

Multilevel Modeling Summative

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Part 1 Introduction

```
# -----  
## clear the environment var area  
# rm(list = ls())  
## clear all plots  
# graphics.off()  
## clear the console area  
# cat("\014")  
# -----  
# install.packages("gridExtra")  
# -----  
require(lme4)  
require(lmerTest)  
require(ggplot2)  
require(sjPlot)
```

Download the dataset “MST” only once from GitHub and save it to csv files.

```
# MST <-  
#   read.csv(  
#     "https://andygolightly.github.io/teaching/MATH43515/summative/andy.csv",  
#     header = TRUE  
#   )  
# write.csv(MST, "MST.csv")  
MST = read.csv("./MST.csv")  
# head(MST)
```

```
# dim(MST)
tab_df(MST[1:5, ])
```

X

ID

Hospital

Responset1

Responset2

Responset3

Trt

Experience

Gender

Size

1

1

1

36

38

38

1

6.80

1

0

2

2

1

35

39

39

1

9.10

1

0

3

3

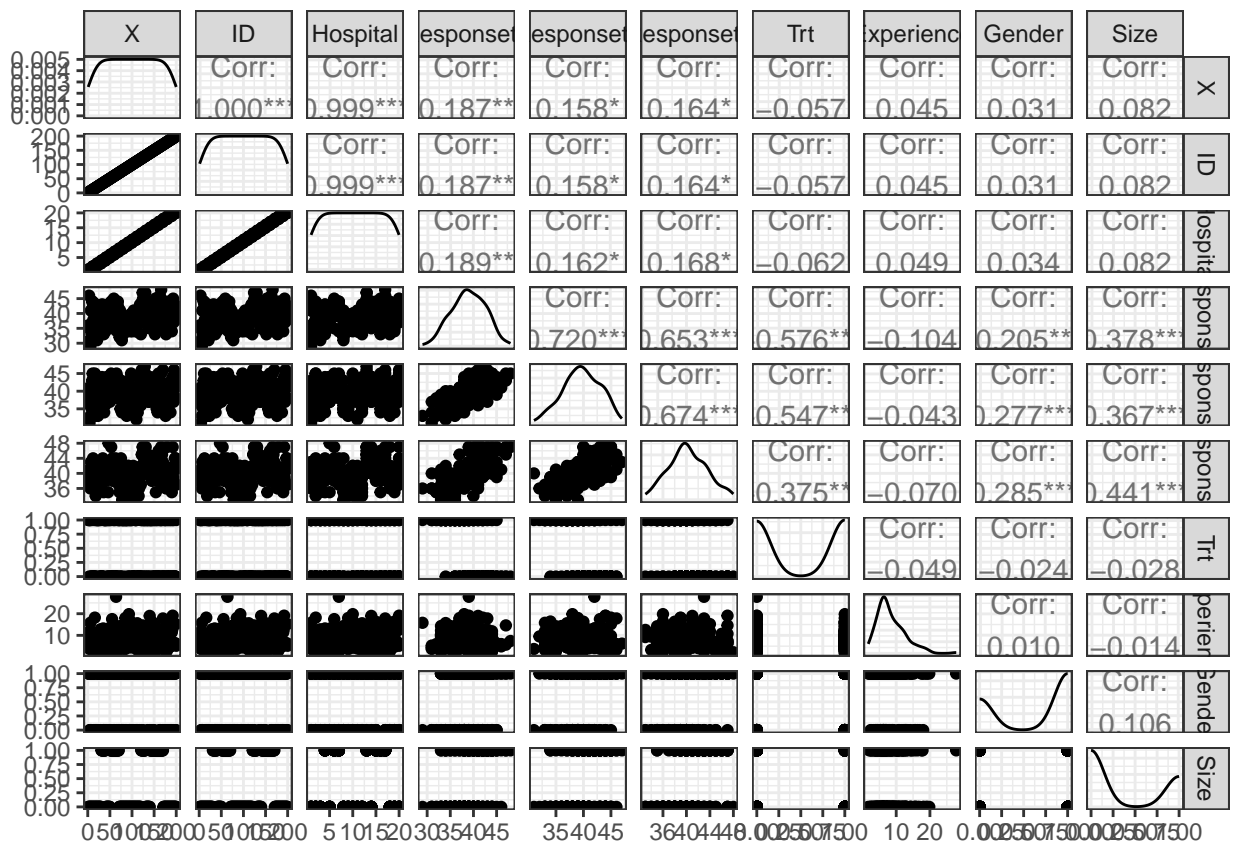
1

46

41
41
0
6.00
1
0
4
4
1
31
31
40
1
3.70
0
0
5
5
1
36
36
39
1
12.10
1
0

```
library(ggplot2)
```

```
# Correlation between two variables with GGpairs  
library("GGally")  
ggpairs(MST)+theme_bw()
```



Part 2 Methods

Part 3 Analysis

Part 4 Discussion of results