

```

In [1]: #SOURCE ::
# 1) https://cran.r-project.org/web/packages/GGally/index.html (To make the data po
# 2) https://ggplot2.tidyverse.org/
# 3) https://dplyr.tidyverse.org/
# 4) https://r-graphics.org/recipe-quick-scatter (Chapter 2.1)

# Load necessary Libraries
install.packages("GGally")
library(ggplot2)
library(GGally)
library(dplyr) # Load the dplyr package

# Sample data frame 'data' with columns 'Panas..', 'Panas...1', 'BFI..E.', 'BFI..A.
data <- read.csv("Pilot_modified_data_1.csv")

# Independent variables
independent_variables <- c('BFI..E.', 'BFI..A.', 'BFI..C.', 'BFI..N.', 'BFI..O.', '

# Dependent variables
dependent_variables <- c('Panas..', 'Panas...1', 'CBCL')

# Mediator variables
mediator_variables <- 'PAQ'

print("Scatter plots of independent vs. dependent variables")

# Create scatter plots of independent vs. dependent variables
for (iv in independent_variables) {
  for (dv in dependent_variables) {
    # Create the scatter plot with red dots
    plot(data[[iv]], data[[dv]],
         xlab = iv, ylab = dv,
         main = paste("Scatter Plot of", iv, "vs.", dv),
         col = "red", pch = 20) # Set color to red and point type to red dots
  }
}

print("=====")
print("Scatter plots of independent vs. mediator variables")

# Create scatter plots of independent vs. mediator variables
for (iv in independent_variables) {
  for (mv in mediator_variables) {
    # Create the scatter plot with red dots
    plot(data[[iv]], data[[mv]],
         xlab = iv, ylab = mv,
         main = paste("Scatter Plot of", iv, "vs.", mv),
         col = "red", pch = 20) # Set color to red and point type to red dots
  }
}

print("=====")
print("Scatter plots of mediator vs. dependent variables")

```

```
# Create scatter plots of mediator vs. dependent variables
for (mv in mediator_variables) {
  for (dv in dependent_variables) {
    # Create the scatter plot with red dots
    plot(data[[mv]], data[[dv]],
          xlab = mv, ylab = dv,
          main = paste("Scatter Plot of", mv, "vs.", dv),
          col = "red", pch = 20) # Set color to red and point type to red dots
  }
}
```

Updating HTML index of packages in '.Library'

Making 'packages.html' ...
done

Registered S3 method overwritten by 'GGally':
method from
+.gg ggplot2

Attaching package: 'dplyr'

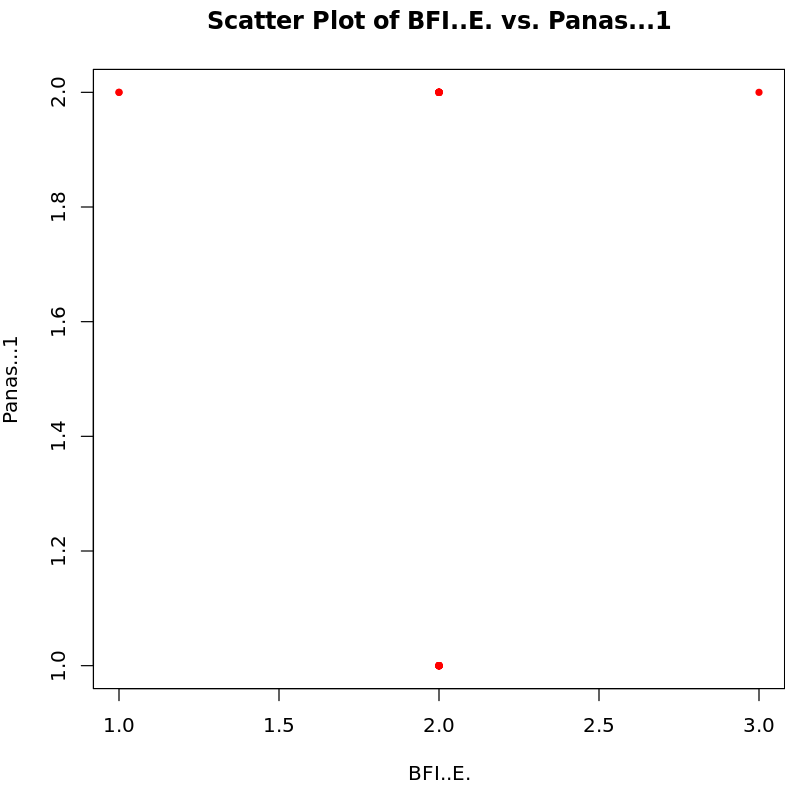
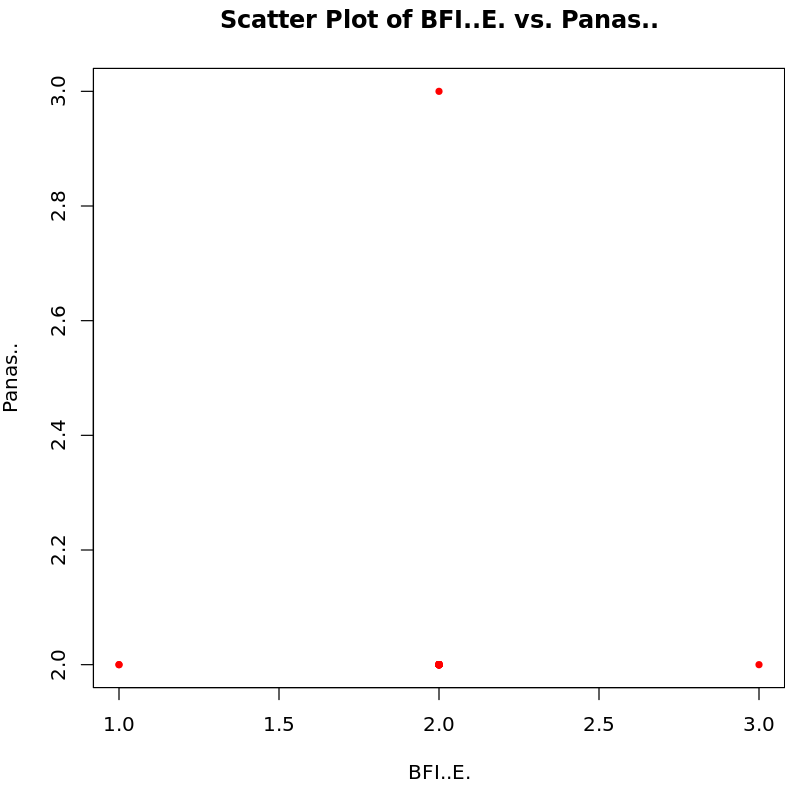
The following objects are masked from 'package:stats':

filter, lag

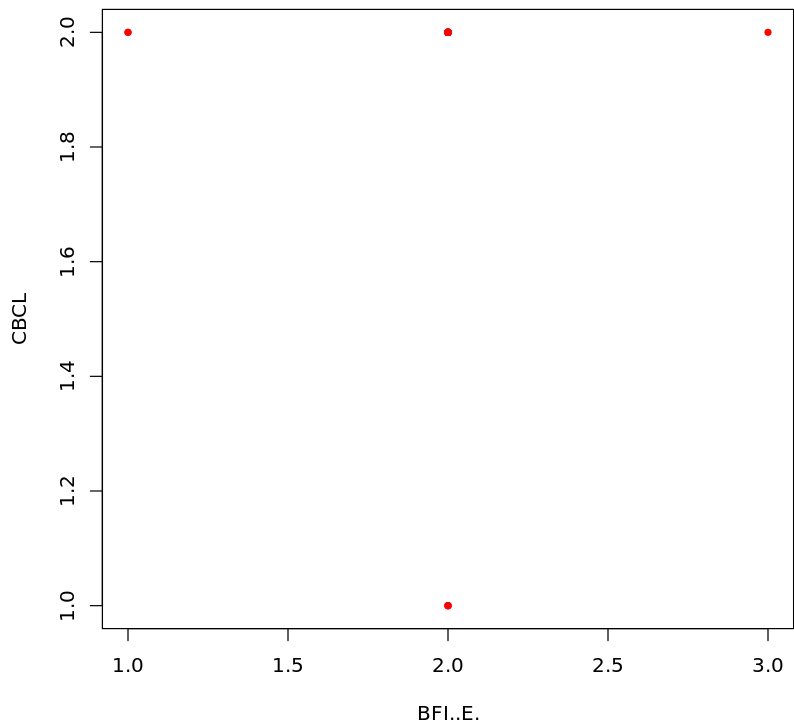
The following objects are masked from 'package:base':

intersect, setdiff, setequal, union

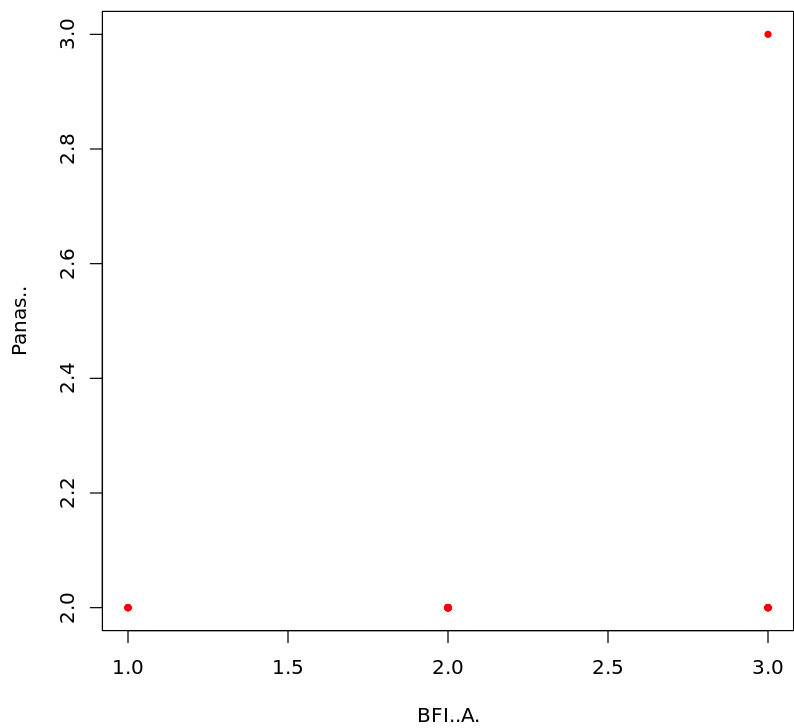
[1] "Scatter plots of independent vs. dependent variables"



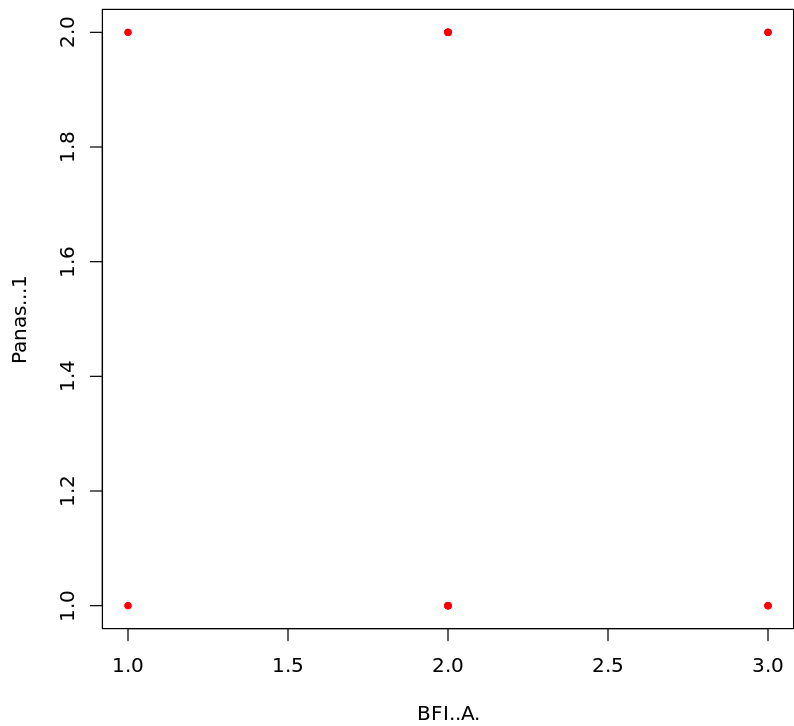
Scatter Plot of BFI..E. vs. CBCL



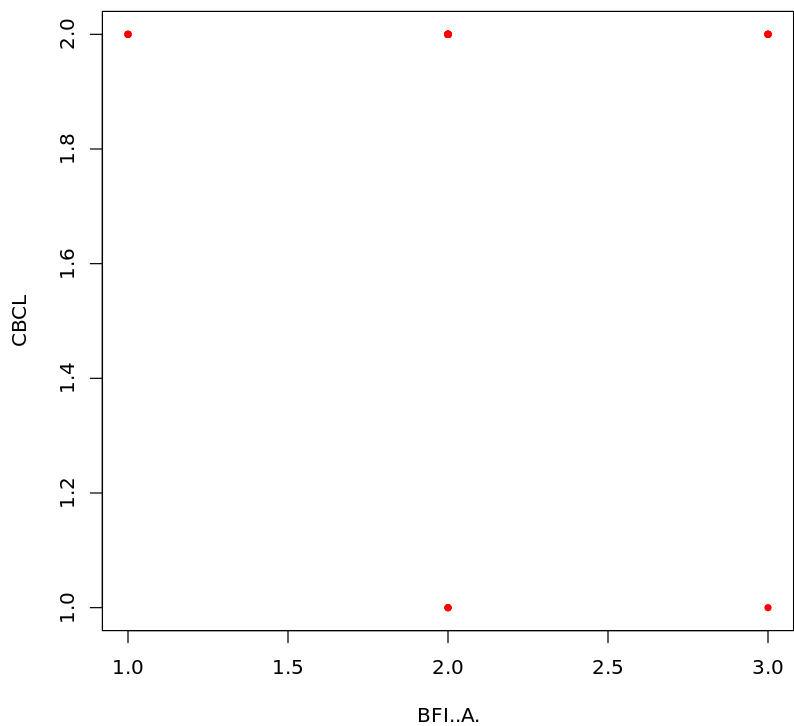
Scatter Plot of BFI..A. vs. Panas..



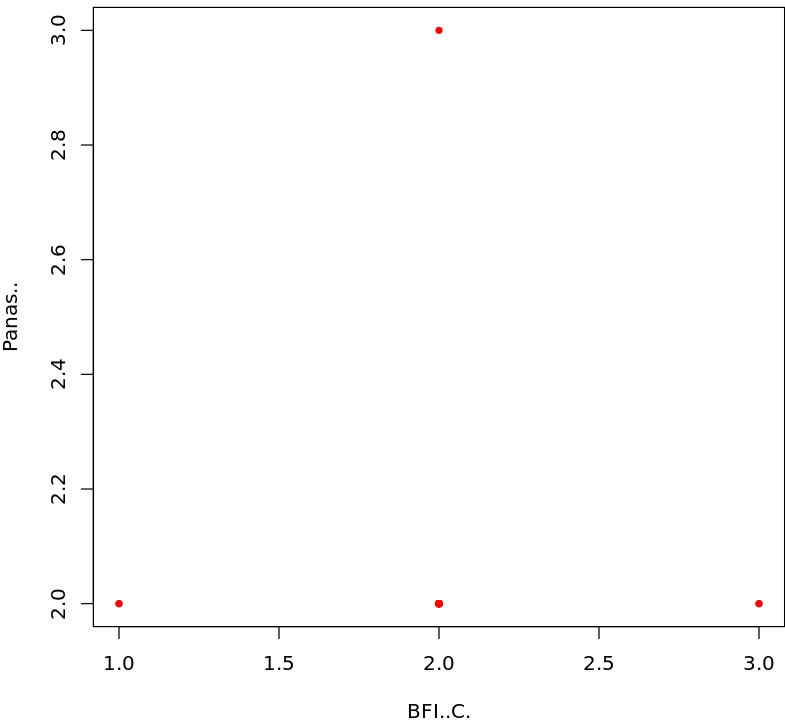
Scatter Plot of BFI..A. vs. Panas...1



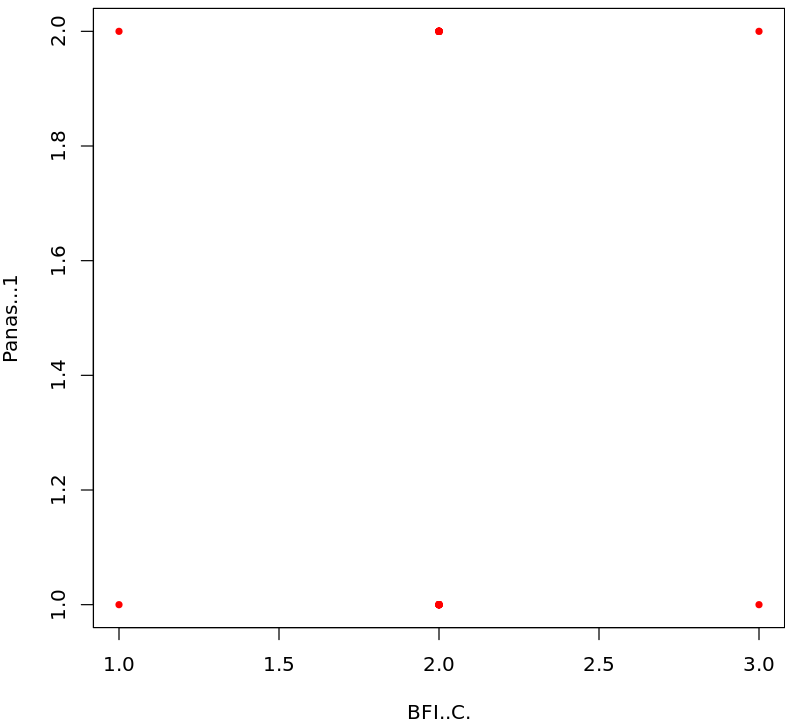
Scatter Plot of BFI..A. vs. CBCL



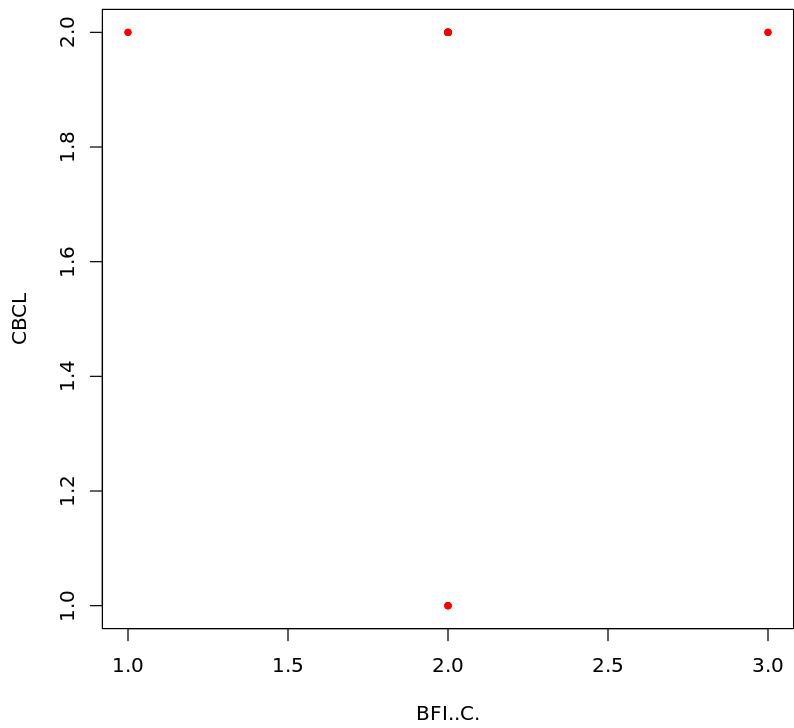
Scatter Plot of BFI..C. vs. Panas..



