Summative Assessment 1

SINOCRUZ, ARVIE

2025-10-11

Given Data

```
males <- c(
  12, 4, 11, 13, 11,
  7, 9, 10, 10, 7,
  7, 12, 6, 9, 15,
  10, 11, 12, 7, 8,
  8, 9, 11, 10, 9,
  10, 9, 9, 7, 9,
  11, 7, 10, 10, 11,
  9, 12, 12, 8, 13,
  9, 10, 8, 11, 10,
  13, 13, 9, 10, 13
)

females <- c(
  11, 9, 7, 10, 9,
  10, 10, 7, 9, 10,
  11, 8, 9, 6, 11,
  10, 7, 9, 12, 14,
  11, 12, 12, 8, 12,
  12, 9, 10, 11, 7,
  12, 7, 9, 8, 11,
  10, 8, 13, 8, 10,
  9, 9, 9, 11, 9,
  9, 8, 9, 12, 11
)
```

Checking sample sizes

```
cat("Number of Male Participants:", length(males), "\n")
```

```
## Number of Male Participants: 50
```

```
cat("Number of Female Participants:", length(females), "\n")
```

```
## Number of Female Participants: 50
```

Combining the Data Frame

```
gender <- c(rep("Male", length(males)), rep("Female", length(females)))
hours <- c(males, females)
data <- data.frame(Gender = gender, Hours = hours)
```

Descriptive statistics for the entire dataset

```
overall_summary <- data.frame(
  Statistic = c("Count", "Mean", "Median", "Standard Dev.",
                "Variance", "Minimum", "Maximum", "1st Quartile (Q1)",
                "3rd Quartile (Q3)"),
  Value = c(
    length(data$Hours),
    round(mean(data$Hours), 2),
    round(median(data$Hours), 2),
    round(sd(data$Hours), 2),
    round(var(data$Hours), 2),
    min(data$Hours),
    max(data$Hours),
    round(quantile(data$Hours, 0.25), 2),
    round(quantile(data$Hours, 0.75), 2)
  )
)

cat("**Summary Statistics for the Entire Dataset**\n\n")
```

```
## **Summary Statistics for the Entire Dataset**
```

```
print(format(overall_summary, justify = "centre"), row.names = FALSE)
```

```
##          Statistic  Value
##        Count       100.00
##        Mean          9.76
##       Median        10.00
##    Standard Dev.     1.96
##      Variance        3.86
##       Minimum        4.00
##       Maximum       15.00
##  1st Quartile (Q1)   9.00
##  3rd Quartile (Q3)  11.00
```

```
cat("\nNote: This table summarizes the overall descriptive statistics for
    weekly cell phone usage among all respondents.\n")
```

```
##
## Note: This table summarizes the overall descriptive statistics for
##     weekly cell phone usage among all respondents.
```

Descriptive statistics by gender

```
split_data <- split(data$Hours, data$Gender)

gender_summary <- data.frame(
  Gender = names(split_data),
  Count = sapply(split_data, length),
  Mean = round(sapply(split_data, mean), 2),
  Median = round(sapply(split_data, median), 2),
  SD = round(sapply(split_data, sd), 2),
  Variance = round(sapply(split_data, var), 2),
  Min = sapply(split_data, min),
  Q1 = sapply(split_data, quantile, 0.25),
  Q3 = sapply(split_data, quantile, 0.75),
  Max = sapply(split_data, max)
)

cat("\n**Descriptive Statistics by Gender**\n\n")
```

```
##
## **Descriptive Statistics by Gender**
```

```
print(format(gender_summary, justify = "centre"), row.names = FALSE)
```

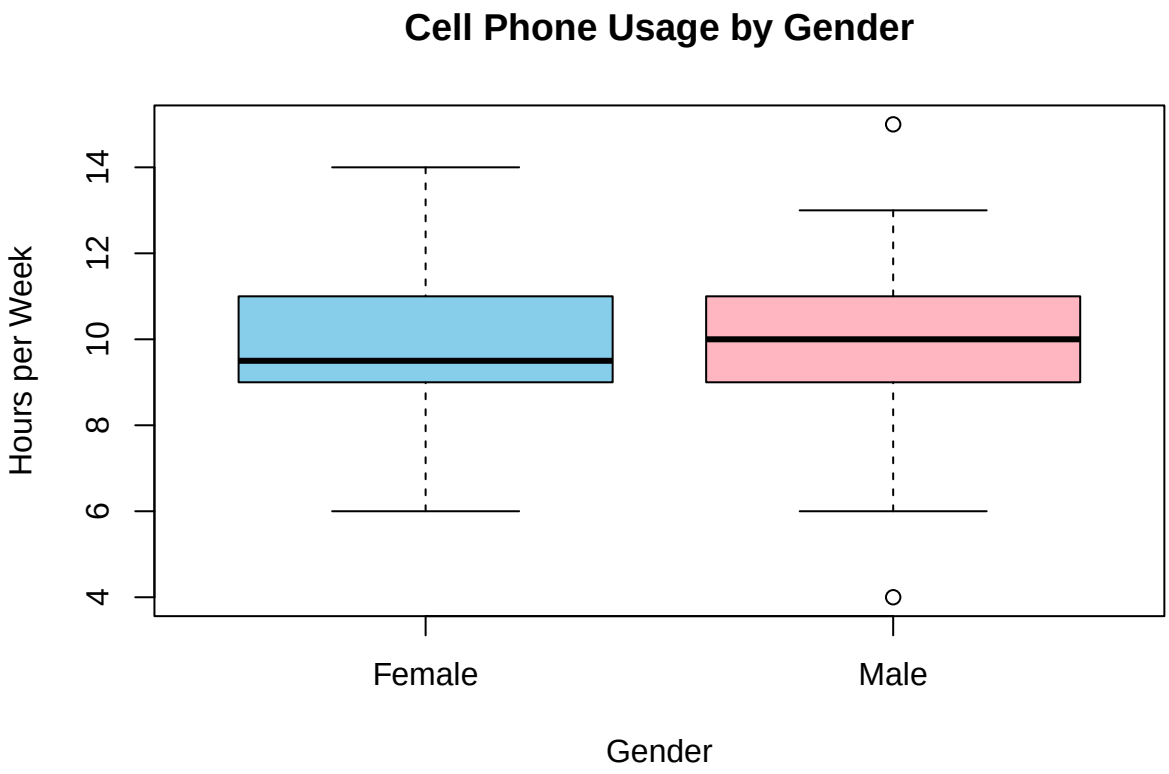
```
##  Gender Count Mean Median   SD Variance Min Q1 Q3 Max
##  Female    50 9.70    9.5 1.78     3.15   6  9 11  14
##   Male     50 9.82   10.0 2.15     4.64   4  9 11  15
```

```
cat("\nThis table presents the key descriptive measures
    for each gender group.\n")
```

