ANALYSIS USING R COMMANDER

```
> library(abind, pos=17)
> library(e1071, pos=18)
> numSummary(Dataset[,"BDI Sum", drop=FALSE], groups=Dataset$BDI Range,
  statistics=c("mean", "sd", "se(mean)", "IQR", "quantiles", "cv", "skewness",
   "kurtosis"), quantiles=c(0,.25,.5,.75,1), type="2")
> editDataset(Dataset)
> numSummary(Dataset[,c("GD Sum", "PN Sum", "SC Sum"), drop=FALSE],
  statistics=c("mean", "sd", "se(mean)", "IQR", "quantiles", "cv", "skewness",
   "kurtosis"), quantiles=c(0,.25,.5,.75,1), type="2")
                    sd se(mean) IQR cv skewness kurtosis 0% 25%
          mean
GD Sum 8.006667 3.532204 0.2884033 4 0.4411579 0.1675961 -0.00646895 0
PN Sum 7.073333 3.489383 0.2849069 4 0.4933152 0.5497619 0.40868020 0
SC Sum 6.493333 3.270258 0.2670154 5 0.5036331 0.3340599 -0.21791199 0
      50% 75% 100% n
GD Sum 8 10 18 150
PN Sum 7 9 19 150
SC Sum 6 9 14 150
```

```
> numSummary(Dataset[,c("BDI Sum", "GD Sum", "PN Sum", "SC Sum", "SH Sum",
   "SP Sum"), drop=FALSE], statistics=c("mean", "sd", "se(mean)", "IQR",
   "quantiles", "cv", "skewness", "kurtosis"), quantiles=c(0,.25,.5,.75,1),
   type="2")
                                       IQR
                                                                   kurtosis 0%
                        sd se(mean)
                                                       skewness
            mean
BDI Sum 22.053333 9.313904 0.7604771 11.75 0.4223354 -0.2593492 -0.25554047
GD Sum
        8.006667 3.532204 0.2884033
                                      4.00 0.4411579
                                                      0.1675961 -0.00646895
PN Sum
        7.073333 3.489383 0.2849069
                                      4.00 0.4933152
                                                      0.5497619
                                                                0.40868020
SC Sum
        6.493333 3.270258 0.2670154
                                     5.00 0.5036331 0.3340599 -0.21791199
SH Sum
        2.400000 1.515025 0.1237013
                                      2.00 0.6312606 0.5164014 -0.26638414
SP Sum
        5.826667 3.201817 0.2614273 5.00 0.5495110 0.1618631 -0.86911710
         25% 50% 75% 100%
BDI Sum 16.25
                  28
                        46 150
         6.00
GD Sum
                       18 150
                  10
         5.00
                       19 150
PN Sum
SC Sum
         4.00
                       14 150
SH Sum
         1.00
                       7 150
SP Sum
         3.00
                        13 150
```

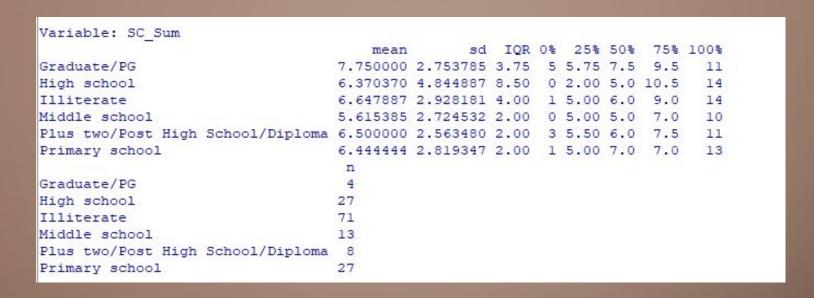
 \bigcap

```
> local({
   .Table <- with (Dataset, table (gender))
   cat ("\ncounts:\n")
   print(.Table)
   cat("\npercentages:\n")
   print(round(100*.Table/sum(.Table), 2))
   .Probs <-c(0.5, 0.5)
   chisq.test(.Table, p=.Probs)
+ })
counts:
gender
Female
       Male
   80
           70
percentages:
gender
Female
       Male
53.33 46.67
        Chi-squared test for given probabilities
data: .Table
X-squared = 0.66667, df = 1, p-value = 0.4142
```

