Measurement and Monitoring Associate Recruitment Test, 2021

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TASK 1

TEACHING AT THE RIGHT LEVEL (TaRL) PROGRAMME IN ZAMBIA

THE PROGRAMME:

- Children grouped according to learning levels rather than grade, targeted lessons to improve core competencies in language and arithmetic.
- Programme was implemented from January to March, 2020 and schools were shut due to the COVID-19 pandemic from April to September; schools reopened in October 2020.
- Learning assessments in reading and numerical ability were conducted in January, March and October of 2020.
- The purpose of this analysis is to understand learning loss due to the pandemic across the two provinces and groupings of children; another goal is to study the relationship between learning gains and the number of catch-up classes attended by students.

THE STUDY:

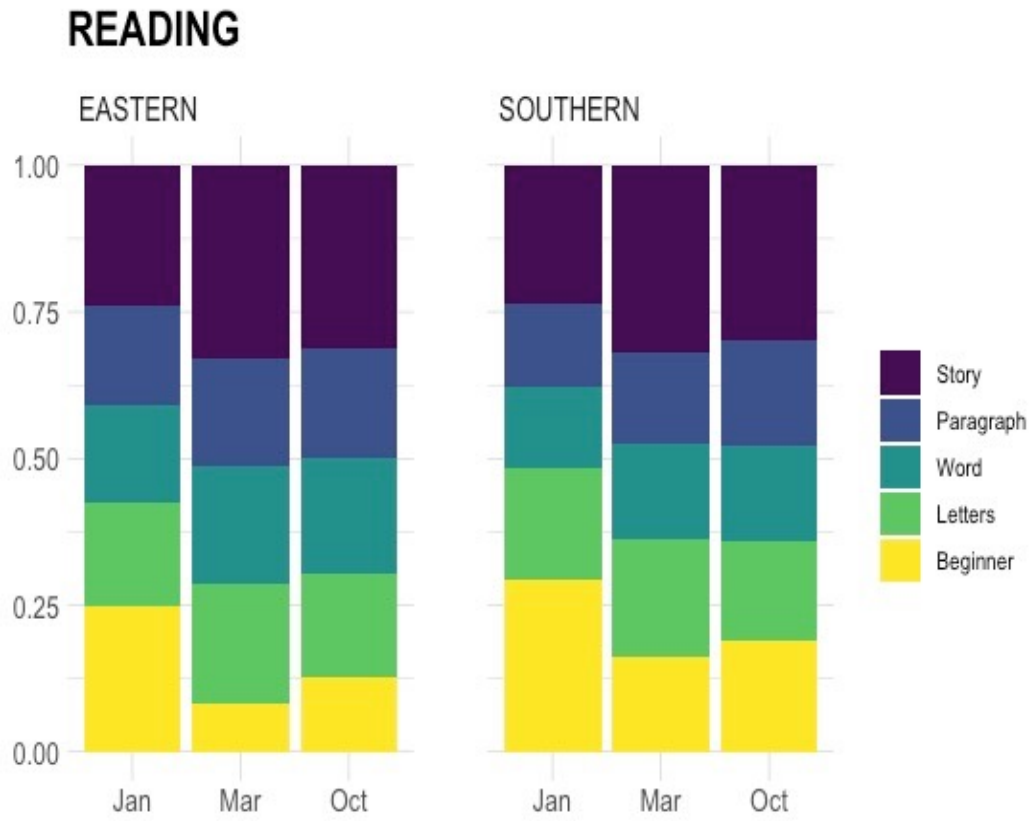
- Sample includes ~260 schools in 2 provinces in Zambia; ~11000 children sampled

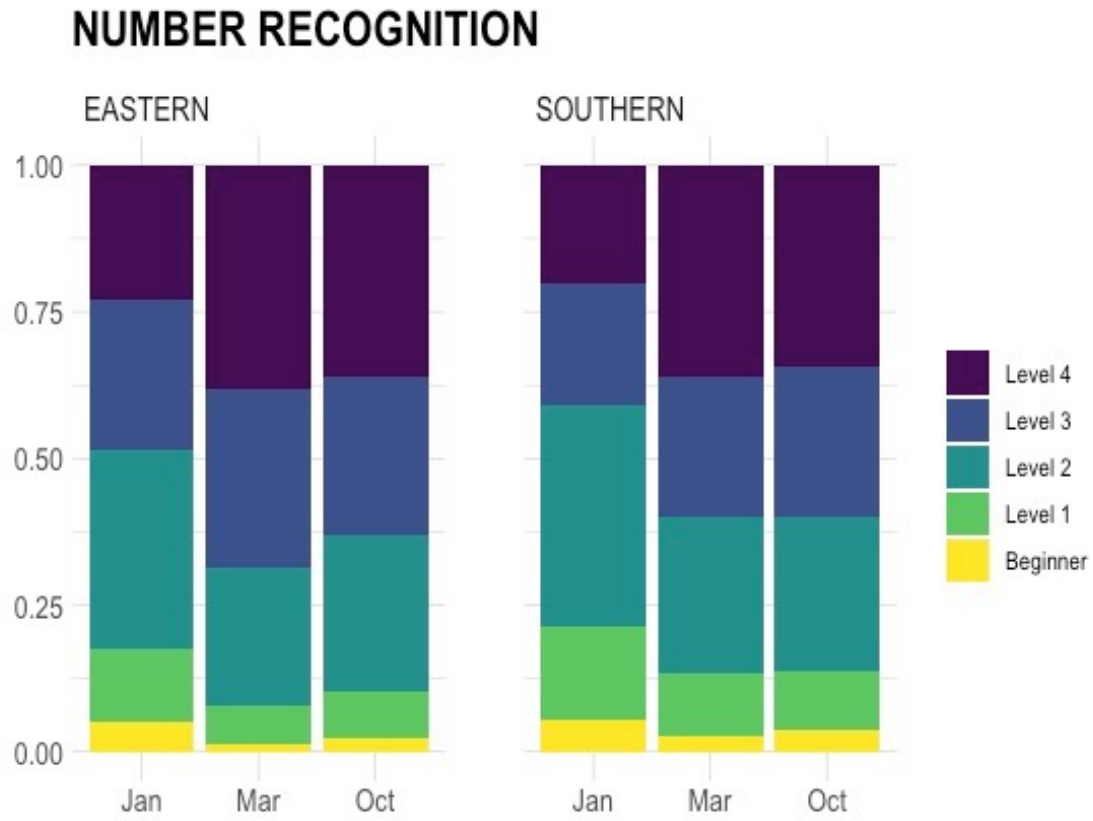
TABLE SHOWING NUMBER OF CHILDREN IN EACH SUB-GROUP ACROSS GRADE, SEX AND PROVINCE IN THE SAMPLE DATA

	Grade			Sex		Province		Total
Number of students	Grade 3	Grade 4	Grade 5	Male	Female	Eastern	Southern	11,230
	3817	3712	3705	5422	5812	6520	4710	

LEARNING LOSS BY PROVINCE

Y-axis values represent the percentage of children in each group.





LEARNING LOSS BY PROVINCE

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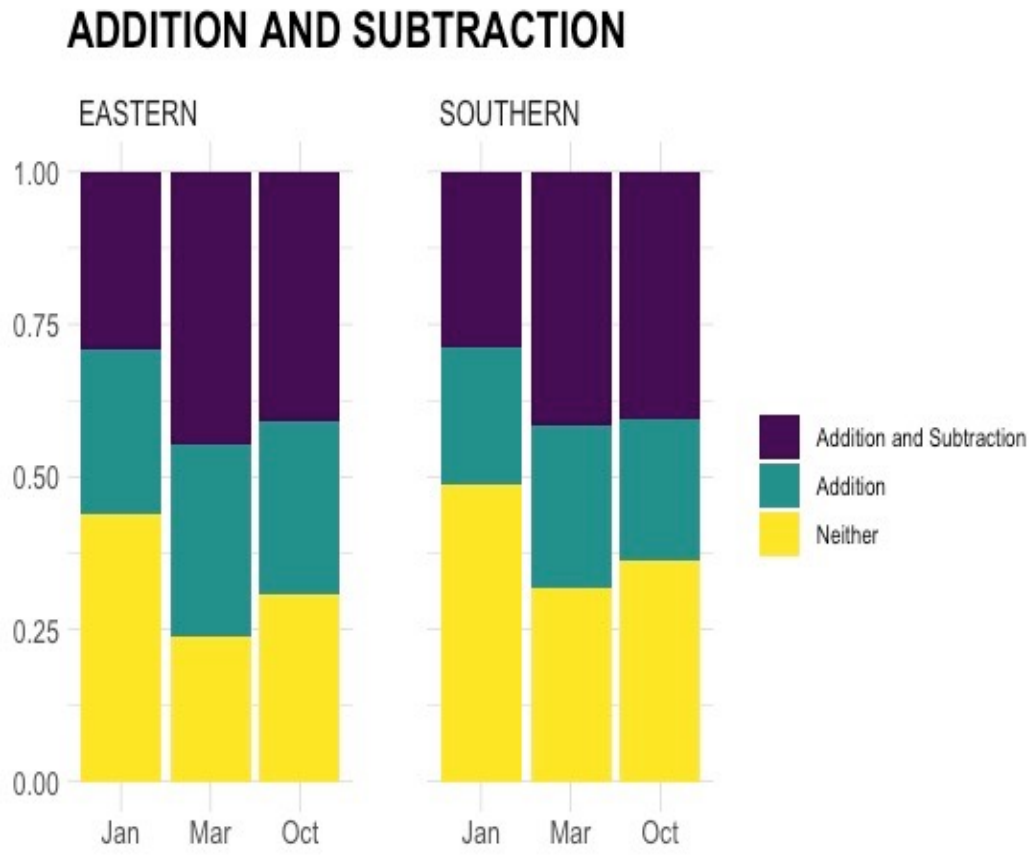
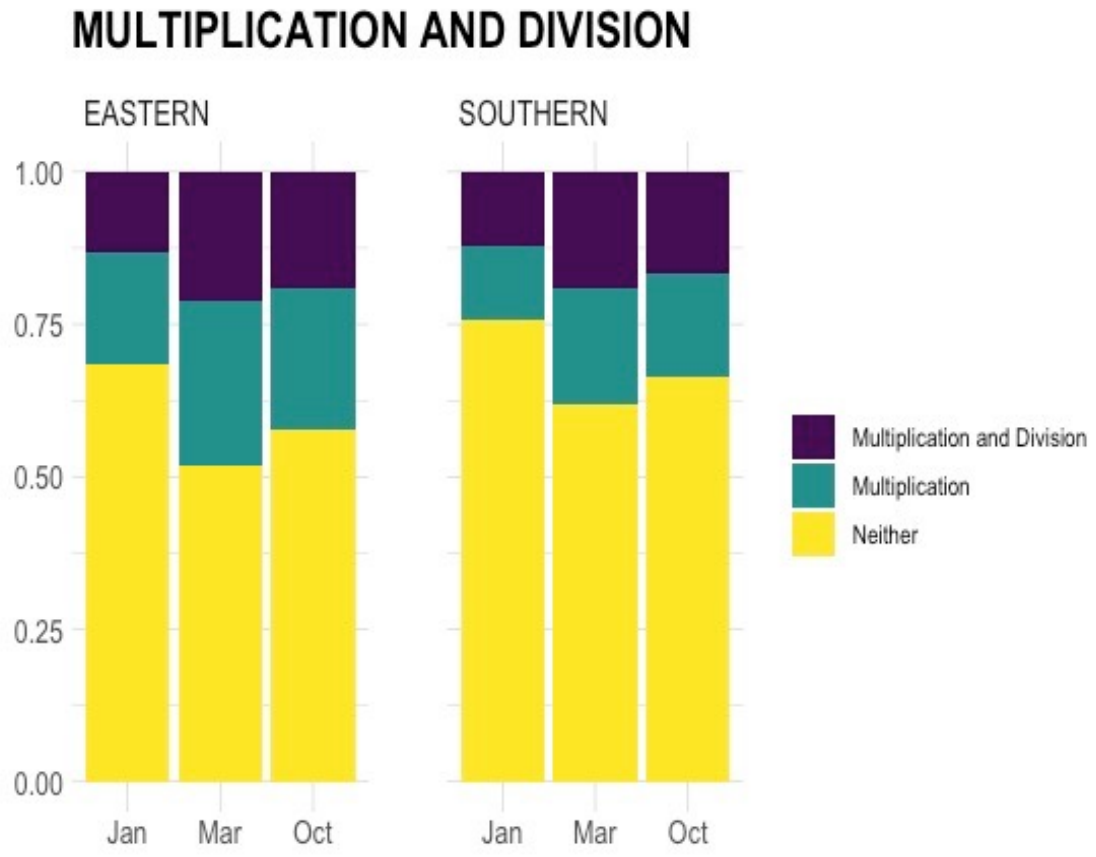
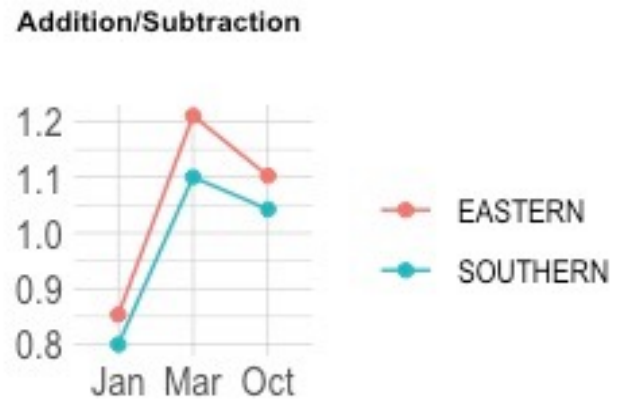
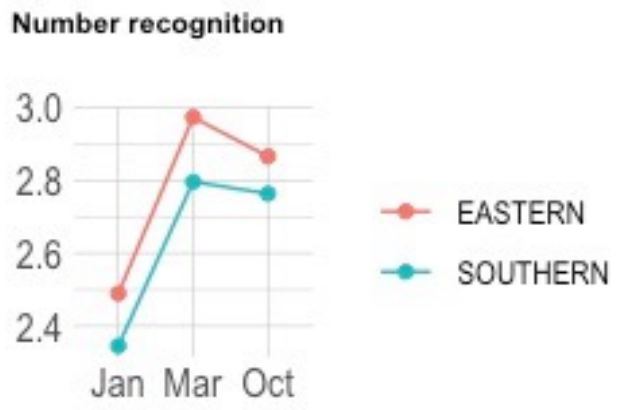