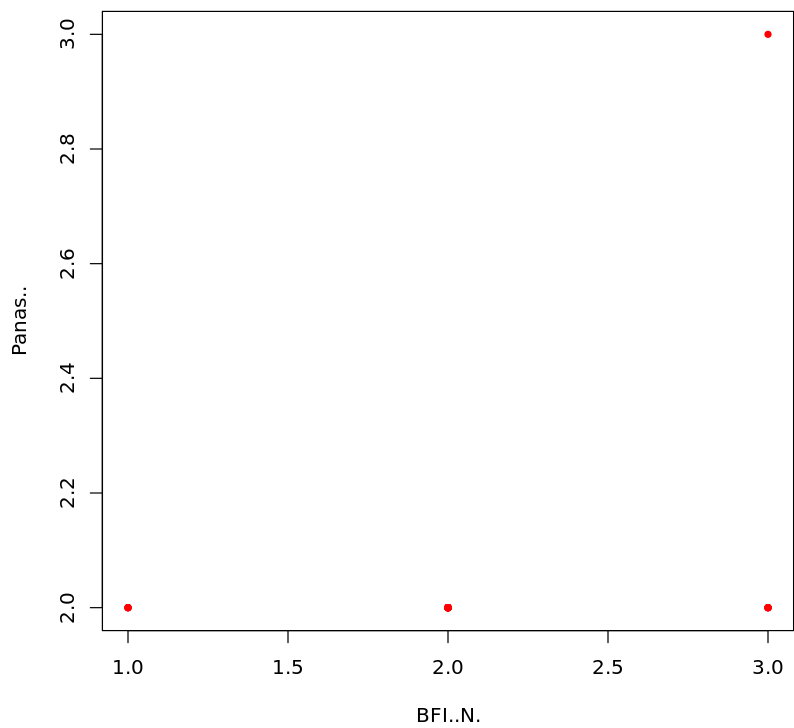
Scatter Plot of BFI..C. vs. Panas...1



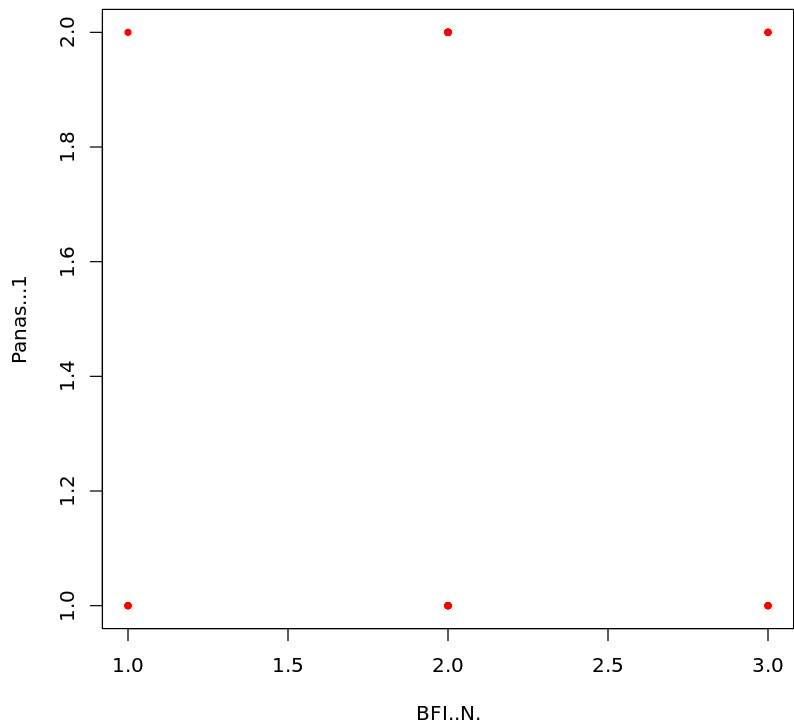
Scatter Plot of BFI..C. vs. CBCL



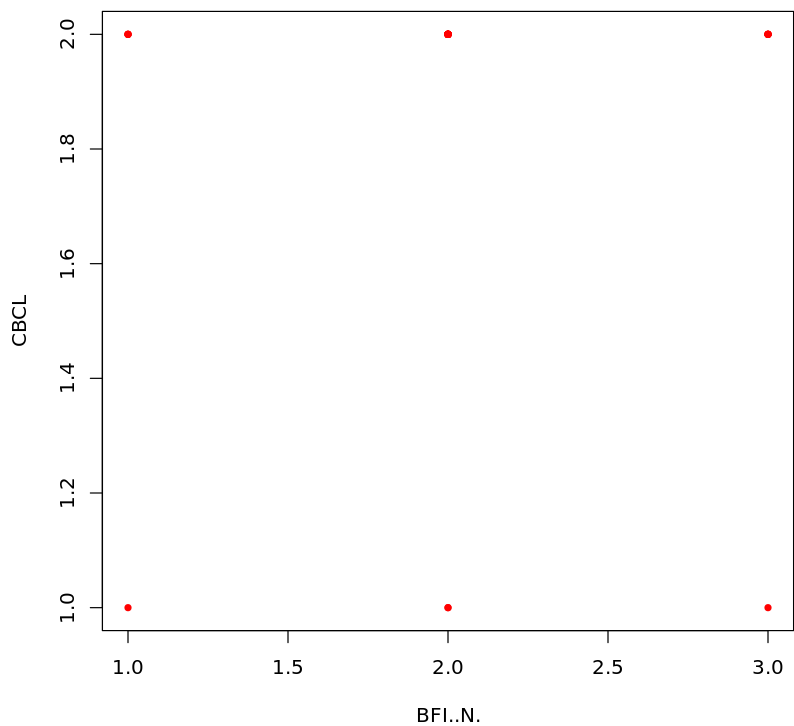
Scatter Plot of BFI..N. vs. Panas..



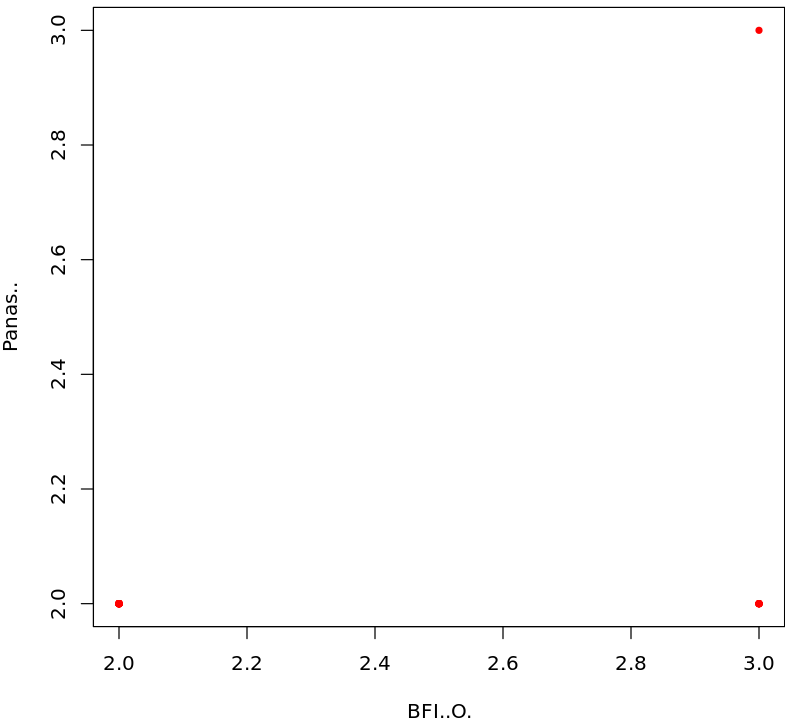
Scatter Plot of BFI..N. vs. Panas...1



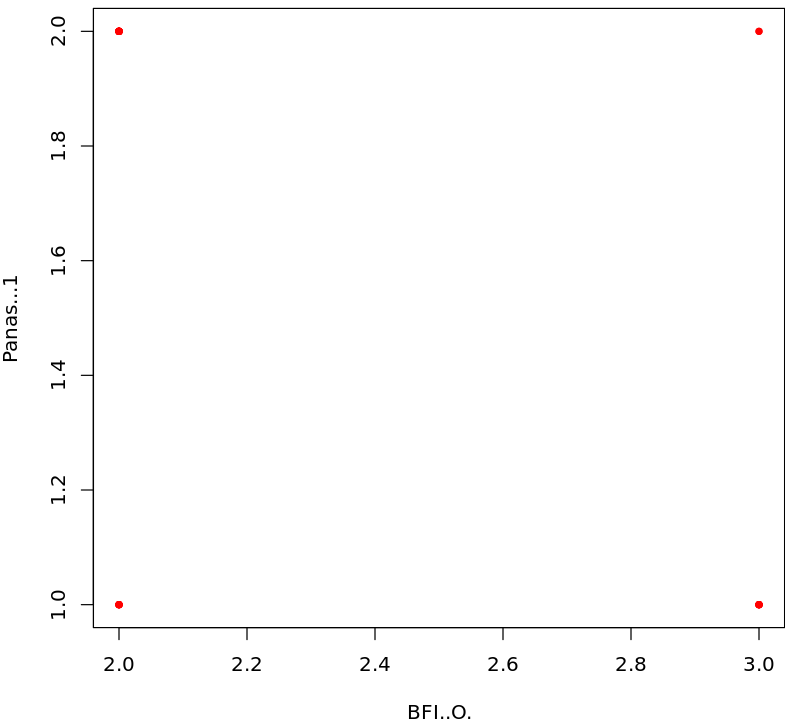
Scatter Plot of BFI..N. vs. CBCL



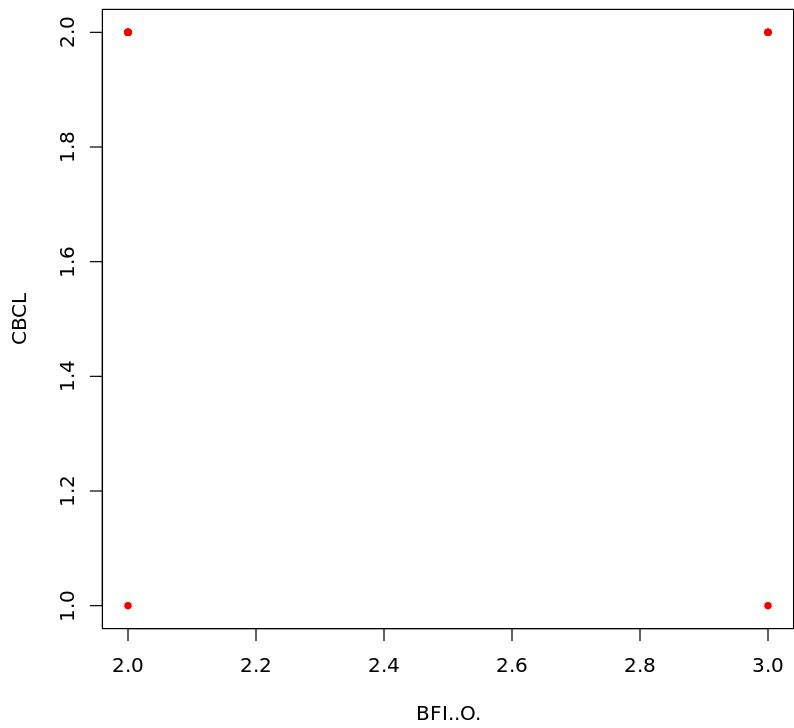
Scatter Plot of BFI..O. vs. Panas..



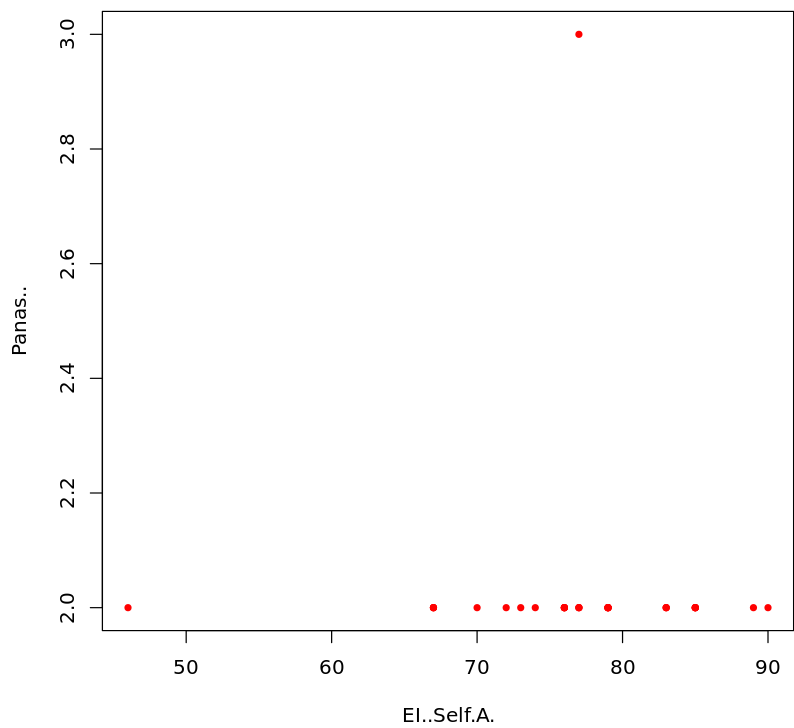
Scatter Plot of BFI..O. vs. Panas...1

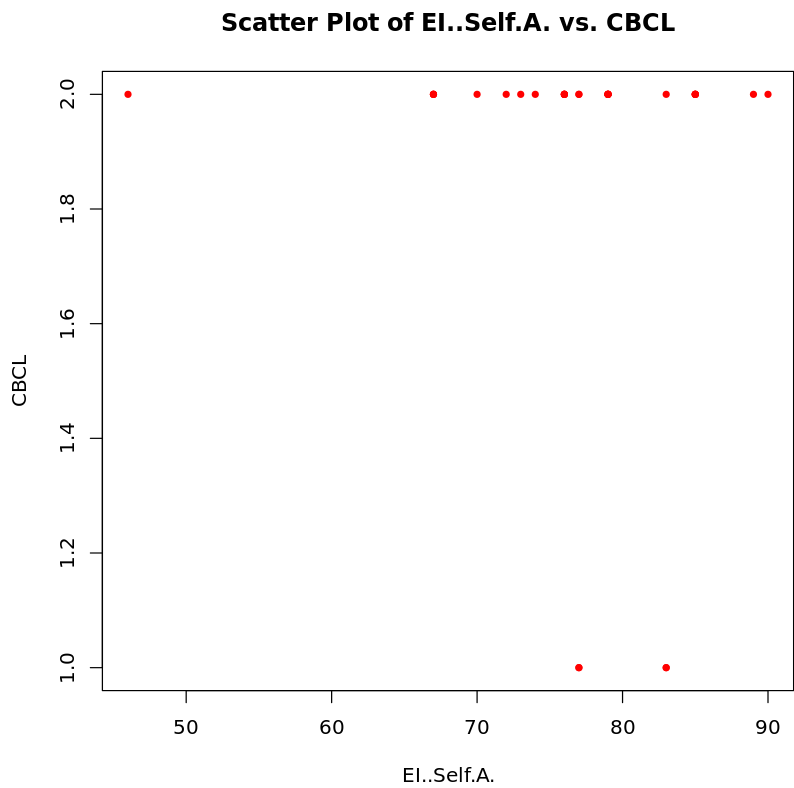
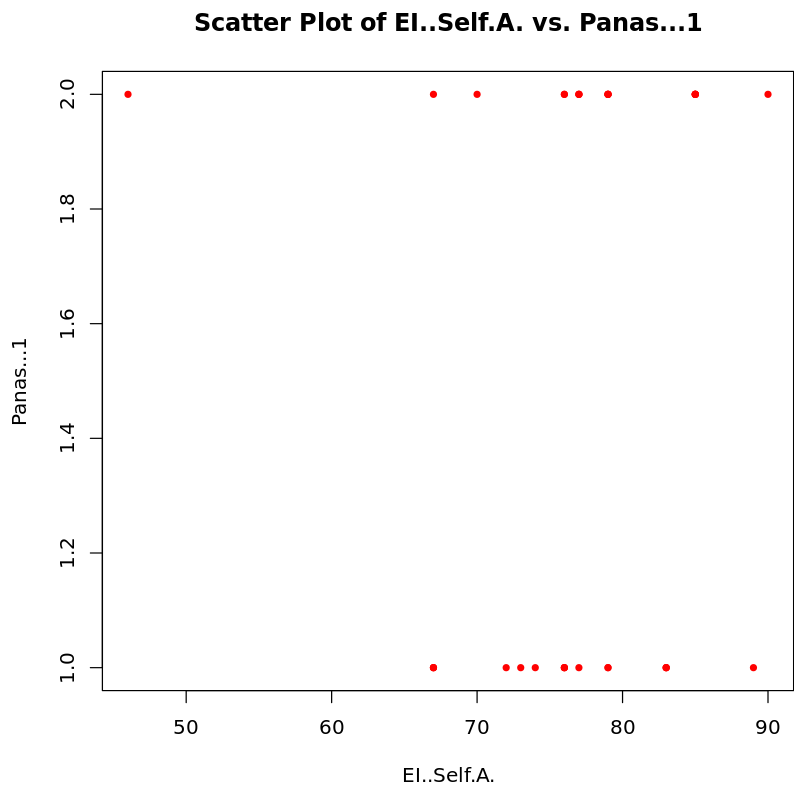


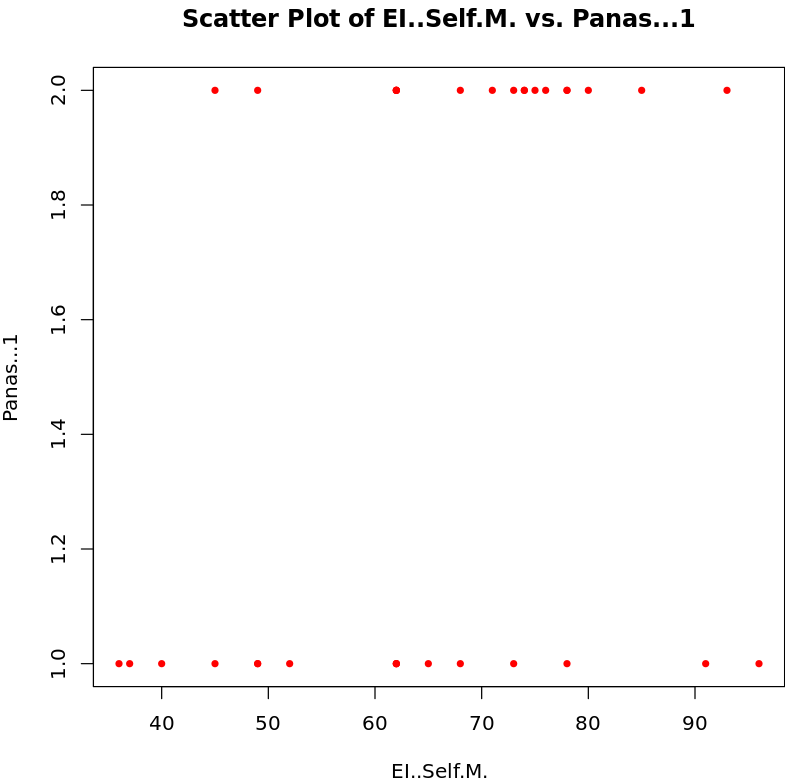
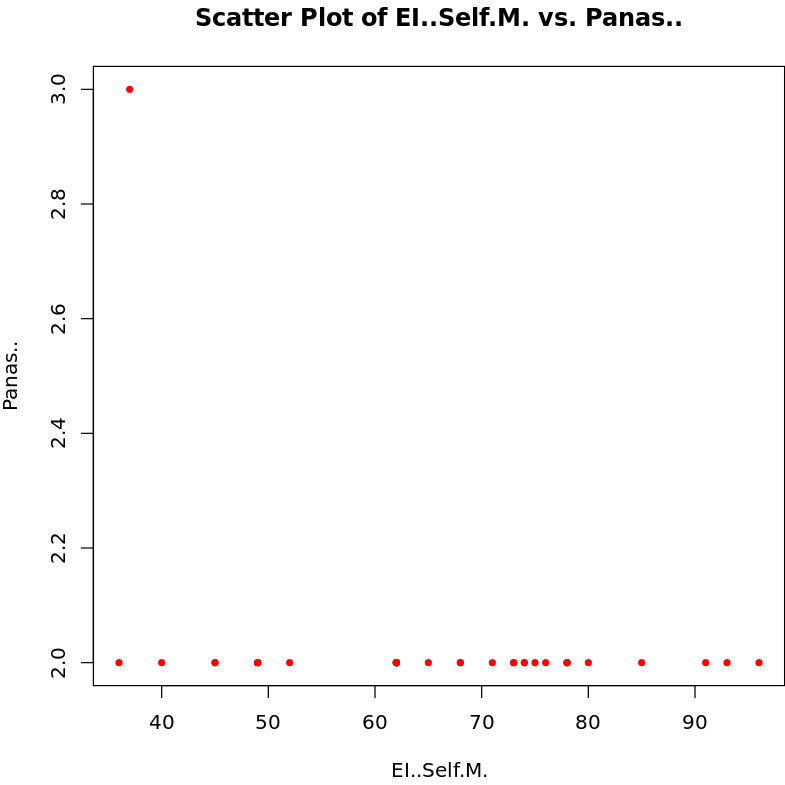
Scatter Plot of BFI..O. vs. CBCL