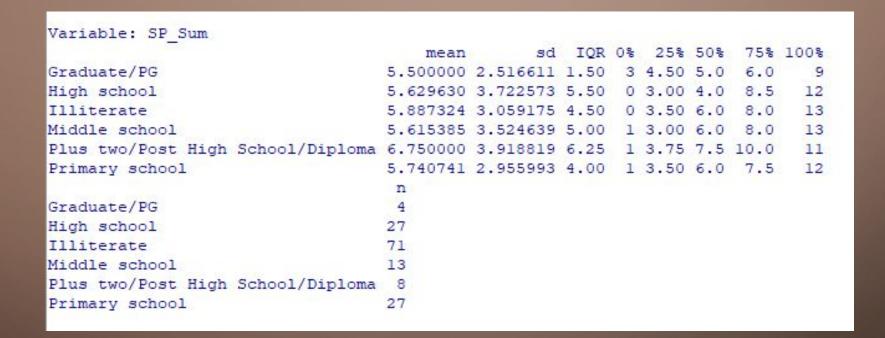
```
Variable: BDI Sum
                                                     IQR 0% 25% 50%
                                    mean
Graduate/PG
                                26.25000 5.678908 6.75 22 22.0 24.5 28.75
High school
                                20.14815 8.847875 11.00 3 14.0 21.0 25.00
Illiterate
                                24.69014 8.661230 9.00 1 20.0 25.0 29.00
Middle school
                                17.53846 7.806145 12.00 4 9.0 20.0 21.00
Plus two/Post High School/Diploma 16.25000 11.196300 19.50 0 6.5 20.5 26.00
Primary school
                                20.29630 10.102607 17.50 5 10.5 23.0 28.00
                                100% n
Graduate/PG
                                  34 4
High school
                                  35 27
Illiterate
                                  46 71
Middle school
                                  30 13
Plus two/Post High School/Diploma 27 8
Primary school
                                  38 27
```

Variable: GD Sum sd IQR 0% 25% 50% 75% 100% mean Graduate/PG 8.750000 2.362908 2.75 7 7.00 8 9.75 High school 7.185185 3.883268 5.00 0 5.00 7 10.00 16 8.492958 3.714348 5.00 1 6.00 9 11.00 Illiterate Middle school 8.230769 3.789324 5.00 3 6.00 8 11.00 Plus two/Post High School/Diploma 7.375000 3.777282 5.50 1 4.75 8 10.25 Primary school 7.518519 2.517177 3.50 4 5.50 7 9.00 14 Graduate/PG High school 27 Illiterate 71 Middle school 13 Plus two/Post High School/Diploma 8 Primary school

```
Variable: PN Sum
                                     mean
                                                sd IQR 0% 25% 50%
                                                                      75% 100%
Graduate/PG
                                 8.500000 3.109126 2.50 4 7.75 9.5 10.25
High school
                                 6.259259 3.253313 3.00 0 4.50 6.0
Illiterate
                                 7.239437 3.837651 4.50 1 4.50 7.0
                                 7.076923 2.722179 5.00 4 4.00 7.0
Middle school
                                                                           11
Plus two/Post High School/Diploma 5.875000 3.943802 5.25 1 2.75 6.0 8.00
Primary school
                                 7.592593 3.003322 4.00 3 6.00 7.0 10.00
                                  n
Graduate/PG
                                 27
High school
Illiterate
                                 71
Middle school
Plus two/Post High School/Diploma 8
Primary school
                                 27
```



```
Variable: SH Sum
                                                sd IQR 0% 25% 50% 75% 100%
                                     mean
Graduate/PG
                                 2.000000 1.8257419 2.5 0 0.75
                                                                 2 3.25
High school
                                 2.074074 1.6623877 2.5 0 1.00 1 3.50
Illiterate
                                                                 2 3.00
                                 2.577465 1.3696921 1.0 0 2.00
Middle school
                                 2.846154 1.6251233 3.0 1 1.00
                                                                 3 4.00
Plus two/Post High School/Diploma 1.125000 0.9910312 0.5 0 0.75 1 1.25
Primary school
                                 2.481481 1.6259996 2.0 0 1.00
                                                                 2 3.00
Graduate/PG
                                 27
High school
Illiterate
Middle school
Plus two/Post High School/Diploma 8
Primary school
Variable: SP Sum
```



```
numSummary(Datasetl[,c("BDI_Sum", "GD_Sum", "FN_Sum", "SC_Sum", "SH_Sum", "SP_Sum"), drop=FALSE], groups=Datasetl$gender, statistics=c("mean", "sd", "IQR",
   "quantiles"), quantiles=c(0,.25,.5,.75,1))
Variable: BDI Sum
                     sd IQR 0% 25% 50% 75% 100% n
Female 24.85000 7.388153 7.25 6 21 25 28.25
Male 18.85714 10.266430 16.75 0 10 19 26.75 42 70
Variable: GD Sum
                    sd IQR 0% 25% 50% 75% 100% n
Female 9.437500 3.260208
Male 6.371429 3.112255
Variable: PN Sum
                    sd IQR 0% 25% 50% 75% 100% n
Female 8.150000 3.628648
Male 5.842857 2.887433 4 1 4 6 8 12 70
```

