Assignment2- Partial Correlation -Apendix

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Data source:

https://extranet.who.int/tme/generateCSV.asp?ds=estimates

Resources:

Library : https://cran.r-project.org/web/packages/ppcor/

Reference: Discovering statistics Using r-Andy Field (Chapter 5 & 6)

Reference: https://statistics.laerd.com/spss-tutorials/partial-correlation-using-spss-statistics.php

Appendix-1

```
library(skimr)
library(dplyr)
library(ggplot2)
library(pastecs)
library(psych)
library(grid)
library(gridExtra)
library(GGally)
burdenData = read.csv("TB_burden_countries_2021-03-02.csv", header = TRUE)

df <- as_tibble(burdenData)
new_df<- df%>%select("e_mort_num","c_cdr_lo","e_inc_tbhiv_num_hi" )

new_df<-mutate(new_df, mortality = log(e_mort_num+1),
               treatement_coverage = log(c_cdr_lo+1),
               cases_tbhiv=log(e_inc_tbhiv_num_hi+1)
                )
x <- na.omit(new_df)
```

Appendix-2

```
number_of_observations <- count(x)
number_of_variables<- length(df)
number_of_countries<- length(unique(burdenData$country))


data<-x %>% select("mortality","treatement_coverage","cases_tbhiv")
```

Appendix-3

```
mortality<- data$mortality
cases<- data$cases_tbhiv
treatment_coverage<-data$treatement_coverage
```

Appendix-4

```
##
##  Pearson's product-moment correlation
##
## data:  mortality and treatment_coverage
## t = -51.924, df = 3589, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.6732436 -0.6358708
## sample estimates:
##        cor
## -0.6549575
```

Appendix-5

```
##
##  Pearson's product-moment correlation
##
## data:  mortality and cases
## t = 132.76, df = 3589, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.9057900 0.9168672
## sample estimates:
##       cor
## 0.9114938
```

Appendix-6

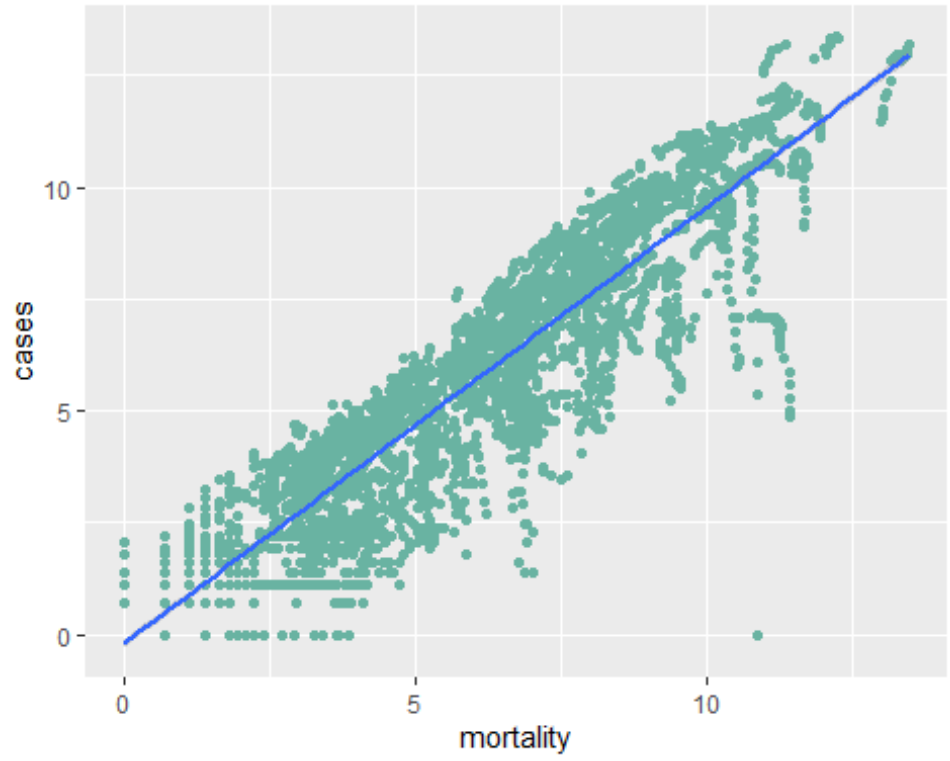
```
##
##  Pearson's product-moment correlation
##
## data:  cases and treatment_coverage
## t = -42.829, df = 3589, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.6028182 -0.5595109
## sample estimates:
##        cor
## -0.5815765
```

Appendix-7

```
##                     mortality treatement_coverage cases_tbhiv
## mortality           100.00000            42.89693    83.08209
## treatement_coverage  42.89693           100.00000    33.82312
## cases_tbhiv          83.08209            33.82312   100.00000
```

Appendix-8

Appendix-9



Appendix-10

Appendix-11

```
## [1] -0.373144
```

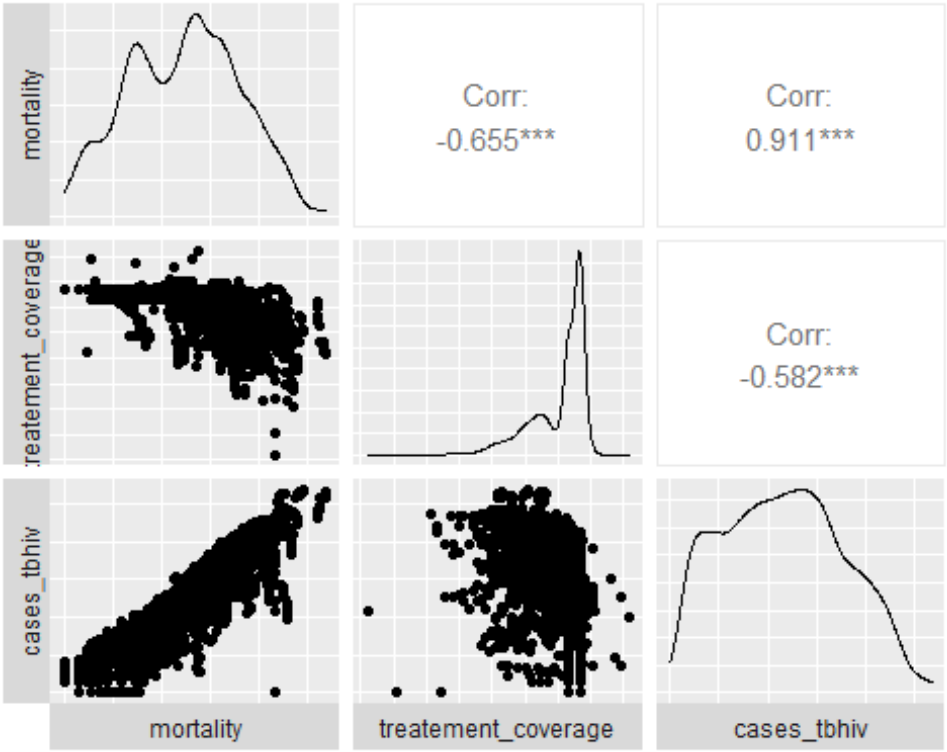
Appendix-12

```
## [1] 0.1392365
```

Appendix-13

```
## $tval
## [1] -24.09133
##
## $df
## [1] 3588
##
## $pvalue
## [1] 5.413797e-119
```

Appendix-14



Appendix-18

http://www.sthda.com/english/wiki/scatter-plots-r-base-graphs