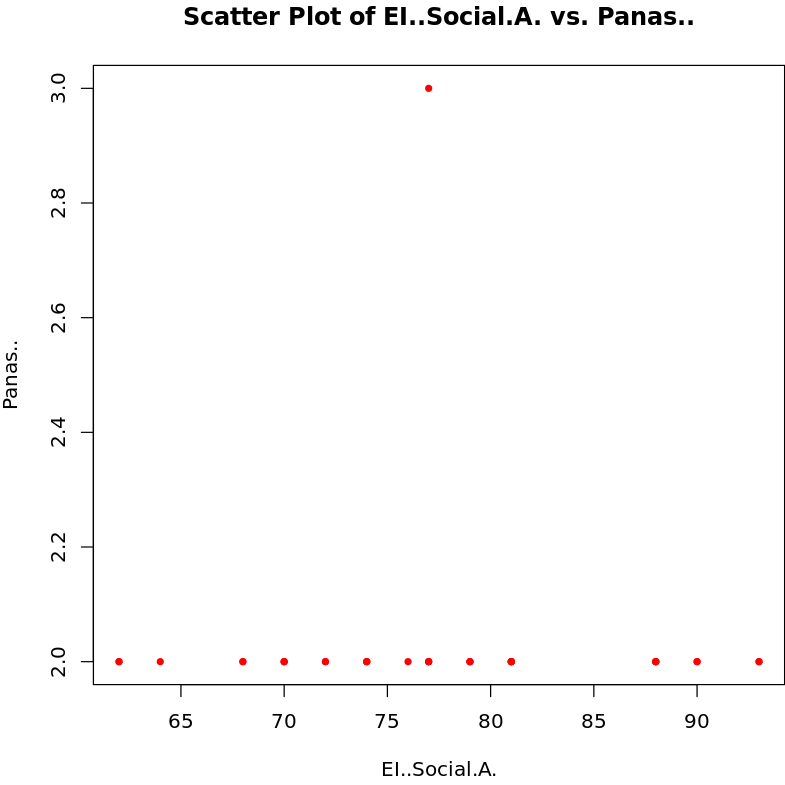
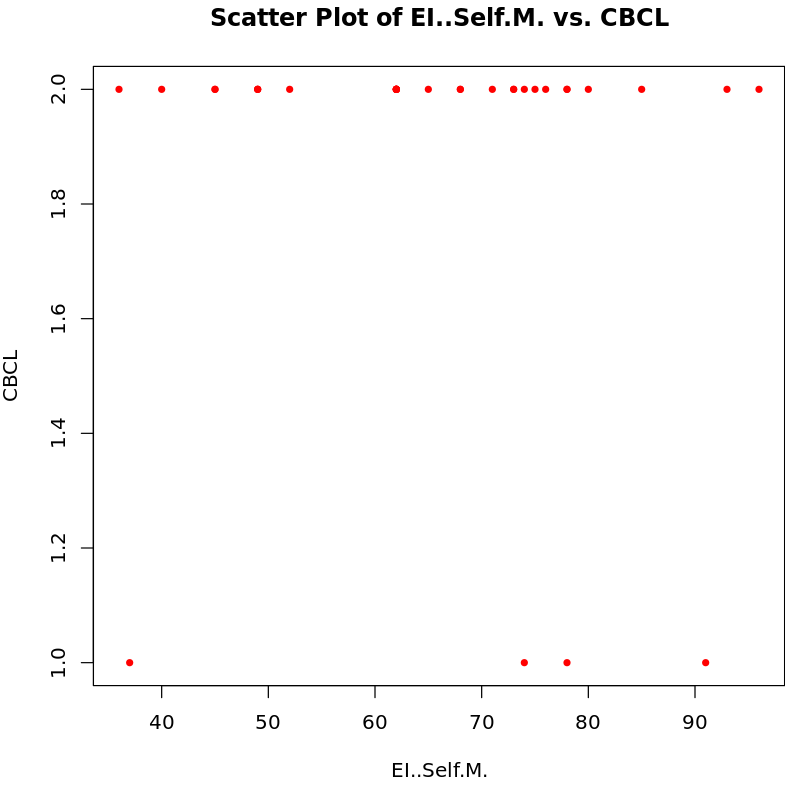


Scatter Plot of EI..Self.A. vs. Panas..

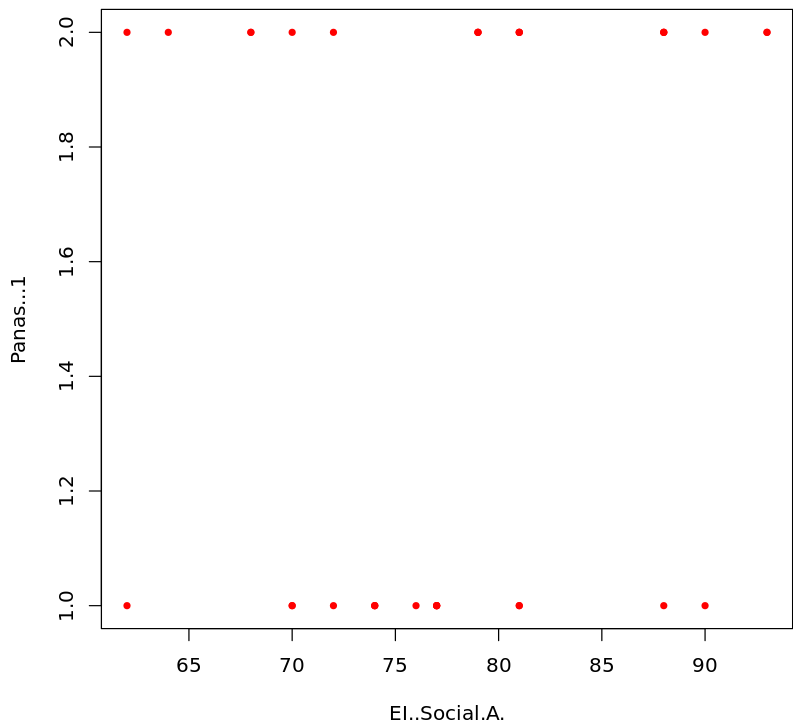




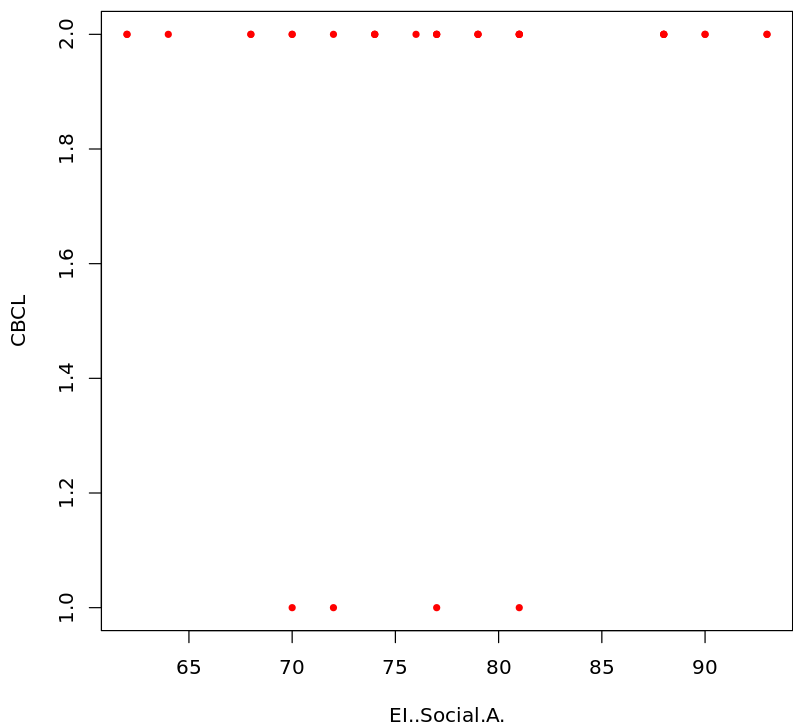




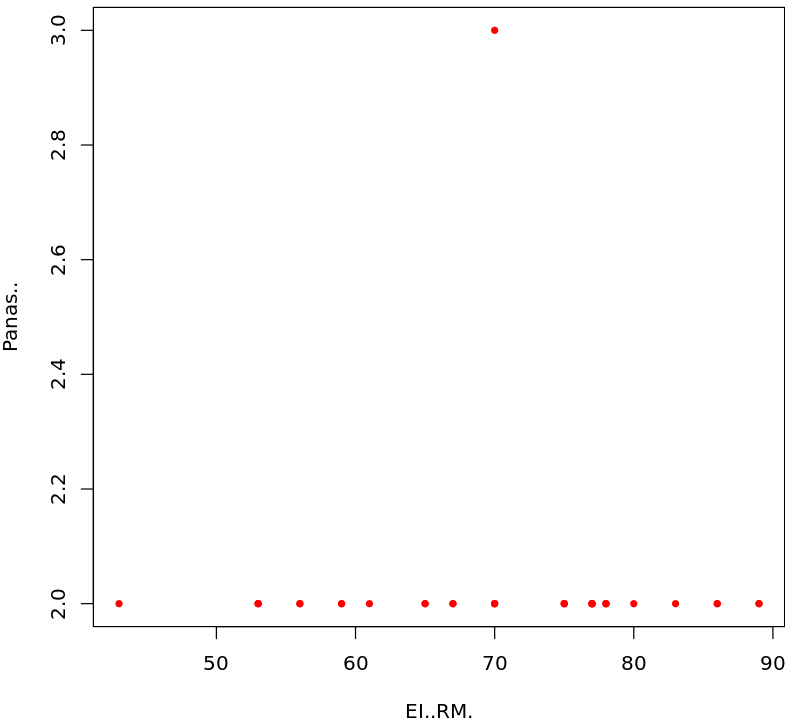
Scatter Plot of EI..Social.A. vs. Panas...1



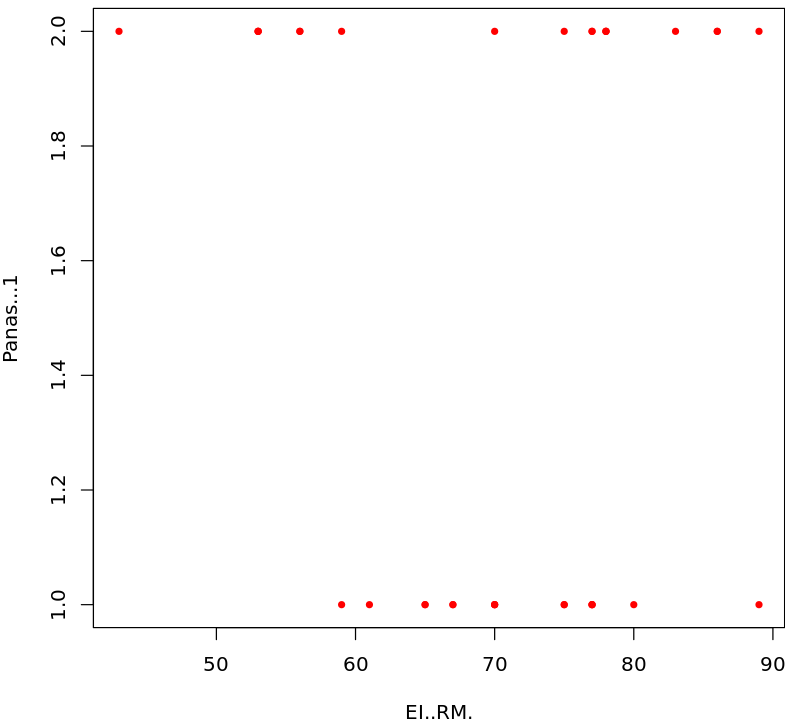
Scatter Plot of EI..Social.A. vs. CBCL

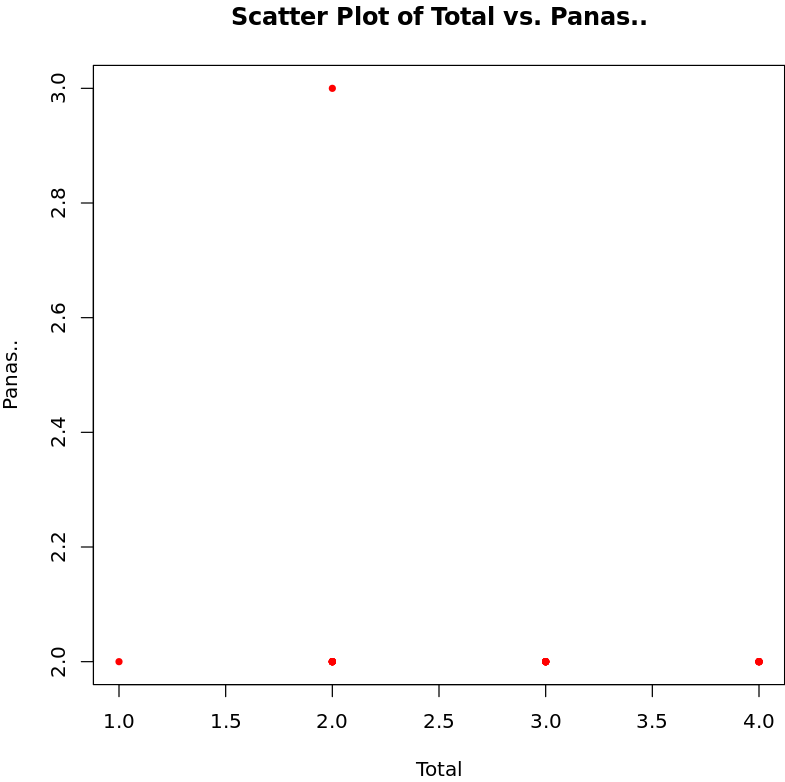
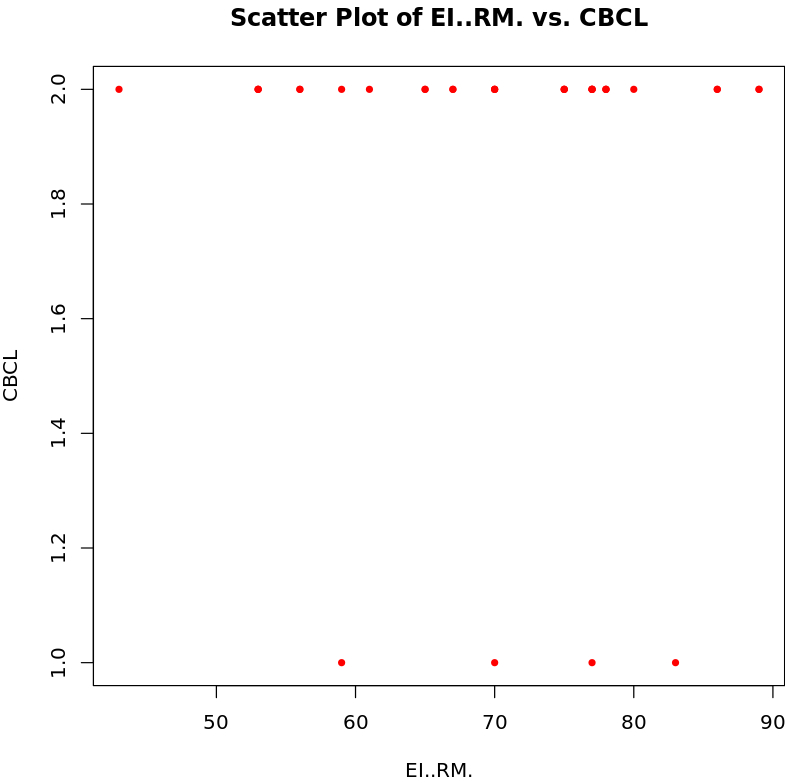


Scatter Plot of El..RM. vs. Panas..

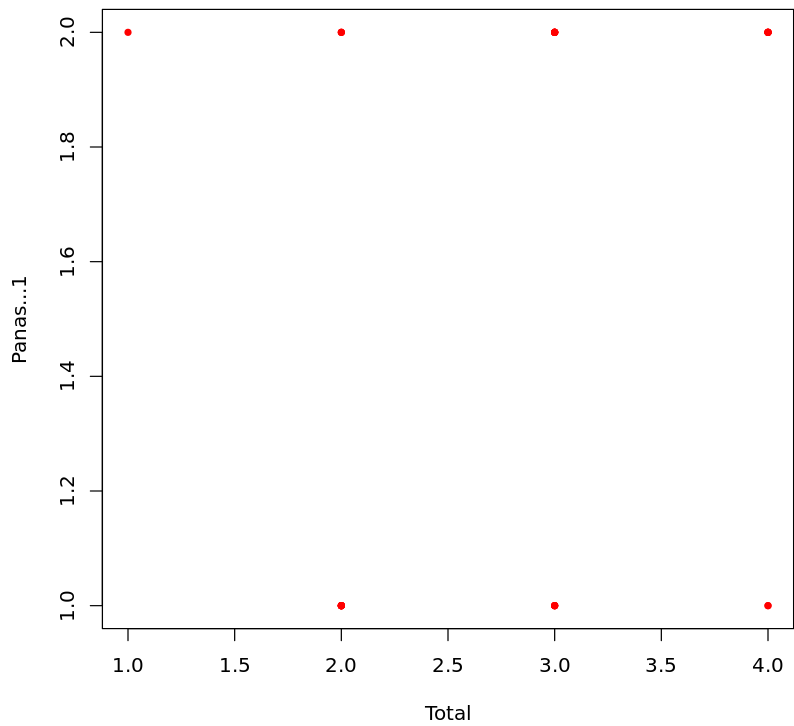


Scatter Plot of El..RM. vs. Panas...1



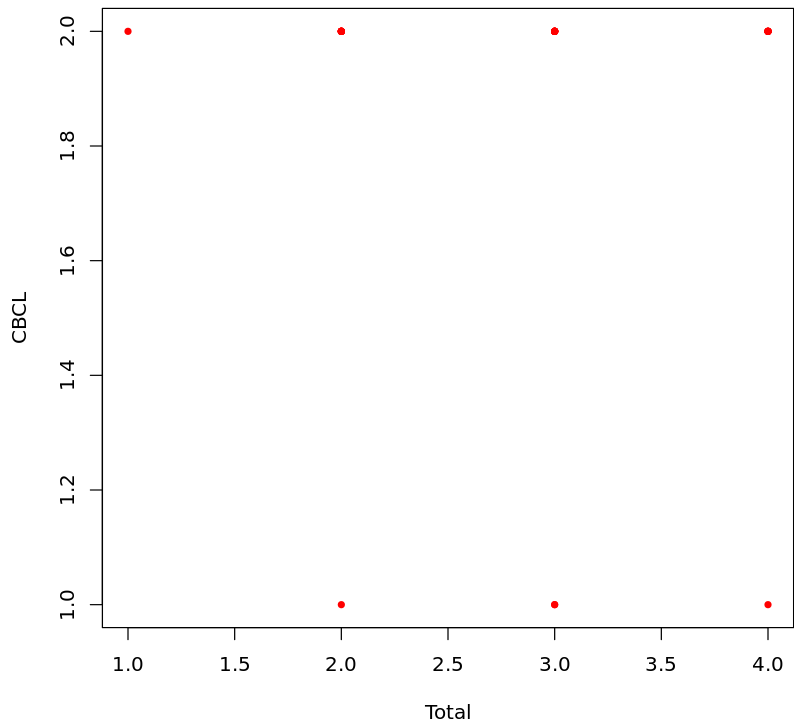


Scatter Plot of Total vs. Panas...1

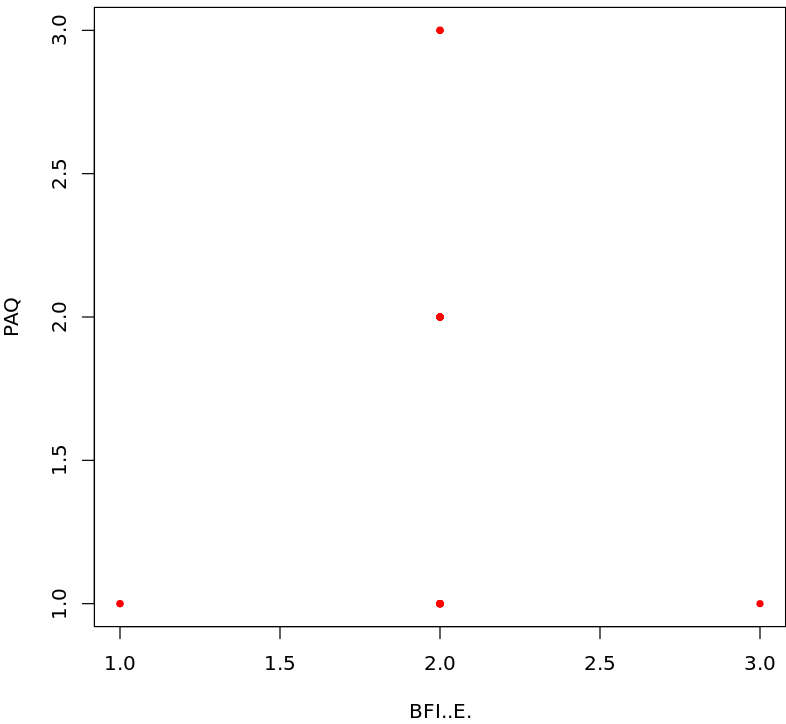


```
[1] "===== "[1] "Scatter plots of independent vs. mediator variables"
```