LEARNING LOSS BY PROVINCE

- Aggregate scores for each measure in January (baseline 1), March (midline) and October (baseline 2).





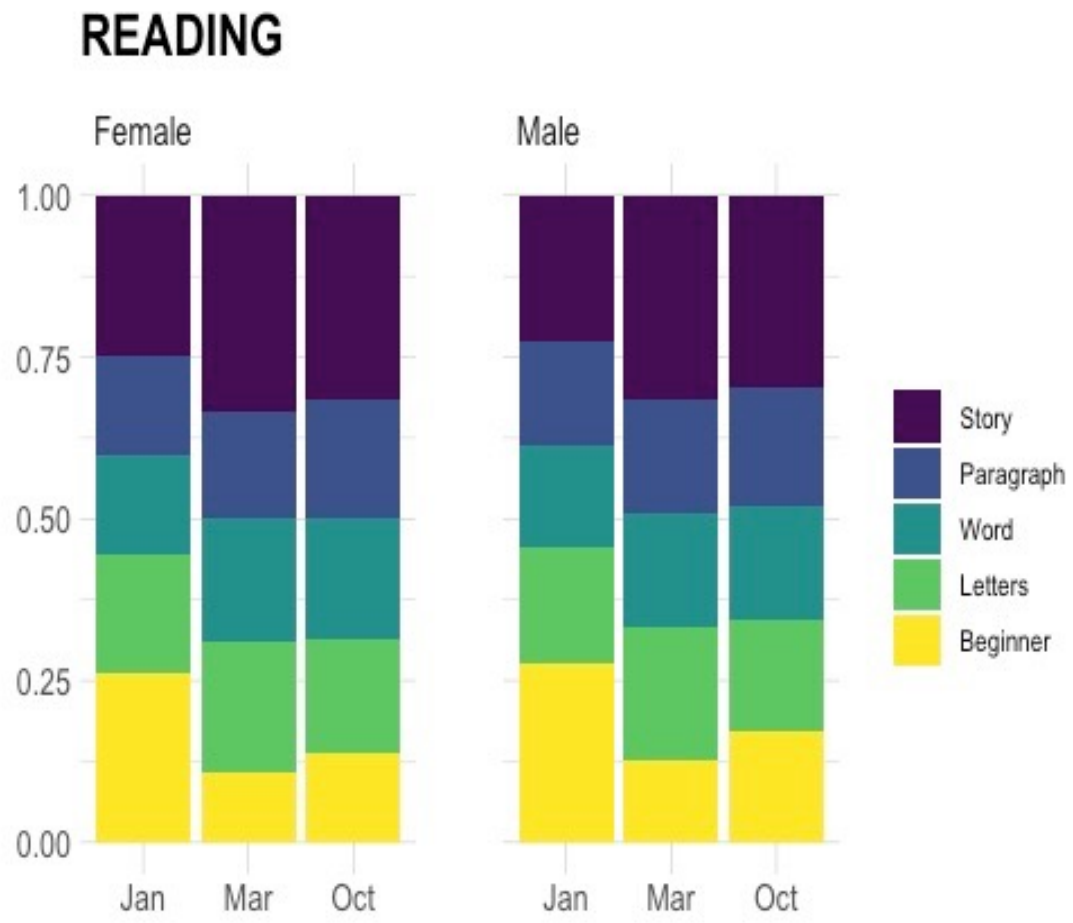
- Children in the **southern province** have lower levels of performance (on average) across all measures.
- Percentage of students in the **beginner category** for each measure decreases from January to March, while the percentage performing at the highest level increases. The programme has thus **increased learning levels across both provinces**.
- There has been a **moderate loss of learning** from April to September. However, this loss has not completely reversed the gains from the programme since performance in October is still higher on average than in January.
- Average scores often hide larger variations in learning levels. Rate of decline due to school closures is similar across the two provinces.

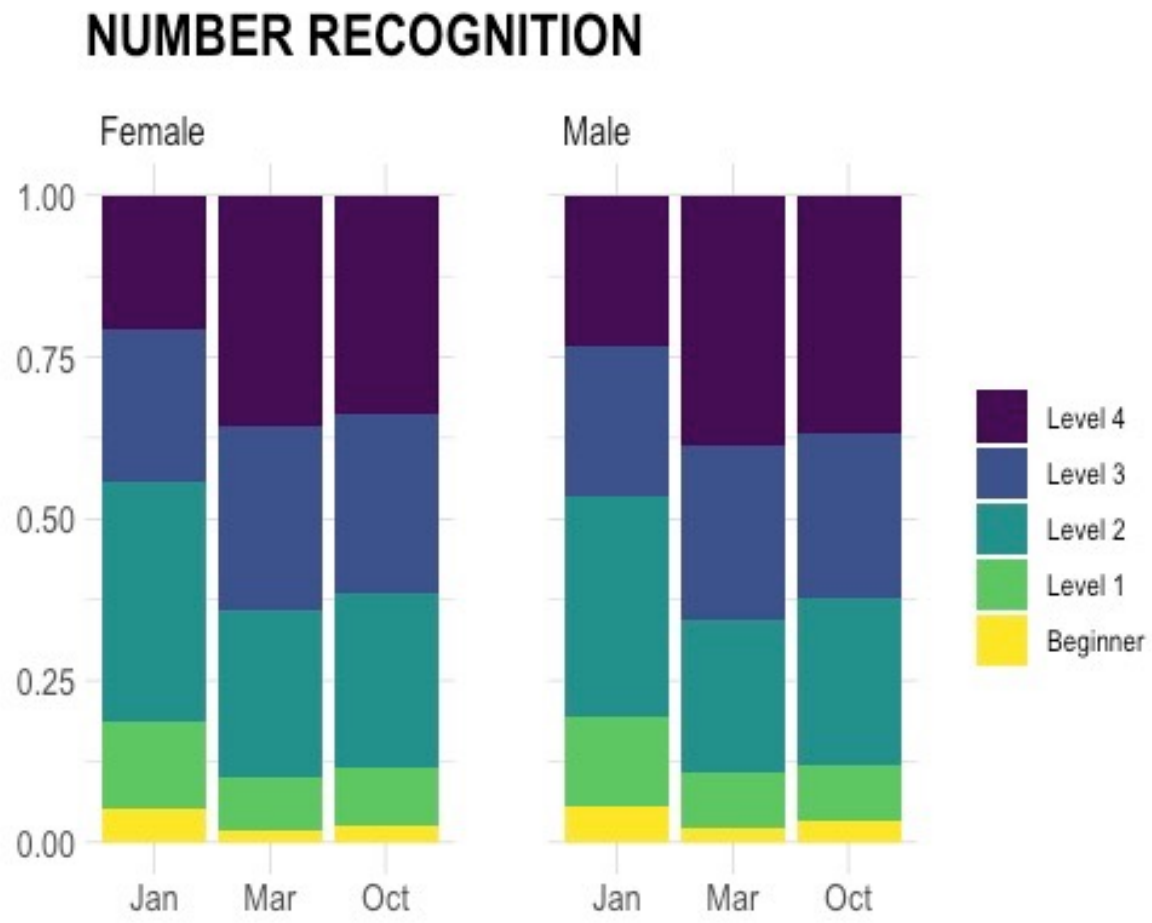
KEY INSIGHTS FOR POLICY:

- The effectiveness of the TaRL programme (examined in detail later) is clear.
- Students in the southern province need more targeted interventions to catch up to levels

LEARNING LOSS BY SEX

Y-axis values represent the percentage of children in each group.





