste (September, Headcount, pre MDM)

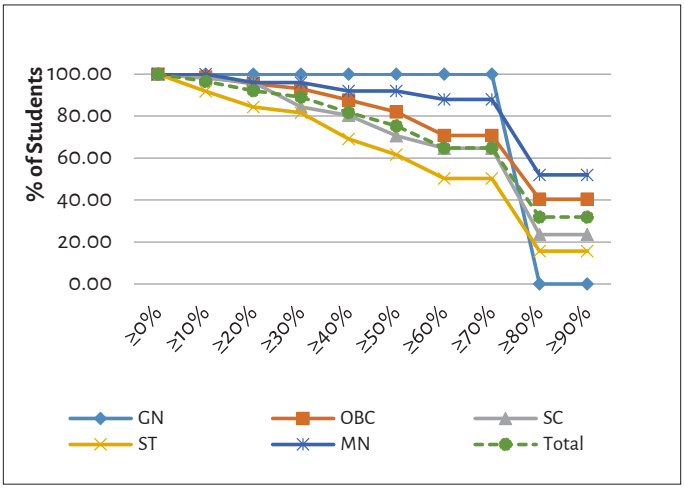


Figure 61b: Percentage of students present by caste (September, Headcount+ Register, pre MDM)

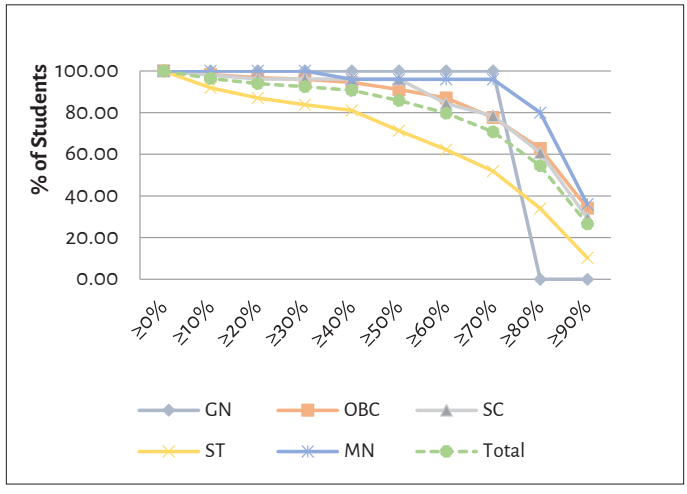


Figure 62a: Percentage of students present at least 90% of all school days by caste (September, Headcount, pre MDM)

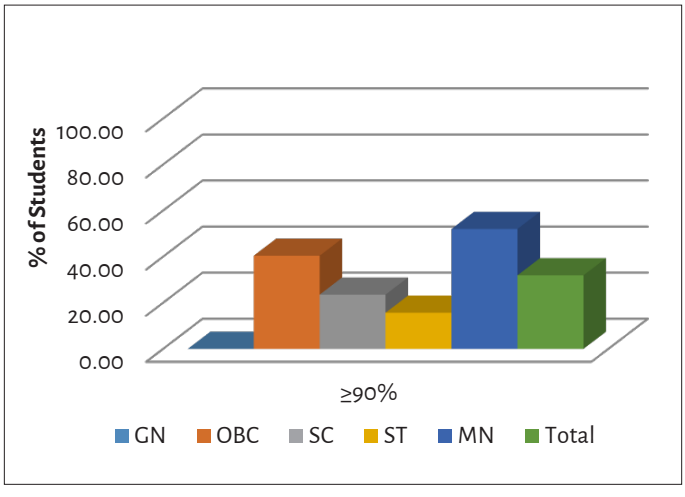


Figure 62b: Percentage of students present at least 90% of all school days by caste (September, Headcount+ Register, pre MDM)

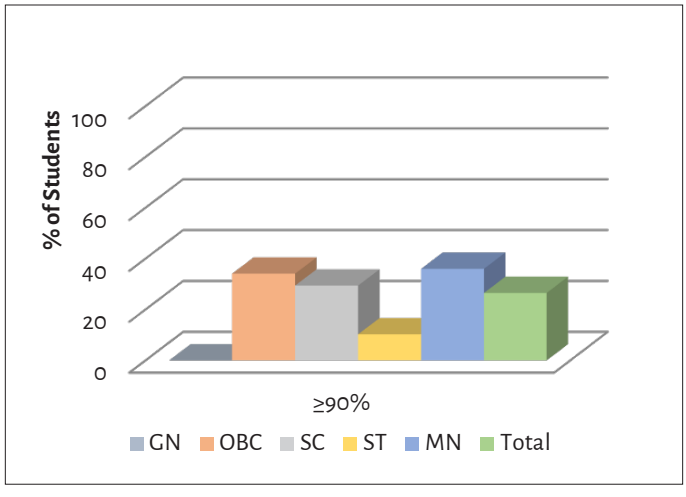


Figure 63a: Percentage of students present by caste (October, Headcount, pre MDM)

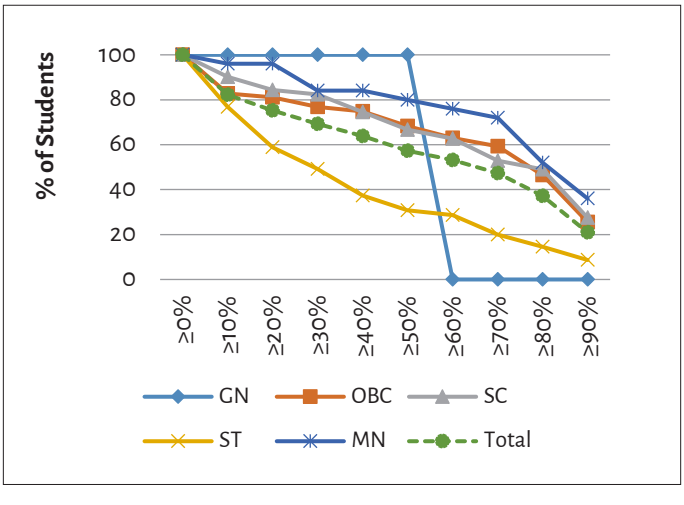


Figure 63b: Percentage of students present by caste (October, Headcount+ Register, pre MDM)

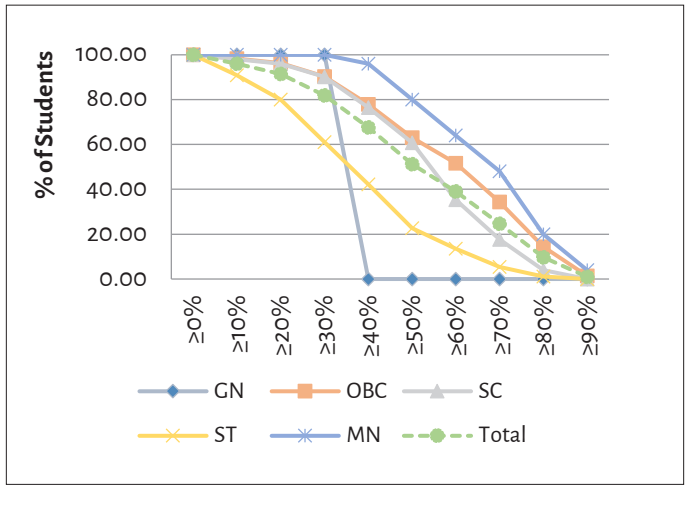


Figure 64a: Percentage of students present at least 90% of all school days by caste (October, Headcount, pre MDM)

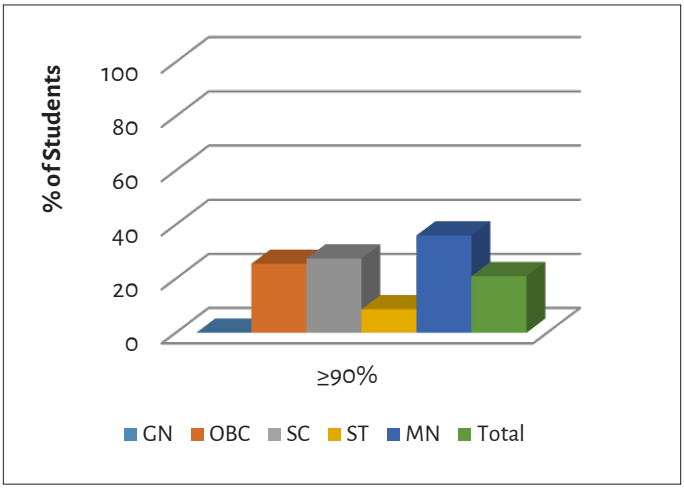


Figure 64b: Percentage of students present at least 90% of all school days by caste (October, Headcount+ Register, pre MDM)

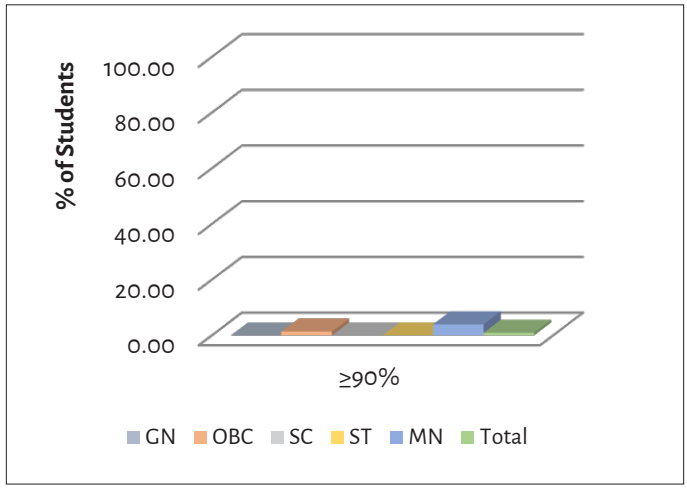


Figure 65a: Percentage of students present by caste (November, Headcount, pre MDM)

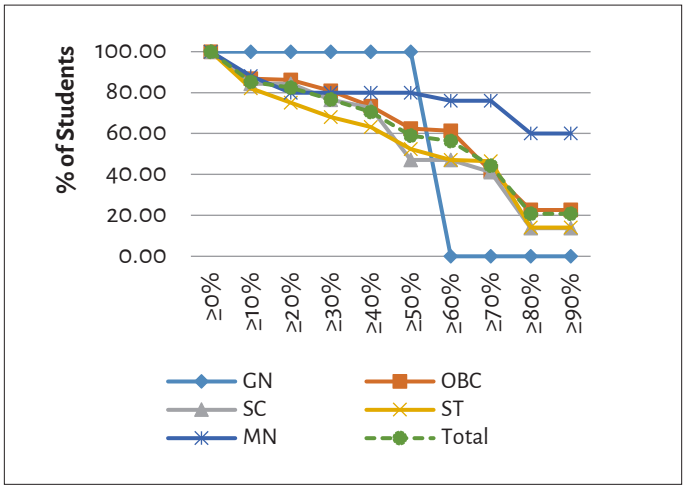


Figure 65b: Percentage of students present by caste (November, Headcount+ Register, pre MDM)

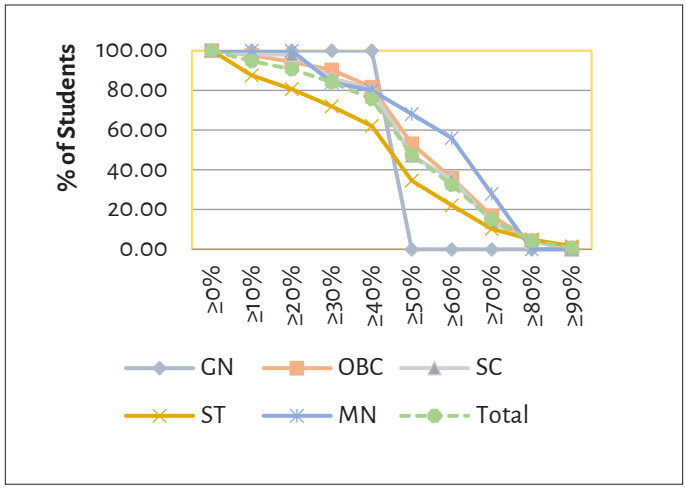


Figure 66a: Percentage of students present at least 90% of all school days by caste (November, Headcount, pre MDM)

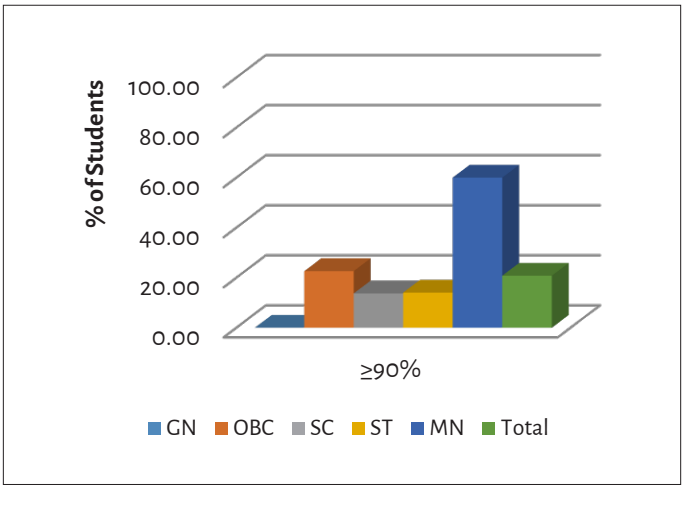


Figure 66b: Percentage of students present at least 90% of all school days by caste (November, Headcount+ Register, pre MDM)

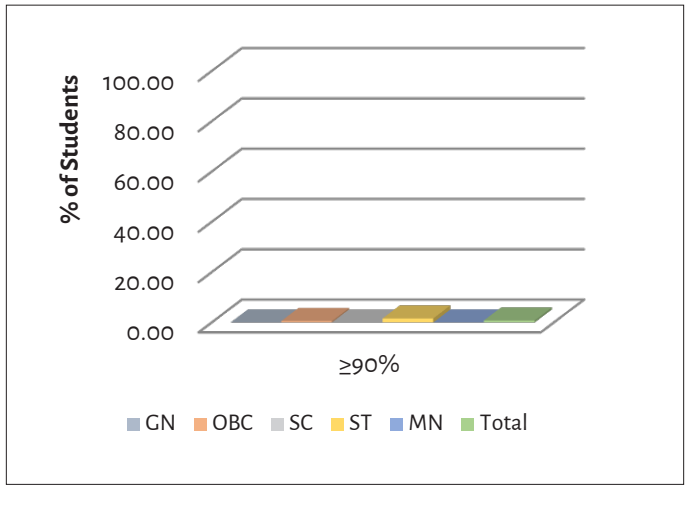


Figure 67a: Percentage of students present by caste (December, Headcount, pre MDM)

