Maths Report Script

Karamjot Kaur, Stuti, Sudipto Ghosh

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```
library(readxl)
data <- read_excel("NFHS_5_Factsheets_Data.xlsx")
```

```
total_data <- data[data$Area == 'Total',]
total_data <- subset(total_data, select=-c(Area))

library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyr)
total_data %>%
  mutate_if(is.numeric, ~replace_na(.,mean(., na.rm = TRUE)))
```

```
## # A tibble: 37 x 135
##    `States/UTs`  Numbe~1 Numbe~2 Numbe~3 Femal~4 Popul~5 Sex r~6 Sex r~7 Child~8
##    <chr>           <dbl>   <dbl>   <dbl>   <dbl>   <dbl>   <dbl> <chr>   <chr>
##  1 India          636699  724115  101839    71.8    26.5   1020. 929.16  89.08
##  2 Andaman & Ni~    2624    2397     367    83.5    20.8    963. 913.91  97.39
##  3 Andhra Prade~   11346   10975    1558    65.6    22.2   1045. 933.63  92.17
##  4 Arunachal Pr~   18268   19765    2881    71.2    27.0    997. 978.73  87.69
##  5 Assam           30119   34979    4973    78.2    28.3   1012. 964.19  96.28
##  6 Bihar           35834   42483    4897    61.1    36.4   1090. 907.99  75.64
##  7 Chandigarh        761     746     104    86.7    23.3    917. 837.77  97.64
##  8 Chhattisgarh    24550   28468    4174    69.3    25.4   1015. 960.16  96.58
##  9 Dadra and Na~    2676    2713     427    74.4    25.4    827. 817.27  98.09
## 10 Goa              1856    2030     313    89.0    19.1   1027. 838.11  100.0
## # ... with 27 more rows, 126 more variables:
## #   `Deaths in the last 3 years registered with the civil authority (%)` <chr>,
## #   `Population living in households with electricity (%)` <dbl>,
## #   `Population living in households with an improved drinking-water source1 (%)` <dbl>,
## #   `Population living in households that use an improved sanitation facility2 (%)` <dbl>,
## #   `Households using clean fuel for cooking3 (%)` <chr>,
## #   `Households using iodized salt (%)` <chr>, ...
```

```
delivery_care_data <- subset(total_data, select=c(1, 54:60))
delivery_care_data[c(2:8)] <- sapply(delivery_care_data[c(2:8)], as.numeric)
```

```
## Warning in lapply(X = X, FUN = FUN, ...): NAs introduced by coercion
```

```
delivery_care_data[c(2:8)] <- sapply(delivery_care_data[c(2:8)], abs)
india_delivery_care_data = delivery_care_data[delivery_care_data$`States/UTs` == 'India',]
delivery_care_data <- delivery_care_data[delivery_care_data$`States/UTs` != 'India',]
```

```
delivery_care_data$`Births in a private health facility that were delivered by caesarean section (in th
```

```
summary(delivery_care_data)
```

```
##   States/UTs        Institutional births (in the 5 years before the survey) (%)
##  Length:36          Min.   :45.67
##  Class :character   1st Qu.:85.31
##  Mode  :character   Median :93.32
##                     Mean   :89.36
##                     3rd Qu.:96.61
##                     Max.   :99.76
##  Institutional births in public facility (in the 5 years before the survey) (%)
##  Min.   :34.10
##  1st Qu.:56.08
##  Median :66.08
##  Mean   :65.55
##  3rd Qu.:76.67
##  Max.   :94.70
##  Home births that were conducted by skilled health personnel  (in the 5 years before the survey)10 (
##  Min.   : 0.000
##  1st Qu.: 1.272
##  Median : 2.120
##  Mean   : 2.695
##  3rd Qu.: 3.430
##  Max.   :10.370
##  Births attended by skilled health personnel (in the 5 years before the survey)10 (%)
##  Min.   : 55.29
##  1st Qu.: 86.83
##  Median : 93.69
##  Mean   : 90.55
##  3rd Qu.: 96.59
##  Max.   :100.00
##  Births delivered by caesarean section (in the 5 years before the survey) (%)
##  Min.   : 5.22
##  1st Qu.:15.09
##  Median :24.33
##  Mean   :25.75
##  3rd Qu.:33.67
##  Max.   :60.70
##  Births in a private health facility that were delivered by caesarean section (in the 5 years before
##  Min.   : 0.00
##  1st Qu.:39.58
##  Median :46.97
##  Mean   :49.48
##  3rd Qu.:58.51
##  Max.   :82.69
```