Variable: SC Sum sd IQR 0% 25% 50% 75% 100% mean Female 7.912500 3.065503 4.25 1 5.75 10 14 80 Male 4.871429 2.707592 2.75 0 3.25 5 6 12 70 Variable: SH Sum mean sd IQR 0% 25% 50% 75% 100% n Female 2.562500 1.541360 3 0 Male 2.214286 1.473366 2 0 7 80 Variable: SP Sum mean sd IQR 0% 25% 50% Female 7.612500 2.739739 4 2 6 10 13 80 Male 3.785714 2.370671 3 9 70

```
> numSummary(Datasetl[,c("BDI_Sum", "GD_Sum", "PN_Sum", "SC_Sum", "SH_Sum", "SP_Sum"), drop=FALSE], groups=Datasetl$religion, statistics=c("mean", "sd", "IQR",
+ "quantiles"), quantiles=c(0,.25,.5,.75,1))
Variable: BDI Sum
                   sd IQR 0% 25% 50% 75% 100% n
Hindu 23.67480 8.623734 10 1 19 25 29 46 123
Muslim 14.66667 8.892521 14 0 8 14 22 31 27
Variable: GD Sum
                   sd IQR 0% 25% 50% 75% 100% n
Hindu 8.455285 3.371170 5.0 0 6.0 8 11 18 123
Muslim 5.962963 3.589316 5.5 1 3.5 5 9 12 27
Variable: PN Sum
                   sd IQR 0% 25% 50% 75% 100% n
          mean
Hindu 7.569106 3.485523 5 0 5 7 10
Muslim 4.814815 2.512079 3 1 3 5 6 11 27
```

```
Variable: SC Sum
         mean sd IQR 0% 25% 50% 75% 100% n
Hindu 6.666667 3.169182 4.0 0 5.0 6 9
Muslim 5.703704 3.656552 4.5 0 3.5 5 8
                                      14 27
Variable: SH Sum
         mean sd IQR 0% 25% 50% 75% 100% n
Hindu 2.471545 1.532838 2.5 0 1 2 3.5
                                        7 123
Muslim 2.074074 1.412198 2.0 0
                                       5 27
                           1 2 3.0
Variable: SP Sum
         mean sd IQR 0% 25% 50% 75% 100% n
Hindu 6.032520 3.205873 5 0 4 6
                                       13 123
Muslim 4.888889 3.067614 4 0 3
                                       11 27
```

```
numSummary(Datasetl[,c("BDI_Sum", "GD_Sum", "PN_Sum", "SC_Sum", "SH_Sum", "SP_Sum"), drop=FALSE], groups=Datasetl$family.type, statistics=c("mean", "sd", "IQR",
    "quantiles"), quantiles=c(0,.25,.5,.75,1))
Variable: BDI Sum
                      sd IQR 0% 25% 50% 75% 100% n
Extended 25.29412 8.830146 9.5 2 20.25 25 29.75
        19.44828 9.295107 14.0 3 11.00 20 25.00
Nuclear 21.65517 9.254575 12.5 0 15.50 23 28.00 46 87
Variable: GD Sum
                      sd IQR 0% 25% 50% 75% 100% n
Extended 8.294118 3.316894
Joint
        7.482759 3.561908
Nuclear 8.068966 3.624186 5 0 6 8 11
```

```
Variable: PN Sum
                     sd IQR 0% 25% 50% 75% 100% n
           mean
Extended 6.911765 2.978383 4 2
                                           17 34
Joint 6.620690 3.619528 6 0 4 6 10
                                          13 29
Nuclear 7.287356 3.646942 5 1
                                5 7 10
                                          19 87
Variable: SC Sum
           mean sd IOR 0% 25% 50% 75% 100% n
Extended 6.117647 2.590948 2.75 0
                                 5
                                    6 7.75
                                            11 34
Joint 6.137931 3.748563 5.00 0 4 5 9.00
                                           14 29
Nuclear 6.758621 3.347910 4.00 0 5 7 9.00
                                           14 87
Variable: SH Sum
                   sd IQR 0% 25% 50% 75% 100% n
           mean
Extended 2.764706 1.457662
                                           6 34
Joint 2.275862 1.709147 2 0
                                           7 29
Nuclear 2.298851 1.463628 2 0
                                           6 87
```

```
Variable: SP_Sum

mean sd IQR 0% 25% 50% 75% 100% n

Extended 5.941176 2.880879 3 1 4 6 7 13 34

Joint 5.206897 3.309934 5 0 3 5 8 12 29

Nuclear 5.988506 3.293737 6 0 3 6 9 13 87
```

```
numSummary(Datasetl[,c("BDI_Sum", "GD_Sum", "PN_Sum", "SC_Sum", "SH_Sum", "SP_Sum"), drop=FALSE], groups=Datasetl$occupation, statistics=c("mean", "sd", "IQR",
   "quantiles"), quantiles=c(0,.25,.5,.75,1))
Variable: BDI Sum
                                                      25% 50% 75% 100% n
Clerical/Shop Owner/Farmer 24.67692 7.628294 8.00 8 21.00 24 29.0
Professional
                         18.55556 8.987646 12.00 0 14.00 22 26.0
Semi Professional
                         15.36364 9.436872 16.50 2 6.50 18 23.0
Semi skilled
                         24.50000 10.241319 10.25 6 21.25 26 31.5
Skilled
                         20.40000 9.844626 14.00 5 13.00 20 27.0
Unemployed
                         16.18182 10.619022 18.50 1 7.50 17 26.0
Unskilled worker
                         22.46667 9.500877 10.50 5 18.00 25 28.5
```