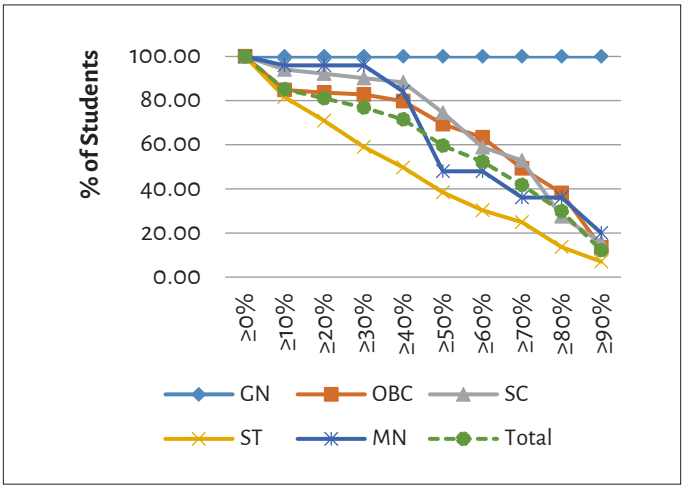


Figure 67b: Percentage of students present by caste (December, Headcount+ Register, pre MDM)

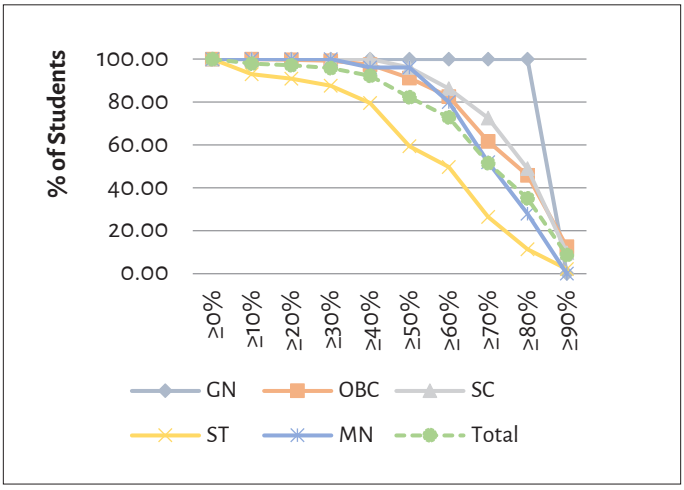


Figure 68a: Percentage of students present at least 90% of all school days by caste (December, Headcount, pre MDM)

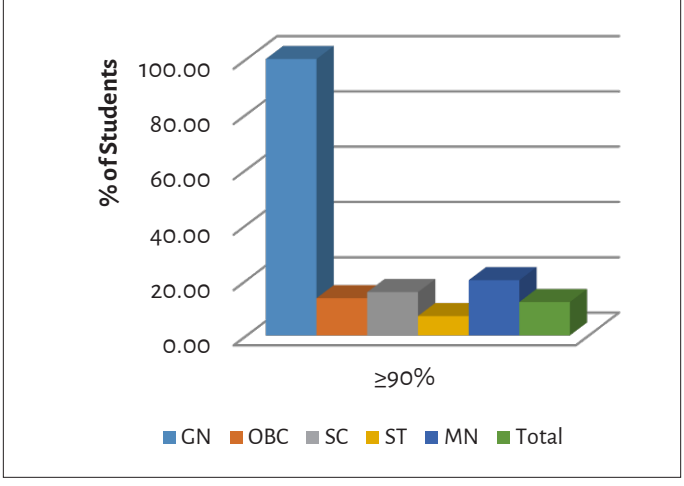


Figure 68b: Percentage of students present at least 90% of all school days by caste (December, Headcount+ Register, pre MDM)

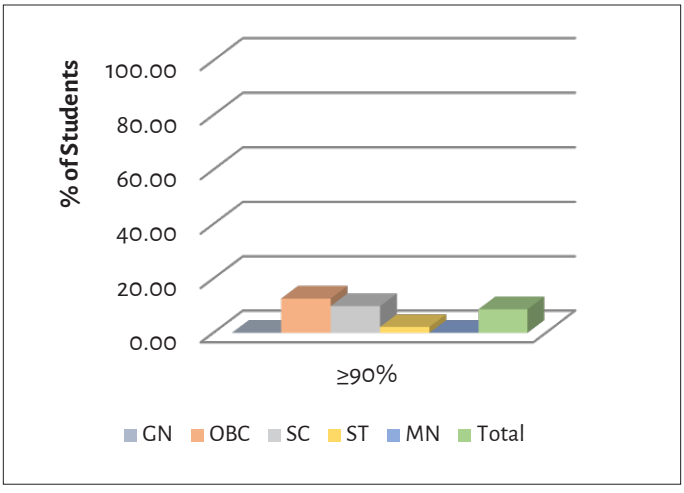


Figure 69a: Percentage of students present by caste (January, Headcount, pre MDM)

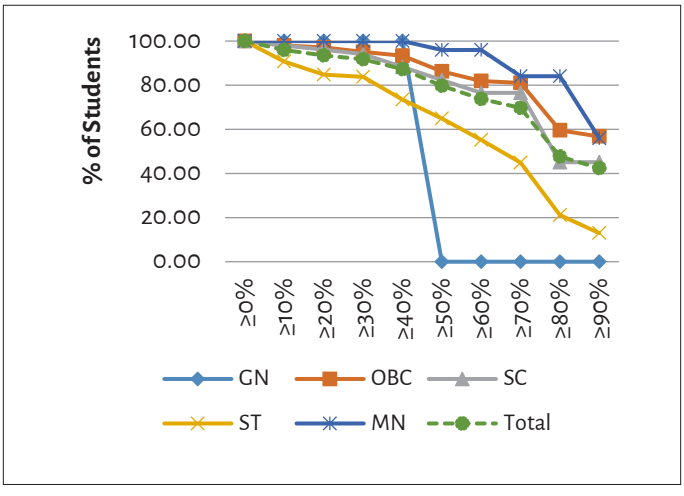


Figure 69b: Percentage of students present by caste (January, Headcount+ Register, pre MDM)

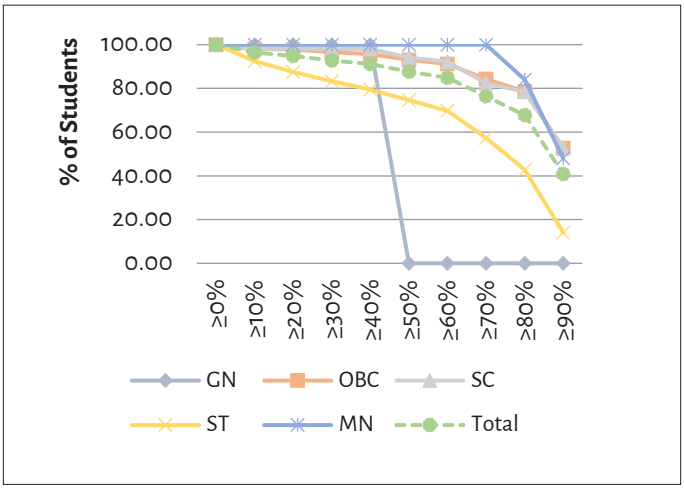


Figure 70a: Percentage of students present at least 90% of all school days by caste (January, Headcount, pre MDM)

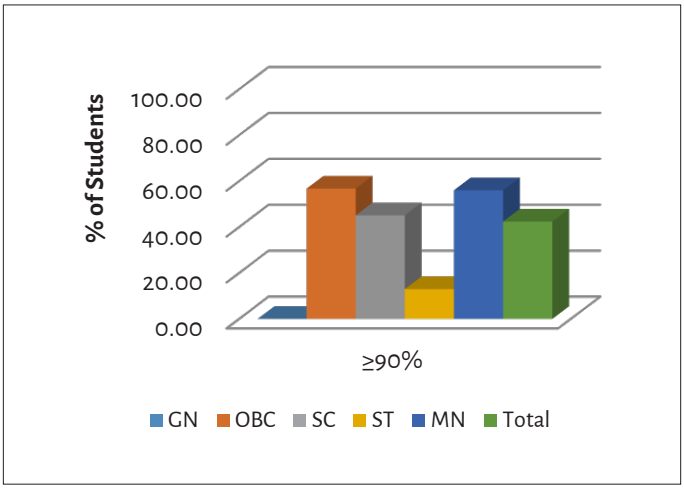


Figure 70b: Percentage of students present at least 90% of all school days by caste (January, Headcount+ Register, pre MDM)

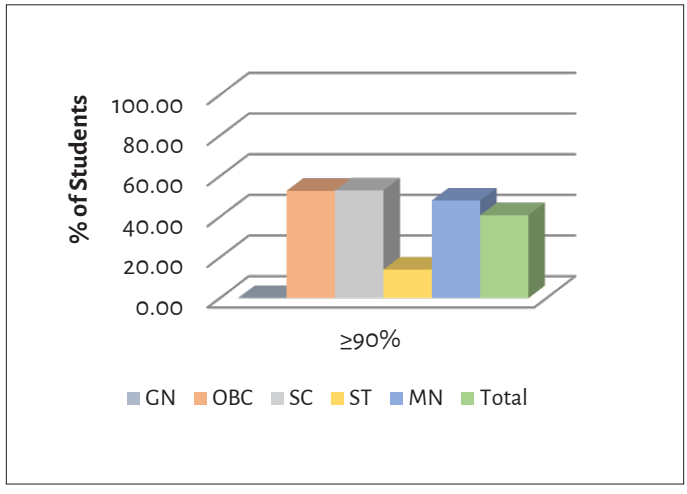


Figure 71a: Percentage of students present by caste (February, Headcount, pre MDM)

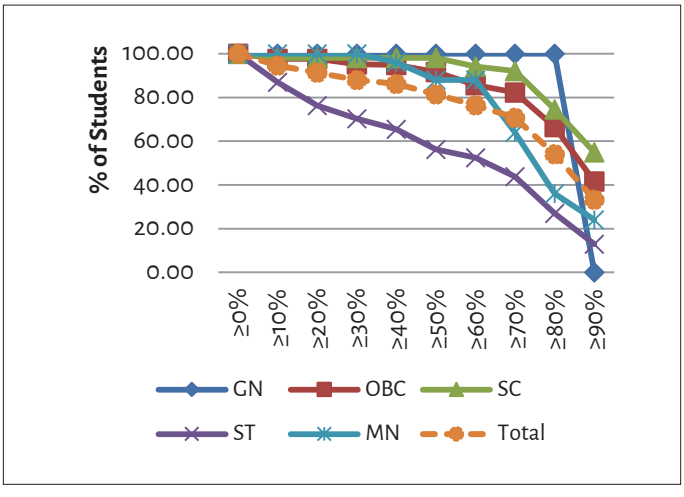


Figure 71b: Percentage of students present by caste (February, Headcount+ Register, pre MDM)

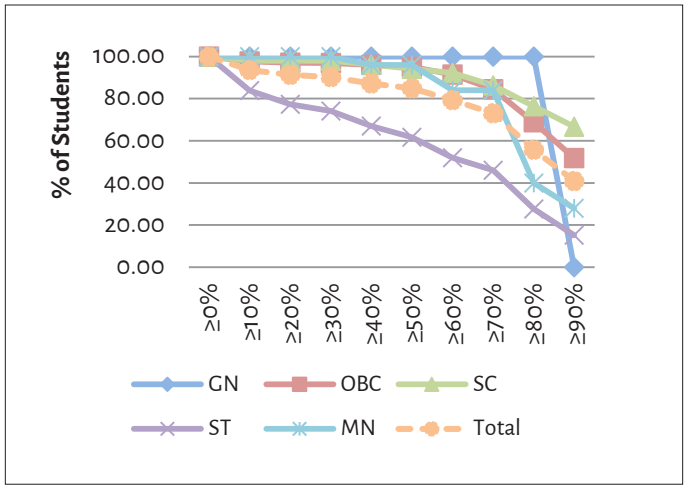


Figure 72a: Percentage of students present at least 90% of all school days by caste (February, Headcount, pre MDM)

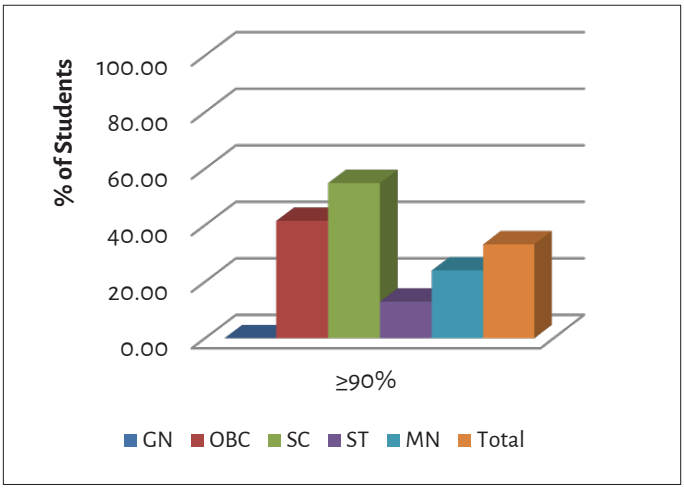


Figure 72b: Percentage of students present at least 90% of all school days by caste (February, Headcount+ Register, pre MDM)

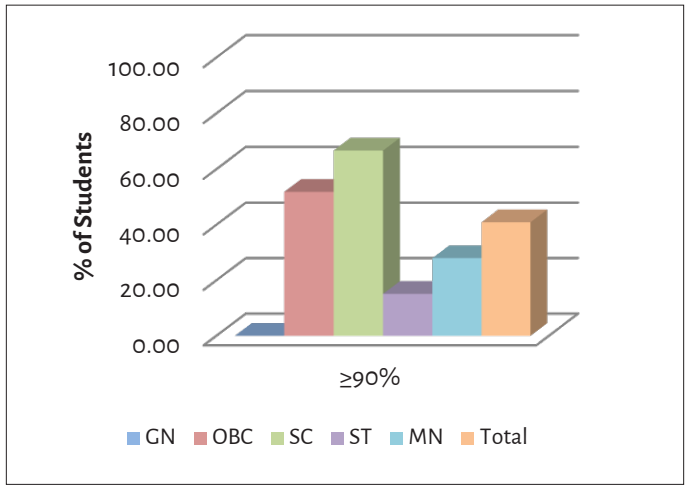


Figure 73a: Percentage of students present by caste (March, Headcount, pre MDM)