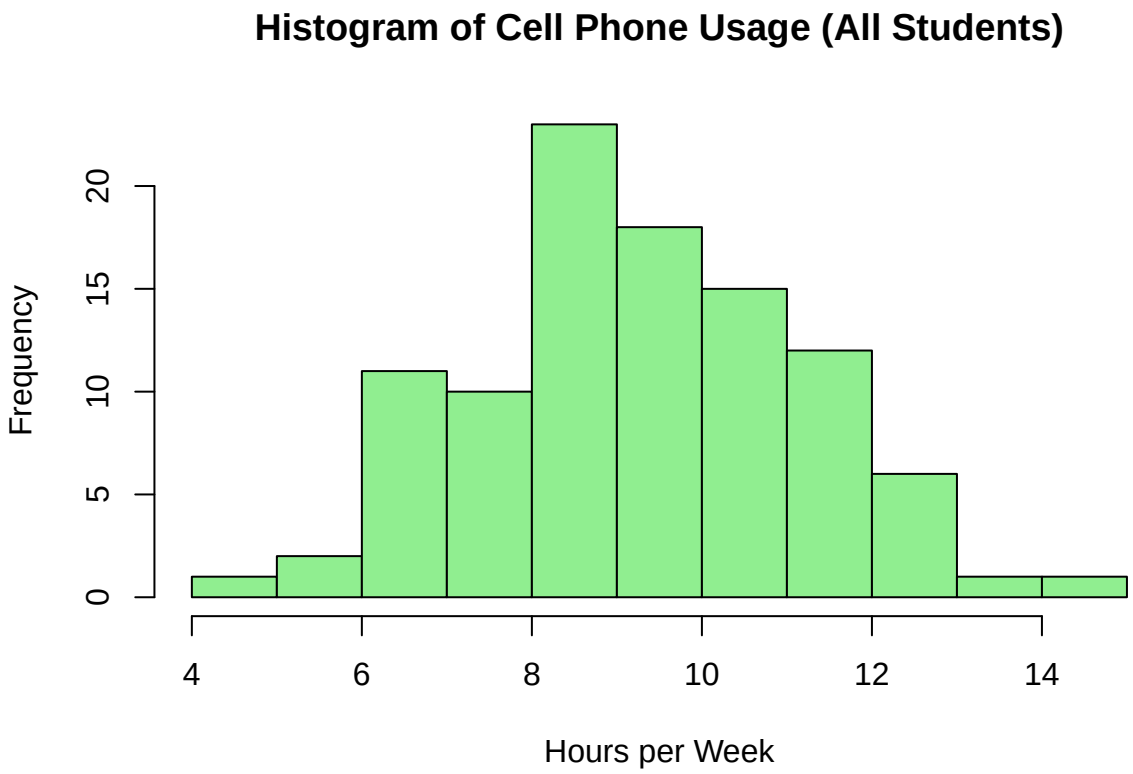
```
##
## This table presents the key descriptive measures
##     for each gender group.
```

Visualization

```
boxplot(Hours ~ Gender, data = data,
        main = "Cell Phone Usage by Gender",
        ylab = "Hours per Week", col = c("skyblue", "lightpink"))
```




```r
hist(data$Hours, breaks = 10, col = "lightgreen",
     main = "Histogram of Cell Phone Usage (All Students)",
     xlab = "Hours per Week")
```



Report Summary

This analysis compared the average hours spent on cell phone calls per week between male and female students.

Descriptive Overview

- Overall Mean Hours: 9.76
- Male Mean Hours: 9.82 | SD: 2.15
- Female Mean Hours: 9.7 | SD: 1.78

Interpretation

Based on the results, male students spend slightly more hours per week on phone calls compared to females.

This report provides a descriptive overview of cell phone usage behavior by gender and may serve as a foundation for further statistical testing or behavioral analysis.