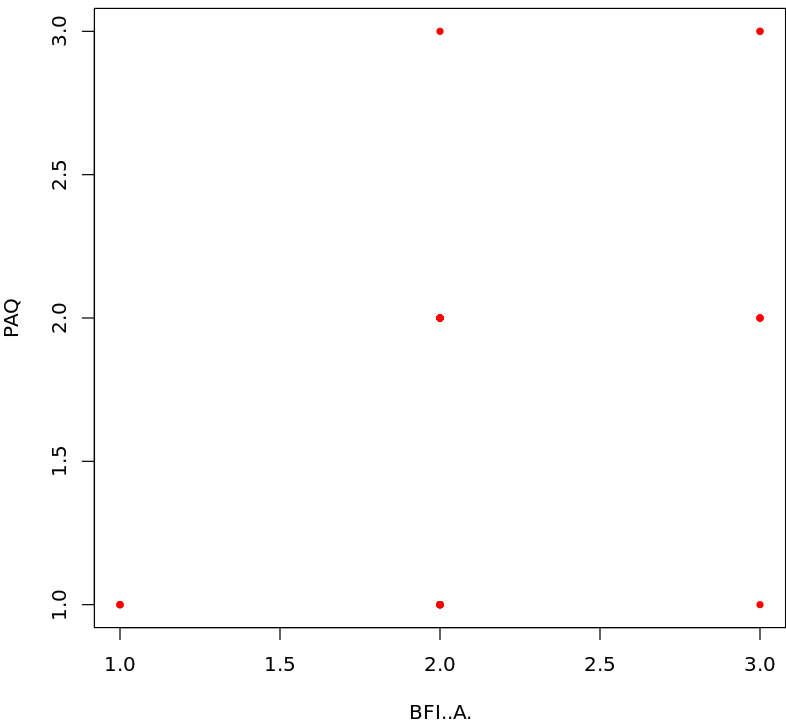
Scatter Plot of Total vs. CBCL



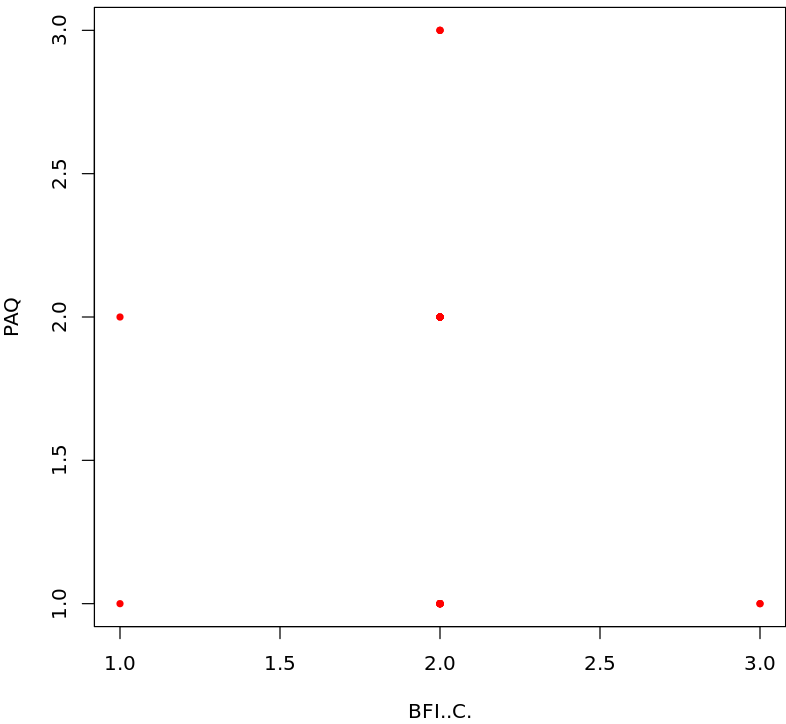
Scatter Plot of BFI..E. vs. PAQ



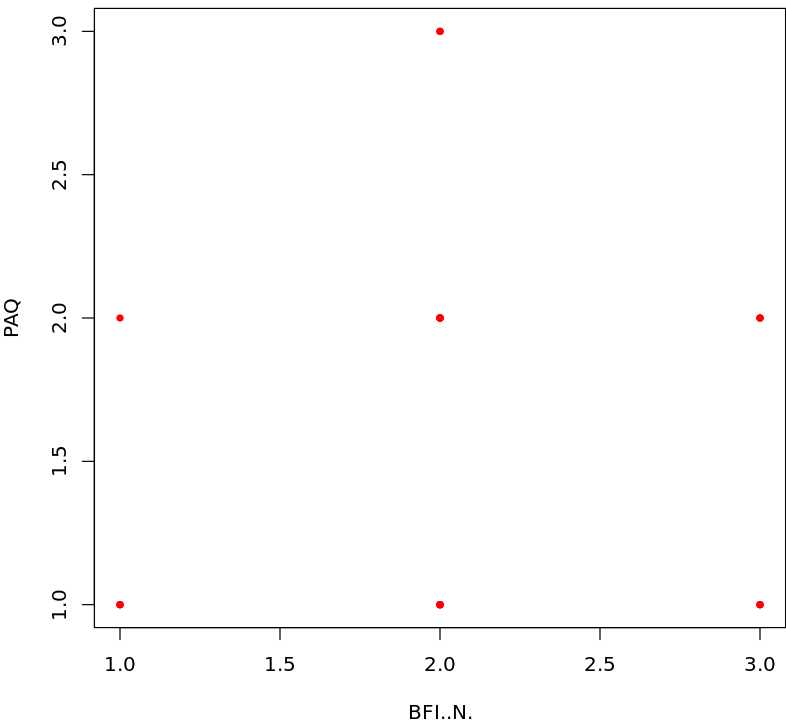
Scatter Plot of BFI..A. vs. PAQ

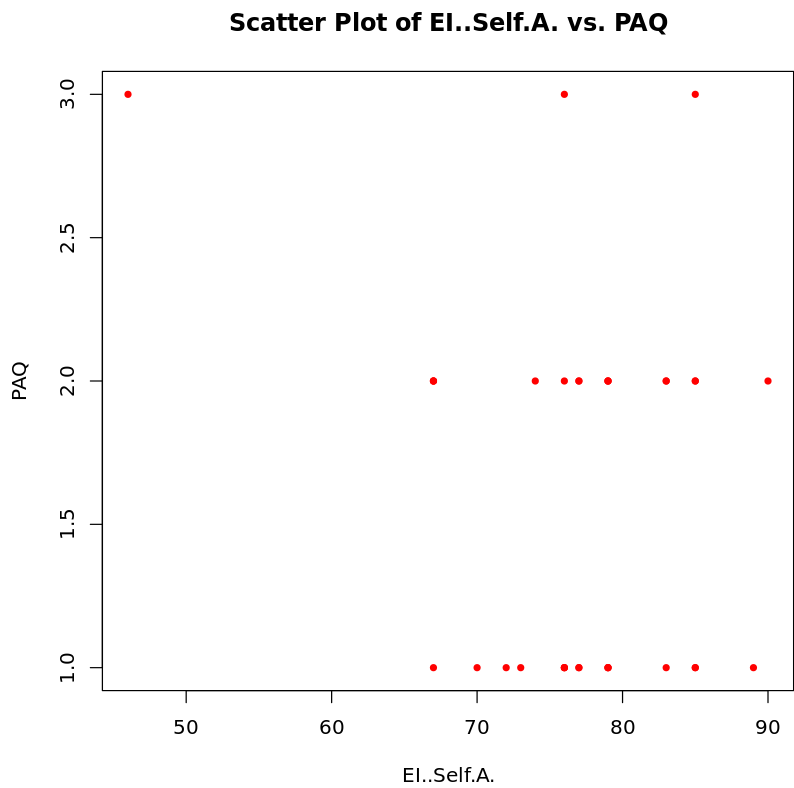
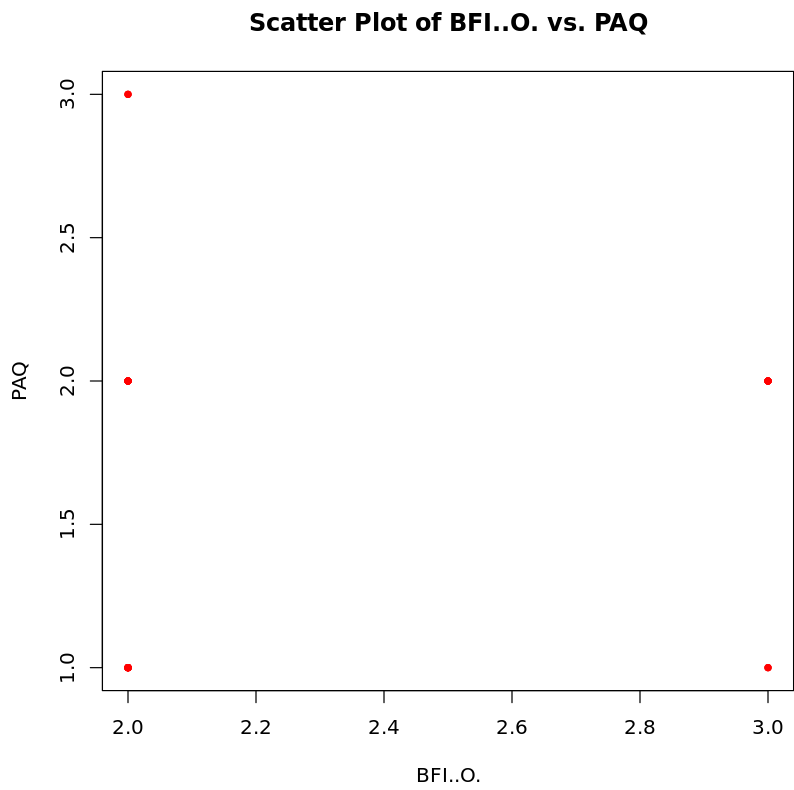


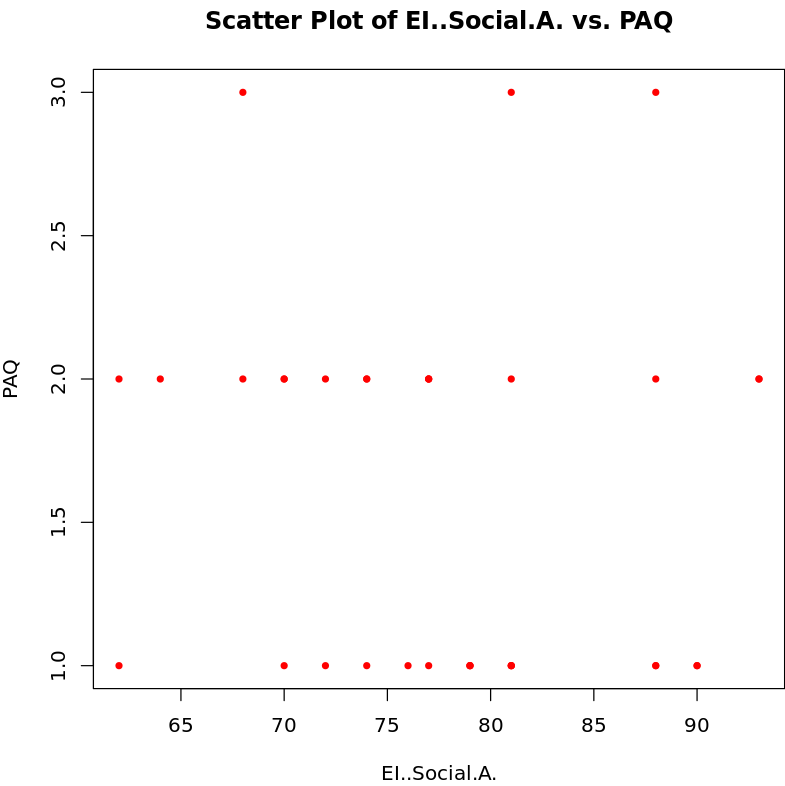
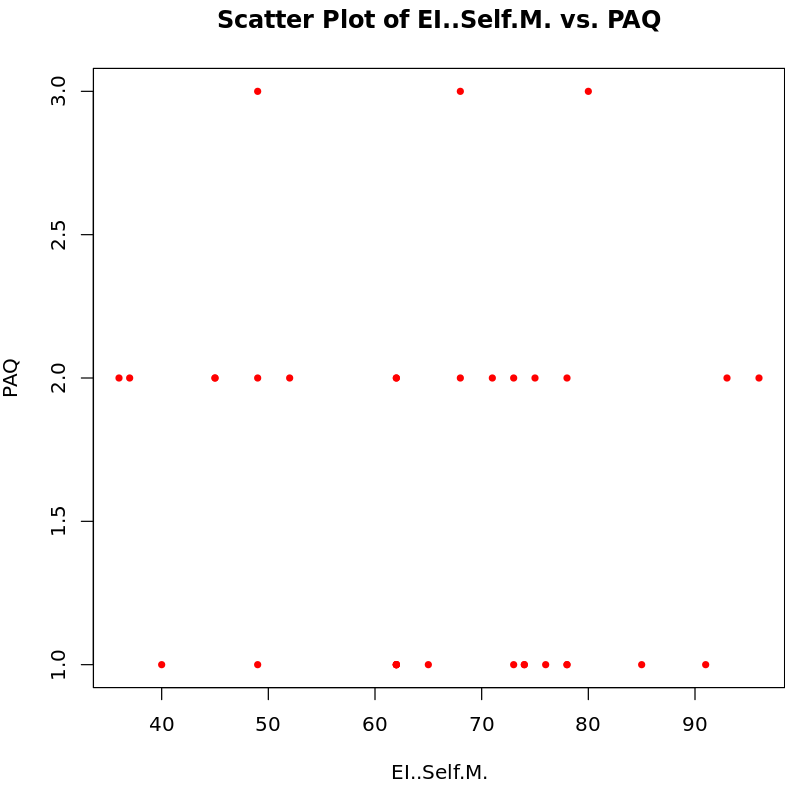
Scatter Plot of BFI..C. vs. PAQ