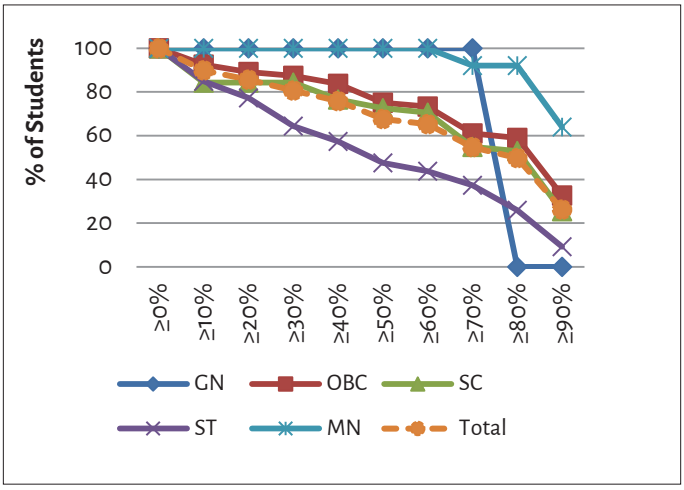


Figure 73b: Percentage of students present by caste (March, Headcount+ Register, pre MDM)

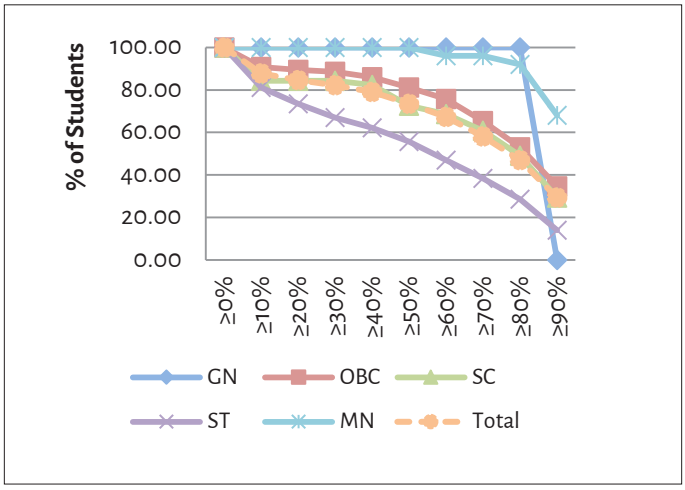


Figure 74a: Percentage of students present at least 90% of all school days by caste (March, Headcount, pre MDM)

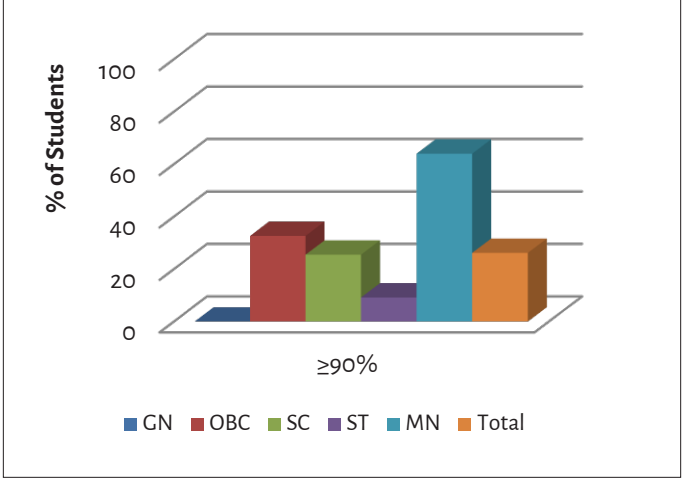


Figure 74b: Percentage of students present at least 90% of all school days by caste (March, Headcount+ Register, pre MDM)

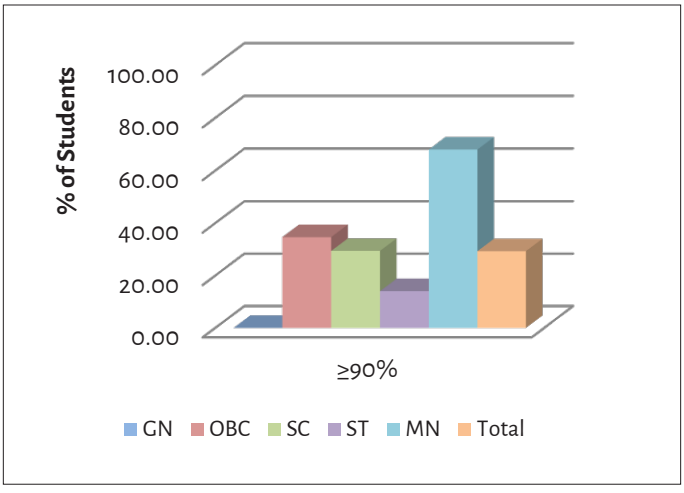


Figure 75a: Percentage of students present by caste (April, Headcount, pre MDM)

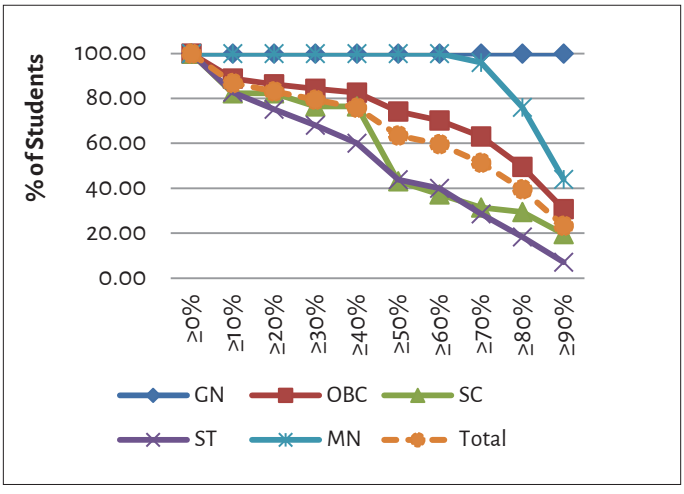


Figure 75b: Percentage of students present by caste (April, Headcount+ Register, pre MDM)

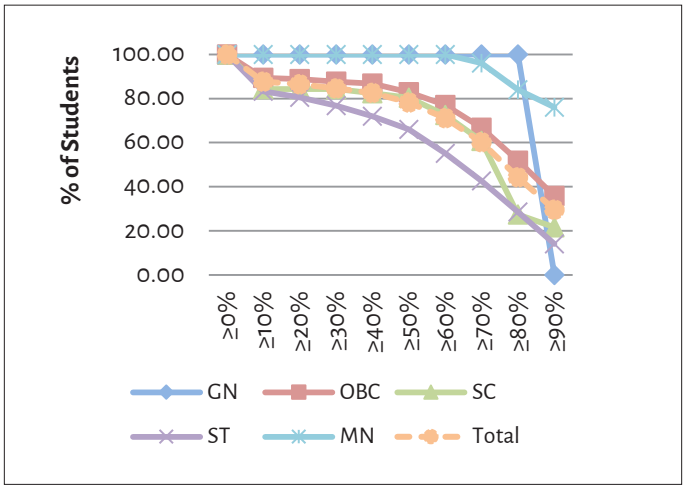


Figure 76a: Percentage of students present at least 90% of all school days by caste (April, Headcount, pre MDM)

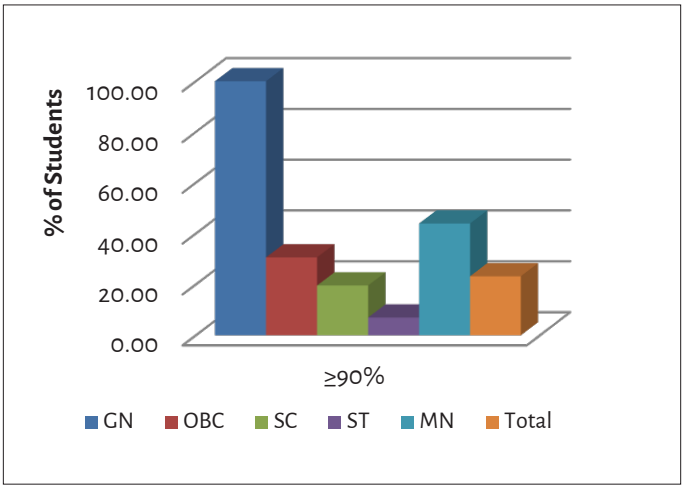
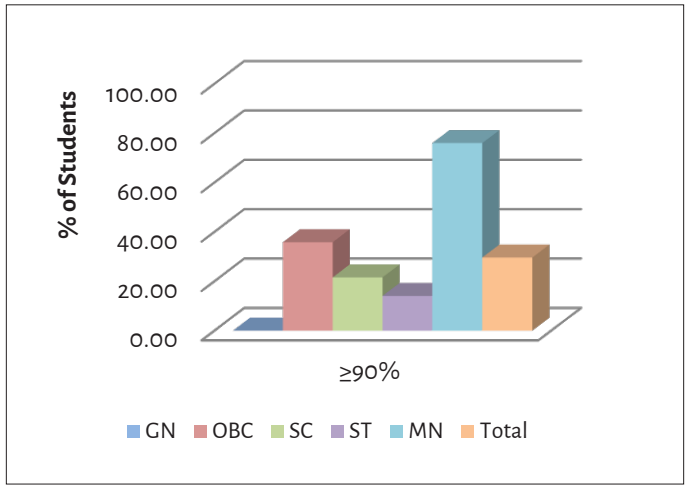


Figure 76b: Percentage of students present at least 90% of all school days by caste (April, Headcount+ Register, pre MDM)



ANNEXURE III (B): % OF STUDENTS PRESENT BY GENDER FOR EVERY MONTH

Figure 77a: Percentage of students present by gender (September, Headcount, pre MDM)

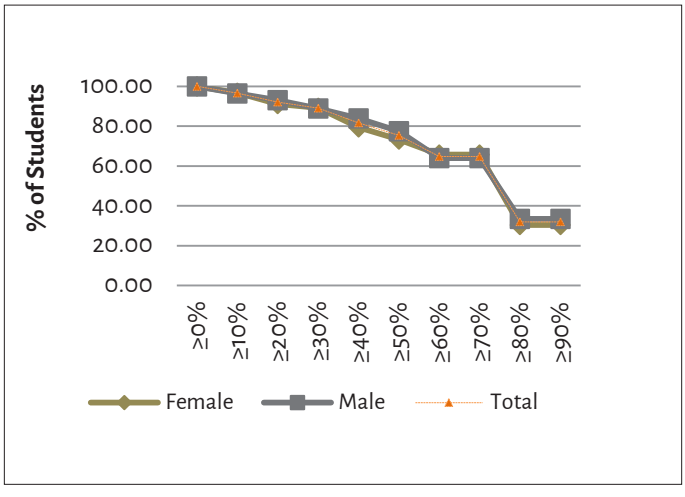


Figure 77b: Percentage of students present by gender (September, Headcount+ Register, pre MDM

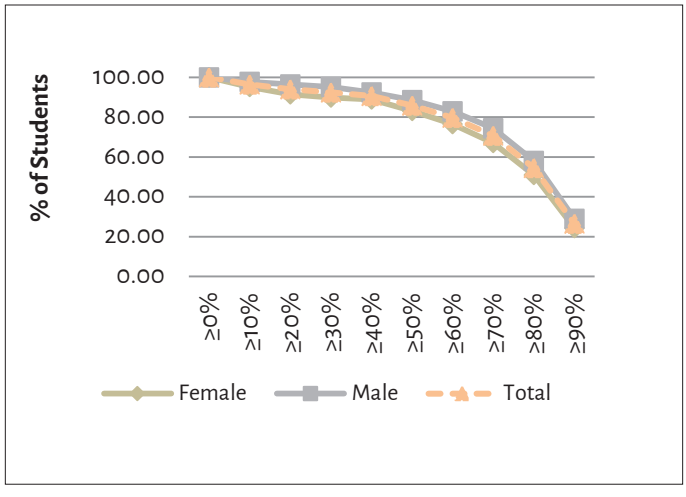


Figure 78a: Percentage of students present at least 90% of all school days by gender (September, Headcount, pre MDM)

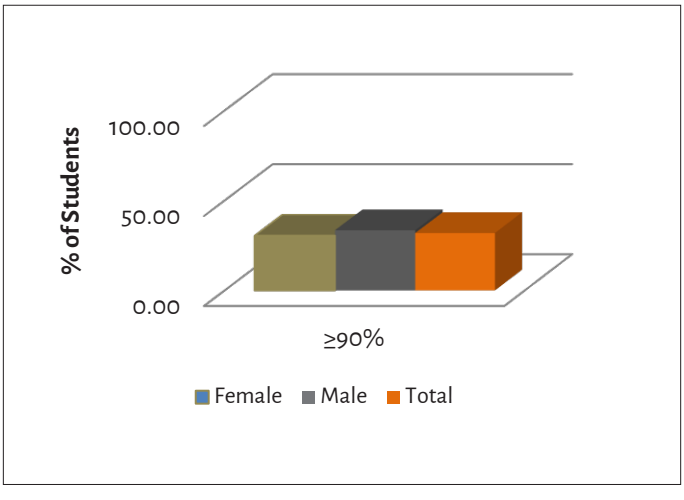


Figure 78b: Percentage of students present at least 90% of all school days by gender (September, Headcount+ Register, pre MDM)

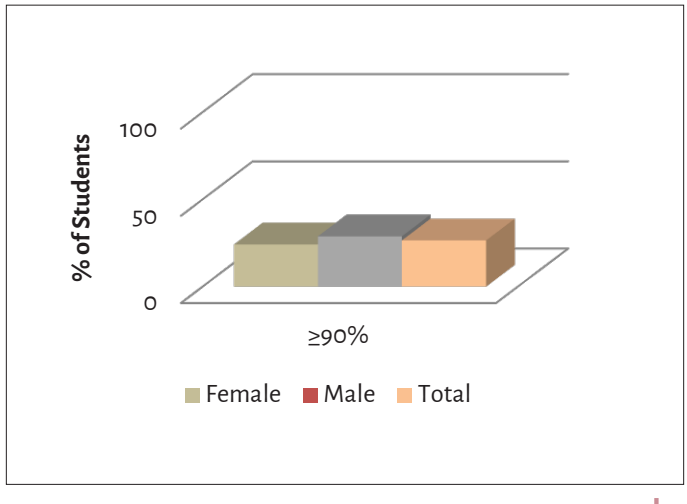


Figure 79a: Percentage of students present by gender (October, Headcount, pre MDM)

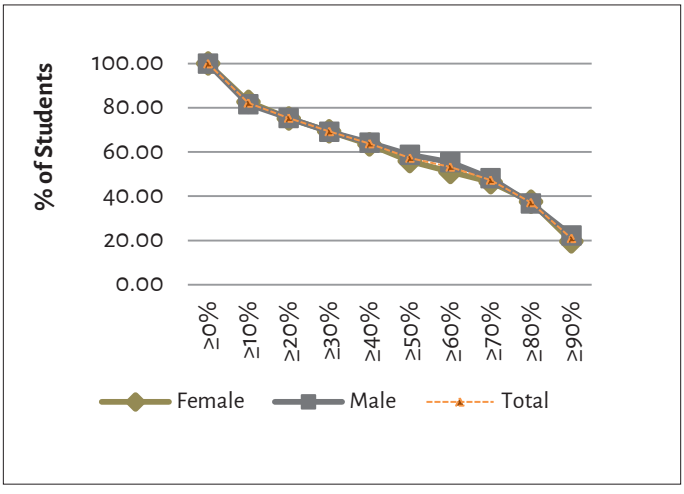


Figure 79b: Percentage of students present by gender (October, Headcount+ Register, pre MDM)