LEARNING LOSS BY SEX

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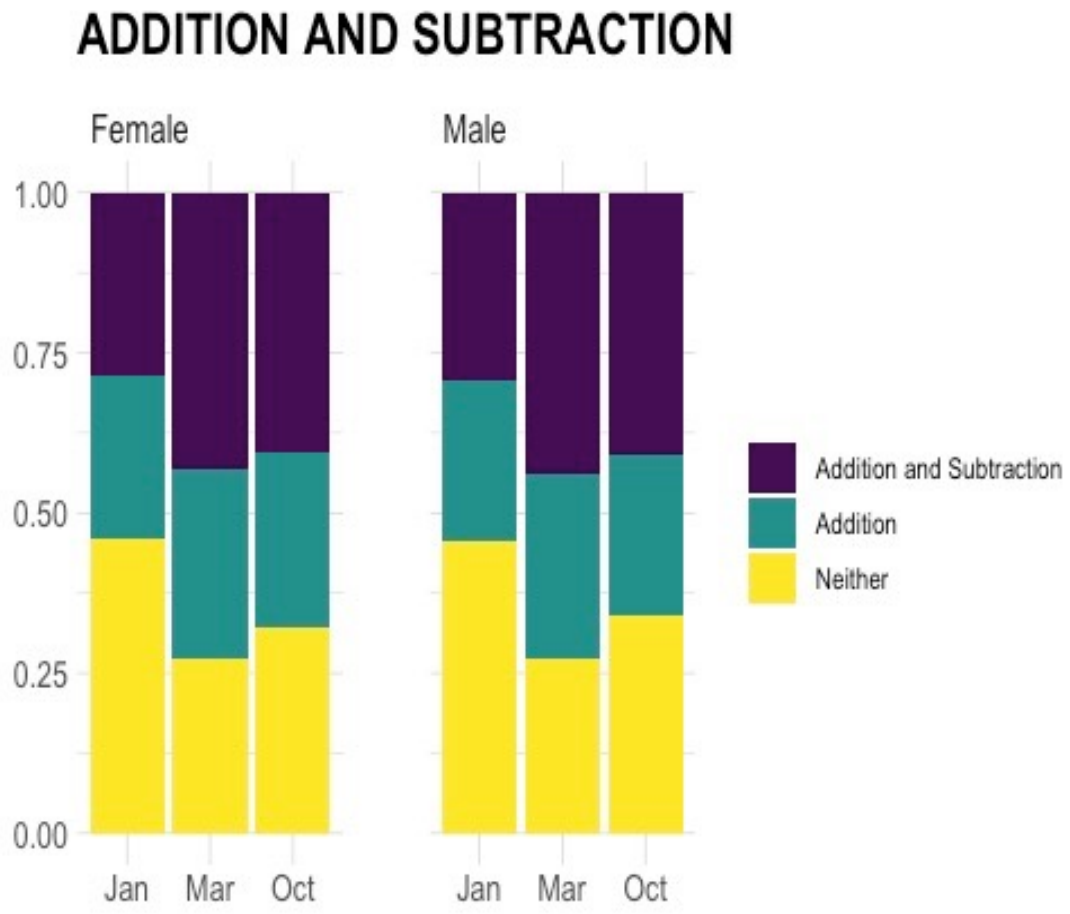
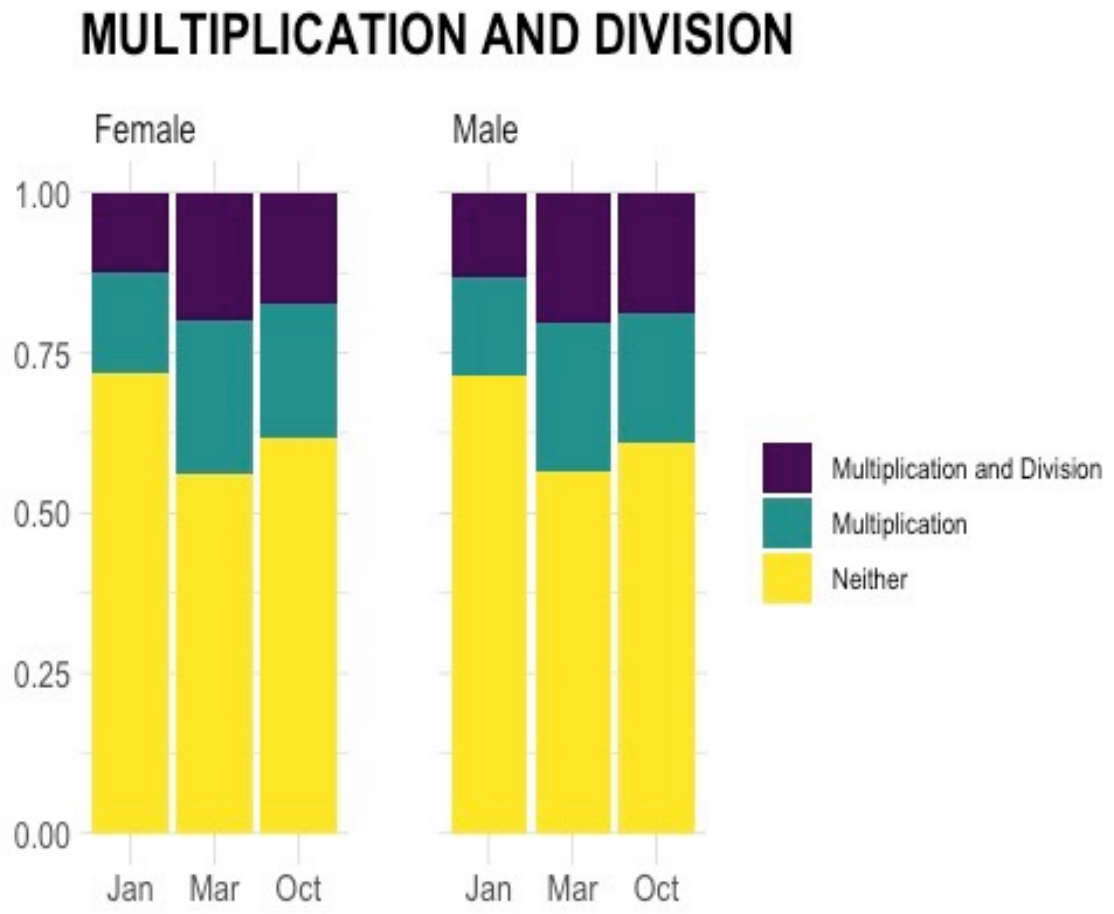
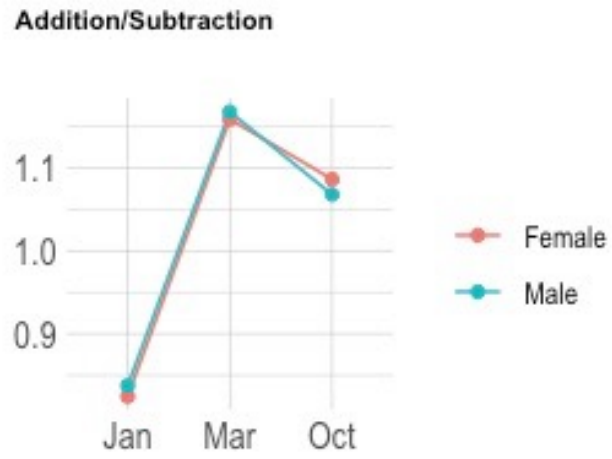
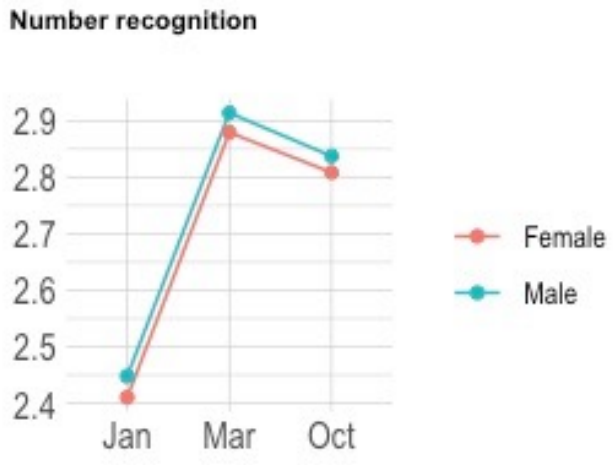




LEARNING LOSS BY SEX

- Aggregate scores for each measure in January (baseline 1), March (midline) and October (baseline 2).





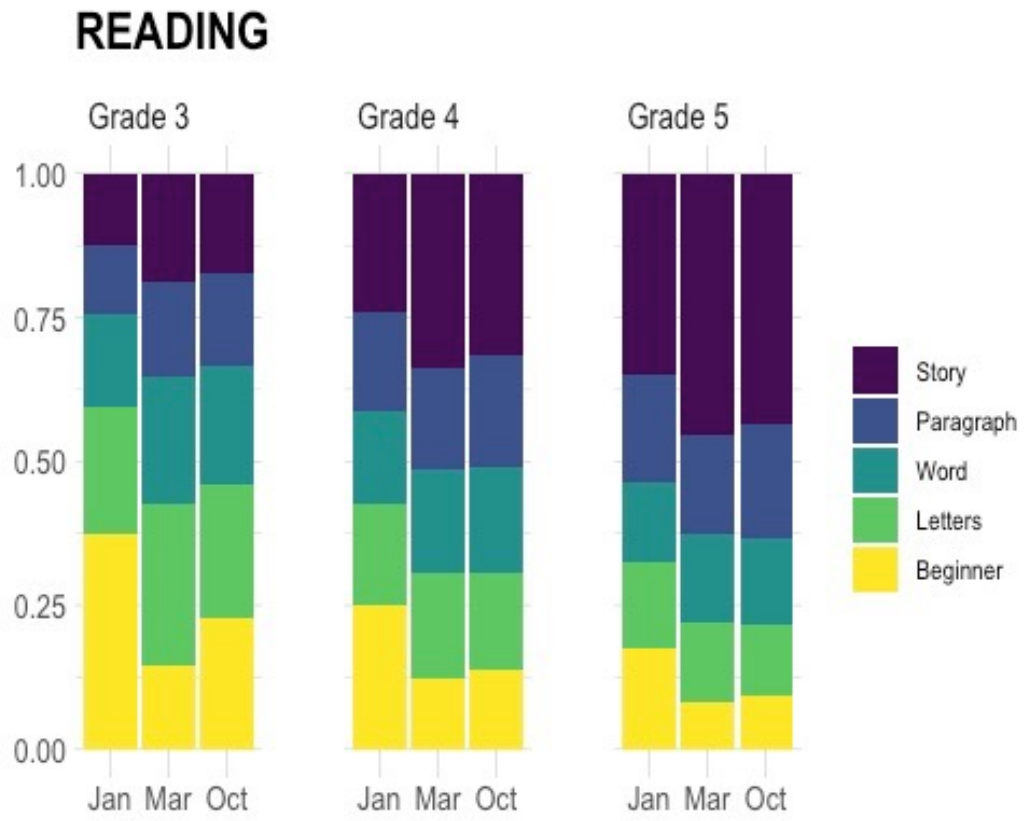
- No significant differences in performance for male and female students.
- Percentage of students in the **beginner category** for each measure decreases from January to March, while the percentage performing at the highest level increases. The programme has thus **increased learning levels across both sexes.**
- There has been a **moderate loss of learning** from April to September. However, this loss has not completely reversed the gains from the programme since performance in October is still higher on average than in January.
- Average scores often hide larger variations in learning levels. Rate of decline due to school closures is similar for the two sexes (steeper for females in multiplication/division).