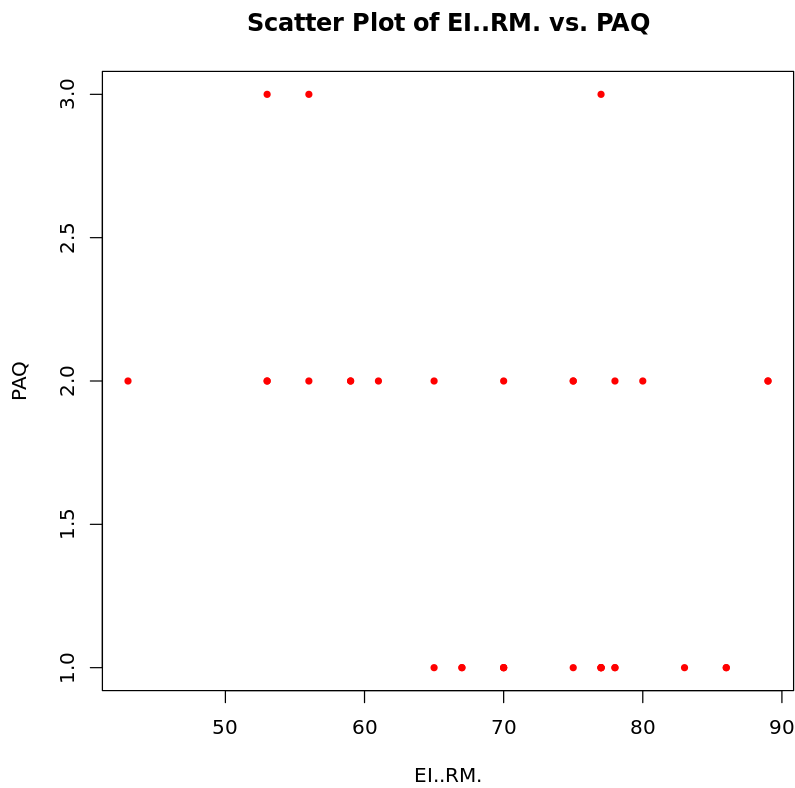


Scatter Plot of BFI..N. vs. PAQ

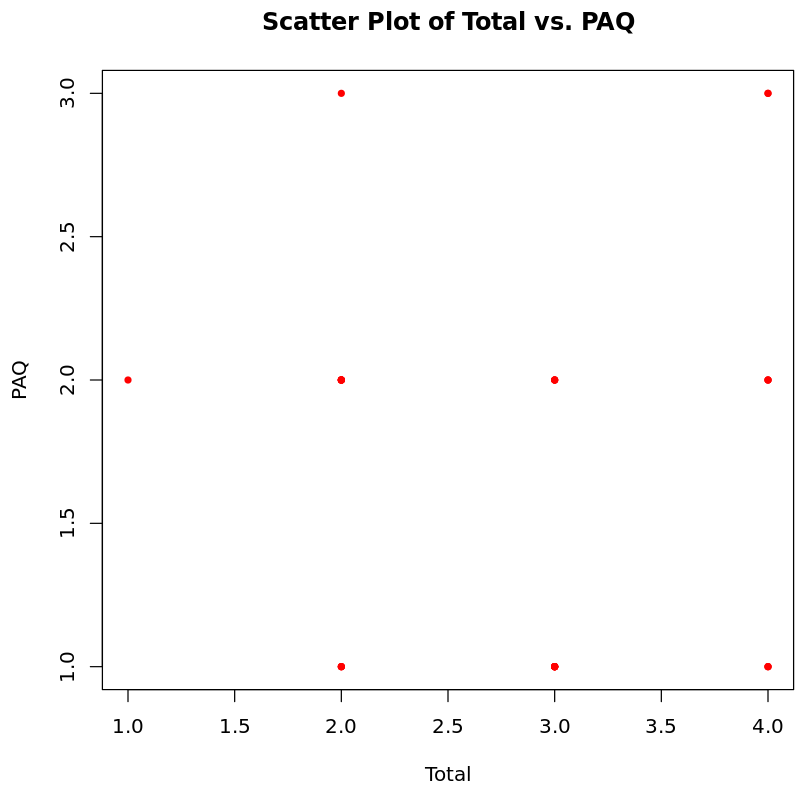




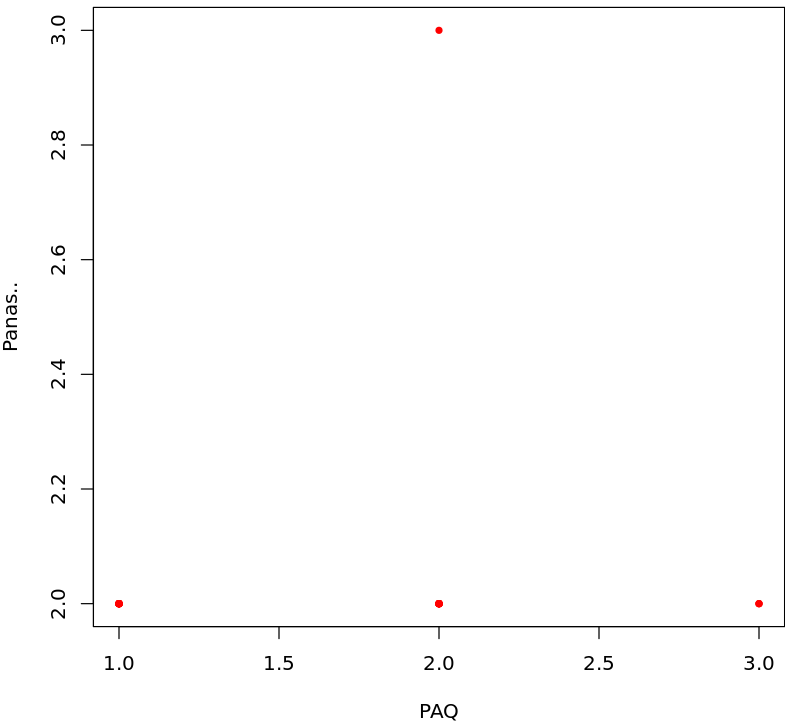




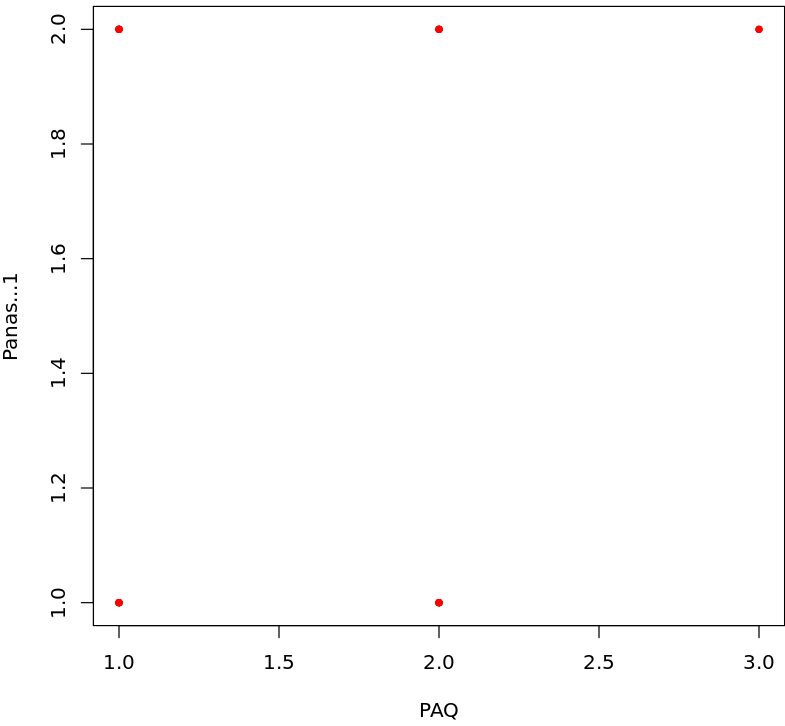
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[1] "===== "[1] "Scatter plots of mediator vs. dependent variables"
```

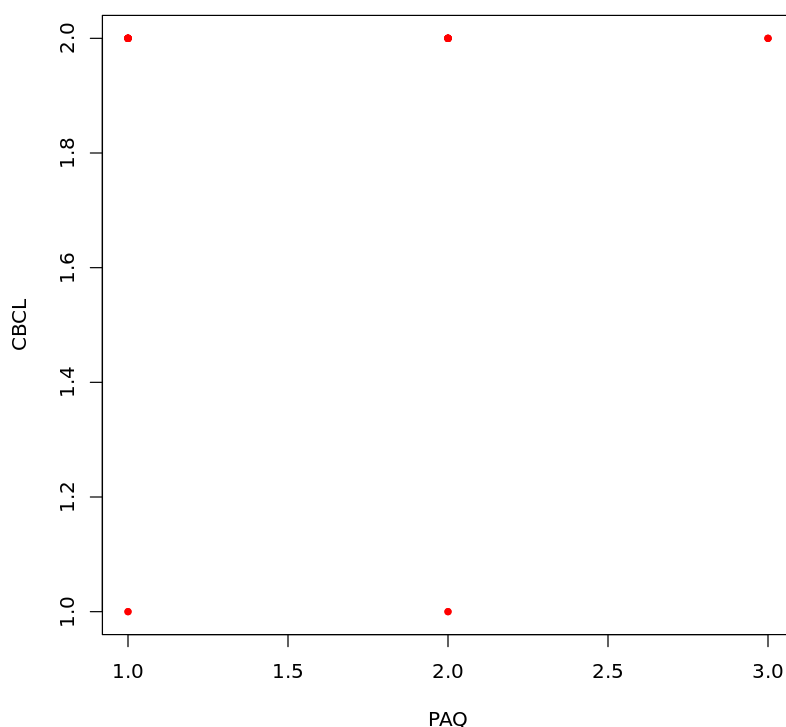


Scatter Plot of PAQ vs. Panas..



Scatter Plot of PAQ vs. Panas...1



Scatter Plot of PAQ vs. CBCL

```
In [2]: #SOURCE ::
#1) https://www.geeksforgeeks.org/how-to-use-the-jitter-function-in-r-for-scatterplots/
#2) https://statisticsglobe.com/jitter-r-function-example/
#3) https://stackoverflow.com/questions/17547699/what-does-the-jitter-function-do-in-r

#NOTES ::
# As we see in the above graph in a few of the scatter plots , only 4-7 dots /data
# This can be due to overlapping of the datapoints . To see if this is the case , a
# This helps us to see most of the data points on the graph by shifting them a bit
# Explanations available in the sources .

# Load necessary Libraries
install.packages("GGally")
library(ggplot2)
library(GGally)
library(dplyr) # Load the dplyr package

# Sample data frame 'data' with columns 'Panas..', 'Panas...1', 'BFI..E.', 'BFI..A.'
data <- read.csv("Pilot_modified_data_1.csv")

# Independent variables
independent_variables <- c('BFI..E.', 'BFI..A.', 'BFI..C.', 'BFI..N.', 'BFI..O.', 'BFI..S.')

# Dependent variables
dependent_variables <- c('Panas..', 'Panas...1', 'CBCL')

# Mediator variables
mediator_variables <- 'PAQ'

print("Scatter plots of independent vs. dependent variables with jittering")
```



```

# Create scatter plots of independent vs. dependent variables with jittering
for (iv in independent_variables) {
  for (dv in dependent_variables) {
    # Add jitter to the data points
    jittered_x <- jitter(data[[iv]], factor = 0.2) # Adjust factor as needed
    jittered_y <- jitter(data[[dv]], factor = 0.2) # Adjust factor as needed

    # Create the scatter plot with jittered points
    plot(jittered_x, jittered_y,
         xlab = iv, ylab = dv,
         main = paste("Scatter Plot of", iv, "vs.", dv),
         col = "red", pch = 20) # Set color to red and point type to red dots
  }
}

print("=====")
print("Scatter plots of independent vs. mediator variables with jittering")

# Create scatter plots of independent vs. mediator variables with jittering
for (iv in independent_variables) {
  for (mv in mediator_variables) {
    # Add jitter to the data points
    jittered_x <- jitter(data[[iv]], factor = 0.2) # Adjust factor as needed
    jittered_y <- jitter(data[[mv]], factor = 0.2) # Adjust factor as needed

    # Create the scatter plot with jittered points
    plot(jittered_x, jittered_y,
         xlab = iv, ylab = mv,
         main = paste("Scatter Plot of", iv, "vs.", mv),
         col = "red", pch = 20) # Set color to red and point type to red dots
  }
}

print("=====")
print("Scatter plots of mediator vs. dependent variables with jittering")

# Create scatter plots of mediator vs. dependent variables with jittering
for (mv in mediator_variables) {
  for (dv in dependent_variables) {
    # Add jitter to the data points
    jittered_x <- jitter(data[[mv]], factor = 0.2) # Adjust factor as needed
    jittered_y <- jitter(data[[dv]], factor = 0.2) # Adjust factor as needed

    # Create the scatter plot with jittered points
    plot(jittered_x, jittered_y,
         xlab = mv, ylab = dv,
         main = paste("Scatter Plot of", mv, "vs.", dv),
         col = "red", pch = 20) # Set color to red and point type to red dots
  }
}

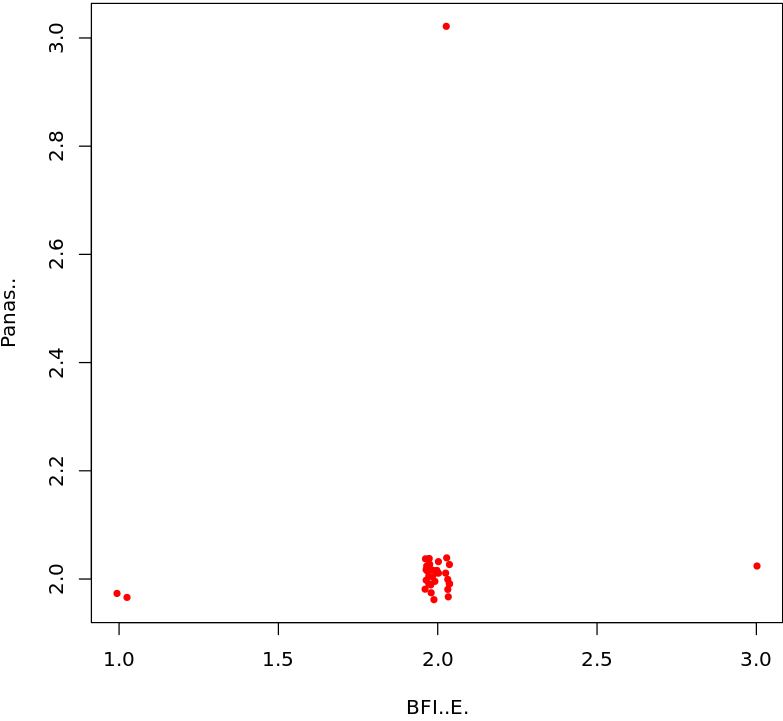
```

```
Updating HTML index of packages in '.Library'