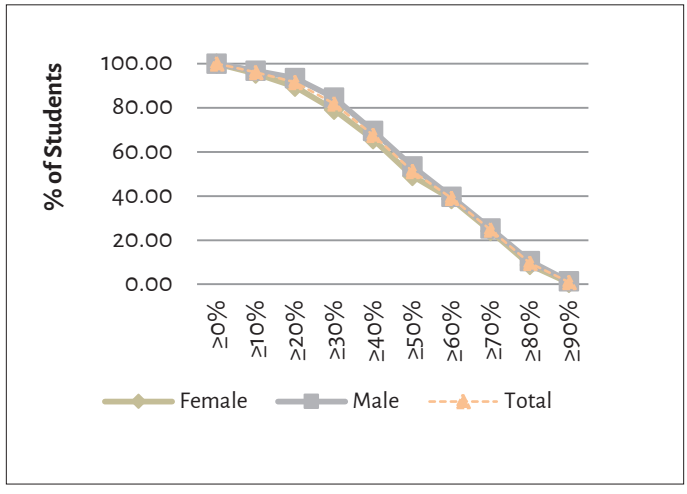


Figure 80a: Percentage of students present at least 90% of all school days by gender (October, Headcount, pre MDM)

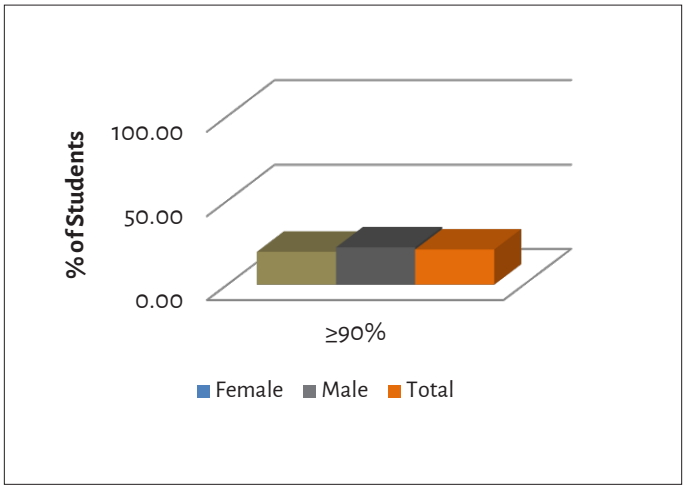


Figure 80b: Percentage of students present at least 90% of all school days by gender (October, Headcount+ Register, pre MDM)

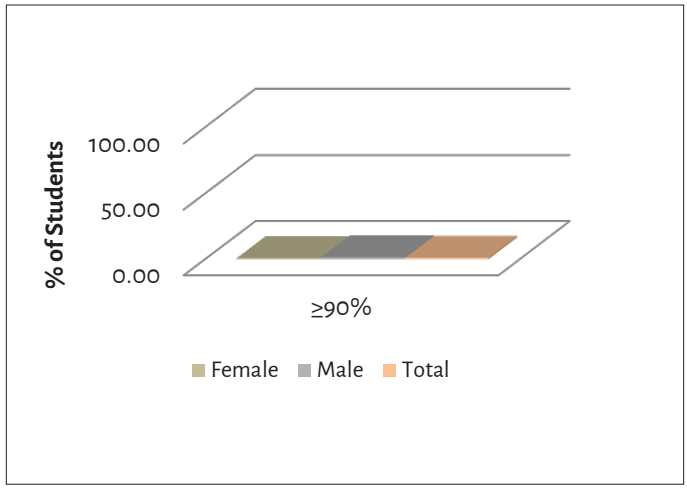


Figure 81a: Percentage of students present by gender (November, Headcount, pre MDM)

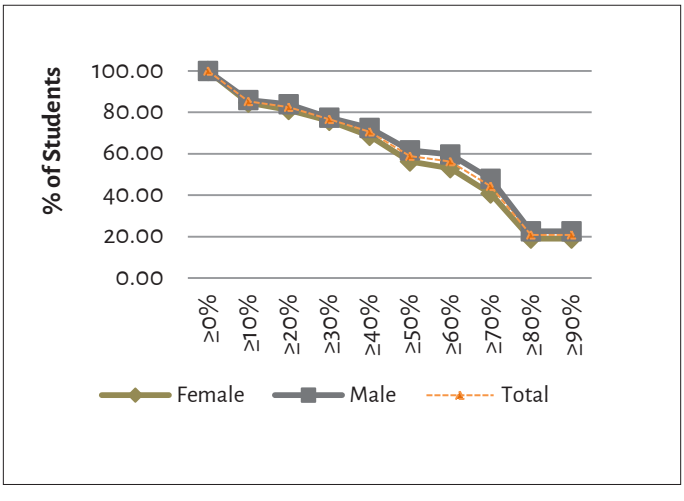


Figure 81b: Percentage of students present by gender (November, Headcount+ Register, pre MDM)

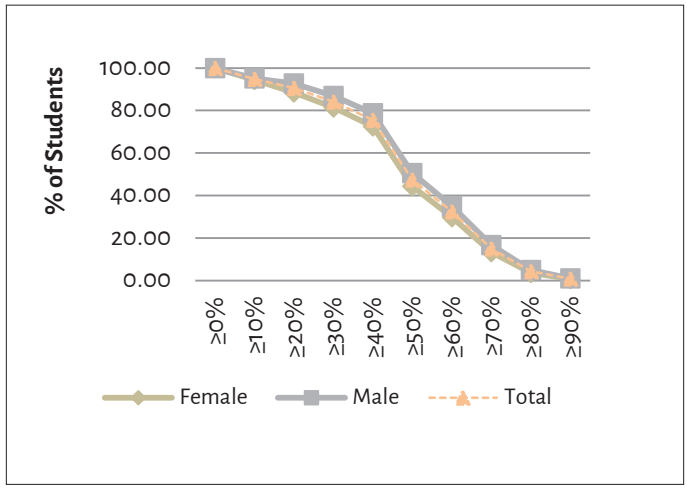


Figure 82a: Percentage of students present at least 90% of all school days by gender (November, Headcount, pre MDM)

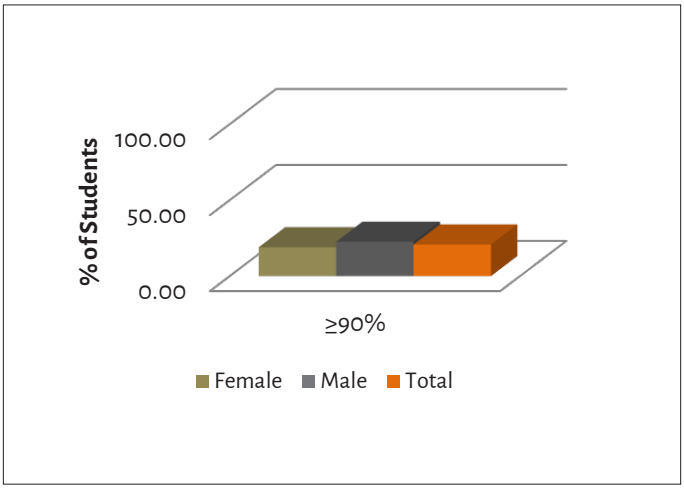


Figure 82b: Percentage of students present at least 90% of all school days by gender (November, Headcount+ Register, pre MDM)

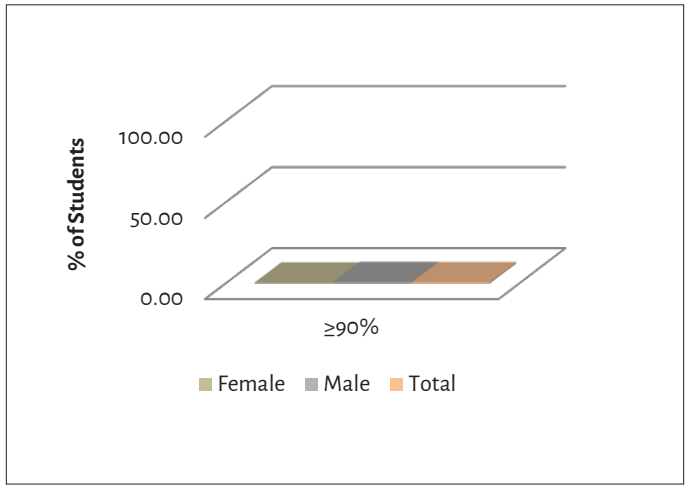


Figure 83a: Percentage of students present by gender (December, Headcount, pre MDM)

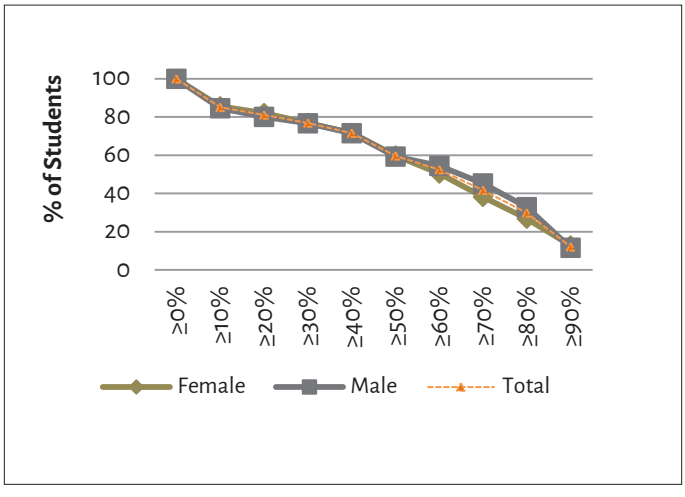


Figure 83b: Percentage of students present by gender (December, Headcount+ Register, pre MDM)

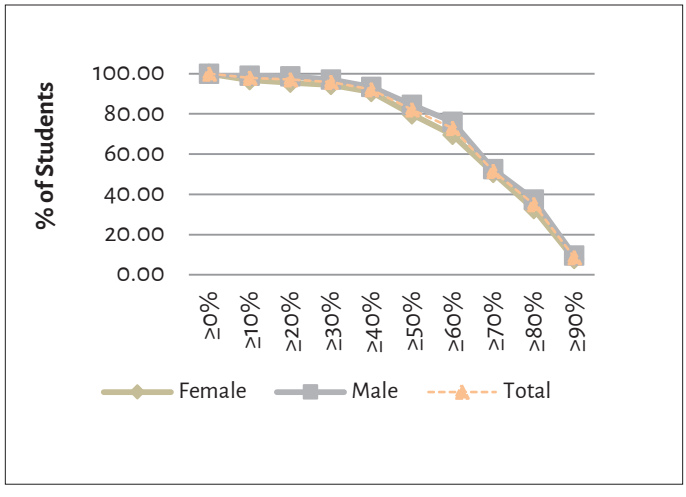


Figure 84a: Percentage of students present at least 90% of all school days by gender (December, Headcount, pre MDM)

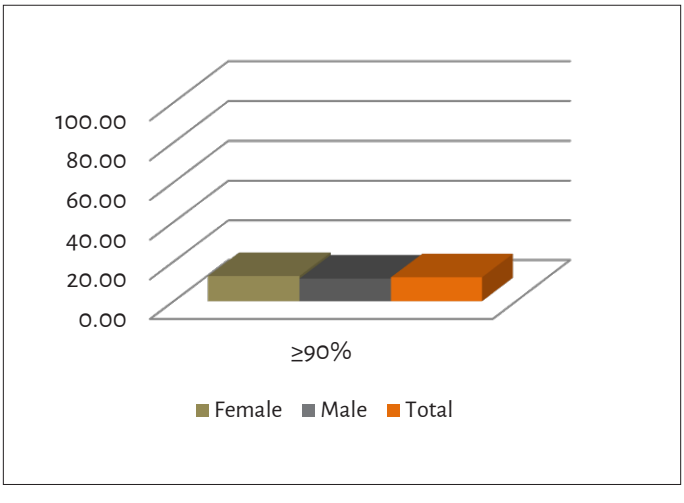


Figure 84b: Percentage of students present at least 90% of all school days by gender (December, Headcount+ Register, pre MDM)

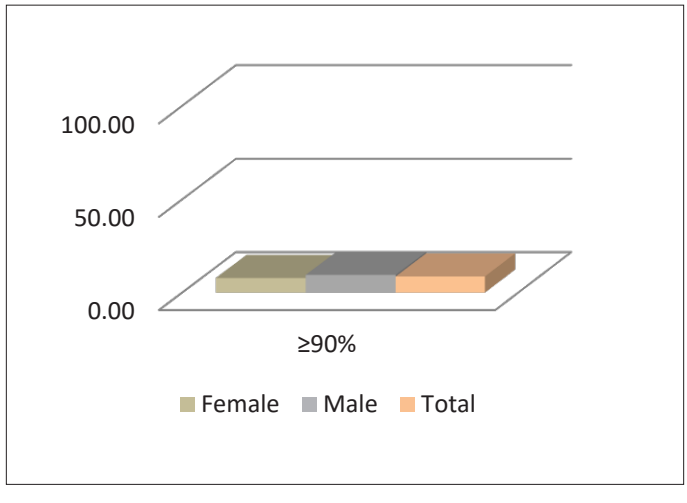


Figure 85a: Percentage of students present by gender (January, Headcount, pre MDM)

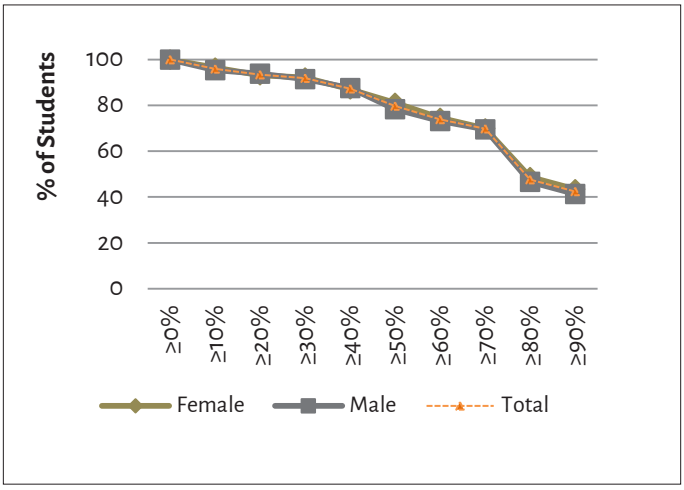


Figure 85b: Percentage of students present by gender (January, Headcount+ Register, pre MDM)