```
##  Births in a public health facility that were delivered by caesarean section (in the 5 years before
##  Min.   : 3.62
##  1st Qu.:11.23
##  Median :17.98
##  Mean   :20.89
##  3rd Qu.:29.98
##  Max.   :44.49
```

```
sd(delivery_care_data$`Institutional births (in the 5 years before the survey) (%)`)
```

```
## [1] 11.58147
```

```
sd(delivery_care_data$`Institutional births in public facility (in the 5 years before the survey) (%)`)
```

```
## [1] 14.5125
```

```
sd(delivery_care_data$`Home births that were conducted by skilled health personnel  (in the 5 years bef
```

```
## [1] 2.417425
```

```
sd(delivery_care_data$`Births attended by skilled health personnel (in the 5 years before the survey)10
```

```
## [1] 9.541626
```

```
sd(delivery_care_data$`Births delivered by caesarean section (in the 5 years before the survey) (%)`)
```

```
## [1] 12.52143
```

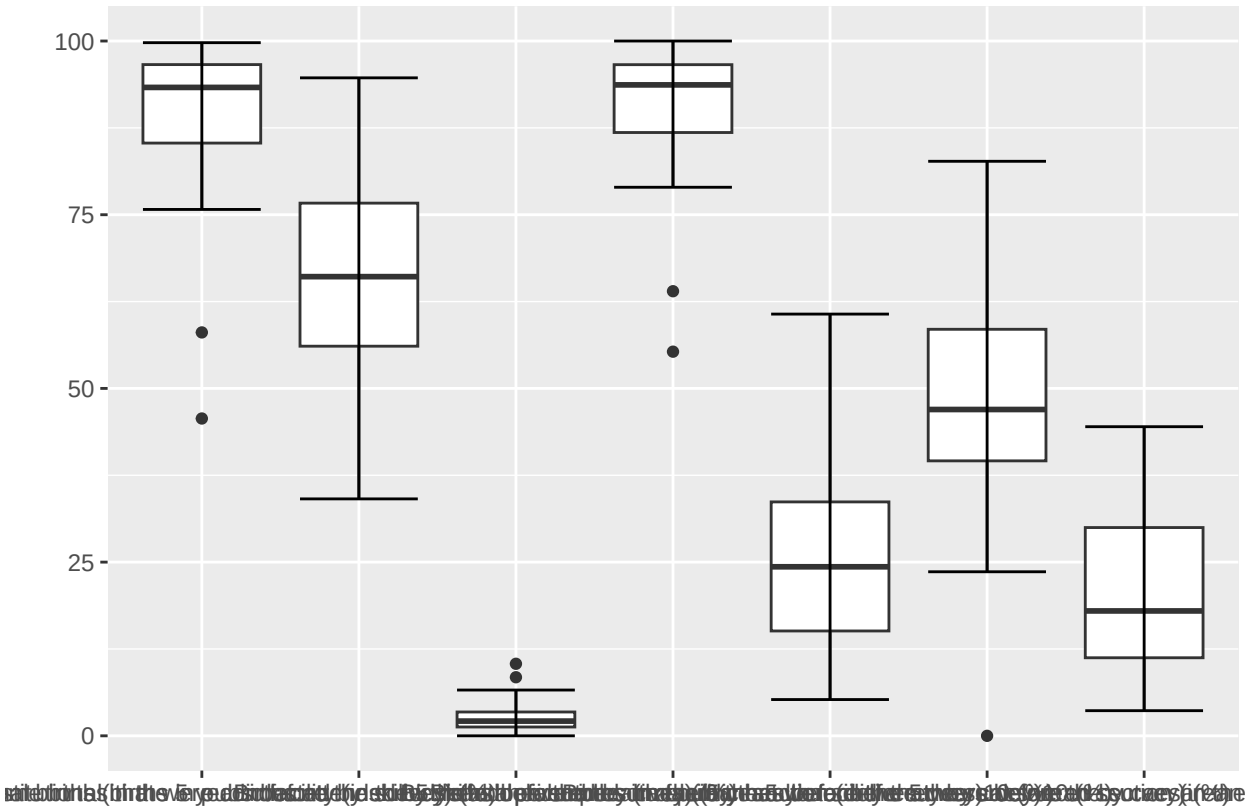
```
sd(delivery_care_data$`Births in a private health facility that were delivered by caesarean section (in
```

