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FEMALE TOILETS CONSTRUCTED VS FUNCTIONAL TOILETS

AKSHITA GUPTA
MSC CS-I

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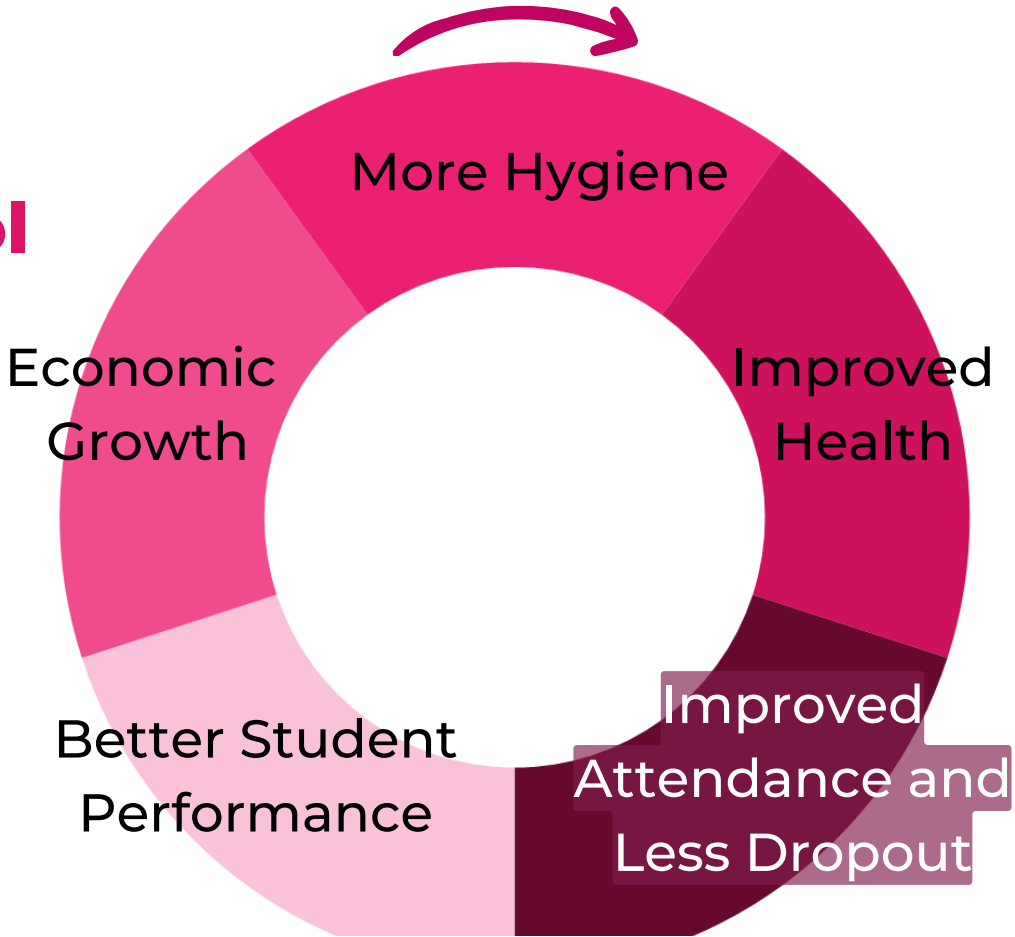
Why are toilets **so important ?**

Because a girl misses school when they don't have **adequate facilities**

What is a **GIRL-FRIENDLY TOILET?**

It is a toilet that ensures a girl's right to **SAFETY, HYGIENE and PRIVACY**

Clean and **Healthy school** creates a cycle of **opportunities**



About the Datasets

Dataset

Sl.	States/UTs	Schools with Girls' Toilet	Schools with functional Girls' Toilet
1	Andaman & Nicobar Islands	100	100
2	Andhra Pradesh	99.72	89.38
3	Arunachal Pradesh	95.6	94.62
4	Assam	97.24	94.72
5	Bihar	89.41	92.24
6	Chandigarh	100	100
7	Chhattisgarh	99.38	96.09
8	Dadra & Nagar Haveli	100	100
9	Daman & Diu	100	100

Dataset contains information about Girls Toilet and Functional Girls Toilet in different States/UTs in the year 2016-17.