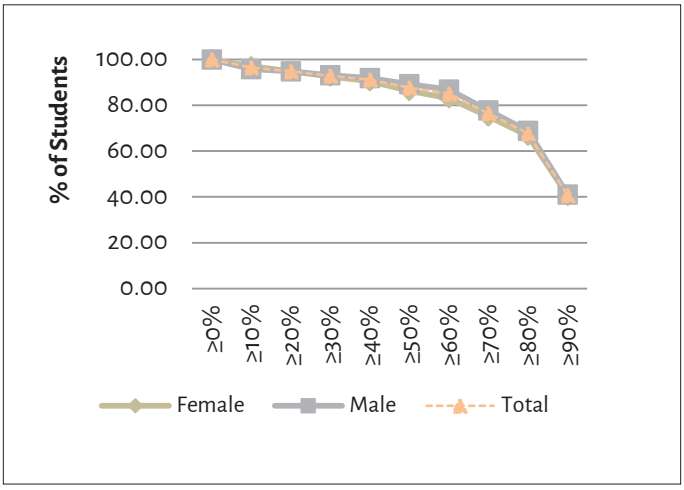


Figure 86a: Percentage of students present at least 90% of all school days by gender (January, Headcount, pre MDM)

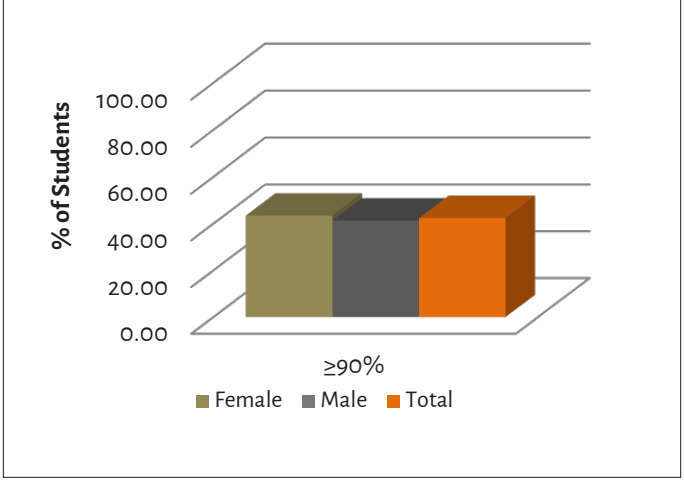


Figure 86b: Percentage of students present at least 90% of all school days by gender (January, Headcount+ Register, pre MDM

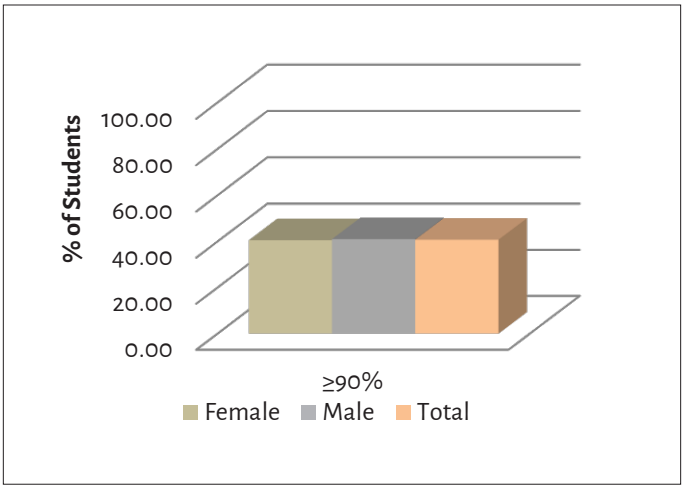


Figure 87a: Percentage of students present by gender (February, Headcount, pre MDM)

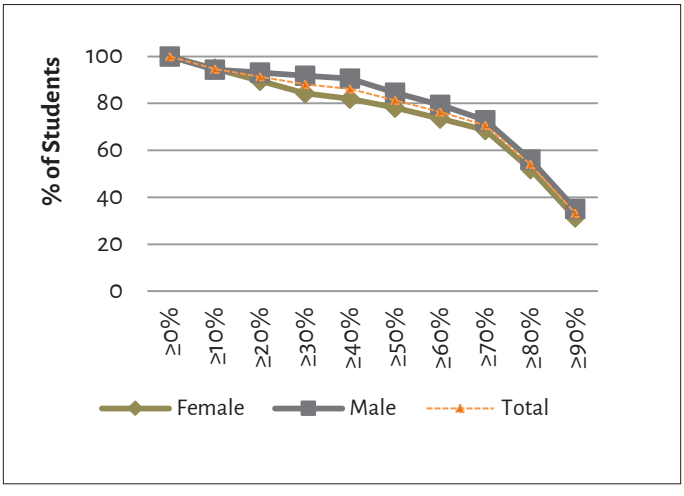


Figure 87b: Percentage of students present by gender (February, Headcount+ Register, pre MDM)

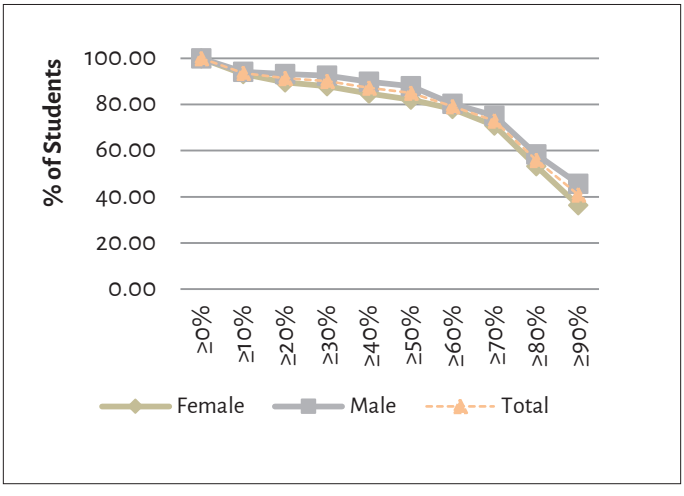


Figure 88a: Percentage of students present at least 90% of all school days by gender (February, Headcount, pre MDM)

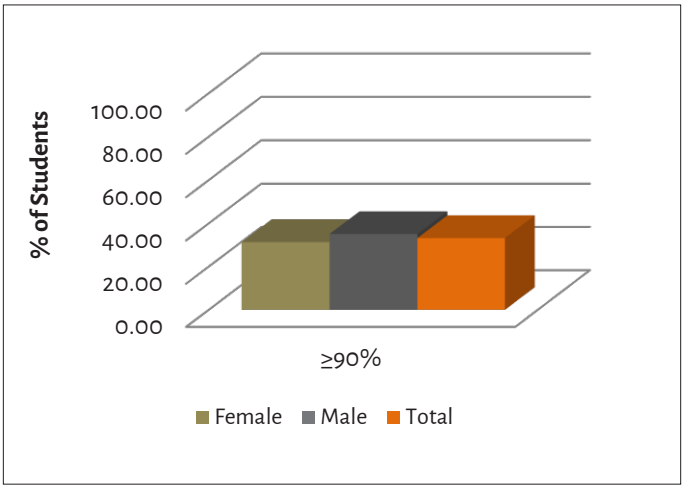


Figure 88b: Percentage of students present at least 90% of all school days by gender (February, Headcount+ Register, pre MDM)

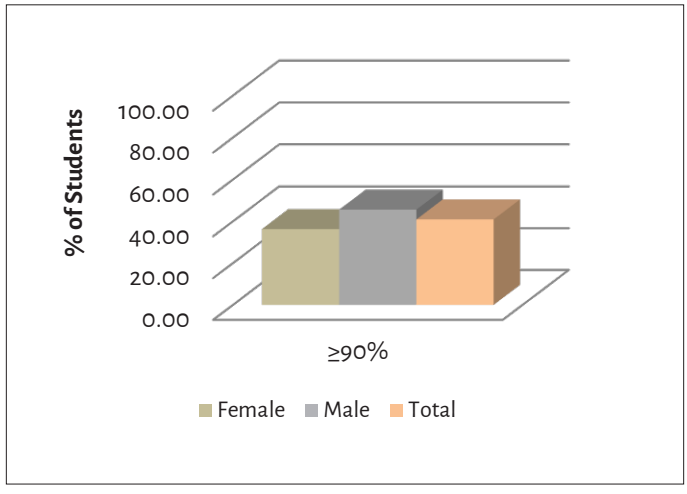


Figure 89a: Percentage of students present by gender (March, Headcount, pre MDM)

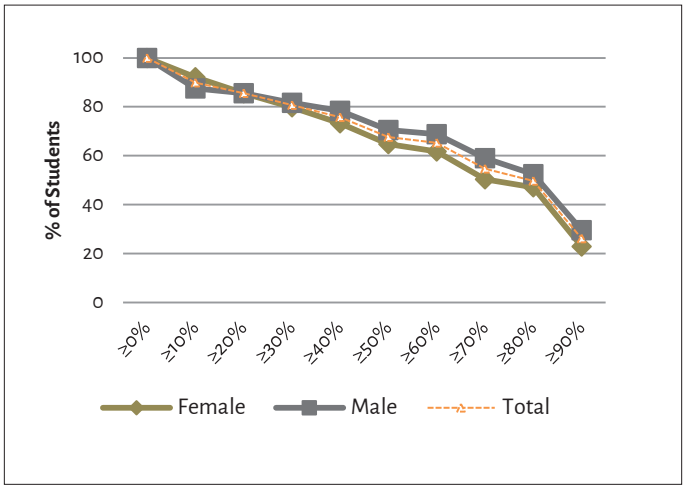


Figure 89b: Percentage of students present by gender (March, Headcount+ Register, pre MDM)

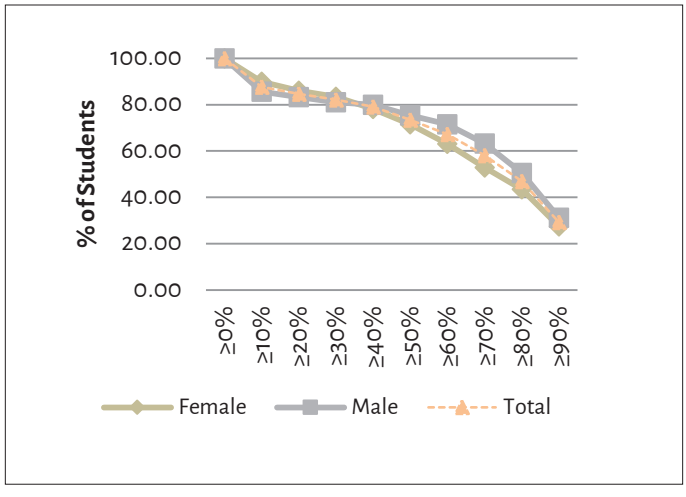


Figure 90a: Percentage of students present at least 90% of all school days by gender (March, Headcount, pre MDM)

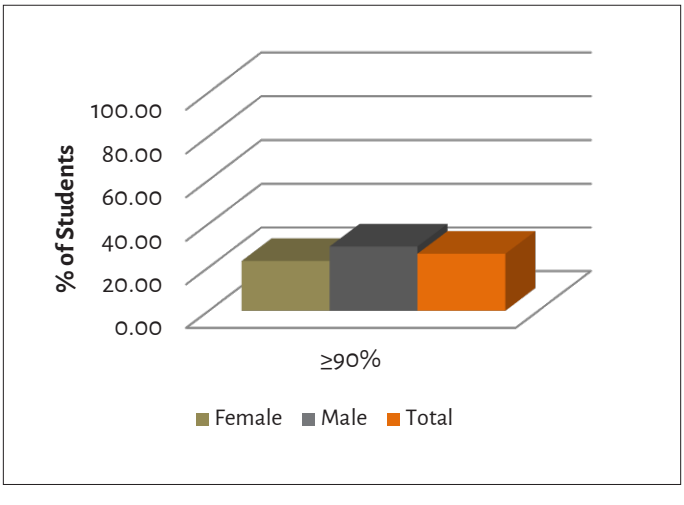


Figure 90b: Percentage of students present at least 90% of all school days by gender (March, Headcount+ Register, pre MDM)

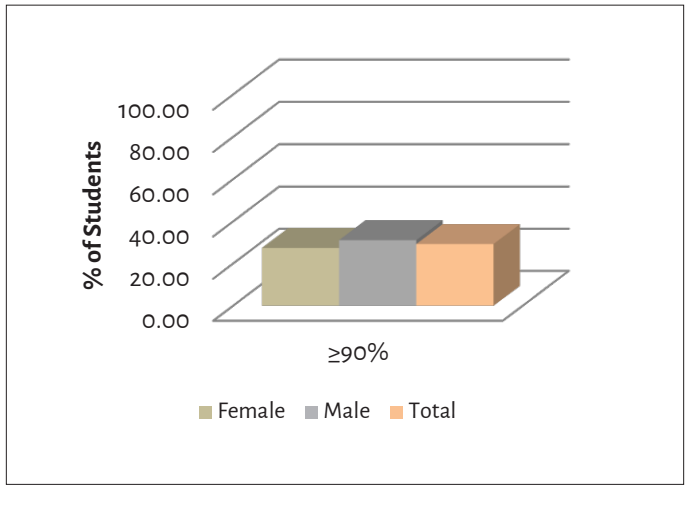


Figure 91a: Percentage of students present by gender (April, Headcount, pre MDM)

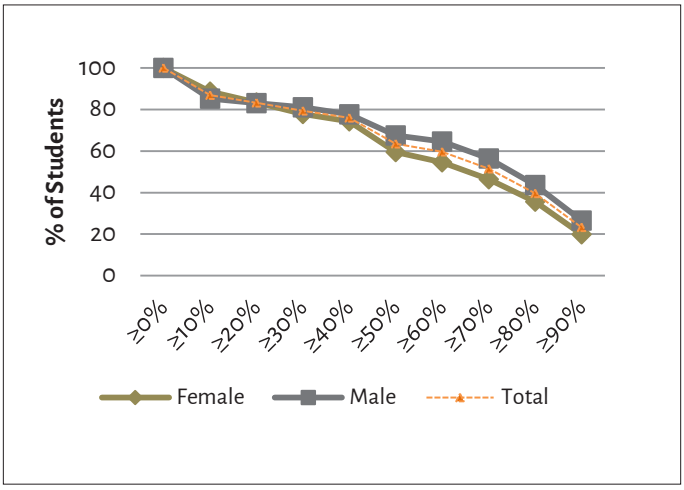


Figure 91b: Percentage of students present by gender (April, Headcount+ Register, pre MDM)