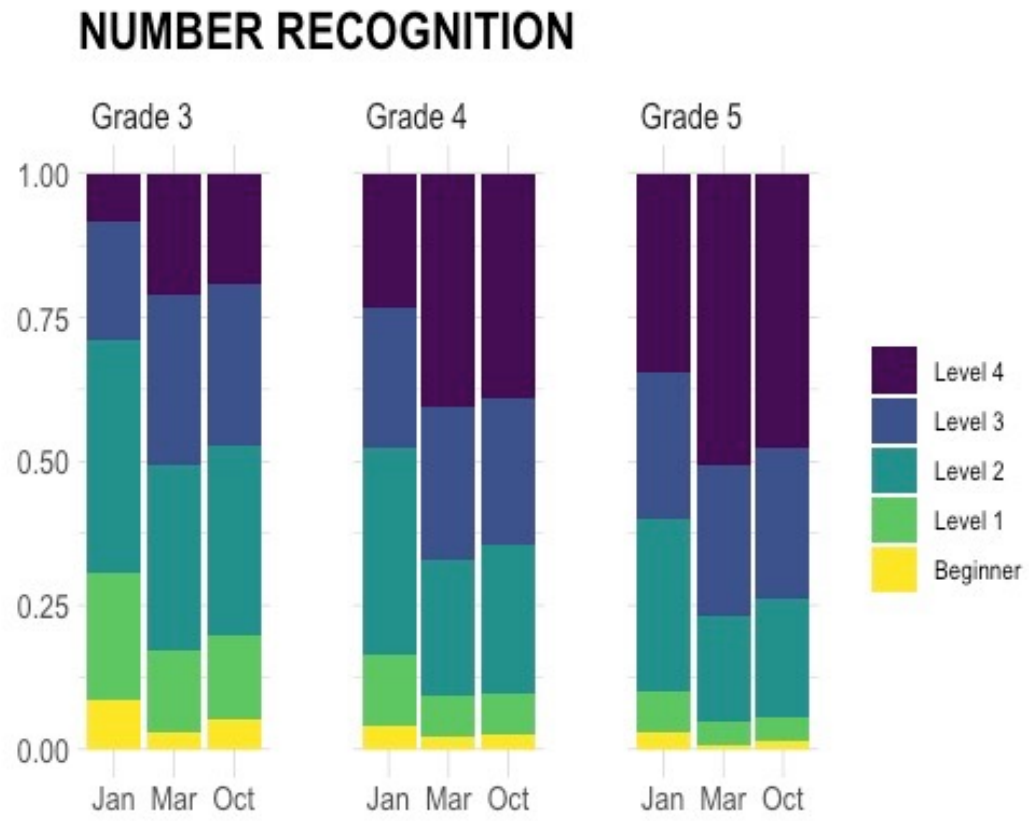
KEY INSIGHTS FOR POLICY:

- The TaRL programme has been implemented with shared focus on both male and female students.
- Sex might be a more important indicator at the secondary level, where only 26% of women receive education.[1]
- As performance among girls and boys at the primary level is comparable, high drop-out rate for girls before secondary school is probably due to other factors such as domestic labour, gender-based violence and child marriage (Zambia has one of the highest rates of female child marriage in Africa, with national prevalence reported at 42% in 2015).[2]

LEARNING LOSS BY GRADE

Y-axis values represent the percentage of children in each group.





LEARNING LOSS BY GRADE

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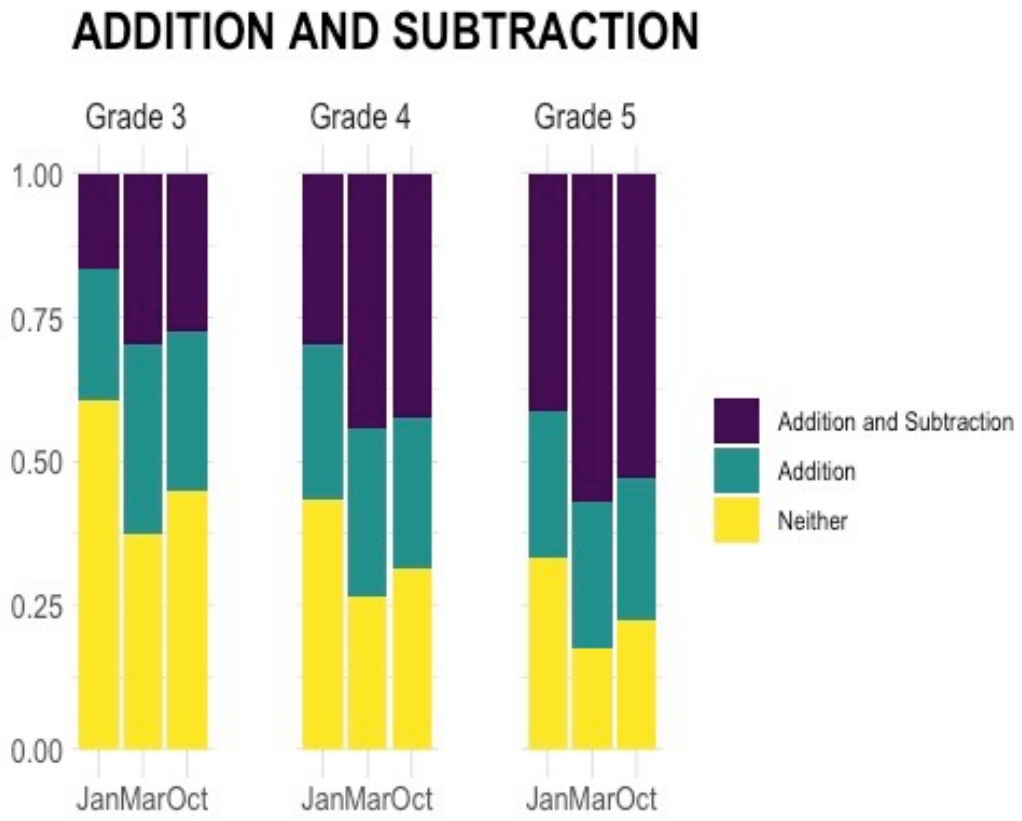
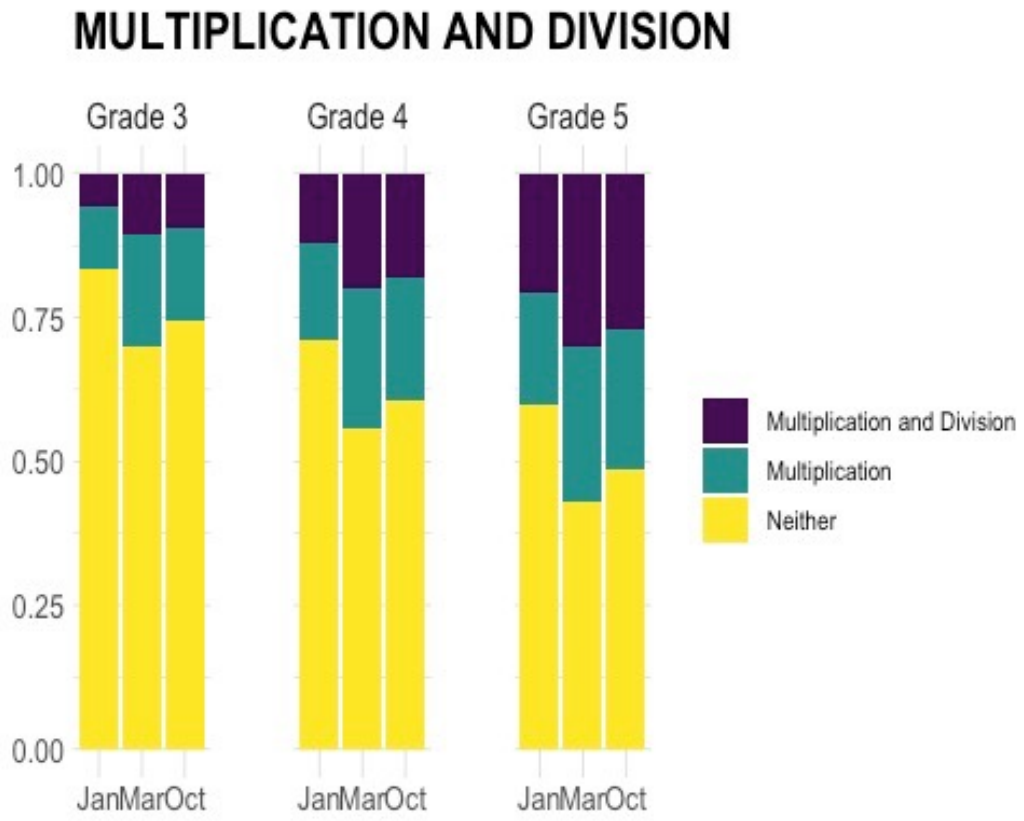
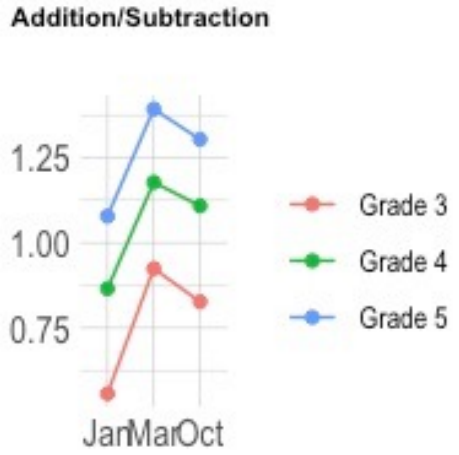
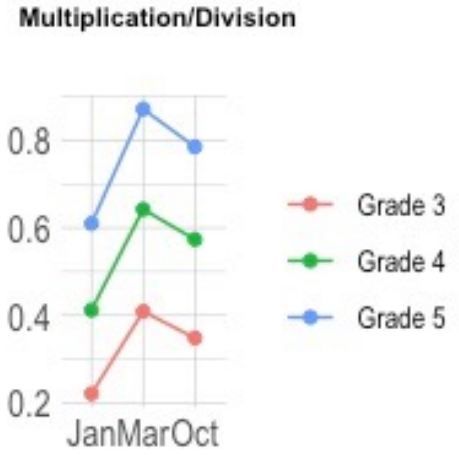


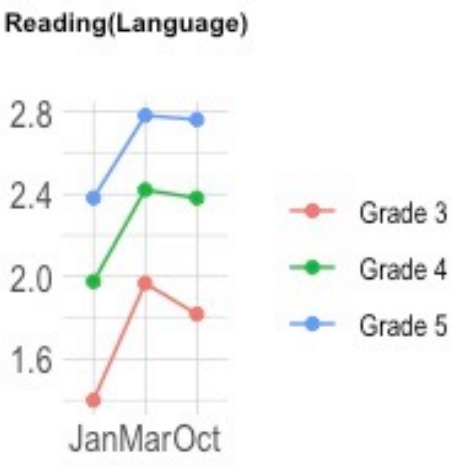


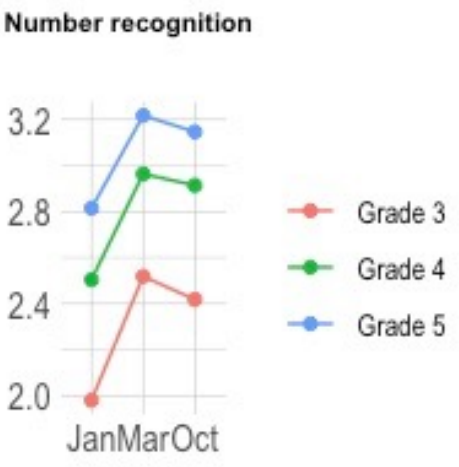
LEARNING LOSS BY GRADE

- Aggregate scores for each measure in January (baseline 1), March (midline) and October (baseline 2).