```
## [1] 18.00155
```

```
sd(delivery_care_data$`Births in a public health facility that were delivered by caesarean section (in
```

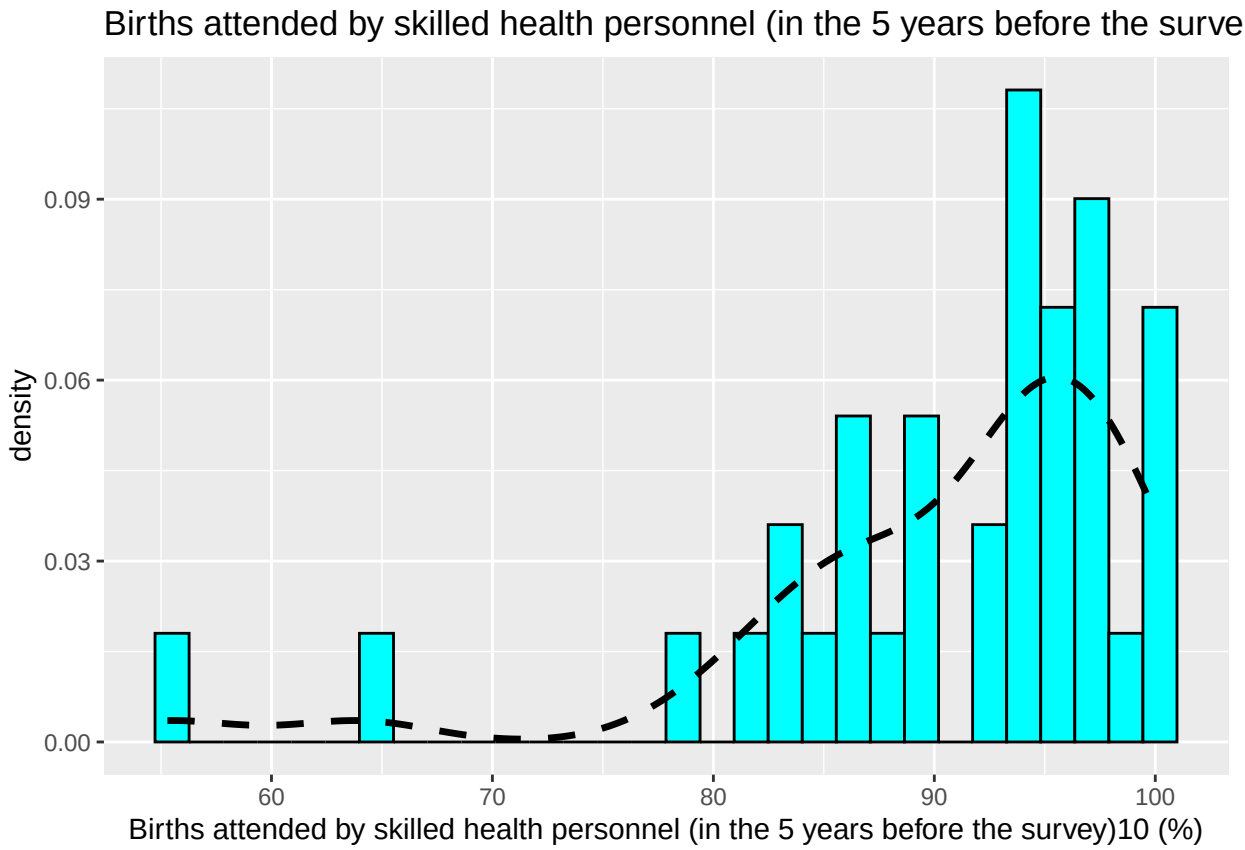
```
## [1] 11.34101
```