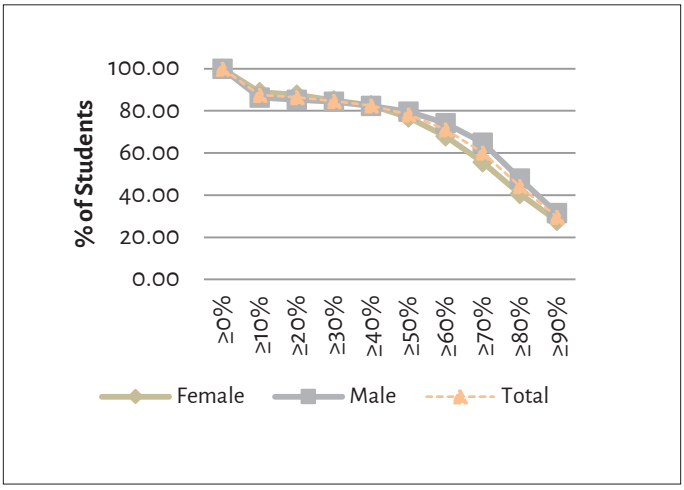


Figure 92a: Percentage of students present at least 90% of all school days by gender (April, Headcount, pre MDM)

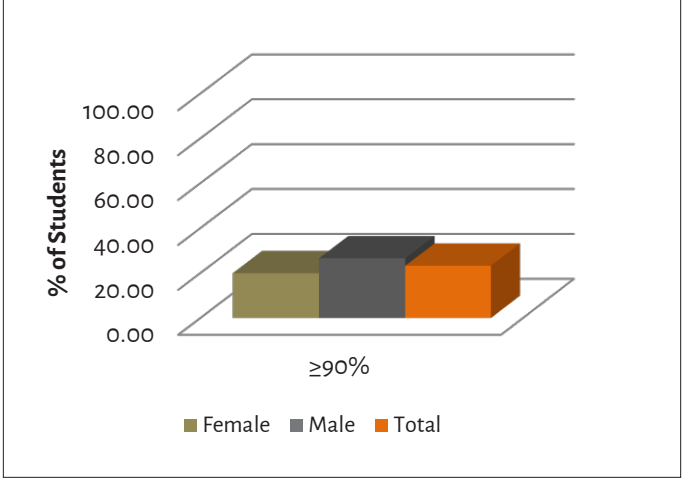
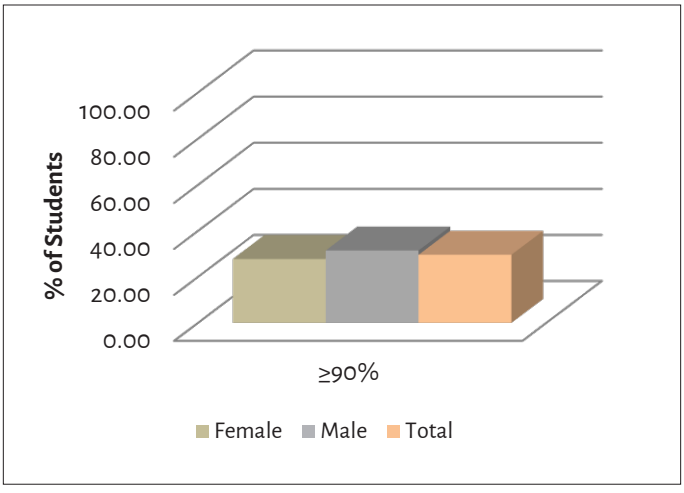


Figure 92b: Percentage of students present at least 90% of all school days by gender (April, Headcount+ Register, pre MDM)



ANNEXURE IV(A): AVERAGE STUDENT ATTENDANCE RATES BY CASTE AND SCHOOL FOR EACH GRADE

Figure 93a: Average student attendance rates for grade I by caste and school (Sept-Apr, Headcount, pre MDM)

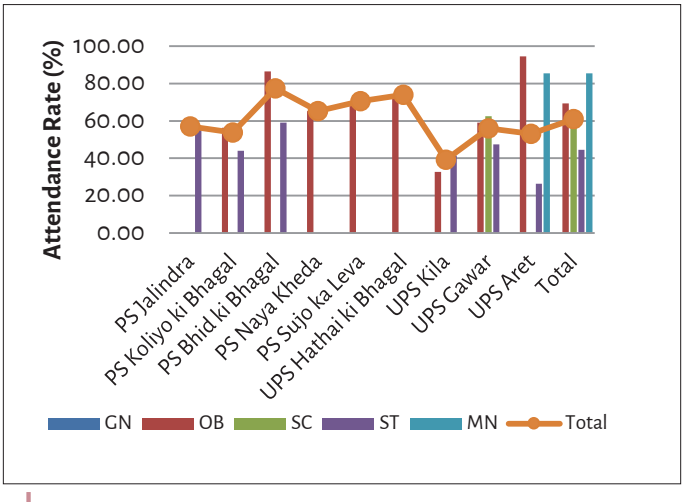


Figure 93b: Average student attendance rates for grade I by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

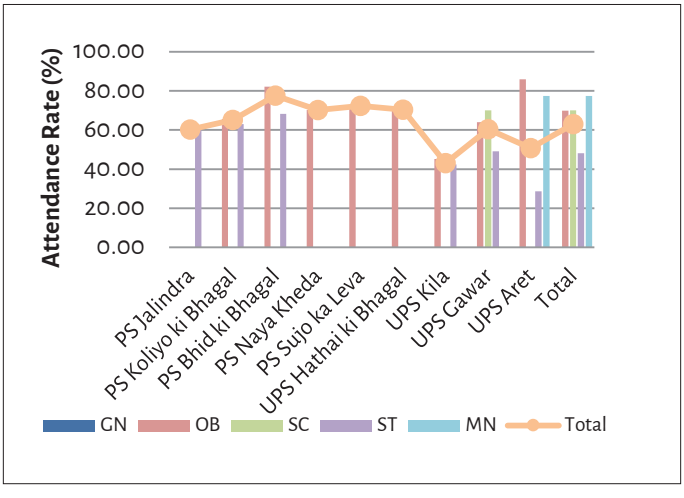


Figure 94a: Average student attendance rates for grade II by caste and school (Sept-Apr, Headcount, pre MDM)

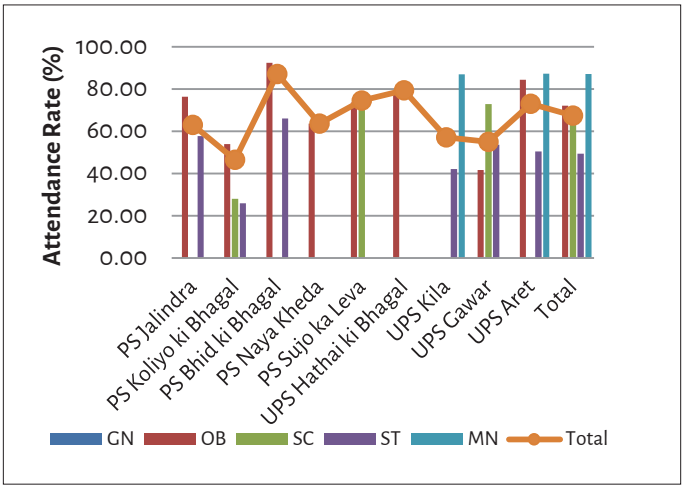


Figure 94b: Average student attendance rates for grade II by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

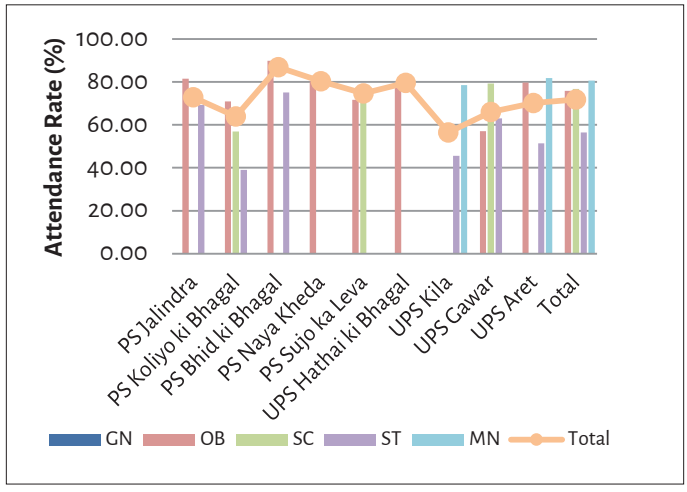


Figure 95a: Average student attendance rates for grade III by caste and school (Sept-Apr, Headcount, pre MDM)

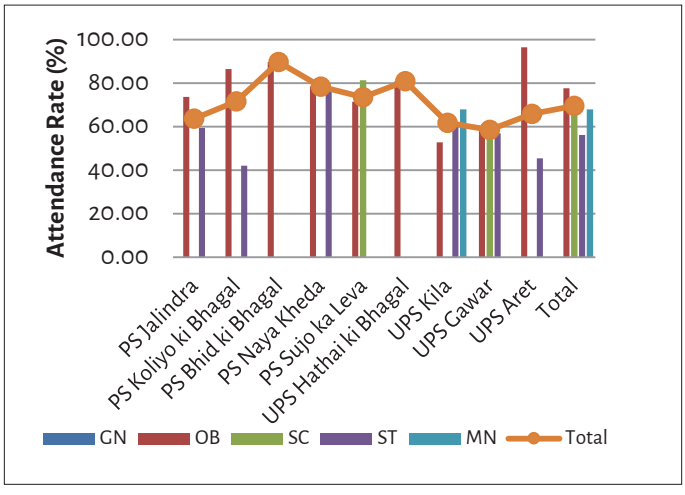


Figure 95b: Average student attendance rates for grade III by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

Figure 96a: Average student attendance rates for grade IV by caste and school (Sept-Apr, Headcount, pre MDM)

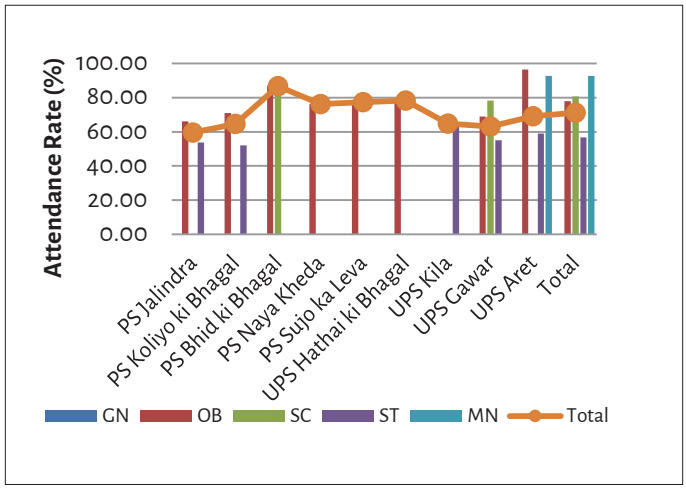


Figure 96b: Average student attendance rates for grade IV by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

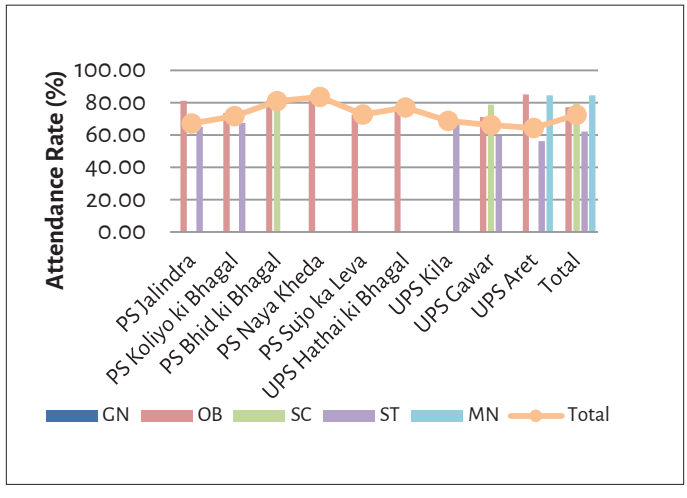


Figure 97a: Average student attendance rates for grade V by caste and school (Sept-Apr, Headcount, pre MDM)

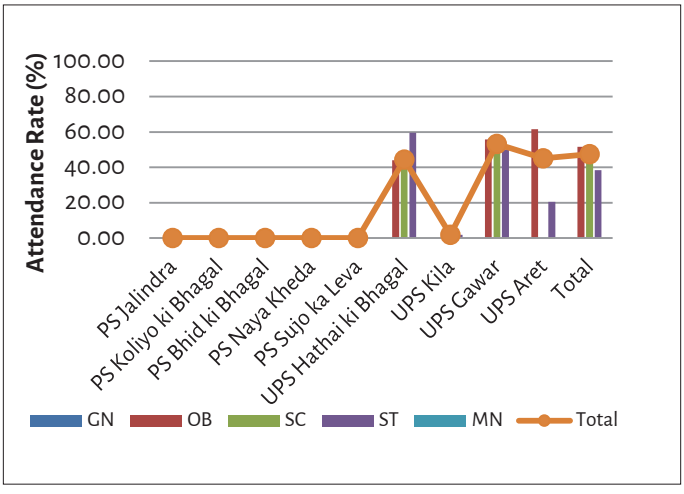


Figure 97b: Average student attendance rates for grade V by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

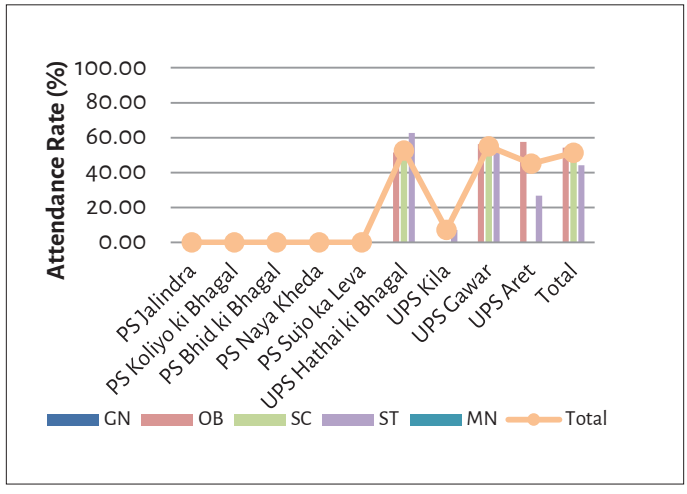


Figure 98a: Average student attendance rates for grade VI by caste and school (Sept-Apr, Headcount, pre MDM)