States/UTs
Schools with Girls' Toilet - Percentage of Schools that have girls toilet in them.
Schools with Functional Girls' Toilet - Percentage of Schools that have **functional** toilets among those that have toilets.

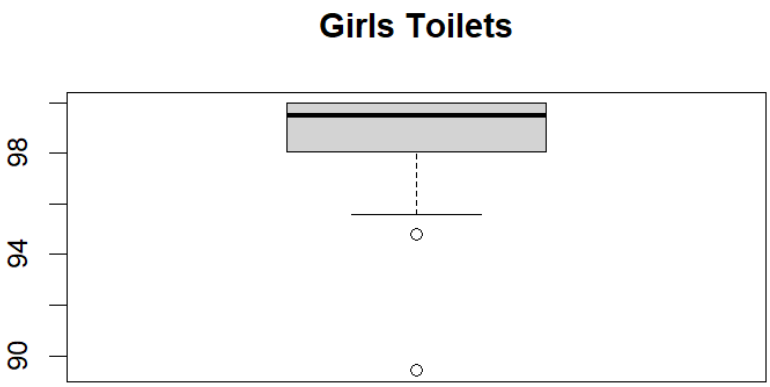
Initial Steps

```
df <- read.csv("C:\\Users\\DELL\\Desktop\\DU MSC\\Maths\\Presentation\\RS_Session_248_AS_9.csv", header=TRUE,stringsAsFactors = FALSE, fill = TRUE)
str(df, vec.len = 1)
head(df)


library(ggplot2)

d1 <- data.frame(GirlsToilet <- df$Schools.with.Girls..Toilet, Locations <- df$States.UTs)

#barplot(data$Schools.with.Girls..Toilet,names.arg = data$X.1  )

d1
```

Reading the Dataframe, checking the values. Loading librray ggplot2 for plotting the graphs.

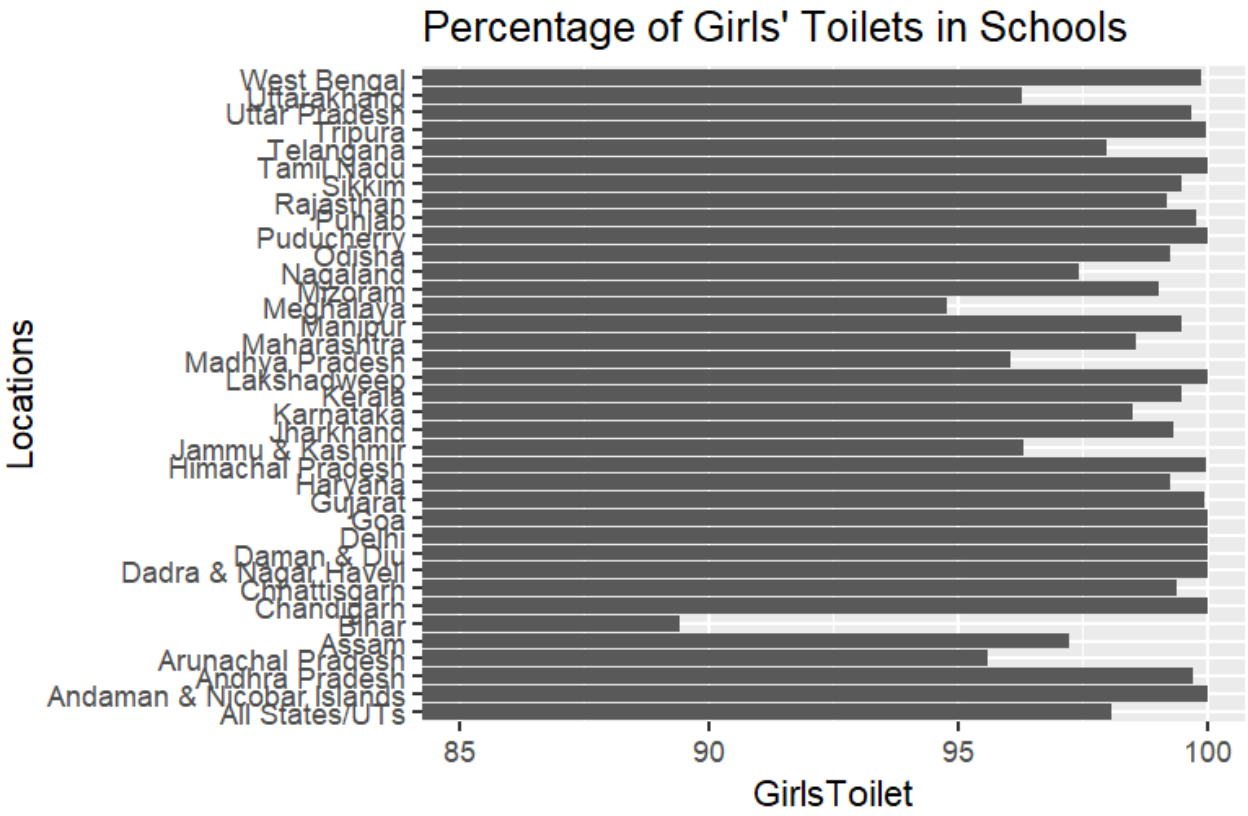
Using Box plot for checking the range of values for Constructed Girls Toilets and Functional Girls Toilets in Schools.

```
boxplot(df$Schools.with.Girls..Toilet, data = df)+
  title("Girls Toilets")

boxplot(df$Schools.with.functional.Girls..Toilet, data = df)+
  title("Functional Girls Toilets")
```