```
library(ggplot2)
ggplot(stack(delivery_care_data[, 2:8]), aes(x=ind, y=values)) +
  geom_boxplot() +
  stat_boxplot(geom = 'errorbar') +
  theme(legend.position = "none") +
  xlab('') +
  ylab('')
```

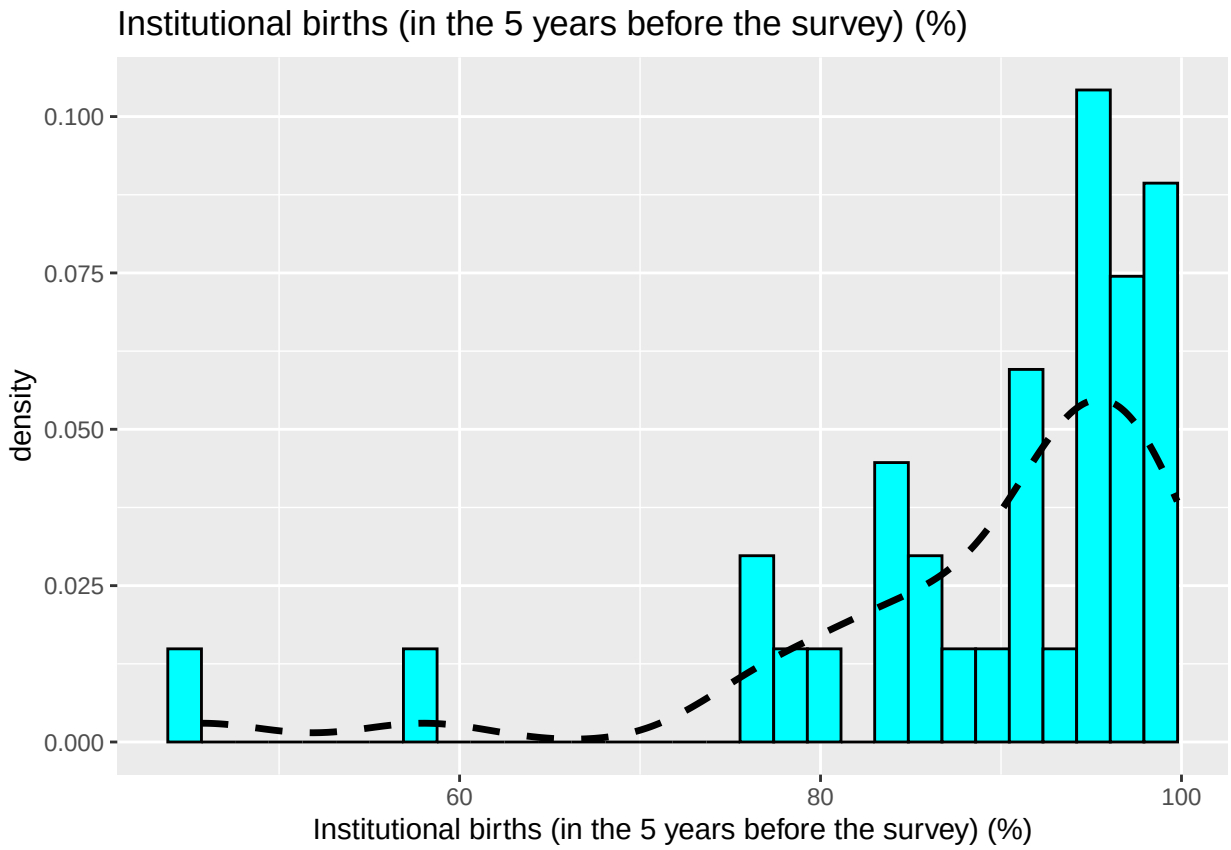


Histograms