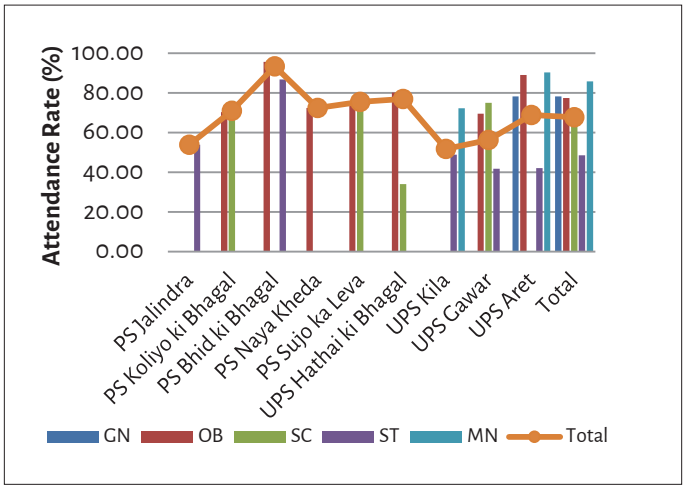


Figure 98b: Average student attendance rates for grade VI by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

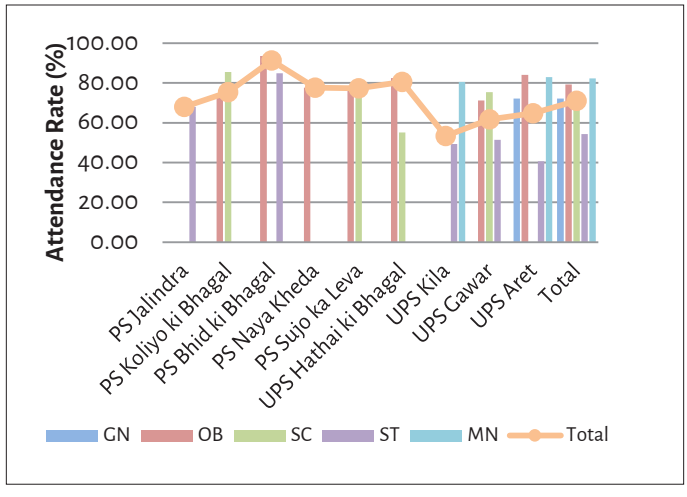


Figure 99a: Average student attendance rates for grade VII by caste and school (Sept-Apr, Headcount, pre MDM)

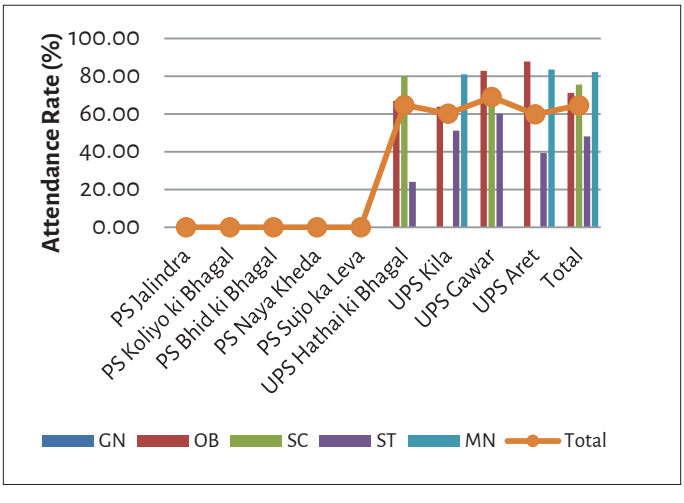


Figure 99b: Average student attendance rates for grade VII by caste and school (Sept-Apr, Headcount+ Register, pre MDM)

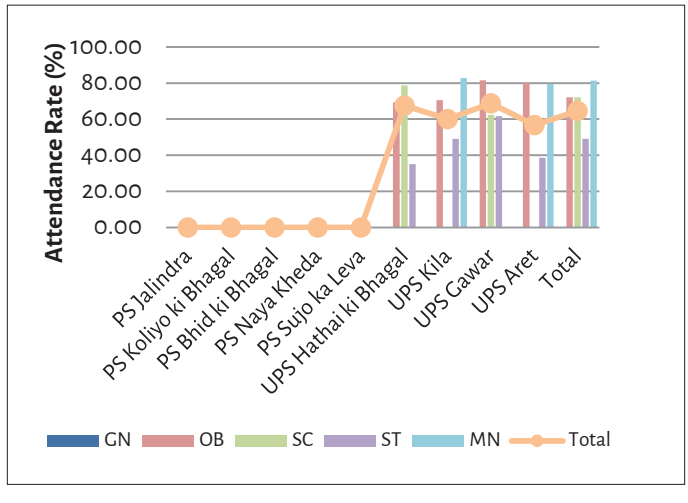


Figure 100a: Average student attendance rates for grade VIII by caste and school (Sept-Apr, Headcount, pre MDM)

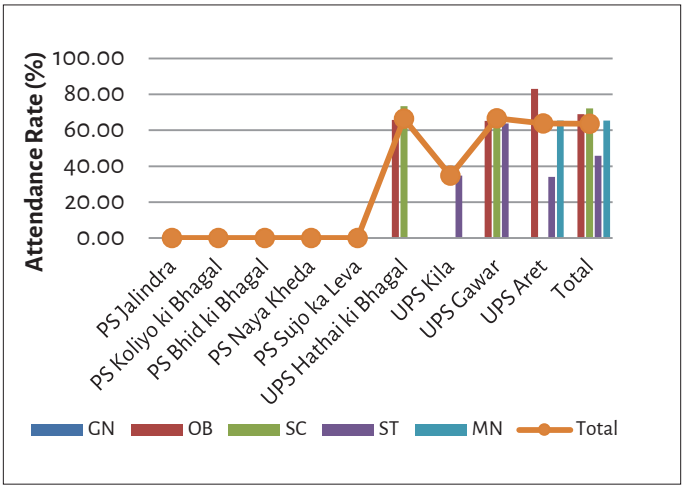
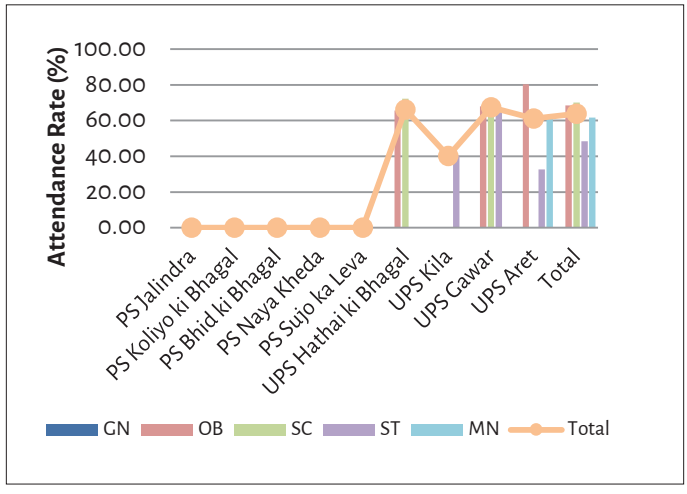


Figure 100b: Average student attendance rates for grade VIII by caste and school (Sept-Apr, Headcount+ Register, pre MDM)



ANNEXURE IV(B): AVERAGE STUDENT ATTENDANCE RATES BY GENDER AND SCHOOL FOR EACH GRADE

Figure 101a: Average student attendance rates for grade I by gender and school (Sept-Apr, Headcount, pre MDM)

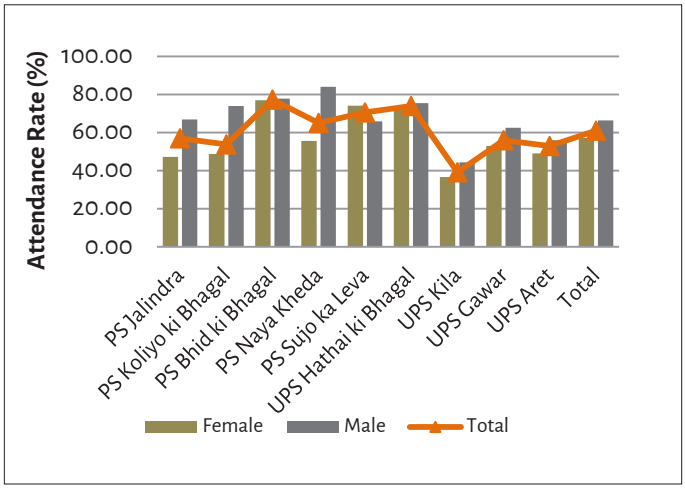


Figure 101b: Average student attendance rates for grade I by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

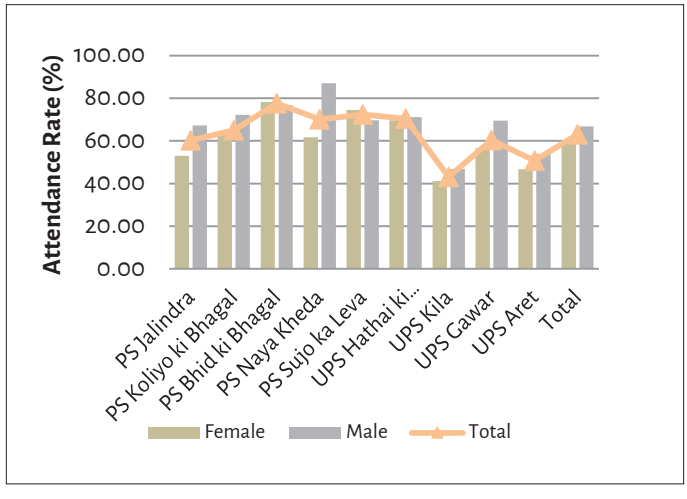


Figure 102a: Average student attendance rates for grade II by gender and school (Sept-Apr, Headcount, pre MDM)

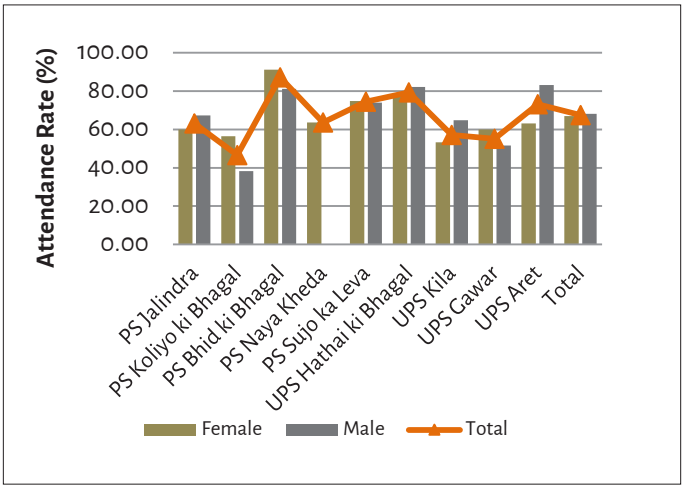


Figure 102b: Average student attendance rates for grade II by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

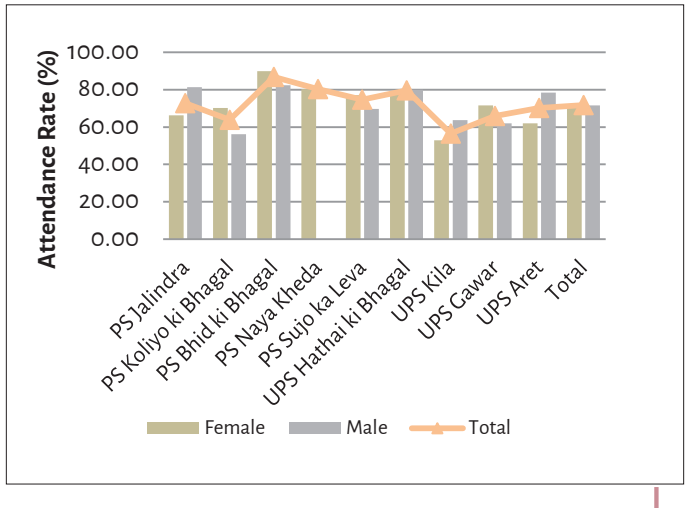


Figure 103a: Average student attendance rates for grade III by gender and school (Sept-Apr, Headcount, pre MDM)

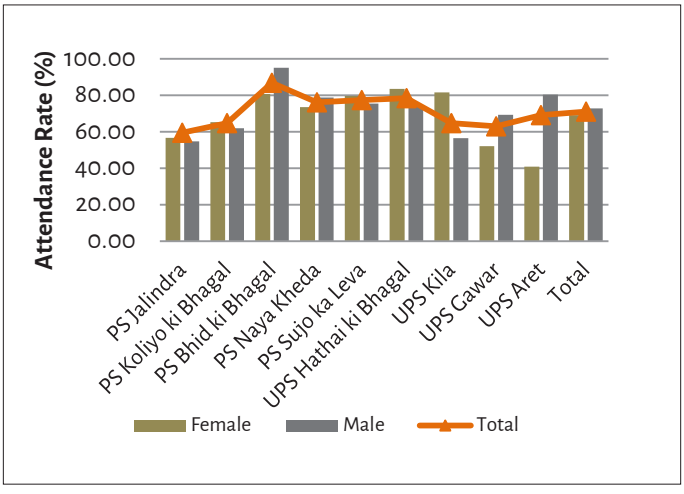


Figure 103b: Average student attendance rates for grade III by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

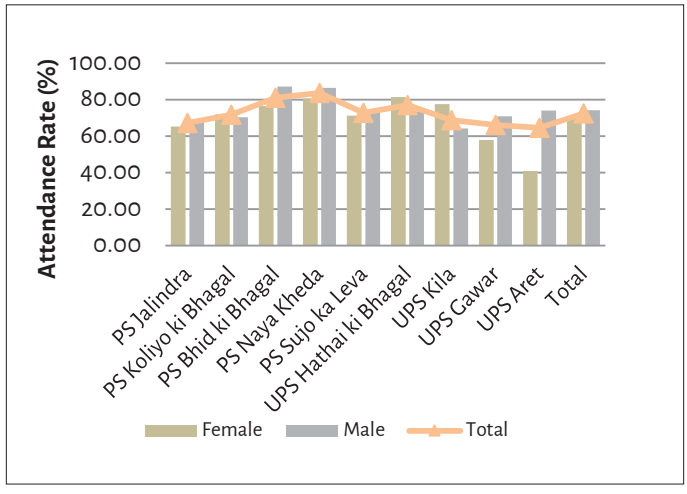


Figure 104a: Average student attendance rates for grade IV by gender and school (Sept-Apr, Headcount, pre MDM)

