

# AblianFA1

2024-02-01

## 1&2

1.The skewness of the four columns are symmetric, although they are not exactly the same. This means that there are different data but not so far from each other.

First, we read the csv file.

```
results <- read.csv("C:/Users/edtech3/Downloads/random1.csv")
```

We can compute the mean, median, and sd to get the skewness with the formula 3(mean-median)/sd.

```
mean1 <- mean(results$sarch1)
mean1
```

```
## [1] 64.48739
```

```
mean2 <- mean(results$sarch2)
mean2
```

```
## [1] 53.58824
```

```
mean3 <- mean(results$prog1)
mean3
```

```
## [1] 59.70588
```

```
mean4 <- mean(results$prog2)
mean4
```

```
## [1] 56.89076
```

```
median1 <-median(results$sarch1)
median1
```

```
## [1] 69
```

```
median2 <-median(results$sarch2)
median2
```

```
## [1] 48
```

```
median3 <-median(results$prog1)
median3
```

```
## [1] 64
```

```
median4 <-median(results$prog2)
median4
```

```
## [1] 61
```

```
sd1 <- sd(results$sarch1)
sd1
```

```
## [1] 24.73687
```

```
sd2 <- sd(results$sarch2)
sd2
```

```
## [1] 23.29705
```

```
sd3 <- sd(results$prog1)
sd3
```

```
## [1] 23.64187
```

```
sd4 <- sd(results$prog1)
sd4
```

```
## [1] 23.64187
```

Alternatively, you can use the library function if your goal is just the skewness and you don't need the mean, median, and sd.

```
library(e1071)
```

```
## Warning: package 'e1071' was built under R version 4.1.3
```

```
skew1 <- skewness(results$sarch1)
skew1
```

```
## [1] -0.5021693
```

```
skew2 <- skewness(results$sarch2)
skew2
```

```
## [1] 0.4475094
```

```
skew3 <- skewness(results$prog1)
skew3
```

```
## [1] -0.3065542
```

```
skew4 <- skewness(results$prog2)
skew4
```

```
## [1] -0.2764746
```

## Including Plots

2.The females have a higher average score than the males. But a circle on the plot means that a male person scored the highest of all the people in the data.The lowest average of the females' score is already close to the highest average scores of the males.

```
Females <- c(57, 59, 78, 79, 60, 65, 68, 71, 75, 48, 51, 55, 56, 41, 43, 44, 75, 78, 80, 81, 83, 83, 85)
Males <- c (48, 49, 49, 30, 30, 31, 32, 35, 37, 41, 86, 42, 51, 53, 56,
           42, 44, 50, 51, 65, 67, 51, 56, 58, 64, 64, 75)

stem(Females)
```

```
##
## The decimal point is 1 digit(s) to the right of the |
##
## 4 | 1348
## 5 | 15679
## 6 | 058
## 7 | 155889
## 8 | 01335
```

```
stem(Males)
```

```
##
## The decimal point is 1 digit(s) to the right of the |
##
## 3 | 001257
## 4 | 1224899
## 5 | 01113668
## 6 | 4457
## 7 | 5
## 8 | 6
```

```
data_summary <-list(Female = Females, Male = Males)

boxplot(data_summary, col = c("pink", "lightblue"), main = "Boxplot by Gender", xlab = "Gender", ylab="Final Exam Scores", names = c("Female", "Male"))
```