```
ggplot(delivery_care_data, aes(x=.data[[names(delivery_care_data)[5]]])) + ggtitle(names(delivery_care_
geom_histogram(aes(y = ..density..), colour = 1, fill = "cyan") +
  geom_density(lwd = 1.2,
               linetype = 2,
               colour = 1)
```

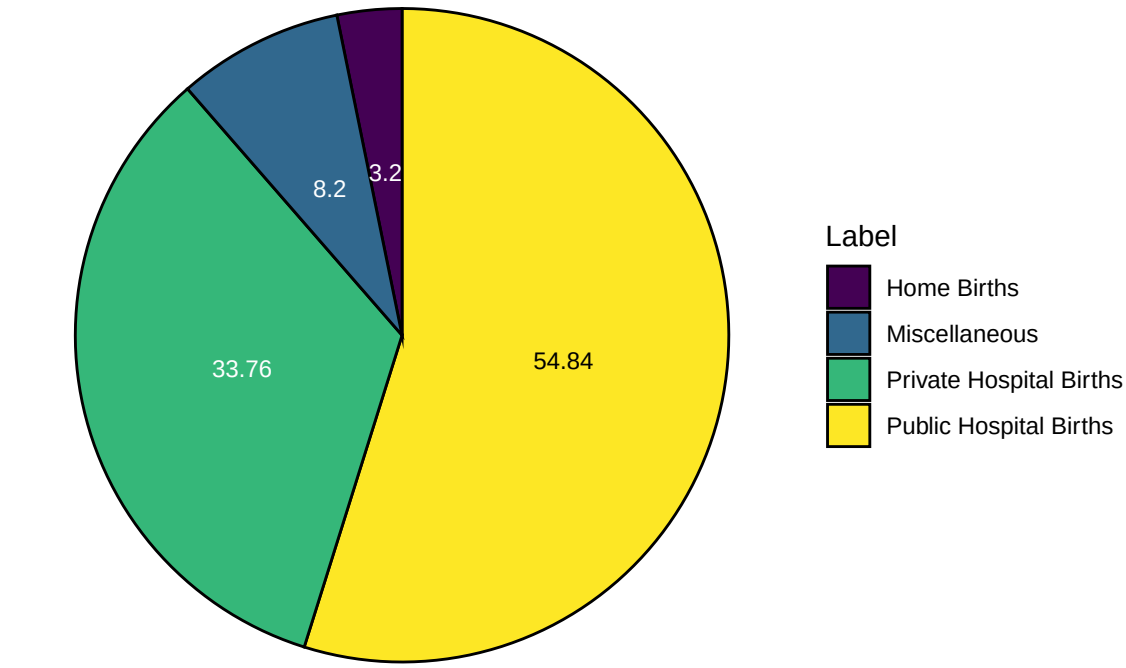