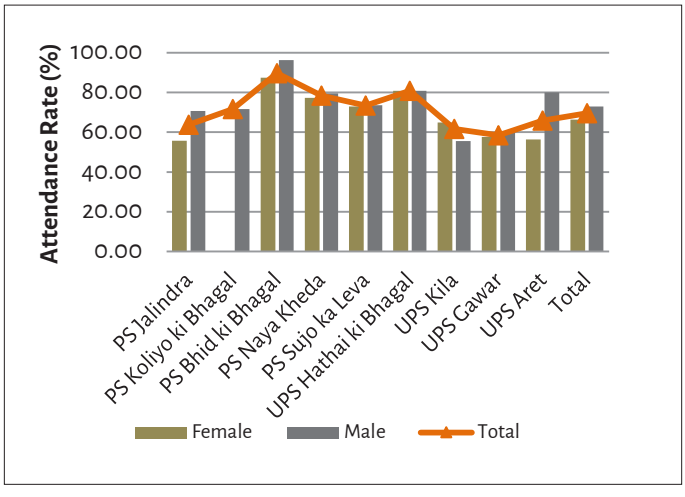


Figure 104b: Average student attendance rates for grade IV by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

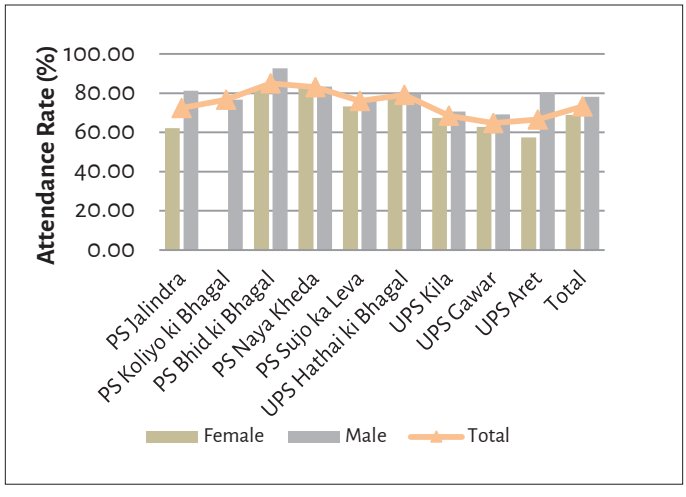


Figure 105a: Average student attendance rates for grade V by gender and school (Sept-Apr, Headcount, pre MDM)

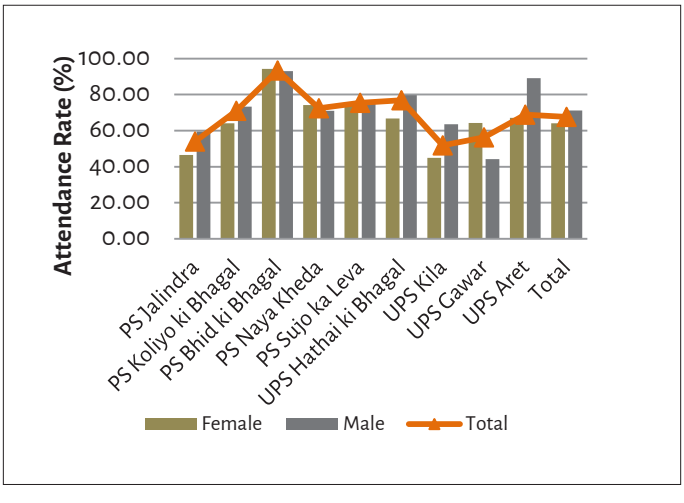


Figure 105b: Average student attendance rates for grade V by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

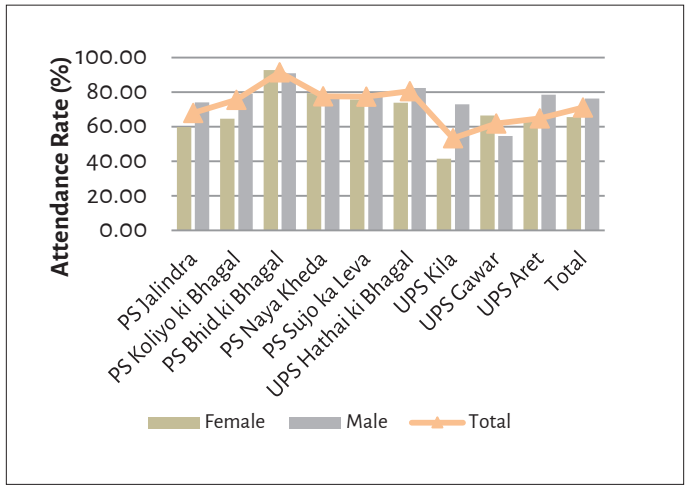


Figure 106a: Average student attendance rates for grade VI by gender and school (Sept-Apr, Headcount, pre MDM)

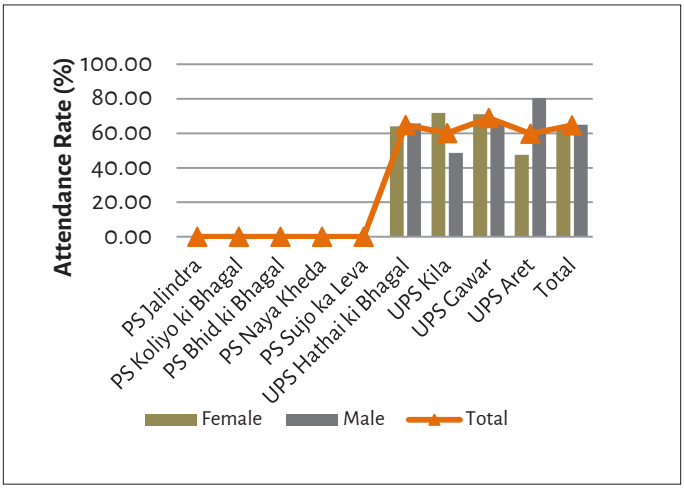


Figure 106b: Average student attendance rates for grade VI by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

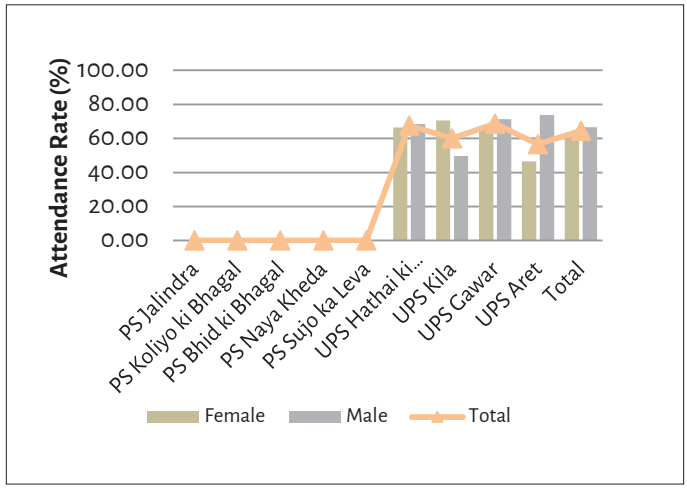


Figure 107a: Average student attendance rates for grade VII by gender and school (Sept-Apr, Headcount, pre MDM)

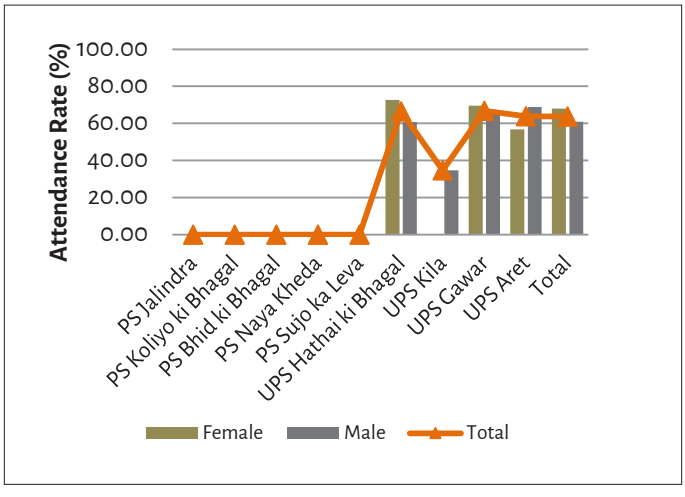


Figure 107b: Average student attendance rates for grade VII by gender and school (Sept-Apr, Headcount+ Register, pre MDM)

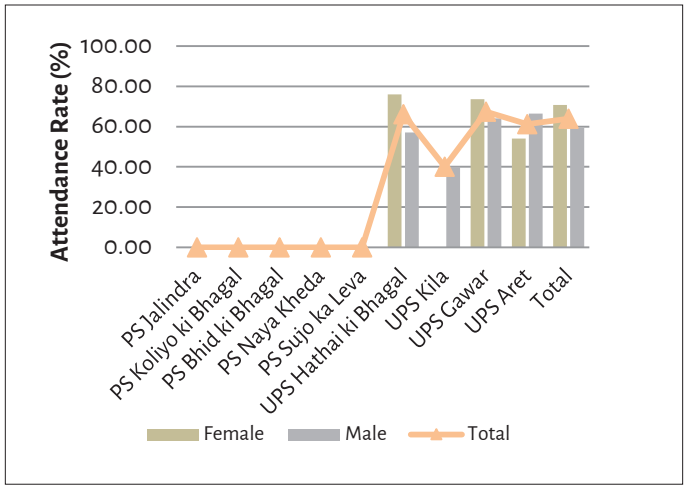


Figure 108a: Average student attendance rates for grade VIII by gender and school (Sept-Apr, Headcount, pre MDM)

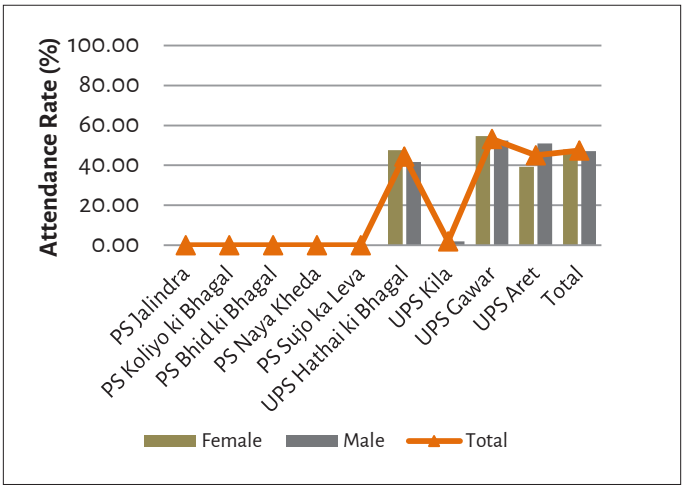
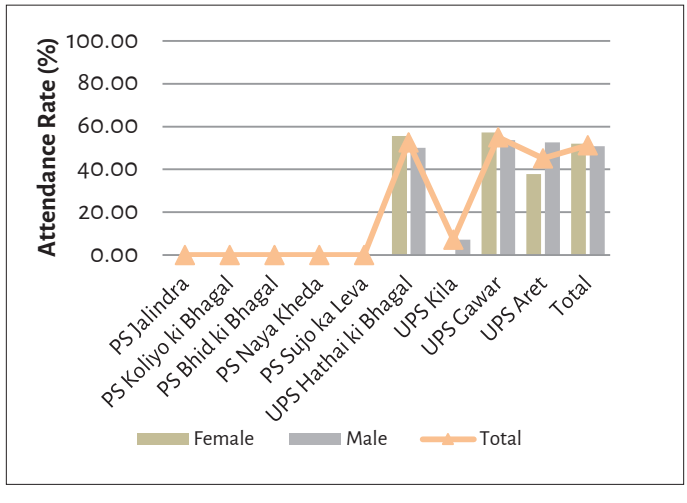


Figure 108b: Average student attendance rates for grade VIII by gender and school (Sept-Apr, Headcount+ Register, pre MDM)



ANNEXURE V: DUMMY AND BENCHMARK CATEGORIES FOR EACH VARIABLE IN THE REGRESSION

- Caste: OBC, ST, SC, Minority
  Benchmark: SC
- Father's Occupation: Agriculture, Non Agriculture Daily Wager
- Benchmark Categories: Daily Wage Agriculture, Government Employee(Contract), Government Employee(Permanent),Others, Private Employee(contract), Private Employee(Permanent), Self Employed
- Mother's Education: No Formal Schooling
  Benchmark Categories: Completed Elementary, Completed Primary, Completed Secondary, Not Completed Primary
- Father's Education: Completed Secondary Education, No Formal Schooling,
  Benchmark Categories: Not Completed Primary, Completed primary, Completed Elementary, Completed Senior Secondary, Completed Bachelor, Completed Post Graduation
- Mother's Occupation: Agriculture, Non Agriculture Daily Wager
  Benchmark Categories: Agriculture Daily Wager, Government Employee(Contract), Others, Private Employee(Contract), Self Employed, Agriculture
- Type of School Building: Pucca, Semi-Pucca, Serviceable Kaccha
  Benchmark: Semi-Pucca, Serviceable Kaccha
- Source of Electricity: Official, Unofficial, None
  Benchmark: None
- Boundary Wall: No boundary, Pucca, Pucca but broken, Partial
- Number of Classrooms
- Distance from the Block
- Distance from Cluster (Benchmark)
- Highest Class in School: Fifth, Eight, Eleventh
  Benchmark: Eighth, Eleventh
- Classes: First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth
  Benchmark: Eighth
- Female teachers in school: Yes, No
  Benchmark: No
- Private Toilet: Yes, No
  Benchmark: No
- Toilet Use: Yes, No
  Benchmark: No
- Gender: Male, Female
  Benchmark: Female
- Functional seats of toilets for boys: Yes, No
  Benchmark: No
- Functional seats of toilets for girls: Yes, No
  Benchmark: No

NOTES

1. UIS Data Centre accessed on 4.09.2014
2. Key recommendations from A situational study of India, Global Initiative on Out-of School children UNICEF & UIS
3. Visible: school age children who are registered as out of school in education databases, Semi-visible: unidentified out of school children, who could be identified through an examination of government or school records, Invisible: school age children who have never attended school and are not recorded in any government database
4. "Teacher Absence in India: A Snapshot", Kremer et al, (2005-06)
5. A pucca structure is one whose walls and roofs are made of pucca materials such as cement, concrete, oven burnt bricks, hollow cement/ ash bricks, stone, stone blocks, jack boards (cement plastered reeds), iron, zinc or other metal sheets, timber, tiles, slate, corrugated iron, asbestos cement sheet, veneer, plywood, artificial wood of synthetic material and polyl vinyl chloride (PVC) material.
6. A structure which cannot be classified as a pucca or a kutcha structure as per definition is a semi-pucca structure. Such a structure will have either the walls of the roof but not both, made of pucca materials.
7. Serviceable katcha structure includes all katcha structures other than unserviceable katcha structures.
8. Unserviceable katcha structure includes all structures with thatch walls and thatch roof, i.e. walls made of grass, leaves, reeds, etc. and roof of a similar material
9. A migrant is a person residing in a place other than his/her place of birth or one who has changed his/her usual place of residence to another place for less than six months

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