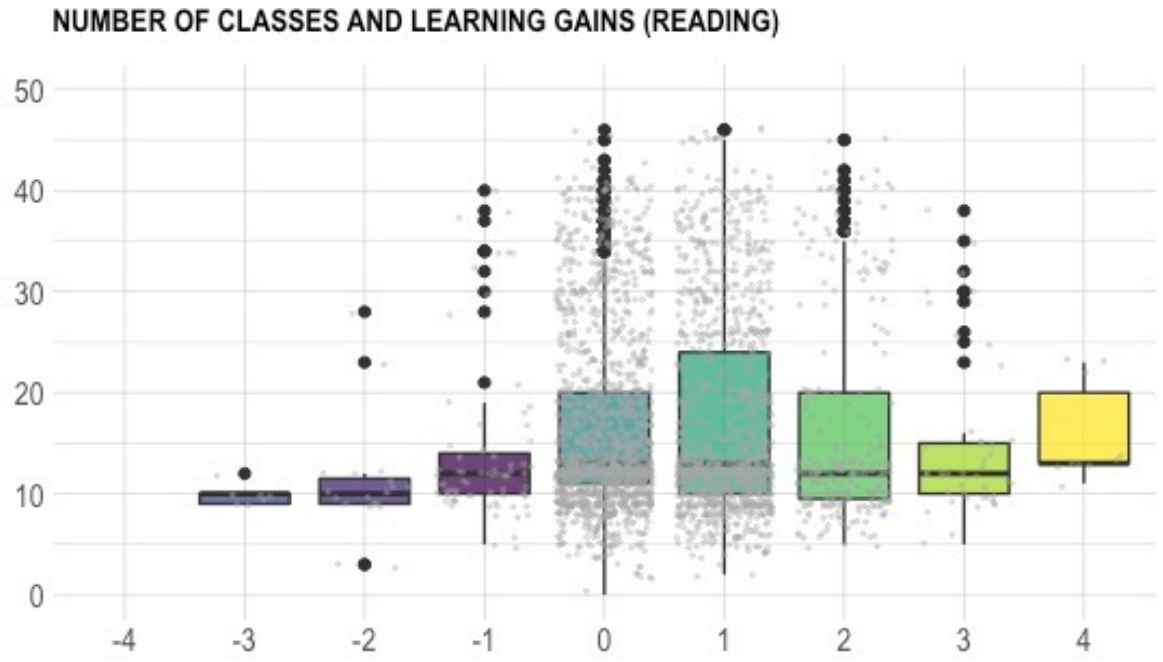


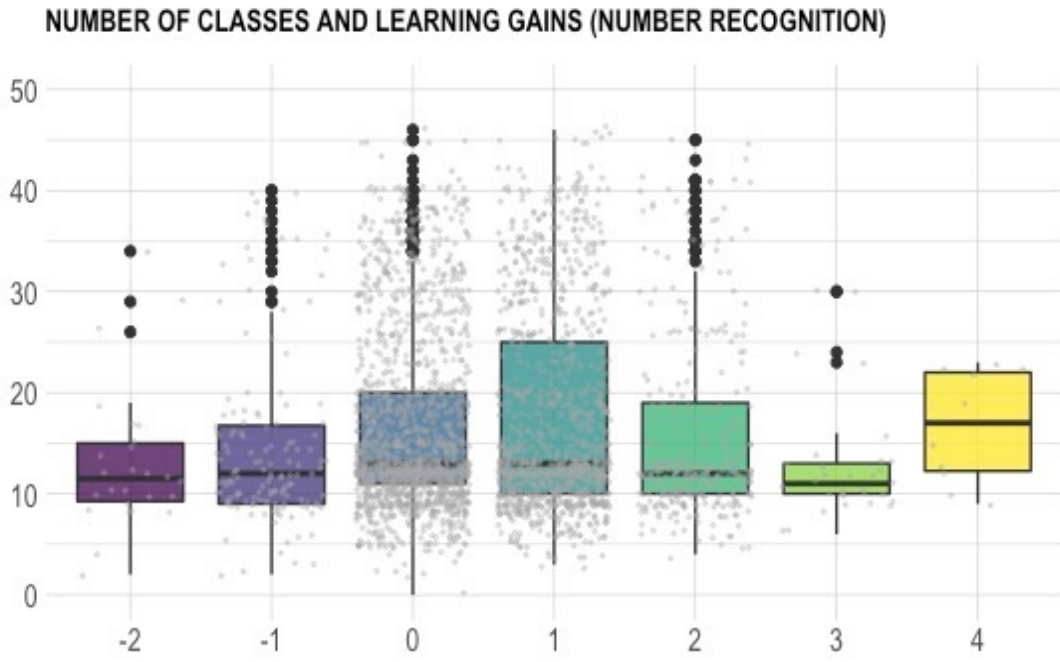
- Percentage of students in the **beginner category** for each measure decreases from January to March, while the percentage performing at the highest level increases. The programme has thus **increased learning levels across all three grades.**
- There has been a **moderate loss of learning** from April to September. However, this loss has not completely reversed the gains from the programme since performance in October is still higher on average than in January.
- Average scores often hide larger variations in learning levels. Rate of decline due to school closures is **steeper for younger children (grade 3), especially in reading and number recognition.**
- **KEY INSIGHTS FOR POLICY:**

- The TaRL programme has been implemented at all grade levels with success in terms of student performance. The approach of targeting students by learning levels rather than grade seems to be effective.
- Young children might require more hours of intervention for long-term retention of basic reading and mathematical skills.

LEARNING GAIN AND CATCH-UP CLASSES

- Learning gain is calculated as the difference between scores in January (Baseline 1) and March (Midline 1). **Negative values represent a decline from January to March.**
- Y-axis values represent number of catch-up classes (1-hour) attended.





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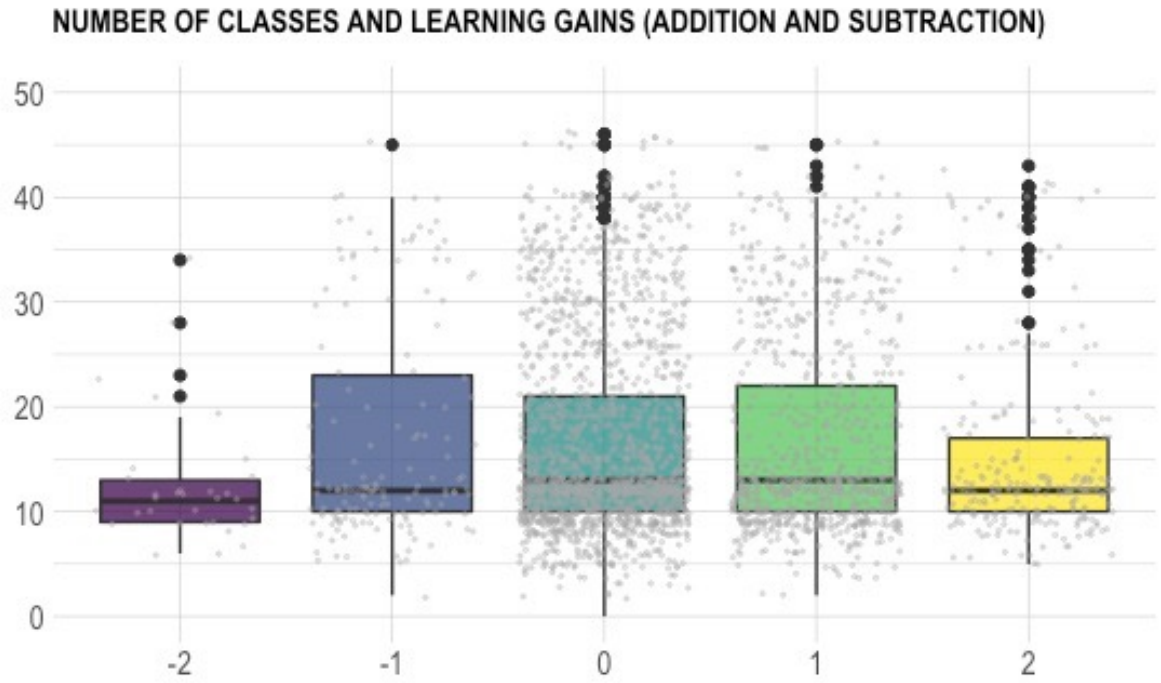
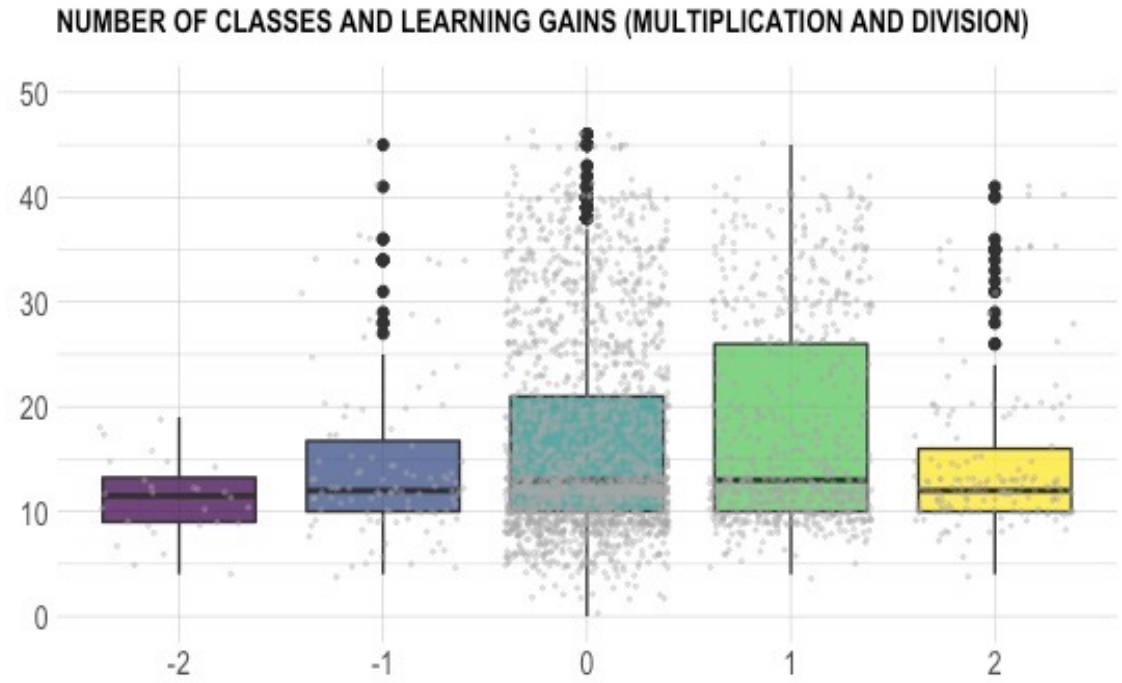




- Most children have gains of 0 or 1, and the median number of classes attended by these children is higher than those who have learning loss (negative scores). This indicates a potential relationship between catch-up classes and the gains from learning; **the scheme seems to be driving the average improvement in student performance from January to March.**
- The high number of children who have remained at the same level (learning gains of 0) could indicate that the catch-up classes are necessary to maintain the same level of learning. Arithmetic and reading (language skills) might have a steep learning curve and thus require many hours of repetition and practice to progress to a higher level.
- Finally, the number of students who record a decrease in performance (negative scores) are relatively few, once again indicating the efficacy of the program for a majority of the students.

TARGETING OF THE SCHEME (BY PROVINCE)

TABLE INDICATING THE MEAN AND MEDIAN NUMBER OF CATCH-UP CLASSES FOR SOUTHERN AND EASTERN PROVINCE

	NUMBER OF CLASSES	
PROVINCE	MEAN	MEDIAN
Eastern	16	12
Southern	24	18

- Children in the Southern province receive more catch-up classes than those in the eastern province.