The construction of toilets in schools have been more than 98% all across India, with functional ones being from 94% to 100%.

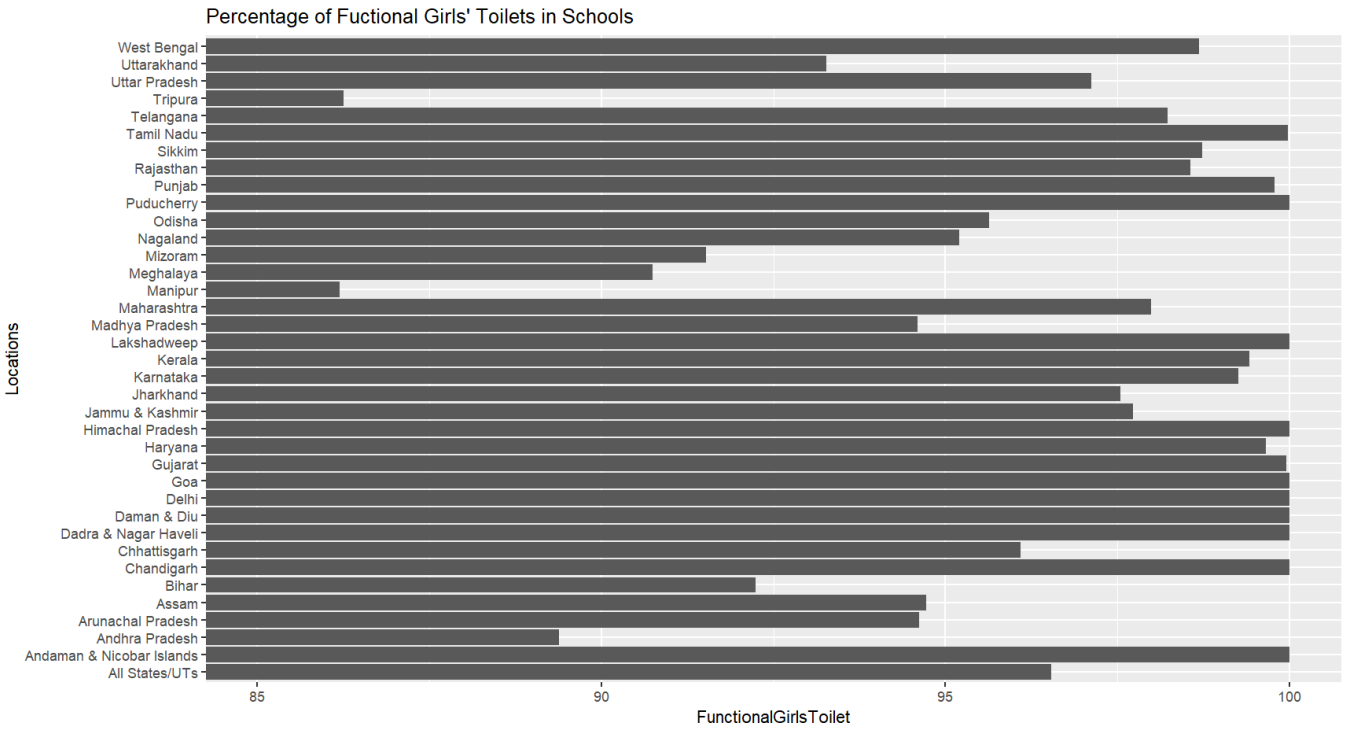
Visualizations



The graph shows us the number of girls toilet created across various states and union territories in already existing government schools.

Meghalaya, Bihar, Arunachal Pradesh, Uttarakhand etc. are among those states which have less number of constructed girl toilets in schools.