```
ggplot(delivery_care_data, aes(x=.data[[names(delivery_care_data)[2]]])) + ggtitle(names(delivery_care_
geom_histogram(aes(y = ..density..), colour = 1, fill = "cyan") +
  geom_density(lwd = 1.2,
               linetype = 2,
               colour = 1)
```

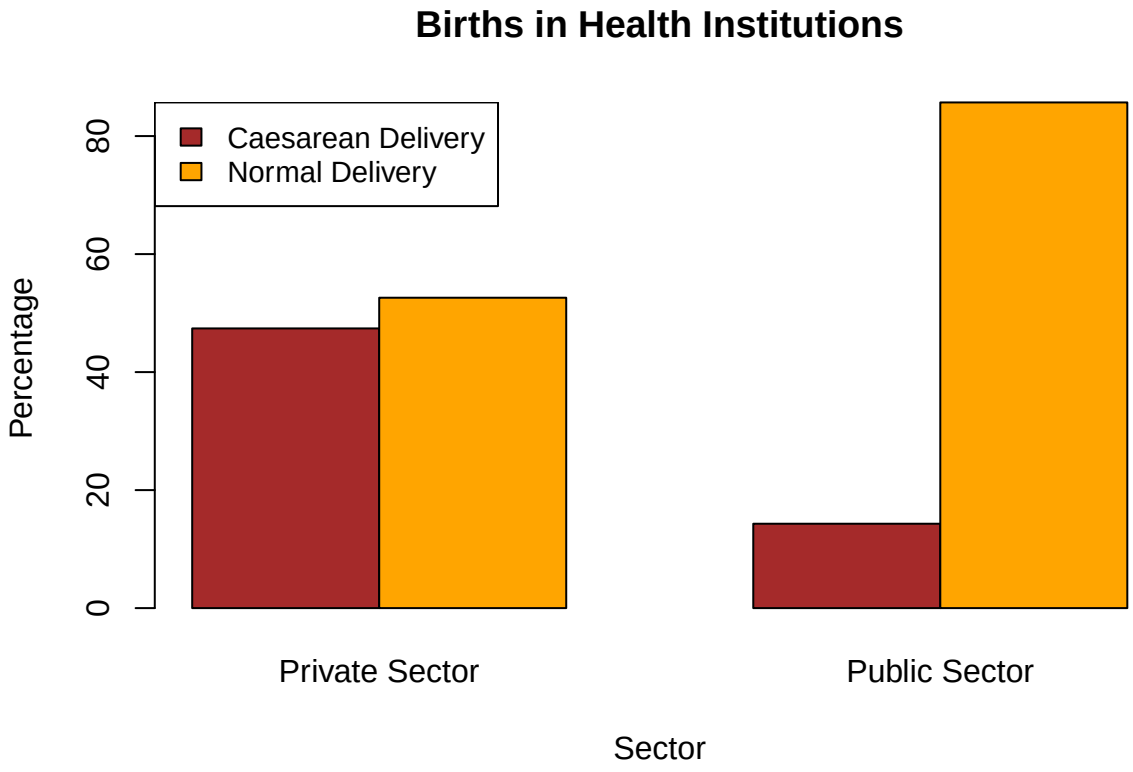



```
library(ggplot2)

Pie1 <- read_excel("./Pie1.xlsx")
percent <- Pie1[,2]
sectors <- Pie1[,1]
ggplot(Pie1, aes(x = "", y = Value, fill = Label)) + coord_polar("y", start = 0) + ggtitle(" Distributi
```




```
colors = c("brown", "orange")
Sector <- c("Private Sector", "Public Sector")
regions <- c("Caesarean Delivery", "Normal Delivery")
# Create the matrix of the values.
Values <- matrix(c(47.4, 14.3, 52.6, 85.7), nrow = 2, ncol = 2, byrow = TRUE)
# Create the bar chart
barplot(Values, main = "Births in Health Institutions", names.arg = Sector, xlab = "Sector", ylab = "Pe
legend("topleft", regions, cex = 0.9, fill = colors)
```


Births in Health Institutions
Caesarean Delivery
Normal Delivery
Percentage
0
20
40
60
80
Private Sector
Public Sector
Sector