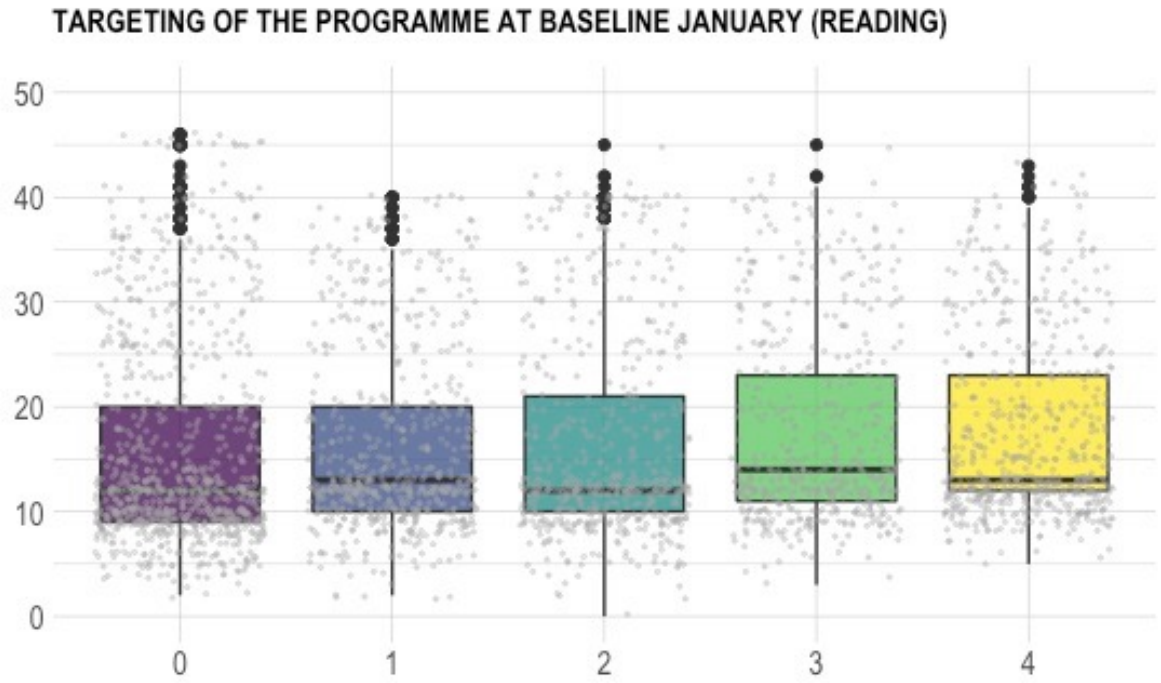
TARGETING OF THE SCHEME (BY SEX)

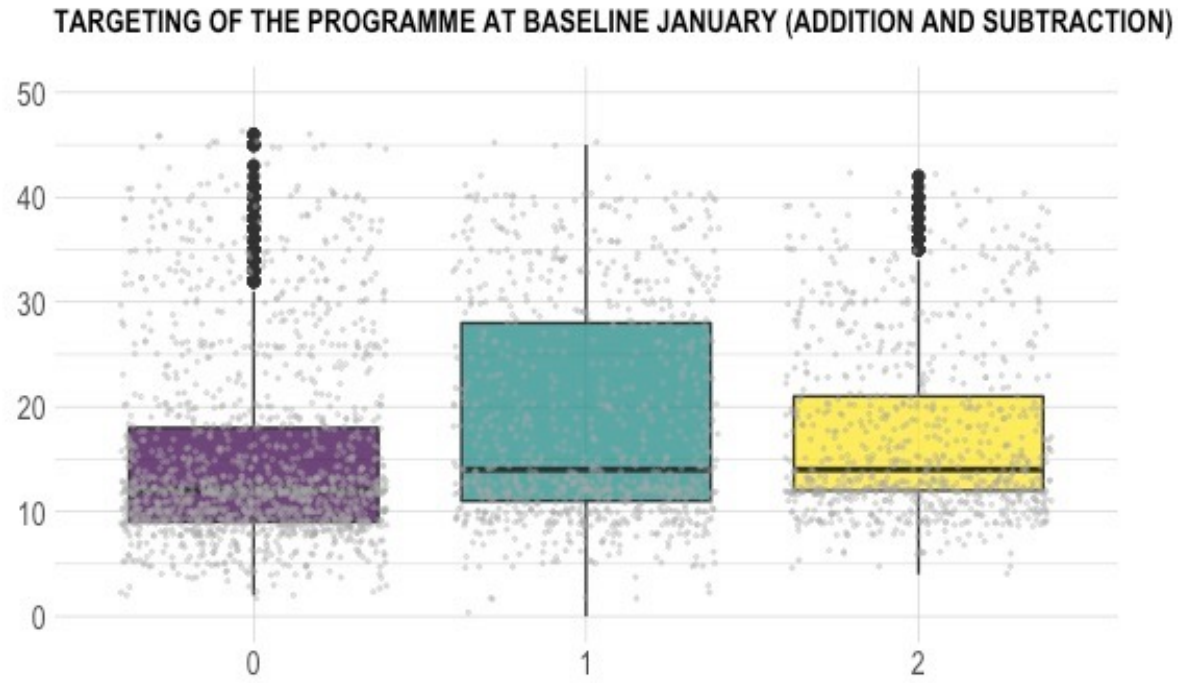
TABLE INDICATING THE MEAN AND MEDIAN NUMBER OF CATCH-UP CLASSES FOR MALE AND FEMALE STUDENTS

	NUMBER OF CLASSES	
SEX	MEAN	MEDIAN
Male	16.75	13
Female	17	13

TARGETING OF THE SCHEME (BY INITIAL LEVEL OF LEARNING)

- **Initial level of learning is taken as the performance of the student in January (Baseline 1).**
- Y-axis values represent number of catch-up classes (1-hour) attended.





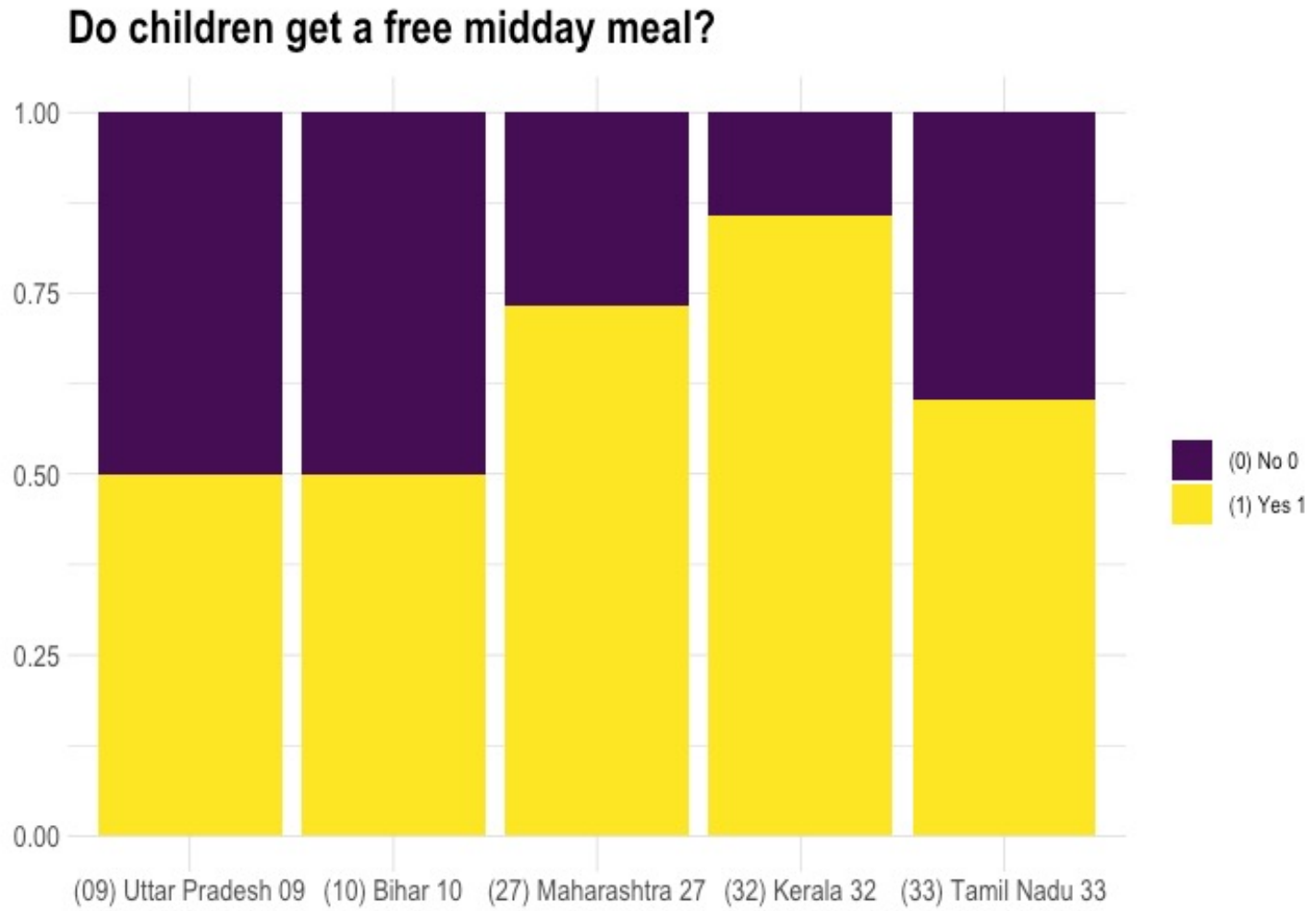
INSIGHTS ABOUT THE TARGETING OF THE SCHEME

- The median number of classes received by students based on level of performance is largely the same and classes are spread evenly across groups. **A more efficient system of targeting with limited resources would aim at providing more support to those at the beginner level in reading and arithmetic, with fewer classes given to students performing at the highest level in baseline January.**
- Targeting has been efficiently done with respect to province. The southern province that had, on average, lower performing students **has received more catch-up classes than the eastern province.**
- Targeting has also been done efficiently with respect to sex: male and female students have received equal support.