Variable: GD Sum sd IOR 0% 25% 50% 75% 100% mean Clerical/Shop Owner/Farmer 8.615385 3.449150 5.0 0 6.0 9 11 18 65 Professional 7.888889 3.887301 4.0 1 7.0 8 11 12 9 Semi Professional 7.636364 3.170890 4.0 1 6.0 8 10 11 11 9.357143 2.762584 3.0 5 8.0 10 11 Semi skilled 14 14 Skilled 7.960000 4.217819 6.0 1 5.0 7 11 18 25 5.181818 2.821992 3.5 1 3.5 5 7 Unemployed 10 11 6.600000 2.693908 3.5 3 4.5 6 8 Unskilled worker 13 15

Variable: PN Sum sd IQR 0% 25% 50% 75% 100% n mean Clerical/Shop Owner/Farmer 7.353846 3.528592 5.0 1 5.0 7.0 10.0 17 65 Professional 6.888889 3.655285 3.0 1 5.0 7.0 8.0 13 9 2 4.5 6.0 8.0 Semi Professional 6.181818 2.638870 3.5 10 11 Semi skilled 8.285714 3.851644 4.0 4 6.0 7.5 10.0 19 14 Skilled 0 5.0 7.0 10.0 16 25 7.720000 4.168533 5.0 Unemployed 4.818182 2.272364 4.0 1 3.0 6.0 7.0 7 11 Unskilled worker 6.066667 2.120198 3.0 2 4.5 6.0 7.5 9 15

Variable: SC Sum sd IQR 0% 25% 50% 75% 100% n mean Clerical/Shop Owner/Farmer 6.384615 3.520885 5.0 0 4.00 6.0 9.00 14 65 7.000000 2.397916 3.0 3 6.00 7.0 9.00 11 9 Professional Semi Professional 6.818182 4.445631 8.0 1 3.50 6.0 11.50 13 11 7.571429 2.533295 2.5 3 6.25 7.5 8.75 13 14 Semi skilled Skilled 6.320000 2.779688 4.0 2 4.00 6.0 8.00 14 25 Unemployed 6.181818 3.789939 3.0 1 4.00 5.0 7.00 13 11 5.933333 2.890049 3.0 1 4.00 5.0 7.00 Unskilled worker 12 15

Variable: SH_Sum									
	mean	sd	IQR	0%	25%	50%	75%	100%	n
Clerical/Shop Owner/Farmer	2.492308	1.4908374	3.00	0	1.00	2	4.0	5	65
Professional	1.444444	1.3333333	1.00	0	1.00	1	2.0	4	9
Semi Professional	1.727273	1.6180797	3.00	0	0.00	2	3.0	4	11
Semi skilled	2.928571	1.6391501	2.75	1	1.25	3	4.0	6	14
Skilled	2.960000	1.6703293	2.00	1	2.00	3	4.0	7	25
Unemployed	2.000000	1.3416408	1.50	0	1.00	2	2.5	5	11
Unskilled worker	1.933333	0.7988086	0.50	1	1.50	2	2.0	4	15

Variable: SP Sum sd IQR 0% 25% 50% 75% 100% n mean Clerical/Shop Owner/Farmer 5.600000 3.195700 5.00 0 3.0 5 8.00 12 65 Professional 7.111111 3.333333 6.00 3 4.0 8 10.00 11 9 Semi Professional 6.272727 3.635682 4.00 0 4.0 6 8.00 13 11 Semi skilled 7.071429 2.234839 2.75 2 6.0 8 8.75 10 14 Skilled 6.200000 3.391165 6.00 2 3.0 5 9.00 12 25 Unemployed 4.909091 3.884702 5.50 1 2.0 4 7.50 13 11 Unskilled worker 4.600000 2.443651 4.50 1 2.5 5 7.00 8 15