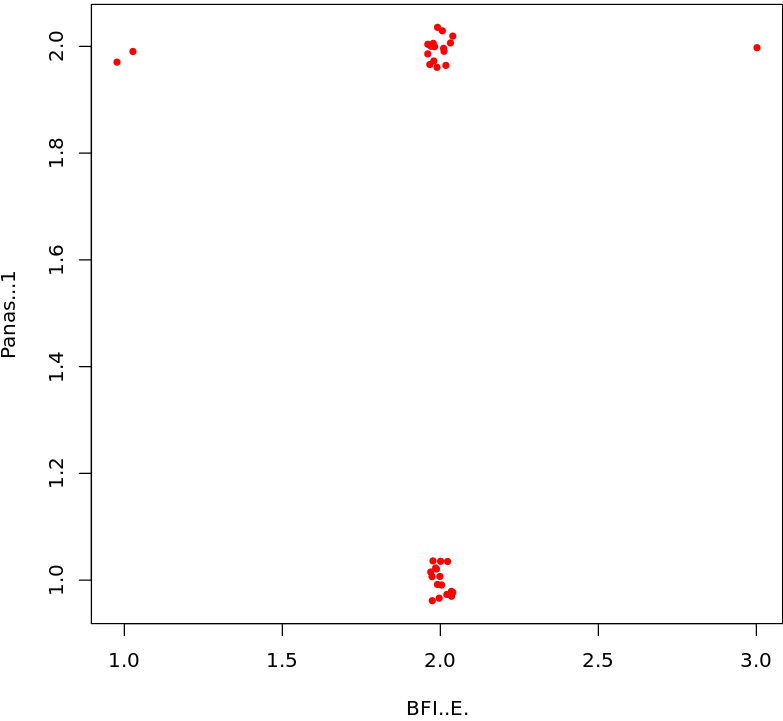
Making 'packages.html' ...
done
```

[1] "Scatter plots of independent vs. dependent variables with jittering"

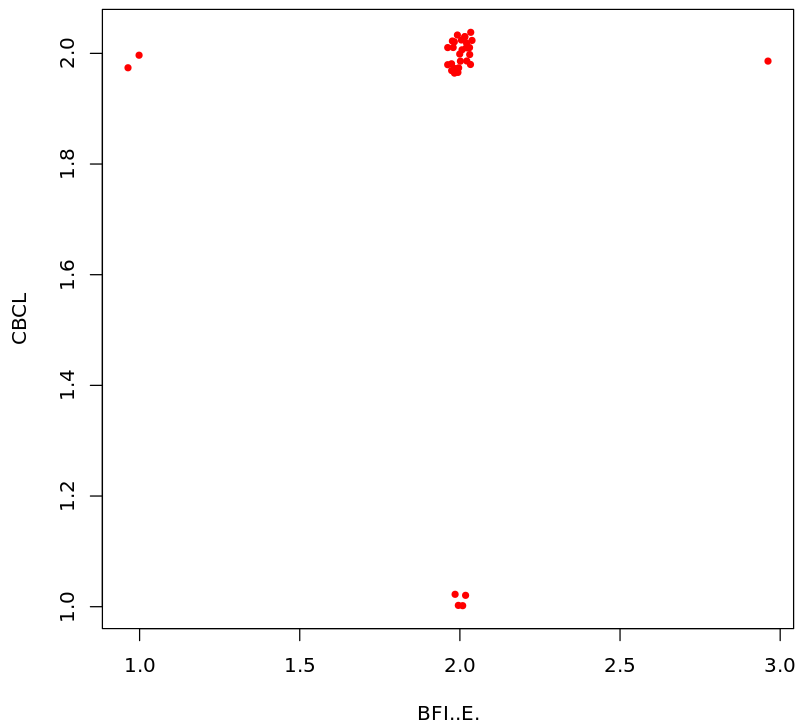
Scatter Plot of BFI..E. vs. Panas..



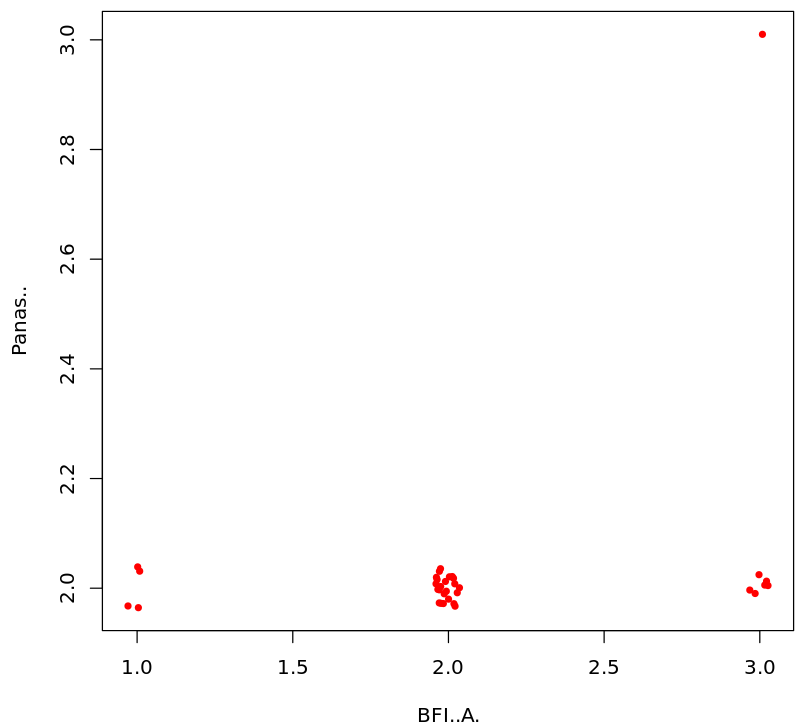
Scatter Plot of BFI..E. vs. Panas...1



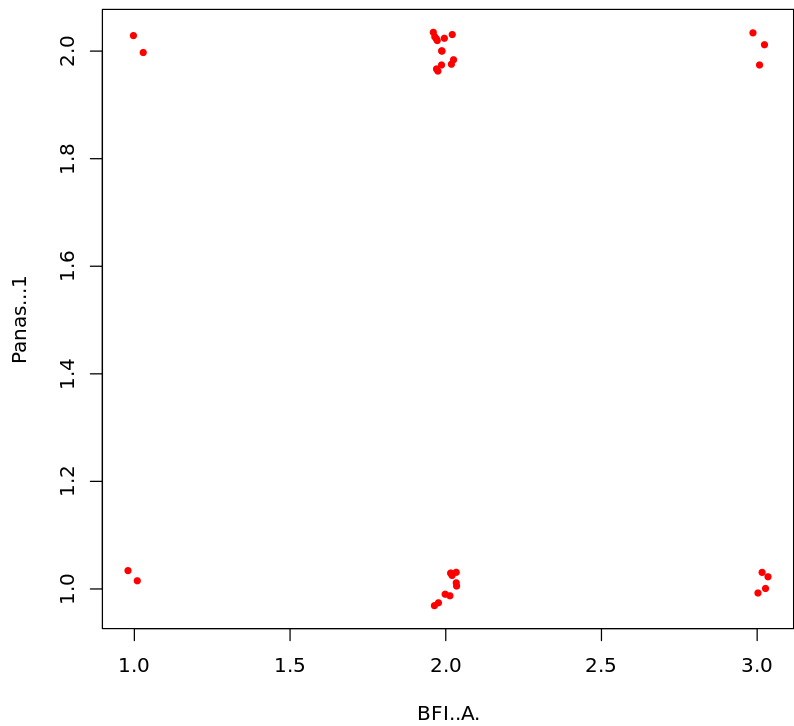
Scatter Plot of BFI..E. vs. CBCL



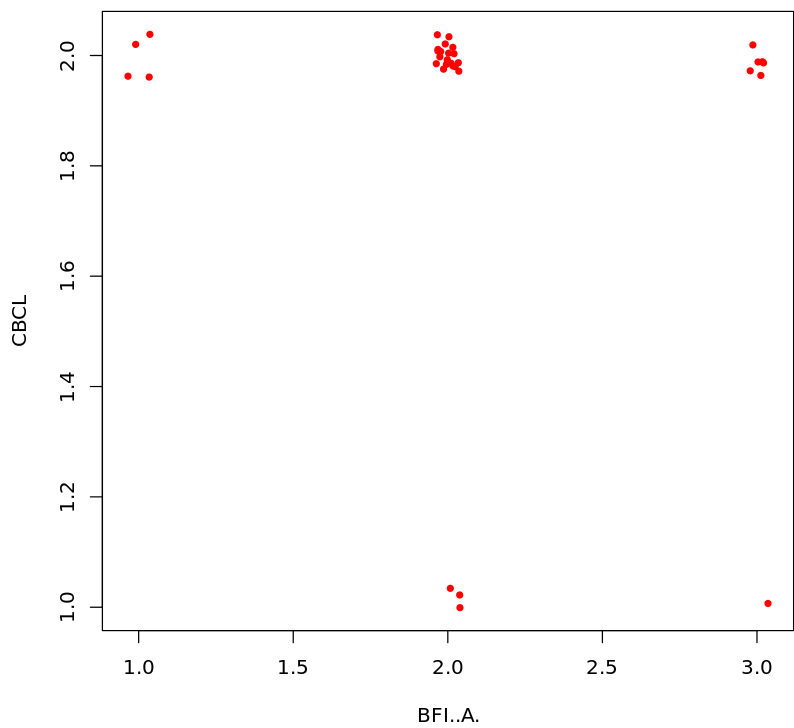
Scatter Plot of BFI..A. vs. Panas..



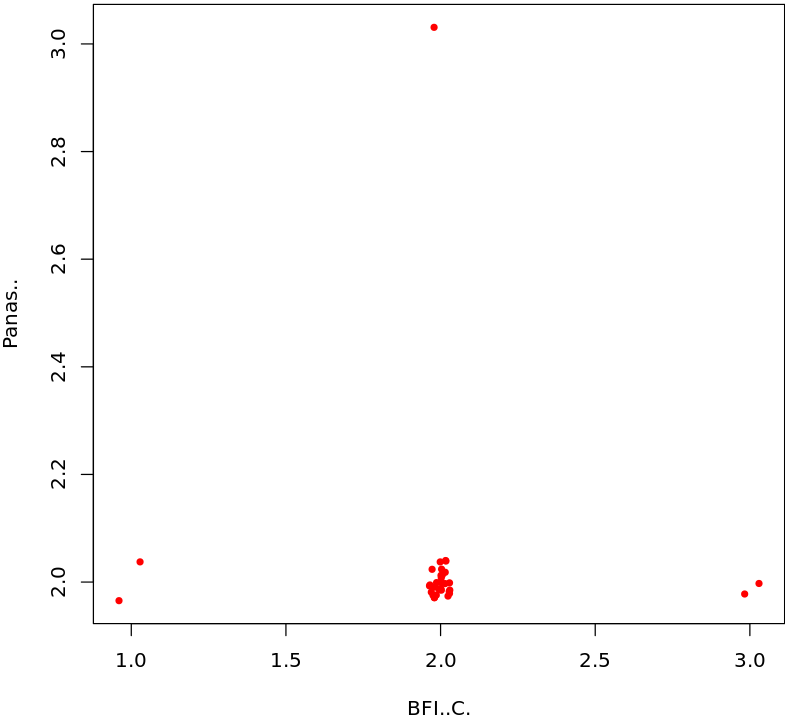
Scatter Plot of BFI..A. vs. Panas...1



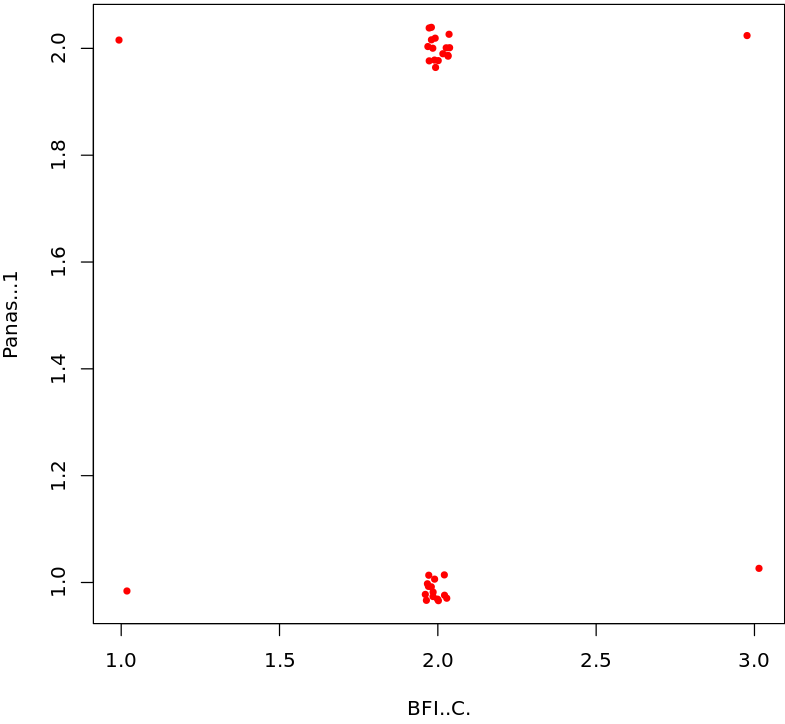
Scatter Plot of BFI..A. vs. CBCL



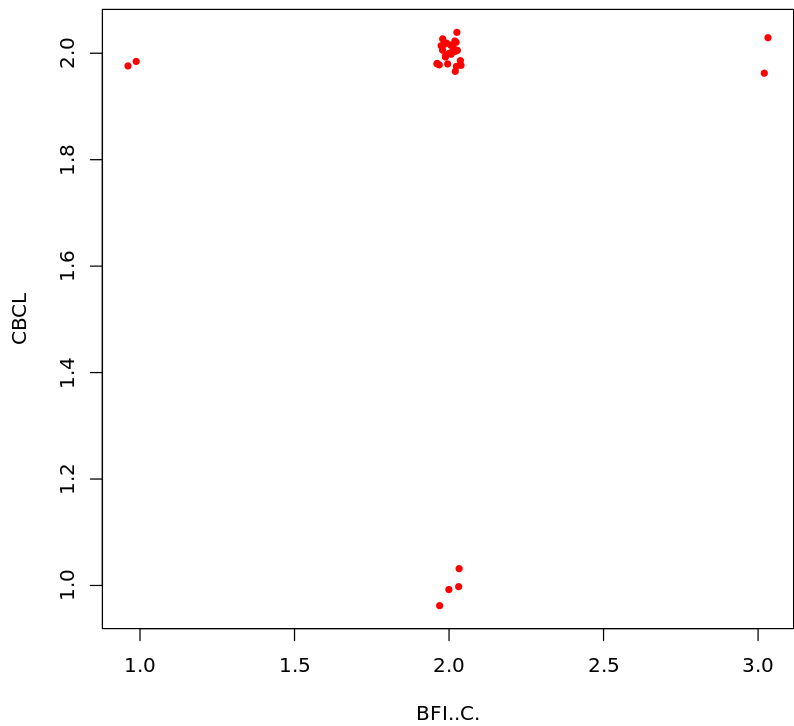
Scatter Plot of BFI..C. vs. Panas..



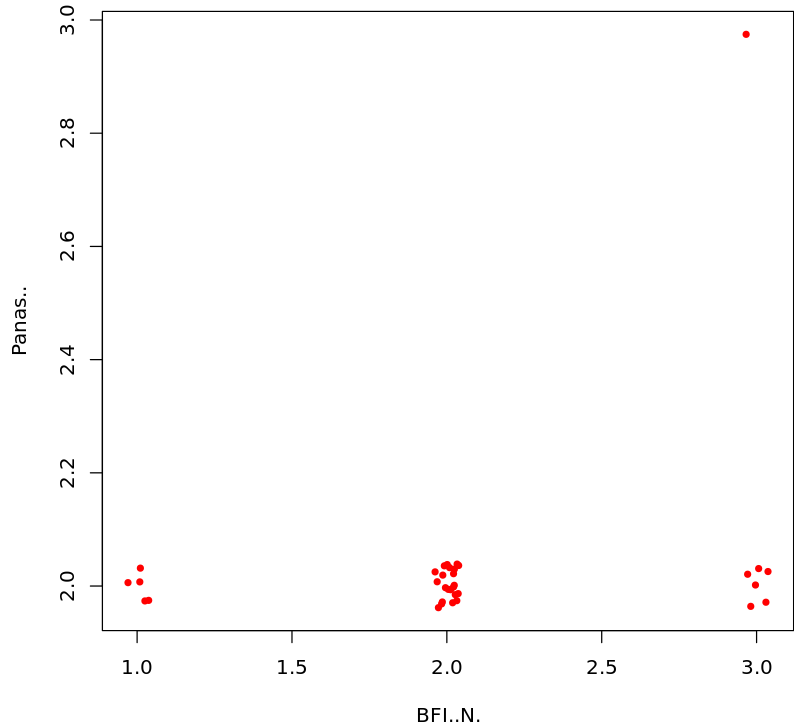
Scatter Plot of BFI..C. vs. Panas...1



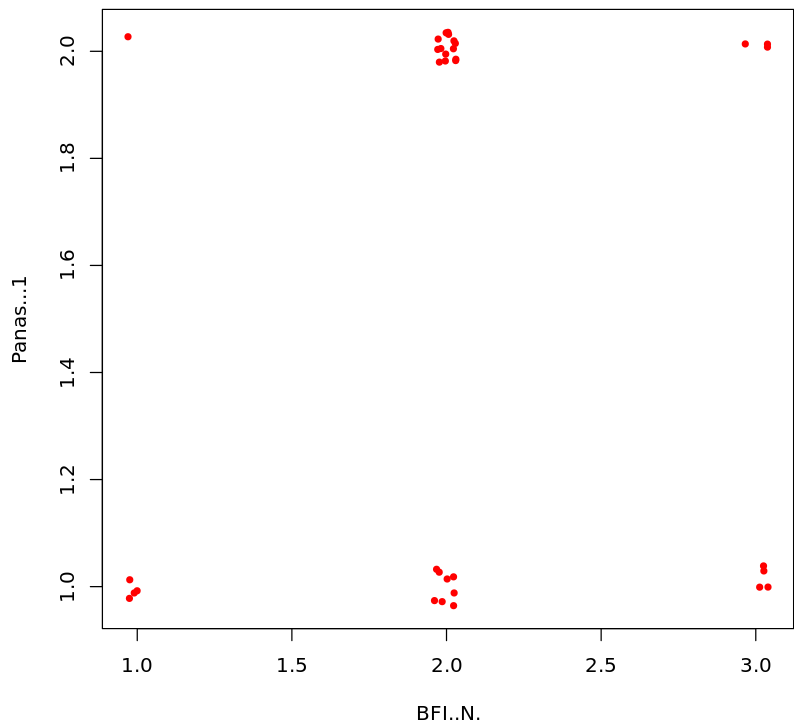
Scatter Plot of BFI..C. vs. CBCL



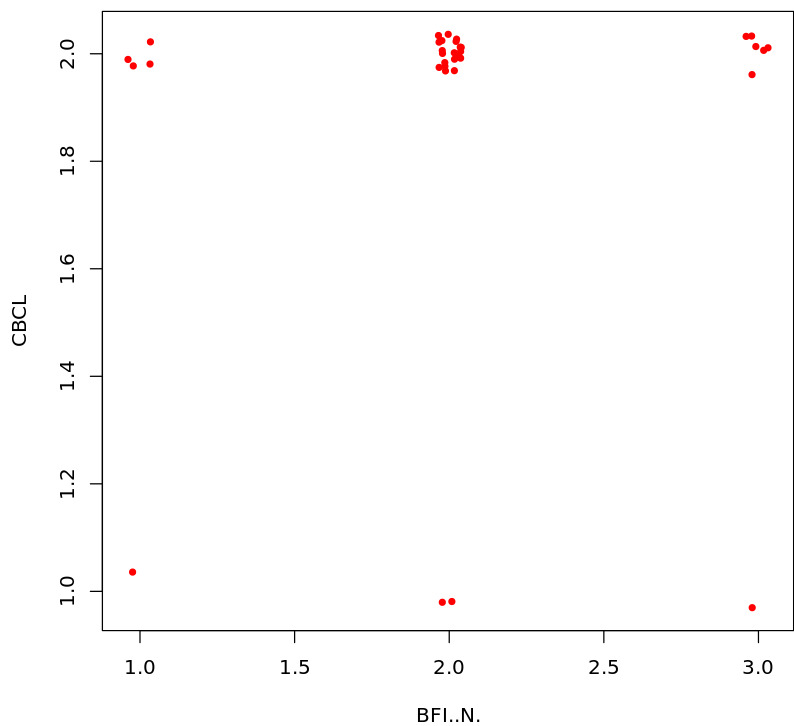
Scatter Plot of BFI..N. vs. Panas..

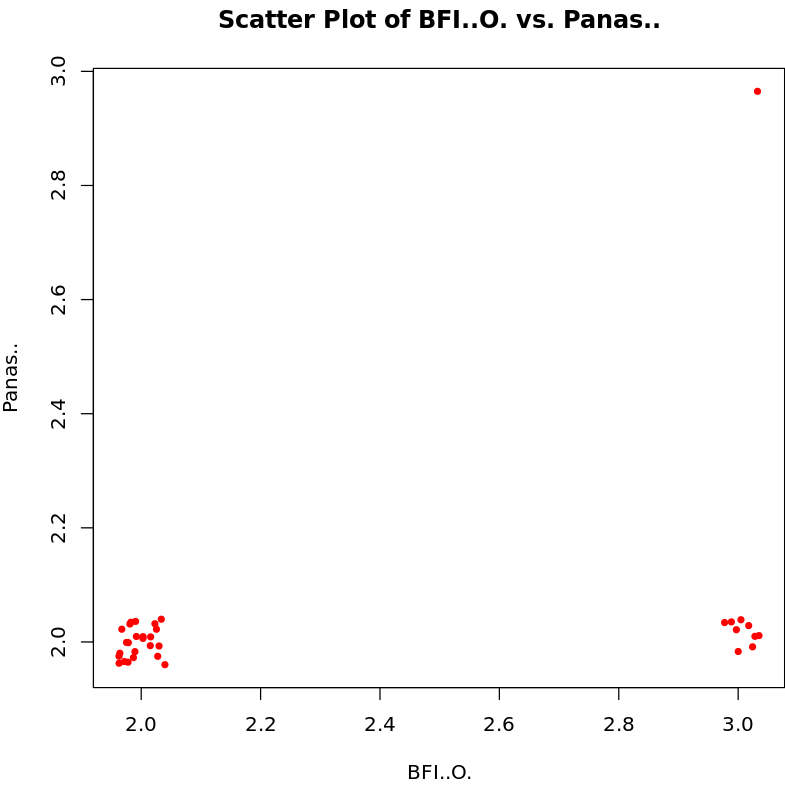


Scatter Plot of BFI..N. vs. Panas...1

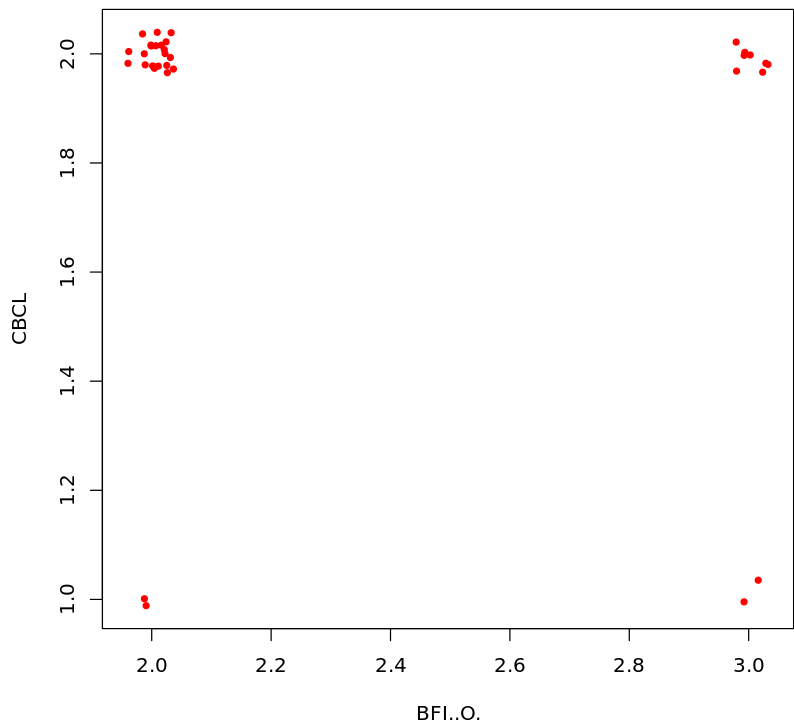


Scatter Plot of BFI..N. vs. CBCL

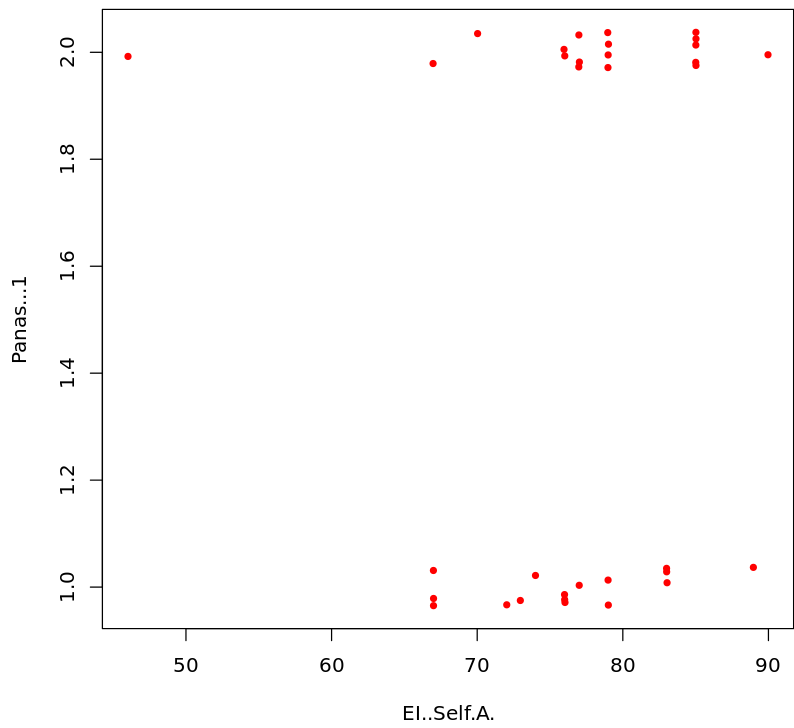




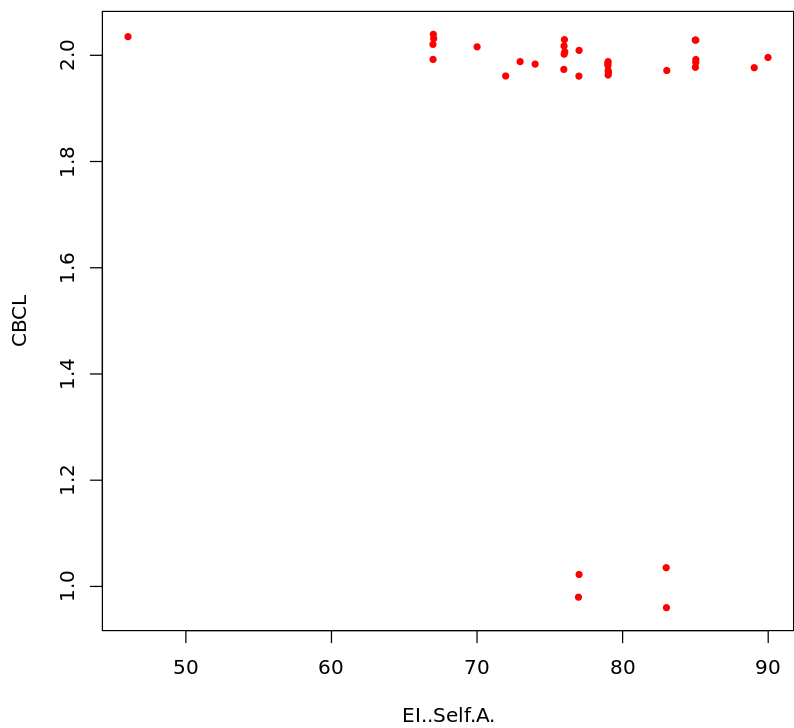
Scatter Plot of BFI..O. vs. CBCL



Scatter Plot of El..Self.A. vs. Panas...1

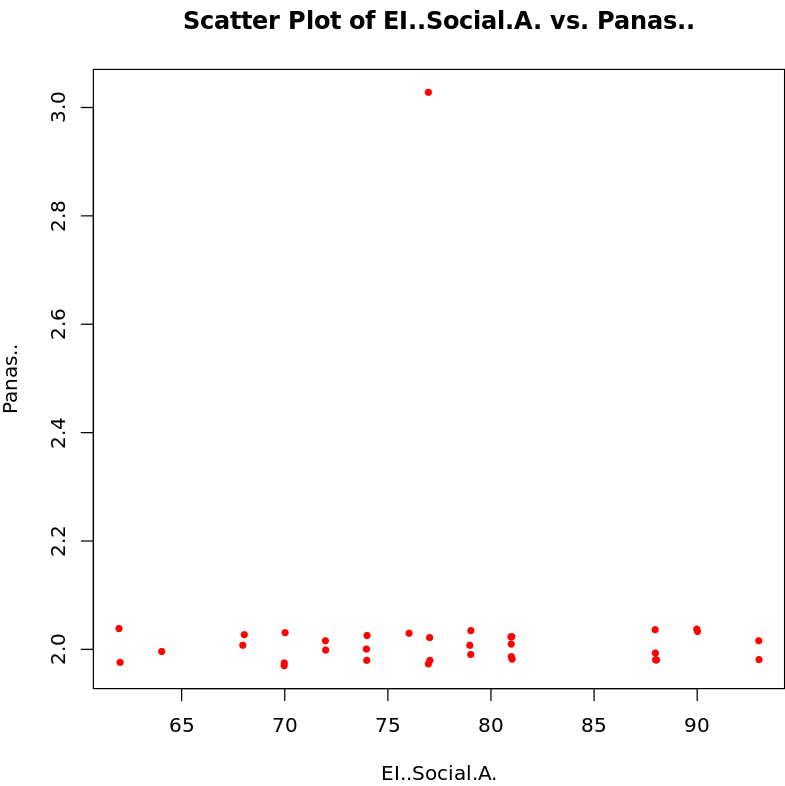
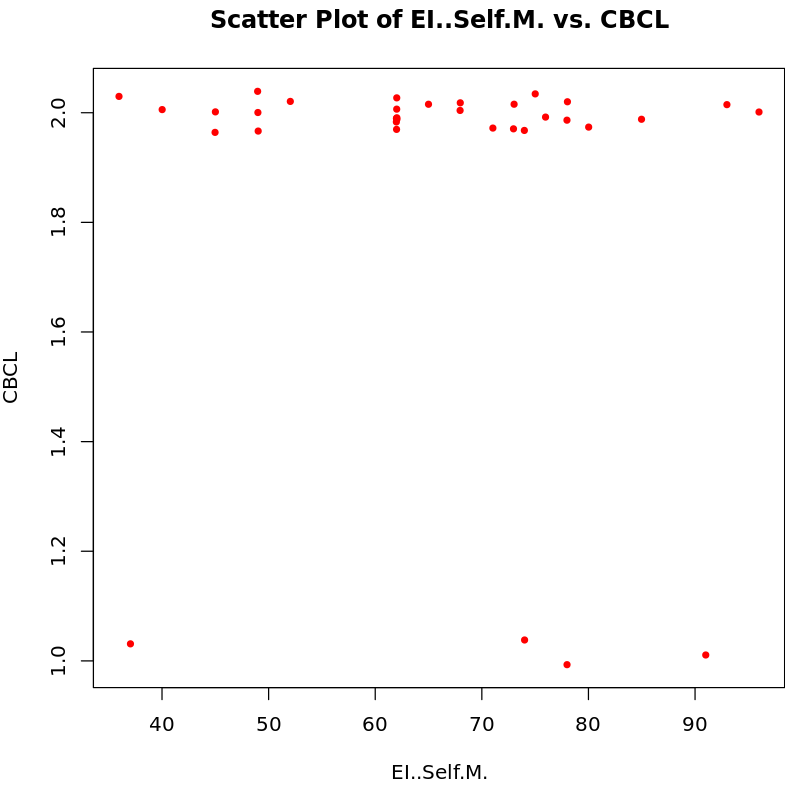


Scatter Plot of El..Self.A. vs. CBCL

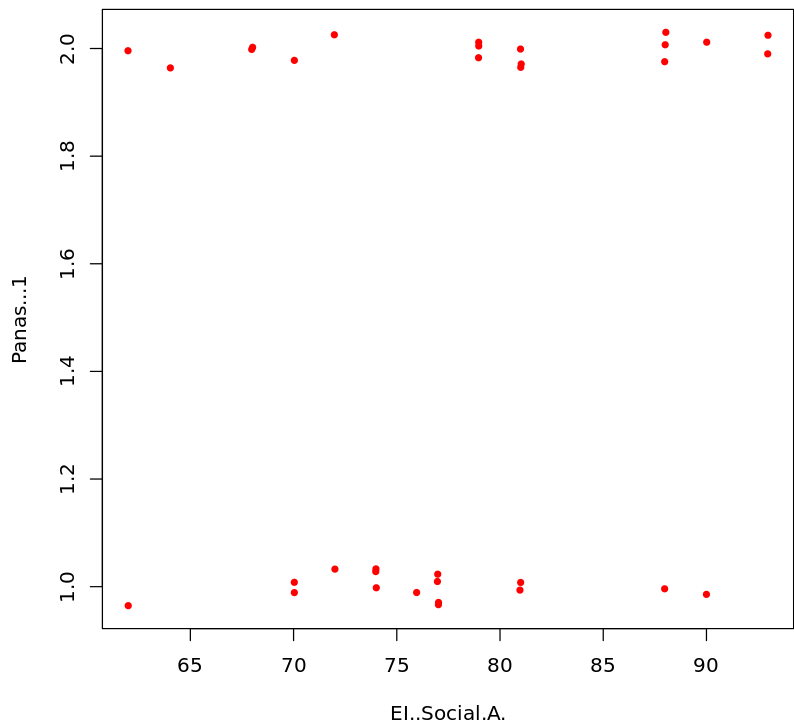