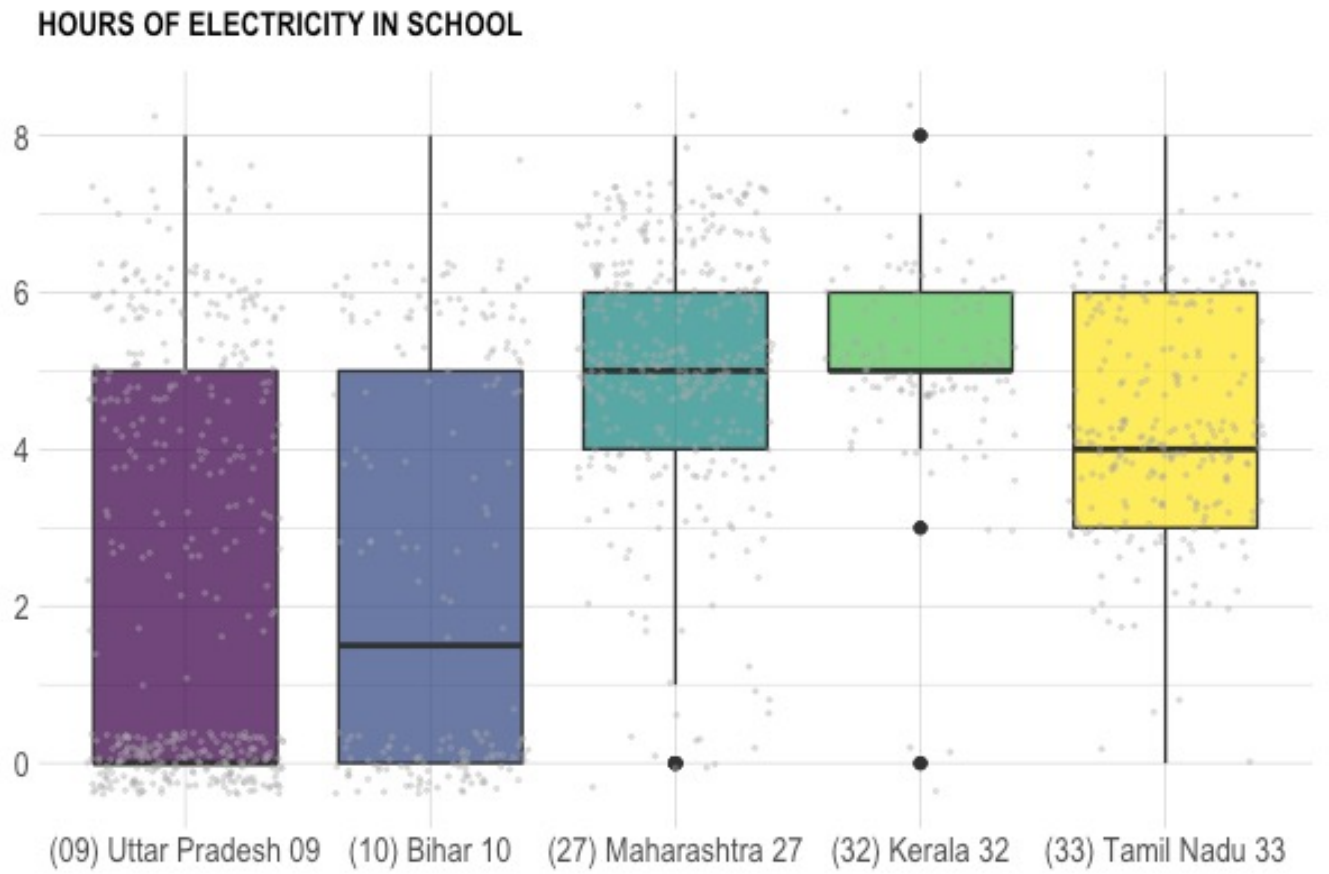
TASK 2

INDIA HUMAN DEVELOPMENT SURVEY-II, 2011-12
Visualizing facilities in schools across five states

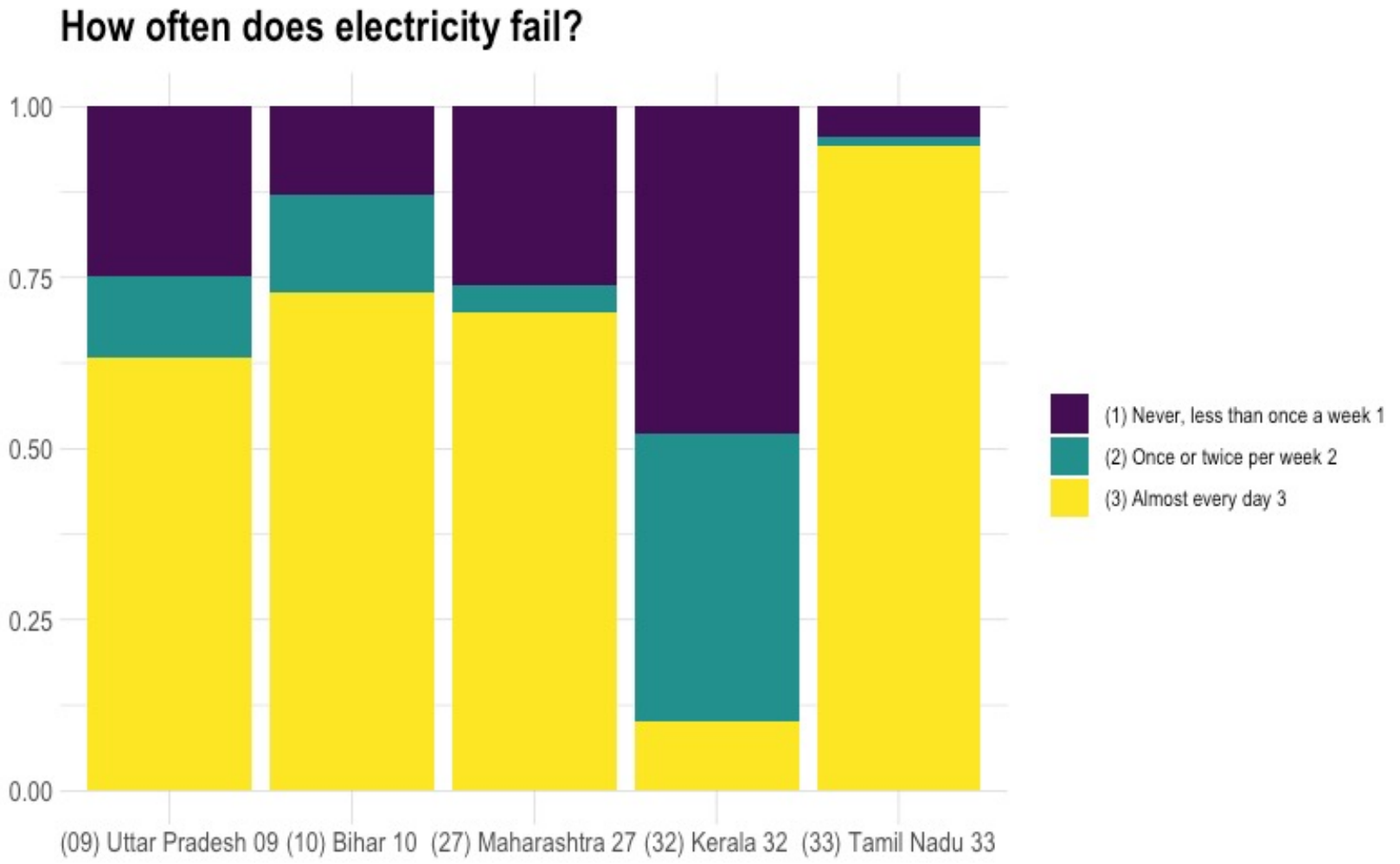
Nearly 90% of children in Kerala government schools receive the free midday meal, while the number is around 50% for Bihar and Uttar Pradesh



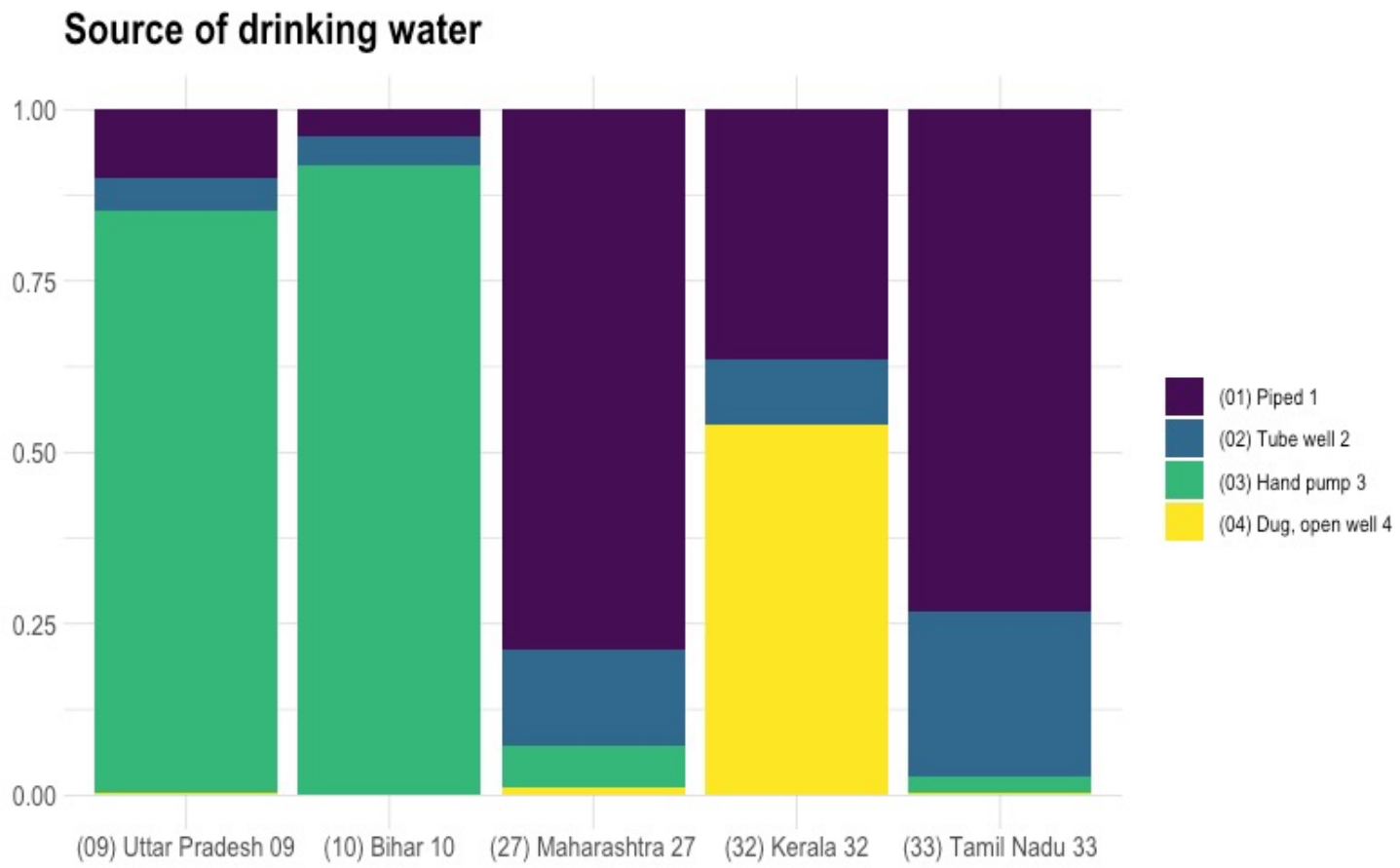
A large number of schools in Bihar and Uttar Pradesh have no access to electricity (grouping of data points near zero; schools in Maharashtra and Kerala have adequate access.