> sapply(Dataset, function(x)(sum(is.na(x)))) # NA counts

name age gen

0

gender name age education religion mother.education family.head.education family.income occupation place.of.residence socio.economic.status family.type BDI Sum PN Sum GD Sum SP Sum SC Sum SH Sum TOTAL SCARED BDI Range City Mobile

```
> with(Dataset, tapply(GD_Sum, list(gender), mean, na.rm=TRUE))
  Female Male
9.437500 6.371429
```

```
> cor(Dataset[,c("GD Sum","PN Sum")], method="spearman",
  use="pairwise.complete")
                  PN Sum
         GD Sum
GD Sum 1.0000000 0.5184247
PN Sum 0.5184247 1.0000000
> cor(Dataset[,c("SC Sum","SH Sum","SP Sum")], use="complete")
           SC Sum
                      SH Sum
                                SP Sum
SC Sum 1.000000000 0.09671861 0.6414962
SH Sum 0.09671861 1.00000000 0.2122378
SP Sum 0.64149619 0.21223776 1.0000000
> with(Dataset, cor.test(PN Sum, SC Sum, alternative="two.sided",
  method="pearson"))
        Pearson's product-moment correlation
data: PN Sum and SC Sum
t = 4.8226, df = 148, p-value = 0.000003485
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
0.2213245 0.4992890
sample estimates:
      cor
0.3685149
```

```
> library(abind, pos=17)
> local({
+    .Table <- xtabs(~gender+religion, data=Dataset)
+    cat("\nFrequency table:\n")
+    print(.Table)
+    .Test <- chisq.test(.Table, correct=FALSE)
+    print(.Test)
+ })</pre>
```

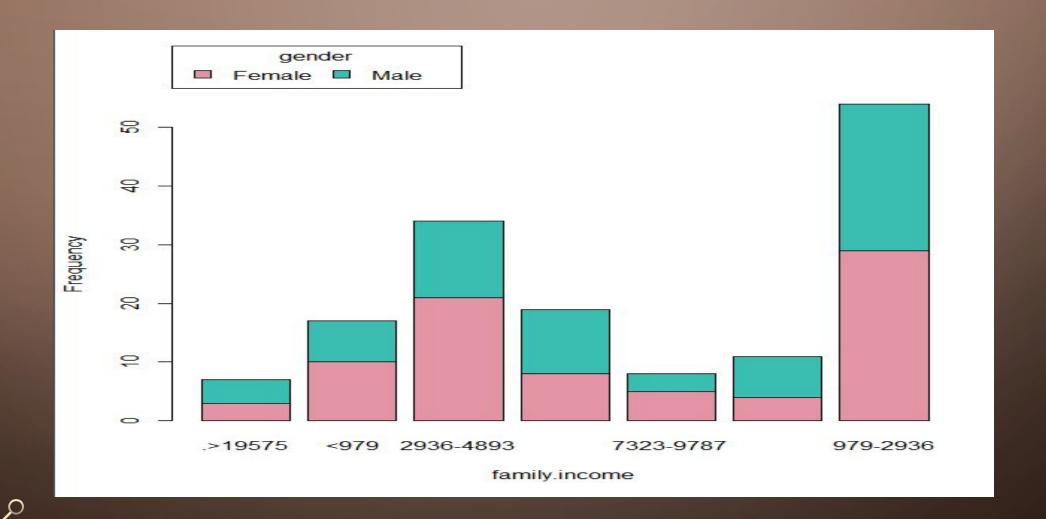
```
Frequency table:
    religion

gender Hindu Muslim
    Female 73 7
    Male 50 20

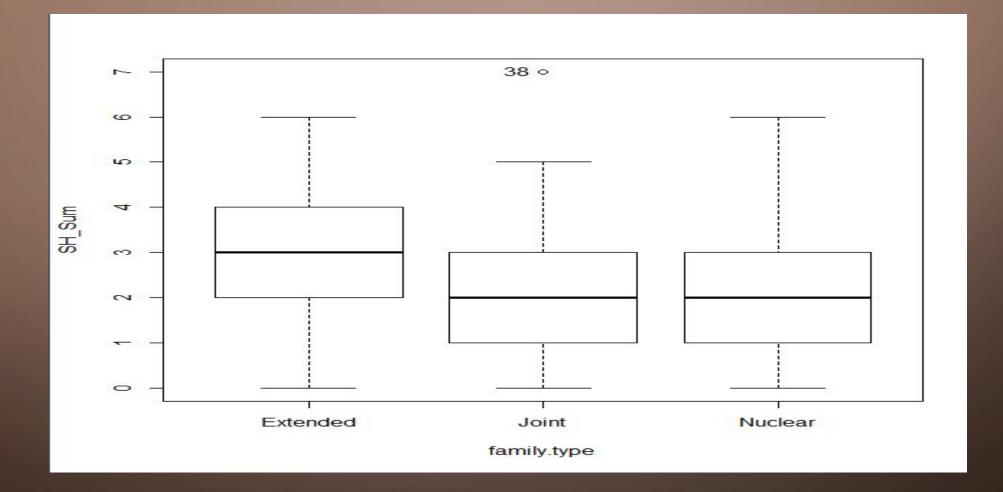
    Pearson's Chi-squared test

data: .Table
X-squared = 9.9376, df = 1, p-value = 0.001619
```