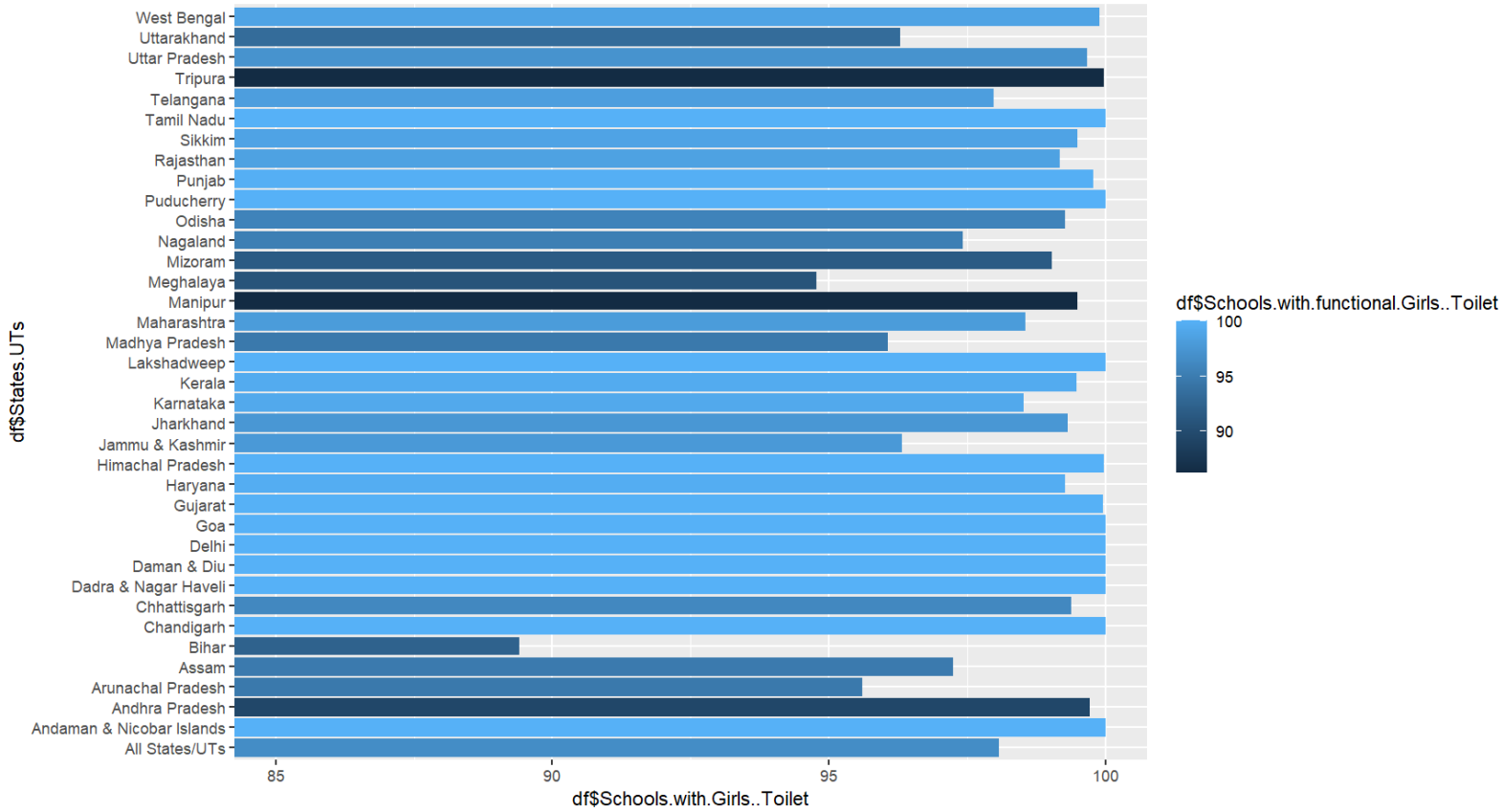
Visualizations



The graph shows us the number of "functional" girls toilet created across various states and union territories amongst the already existing girls toilets i.e. a toilet that has SAFETY, HYGIENCE and PRIVACY.

Among already identified States and Union Territories with lesser access to toilet facilities, Bihar and North Eastern States have lesser number of functional female toilets in schools.

Visualizations



The graph shows us the number of "functional" girls toilet created across various states and union territories amongst the already existing girls toilets i.e. a toilet that has SAFETY, HYGIENCE and PRIVACY.

Darker shades of blue signify those states that a low percentage of functional toilets- Bihar, Andhra Pradesh, Manipur, Meghalaya, Mizoram, Tripura, Uttrakhand.

Hence, we observe that making up of toilets for woman is not enough,it should be ensured that the toilets are such which woman can use without any issues related to hygiene, privacy or safety.

Code

```
df <- read.csv("C:\\Users\\DELL\\Desktop\\DU MSC\\Maths\\Presentation\\RS_Session_248_AS_9.csv", header=TRUE,stringsAsFactors = FALSE, fill = TRUE)
str(df, vec.len = 1)
head(df)

library(ggplot2)

d1 <- data.frame(GirlsToilet <- df$Schools.with.Girls..Toilet, Locations <- df$States.UTs)

#barplot(data$Schools.with.Girls..Toilet,names.arg = data$X.1  )

d1

d2 <- data.frame(FunctionalGirlsToilet <- df$Schools.with.functional.Girls..Toilet, Locations <- df$States.UTs)