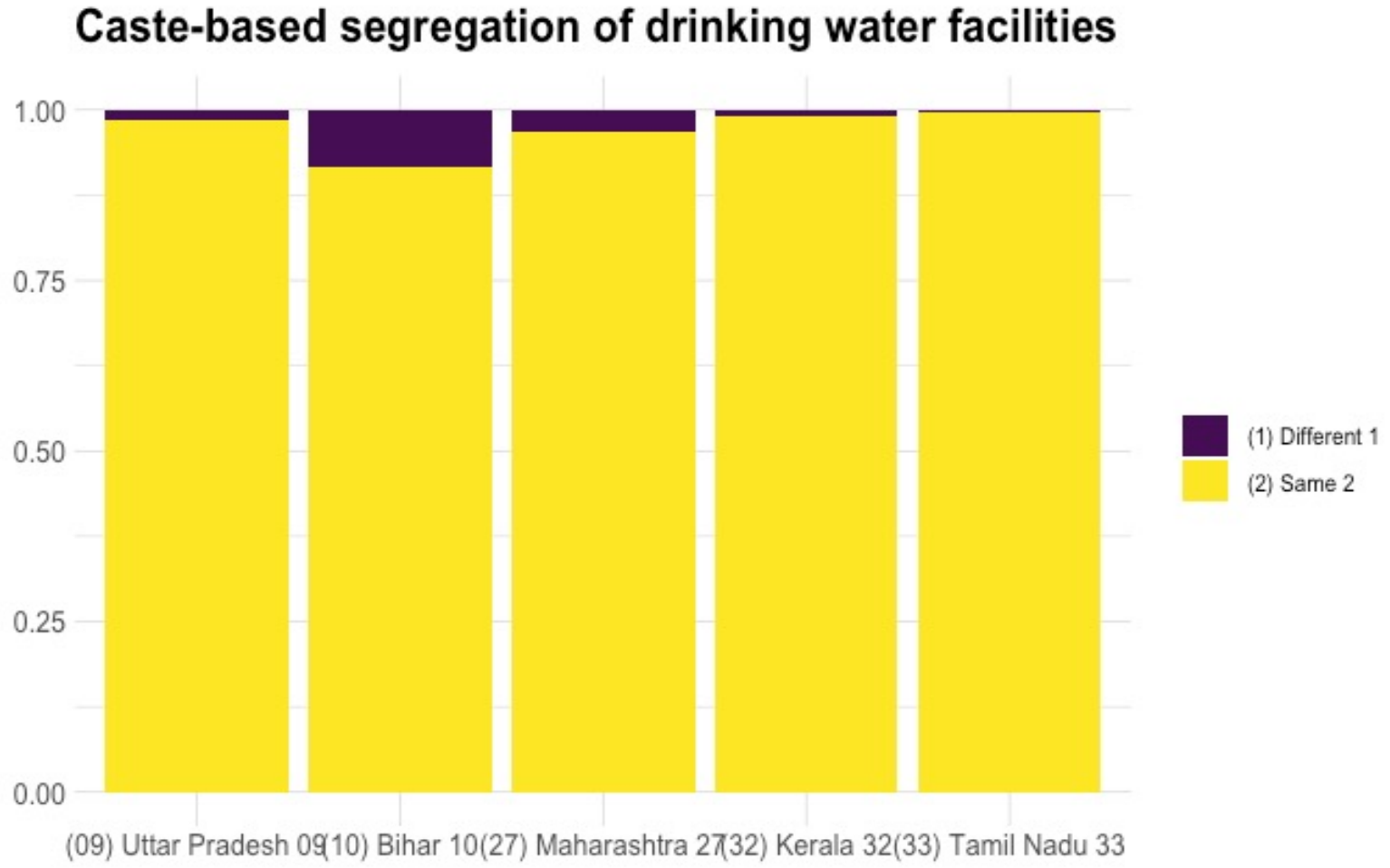
Most schools in Bihar, Uttar Pradesh, Maharashtra and Tamil Nadu have regular power shortages; schools in Kerala have a more consistent supply of electricity



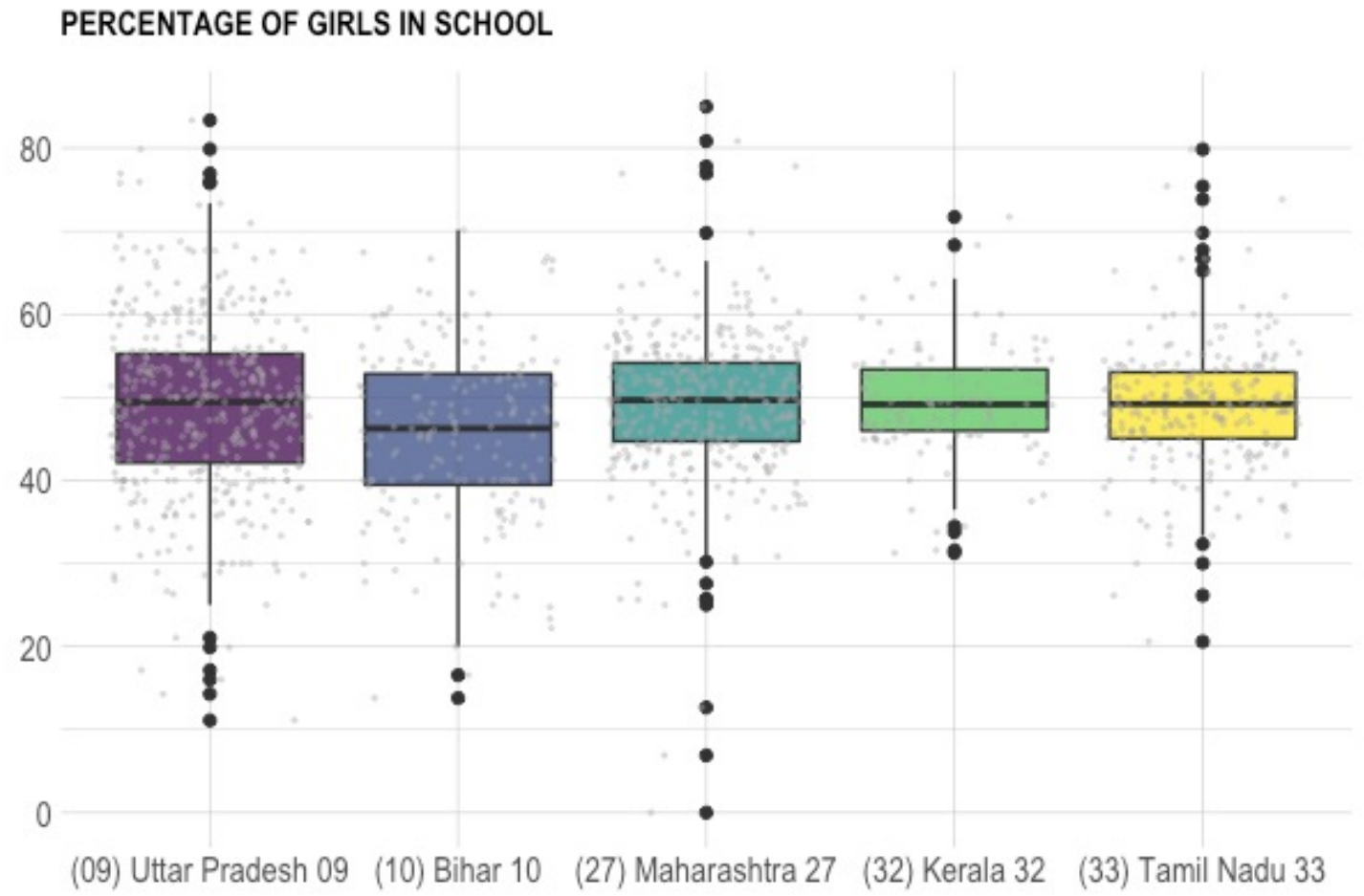
Schools in Maharashtra and Tamil Nadu have a relatively high rate of access to piped water; most schools in Bihar and Uttar Pradesh rely on hand-pumps.



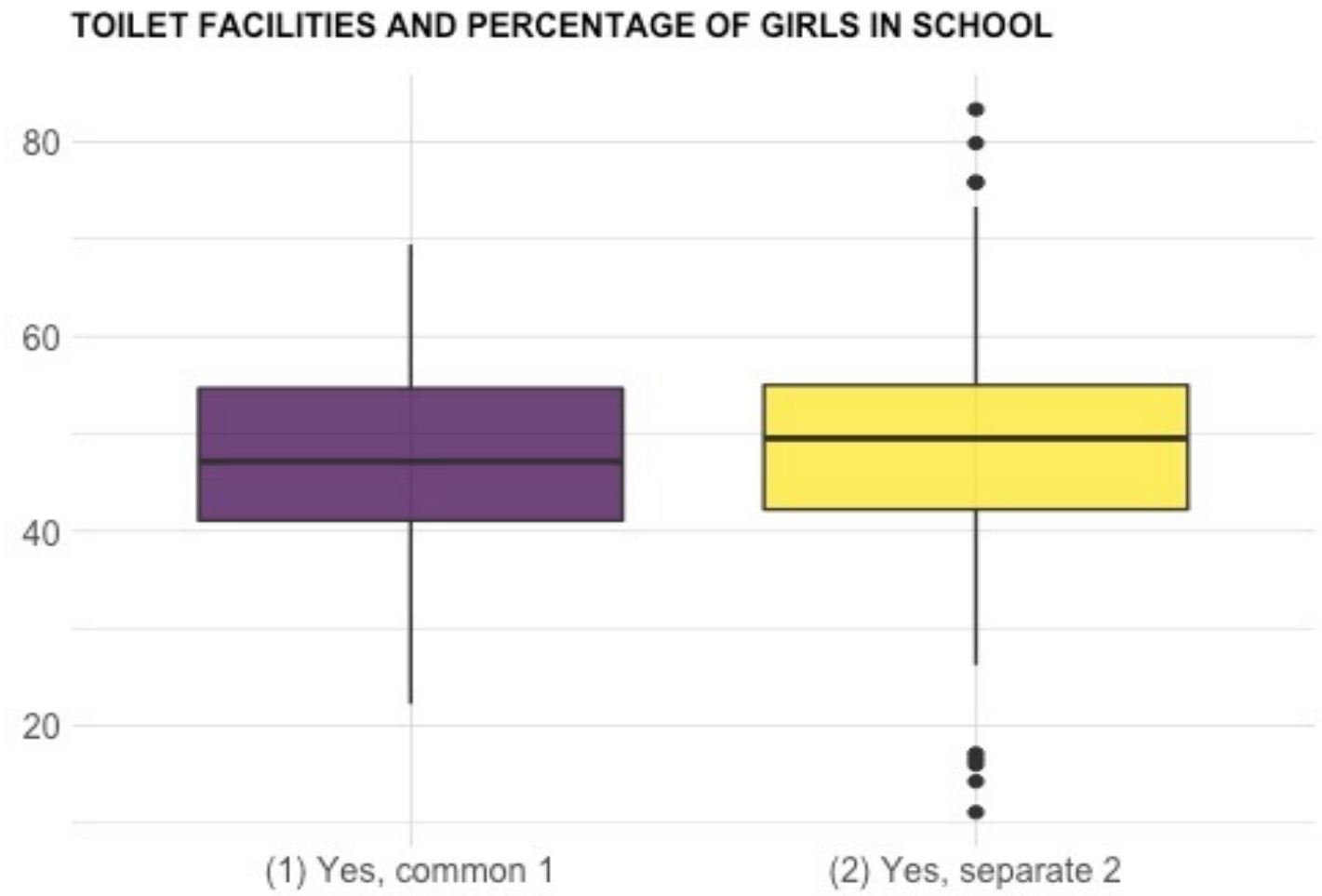
While most schools have the same water facility for children of different castes, there is a significant number of schools (particularly in Bihar and Maharashtra) that do have segregated water facilities



Bihar has, on average, lower rates of female participation in schools, suggesting greater bias against women in education



Separate toilet facilities matter for female enrollment in schools in Bihar and Uttar Pradesh, where there are relatively higher rates of violence against girls and women



Schools that provide full scholarships to girls have a higher percentage of female students; one possible explanation is that many families consider the education of the girl child an unnecessary expenditure when resources are limited.