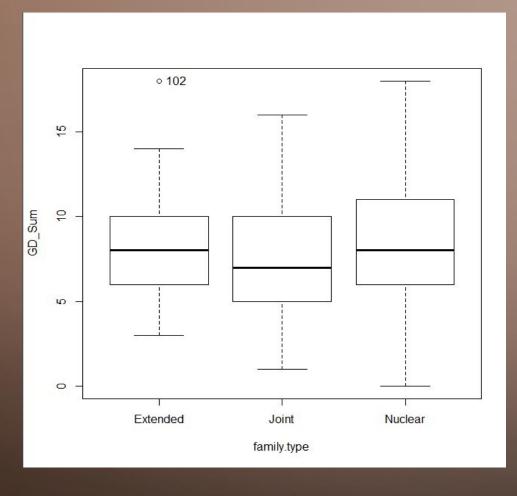
```
> with(Dataset, Barplot(family.income, by=gender, style="divided",
+ legend.pos="above", xlab="family.income", ylab="Frequency"))
```

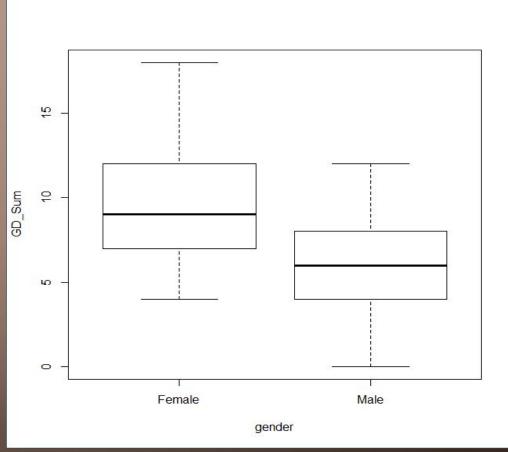


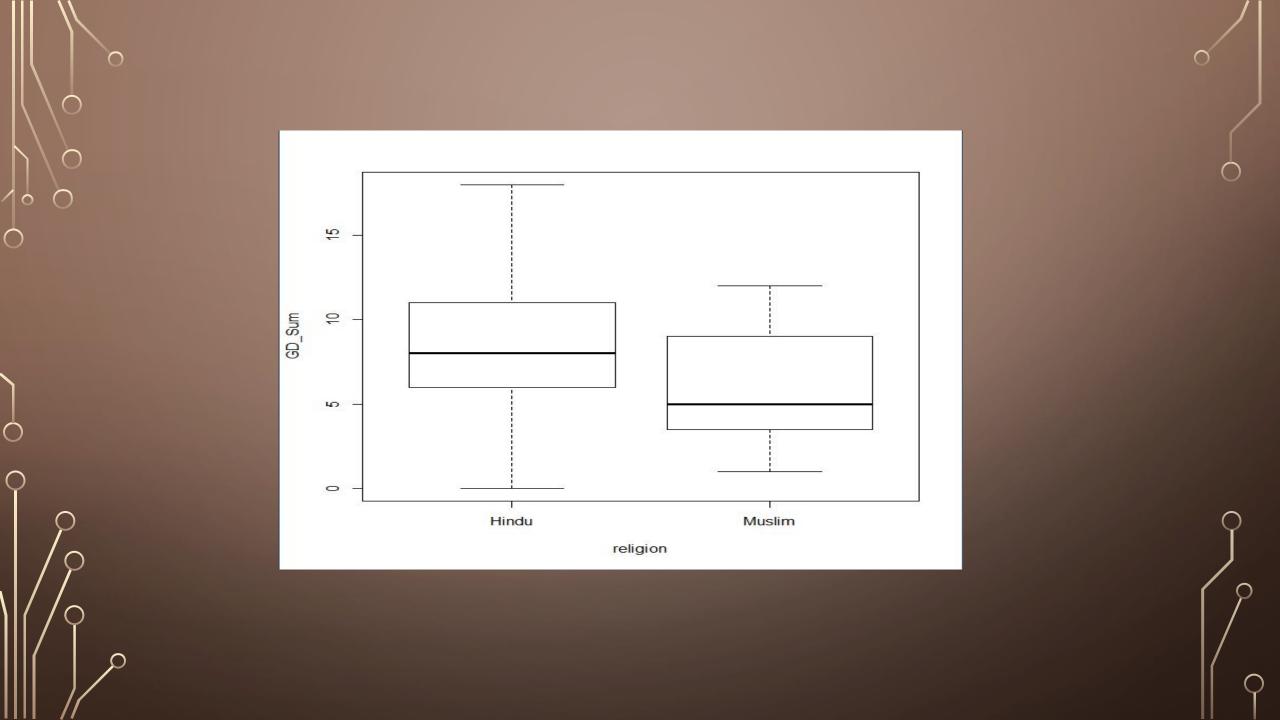
> Boxplot(SH_Sum~family.type, data=Dataset, id=list(method="y"))
[1] "38"