d1 <- d1[order(d1$GirlsToilet, decreasing = TRUE)]

ggplot(d1, aes(y=Locations,x=GirlsToilet)) +
  geom_bar(stat='identity')+
  coord_flip()+
 coord_cartesian(xlim =c(85.0, 100.0))+
  ggtitle("Percentage of Girls' Toilets in Schools")

ggplot(d2, aes(y=Locations,x=FunctionalGirlsToilet)) +
  geom_bar(stat='identity')+
  coord_flip()+
  coord_cartesian(xlim =c(85.0, 100.0))+
  ggtitle("Percentage of Fuctional Girls' Toilets in Schools")
```

```
29
30  x<- ggplot(df, aes(fill=df$Schools.with.functional.Girls..Toilet,
31                     x=df$Schools.with.Girls..Toilet,
32                     y=df$States.UTs)) +
33    geom_bar(position="dodge", stat="identity")
34  x + coord_cartesian(xlim =c(85.0, 100.0))
35
36  boxplot(df$Schools.with.Girls..Toilet, data = df)+
37    title("Girls Toilets")
38
39  boxplot(df$Schools.with.functional.Girls..Toilet, data = df)+
40    title("Functional Girls Toilets")
41
42
43
44
45
30:66  (Top Level)  R Script
Console
```

References

Images:
https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.ndtv.com%2Feducation%2Fpunjab-government-distribute-free-school-uniforms-over-13-lakh-students-minister&psig=AOvVaw0_X4Xfvzk5b2wIbrDVE6K3&ust=1676803752812000&source=images&cd=vfe&ved=0CBAQjRxqFwoTCOj12_Lynv0CFQAAAAAdAAAAABAQ

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Dataset:
https://data.gov.in/resource/stateut-wise-details-percentage-government-schools-girls-toilets-and-functional-girls

Thankyou!