A scatter plot showing the relationship between 'El..Self.M.' (X-axis) and 'Panas..' (Y-axis). The X-axis ranges from approximately 35 to 95, and the Y-axis ranges from 1.8 to 3.0. The data points are red dots. Most points are clustered between Y=1.8 and Y=2.0. There is one prominent outlier at approximately (37, 3.01).

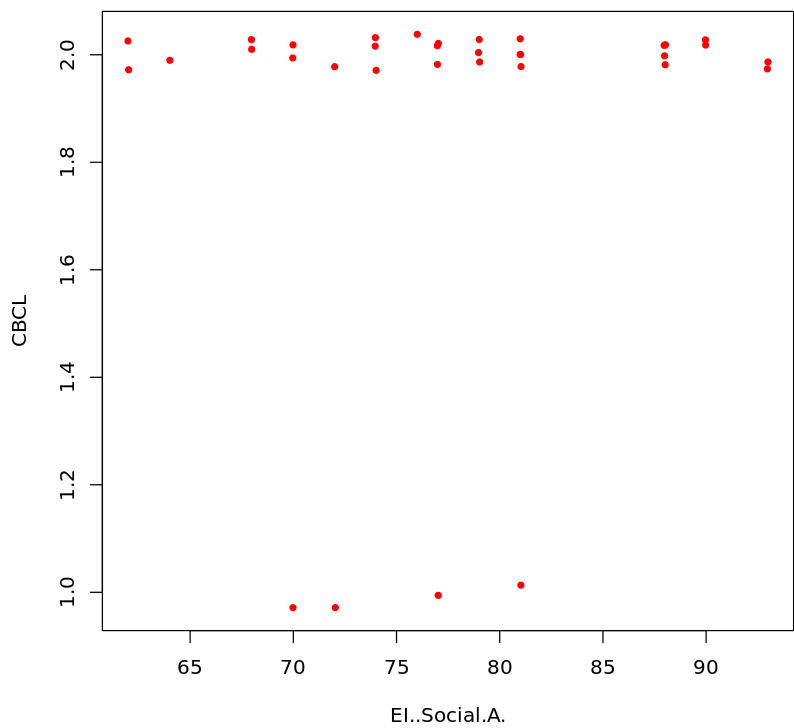
A scatter plot showing the relationship between 'El..Self.M.' (X-axis) and 'Panas...1' (Y-axis). The X-axis ranges from approximately 35 to 105, with major ticks at 40, 50, 60, 70, 80, and 90. The Y-axis ranges from 1.0 to 2.0, with major ticks at 1.0, 1.2, 1.4, 1.6, 1.8, and 2.0. The data points are red dots, forming two distinct horizontal clusters. The lower cluster is centered around Y=1.0, and the upper cluster is centered around Y=2.0. There is a clear gap between the two clusters, indicating a bimodal distribution.



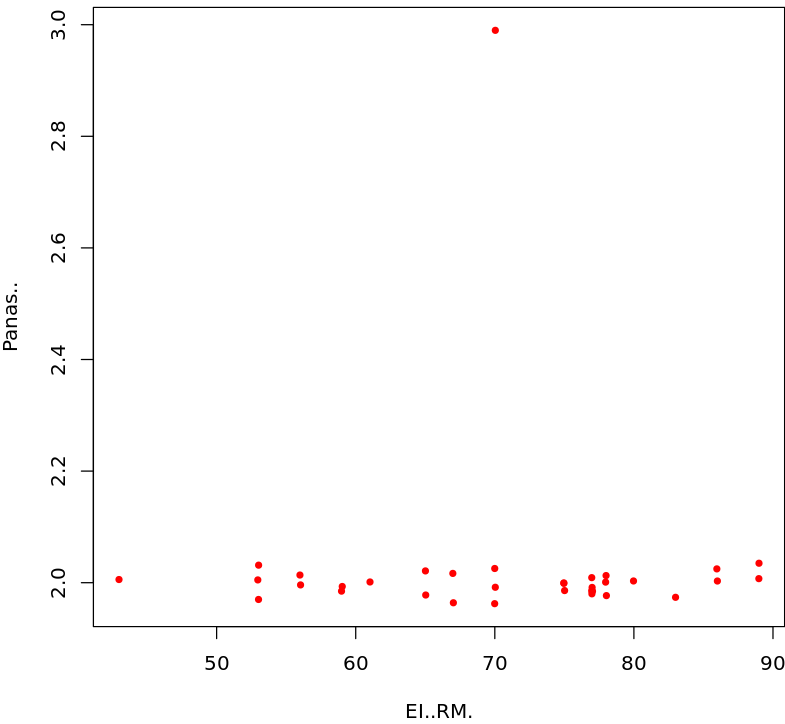
Scatter Plot of EI..Social.A. vs. Panas...1



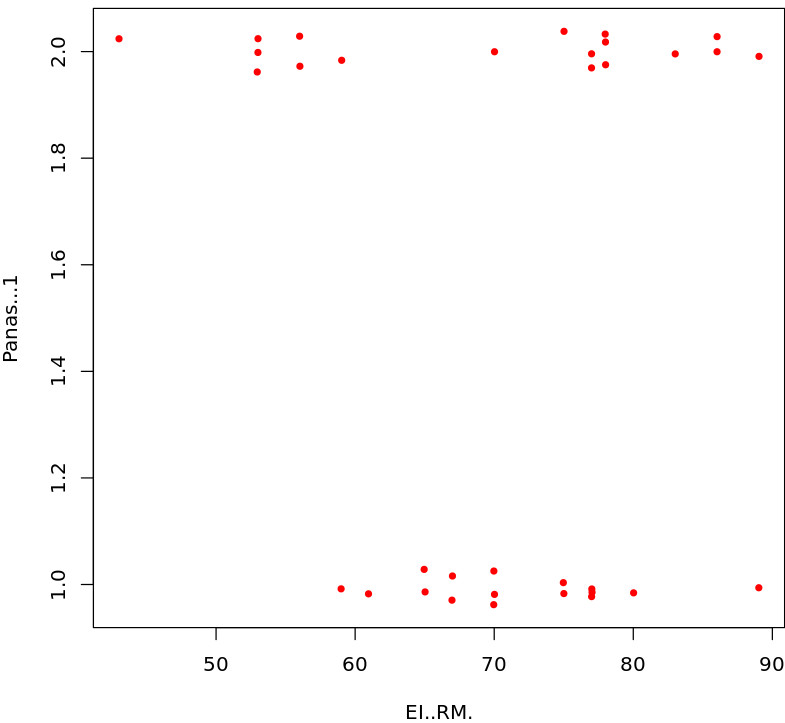
Scatter Plot of EI..Social.A. vs. CBCL



Scatter Plot of El..RM. vs. Panas..



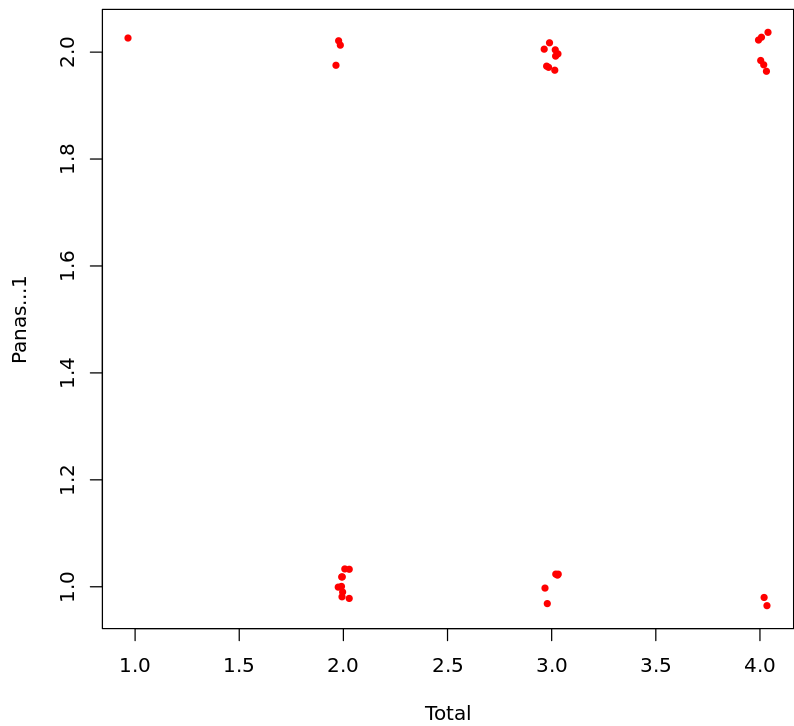
Scatter Plot of El..RM. vs. Panas...1



Scatter plot showing the relationship between EI..RM. (X-axis) and CBCL (Y-axis). The X-axis ranges from 40 to 90, and the Y-axis ranges from 1.0 to 2.0. The plot displays a positive correlation, with data points clustered around a diagonal line.

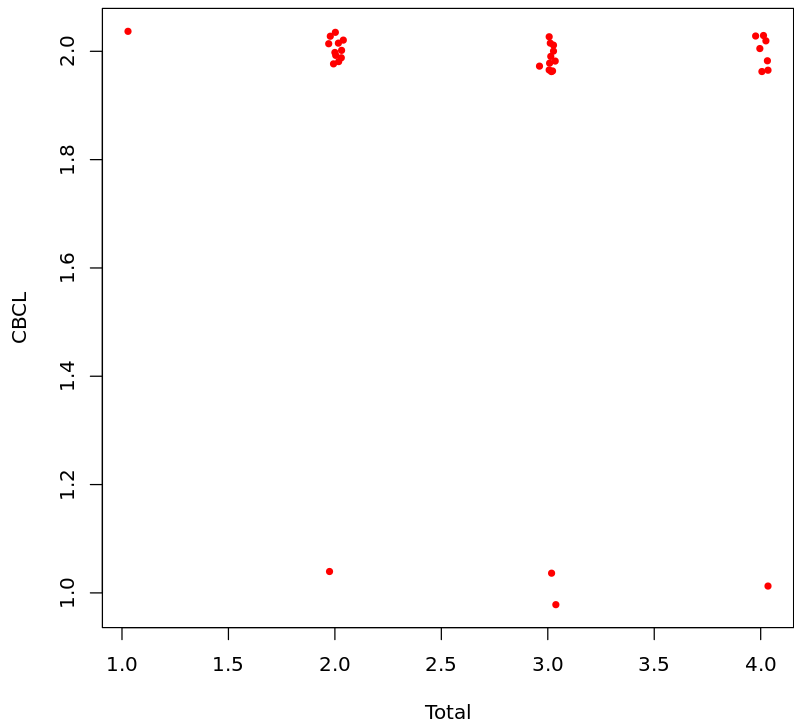
Scatter plot showing the relationship between Total (X-axis) and Panas.. (Y-axis). The X-axis ranges from 1.0 to 4.0, and the Y-axis ranges from 2.0 to 3.0. The data points are red dots, showing a positive correlation between Total and Panas...