LIKE WISE WE CAN DO OTHER BOXPLOTS...

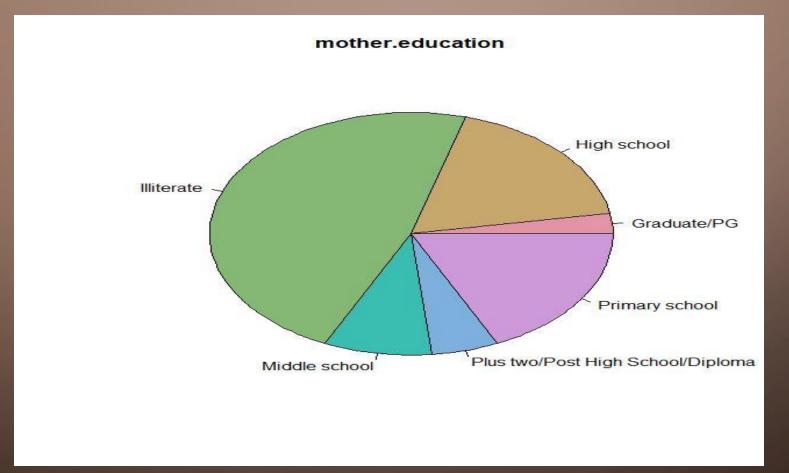






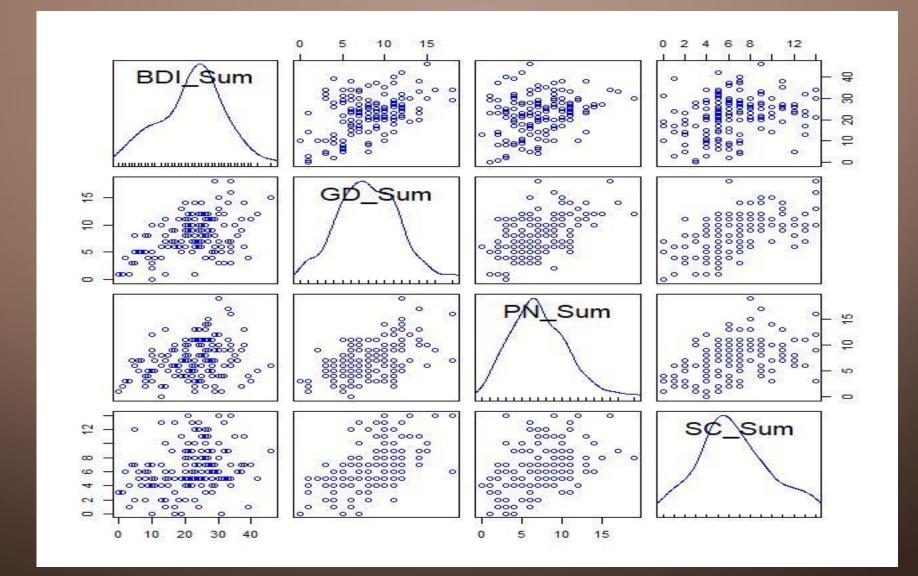
> with (Dataset, Dotplot (PN_Sum, by=family.type, bin=FALSE)) family.type = Extended 15 10 PN_Sum family.type = Joint 15 PN_Sum family.type = Nuclear 15 10 PN_Sum