Scatter Plot of Total vs. Panas...1

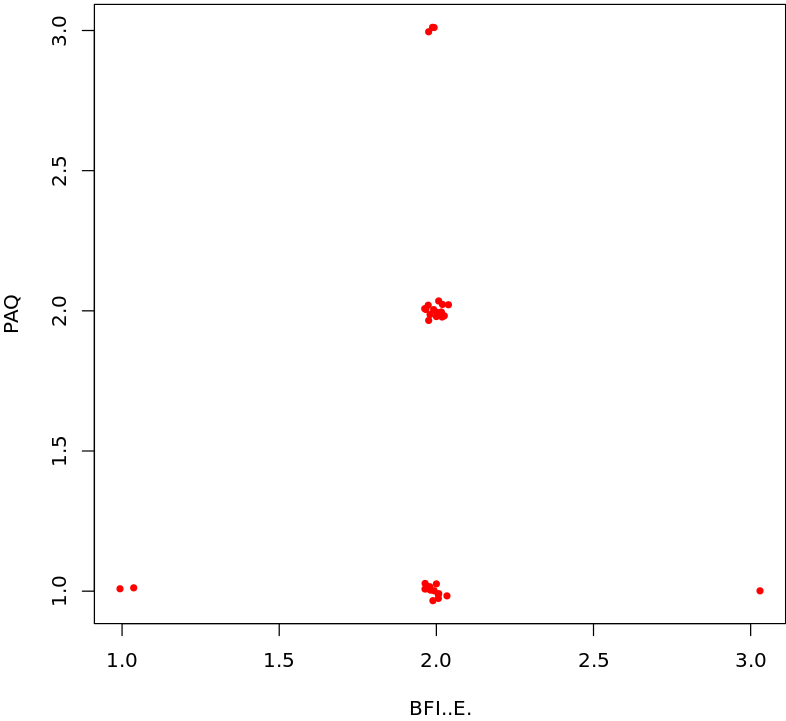


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[1] "===== "[1] "Scatter plots of independent vs. mediator variables with jittering"
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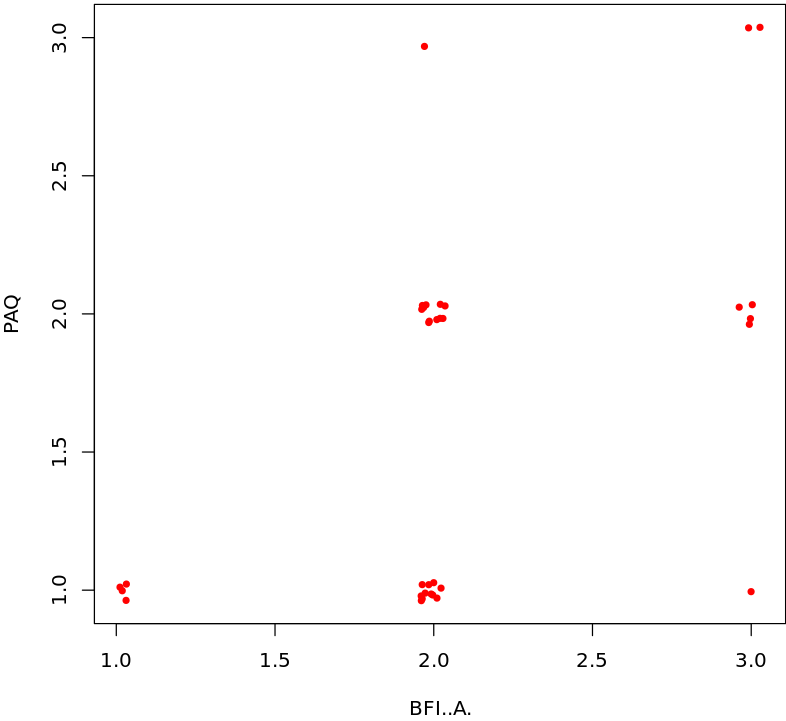
Scatter Plot of Total vs. CBCL



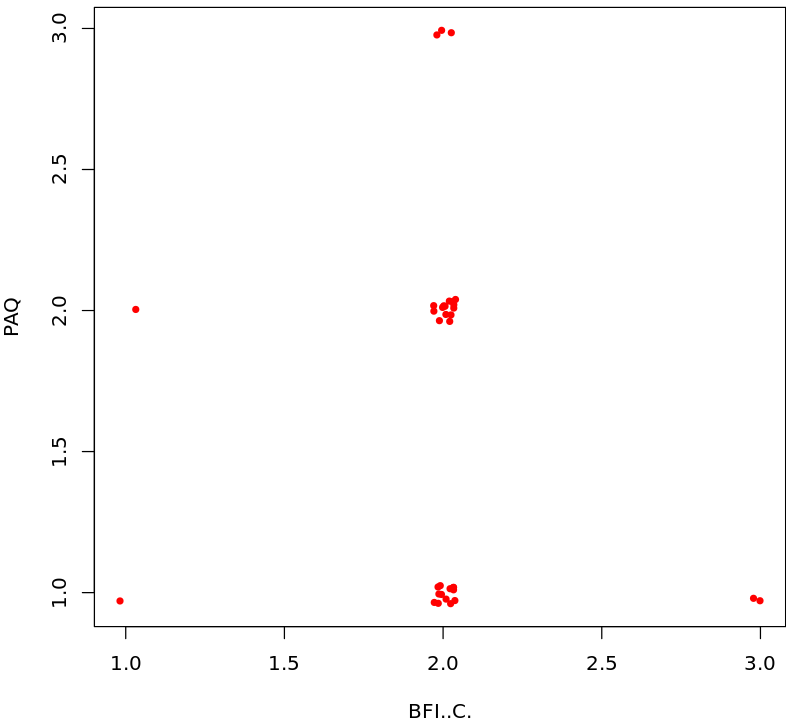
Scatter Plot of BFI..E. vs. PAQ



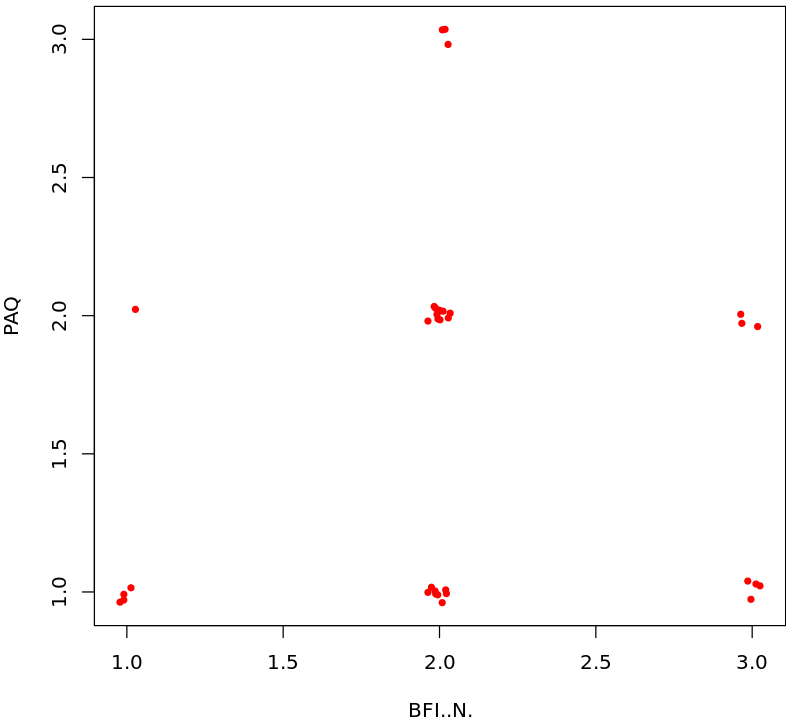
Scatter Plot of BFI..A. vs. PAQ



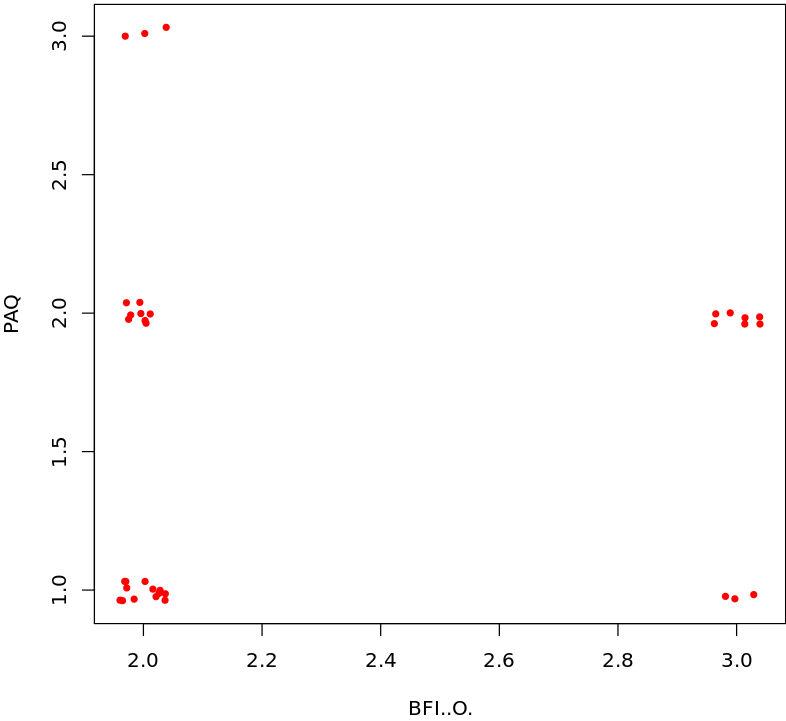
Scatter Plot of BFI..C. vs. PAQ



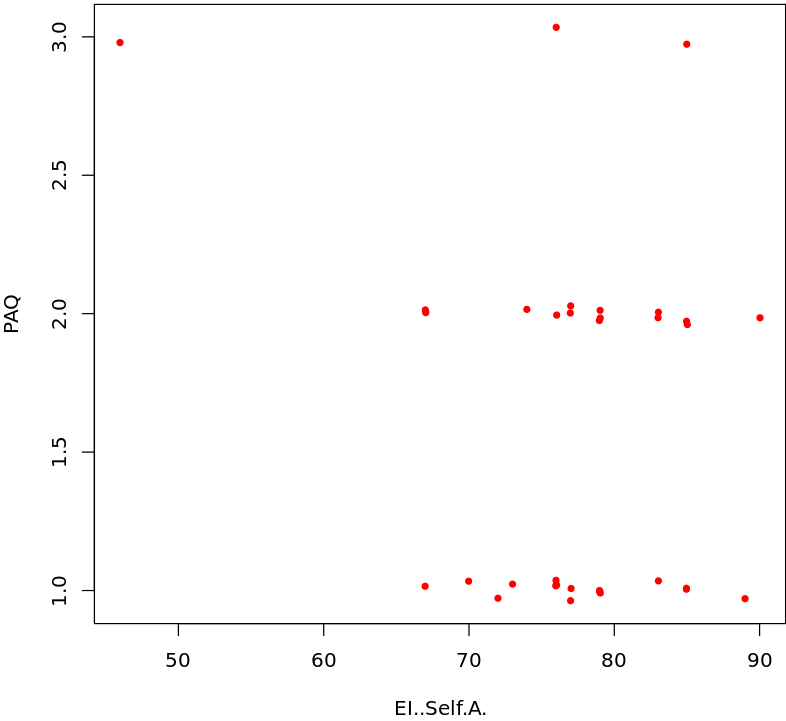
Scatter Plot of BFI..N. vs. PAQ

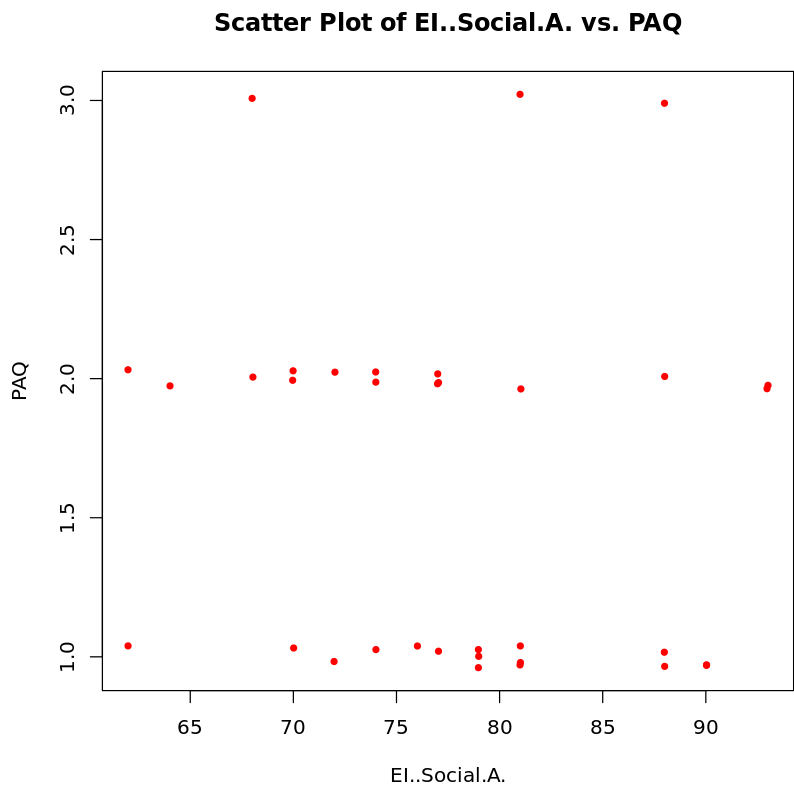
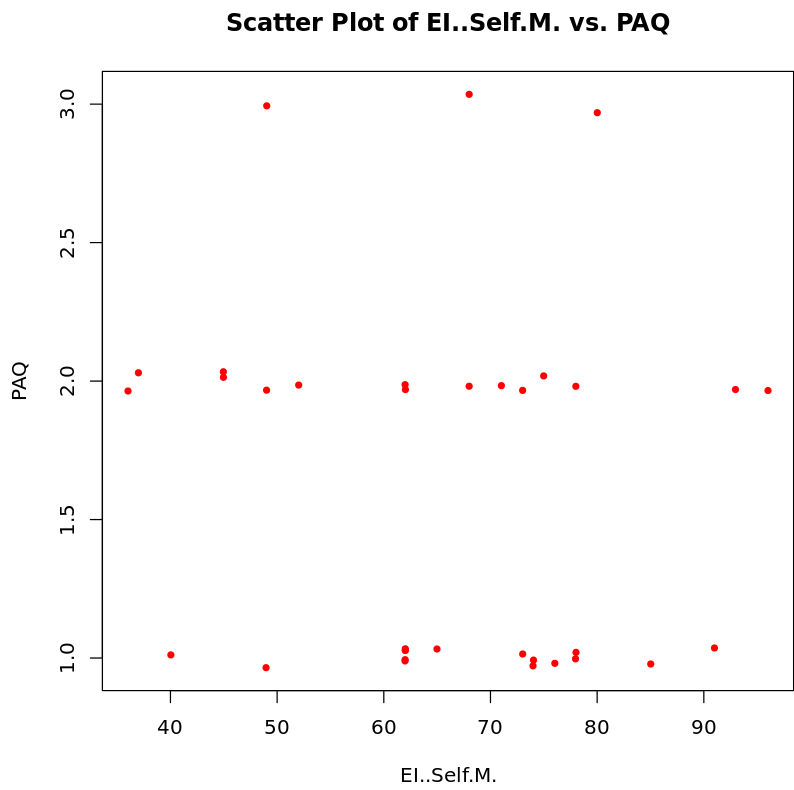


Scatter Plot of BFI..O. vs. PAQ

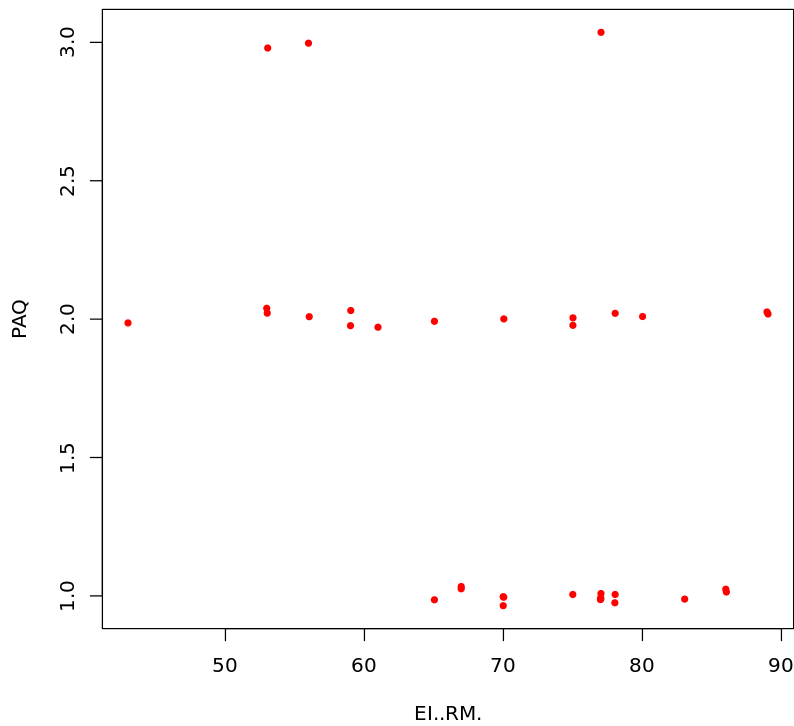


Scatter Plot of EI..Self.A. vs. PAQ





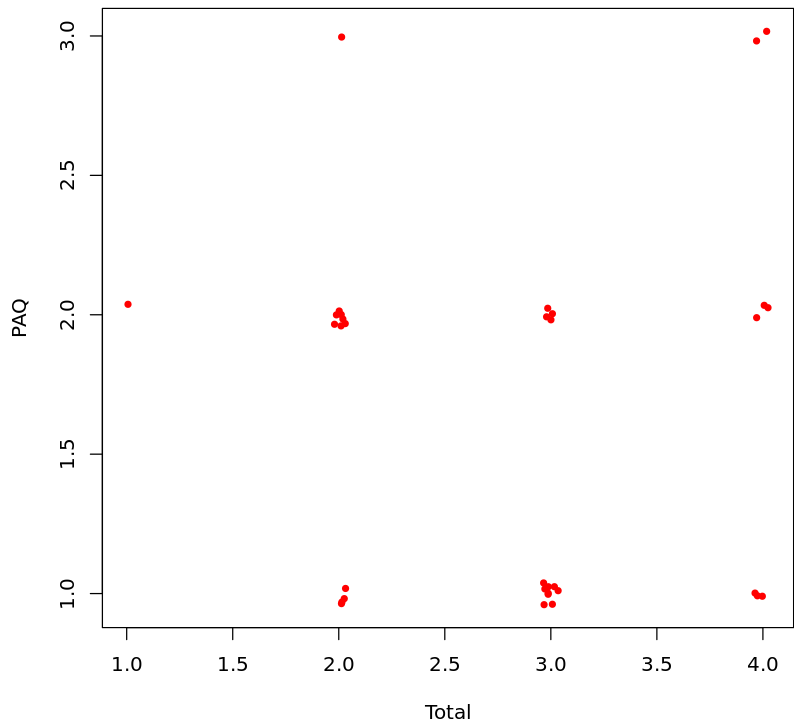
Scatter Plot of EI..RM. vs. PAQ



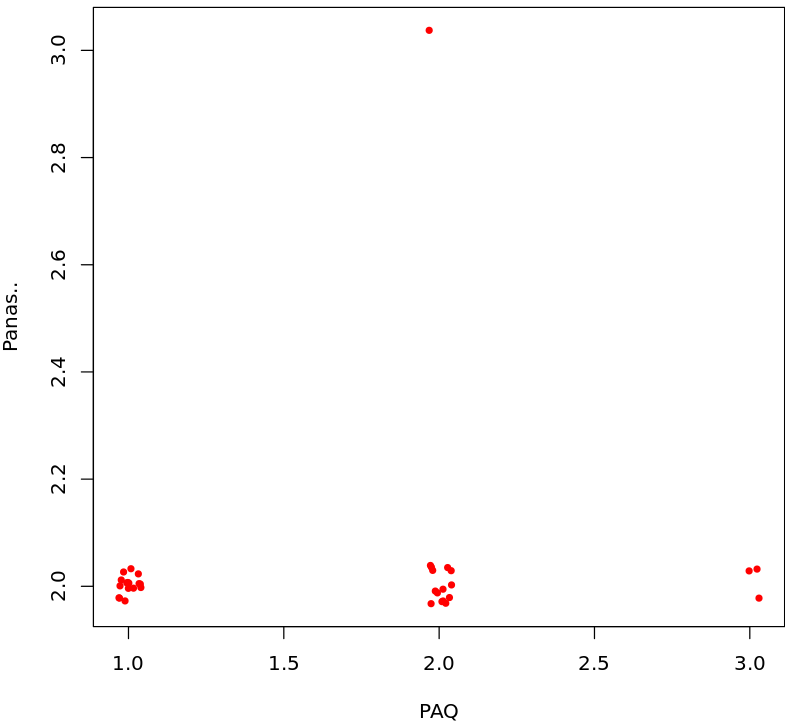
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[1] "====="
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[1] "Scatter plots of mediator vs. dependent variables with jittering"
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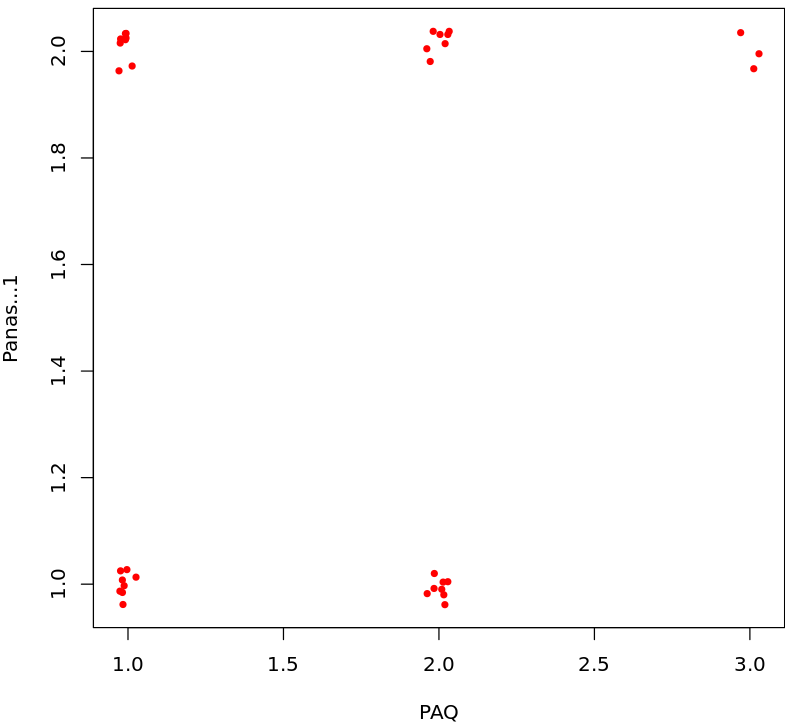
Scatter Plot of Total vs. PAQ

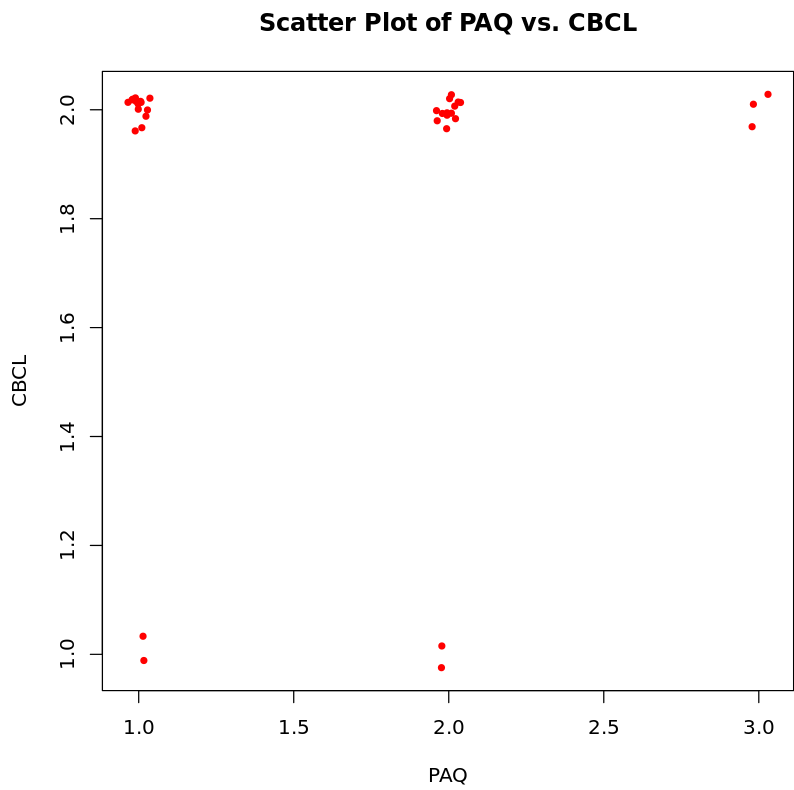


Scatter Plot of PAQ vs. Panas..



Scatter Plot of PAQ vs. Panas...1





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In [ ]:
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