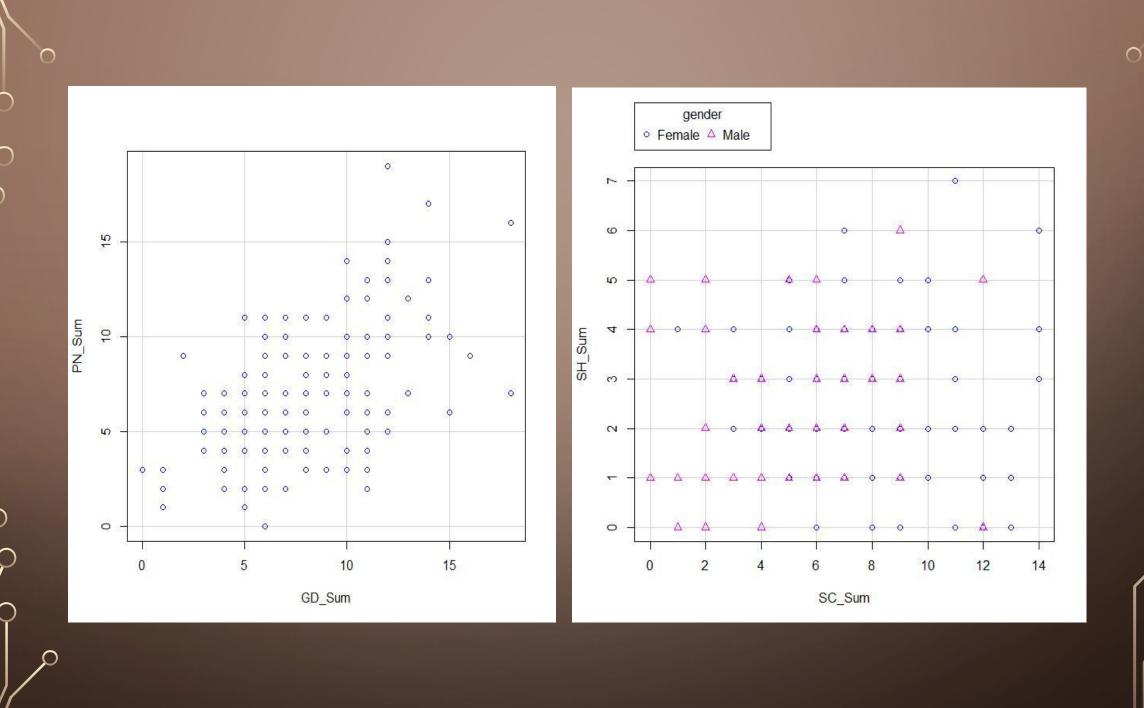
```
> library(colorspace, pos=18)
> with(Dataset, pie(table(mother.education), labels=levels(mother.education),
+ xlab="", ylab="", main="mother.education", col=rainbow_hcl(6)))
```



scatter3d(SH_Sum~GD_Sum+PN_Sum, data=Dataset, surface=FALSE, residuals=TRUE,
bg="white", axis.scales=TRUE, grid=TRUE, ellipsoid=FALSE) SH_Sum GD_Sum PN_Sum 20

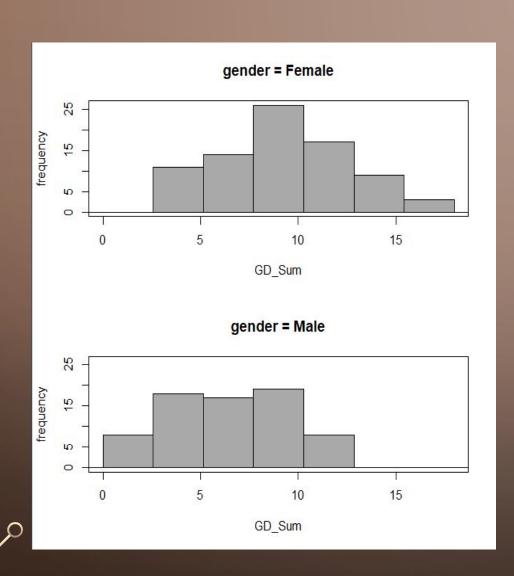
> scatterplotMatrix(~BDI_Sum+GD_Sum+PN_Sum+SC_Sum, regLine=FALSE,
+ smooth=FALSE, diagonal=list(method="density"), data=Dataset)

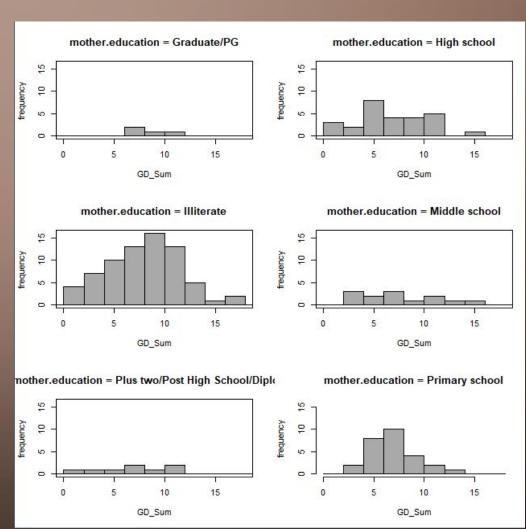


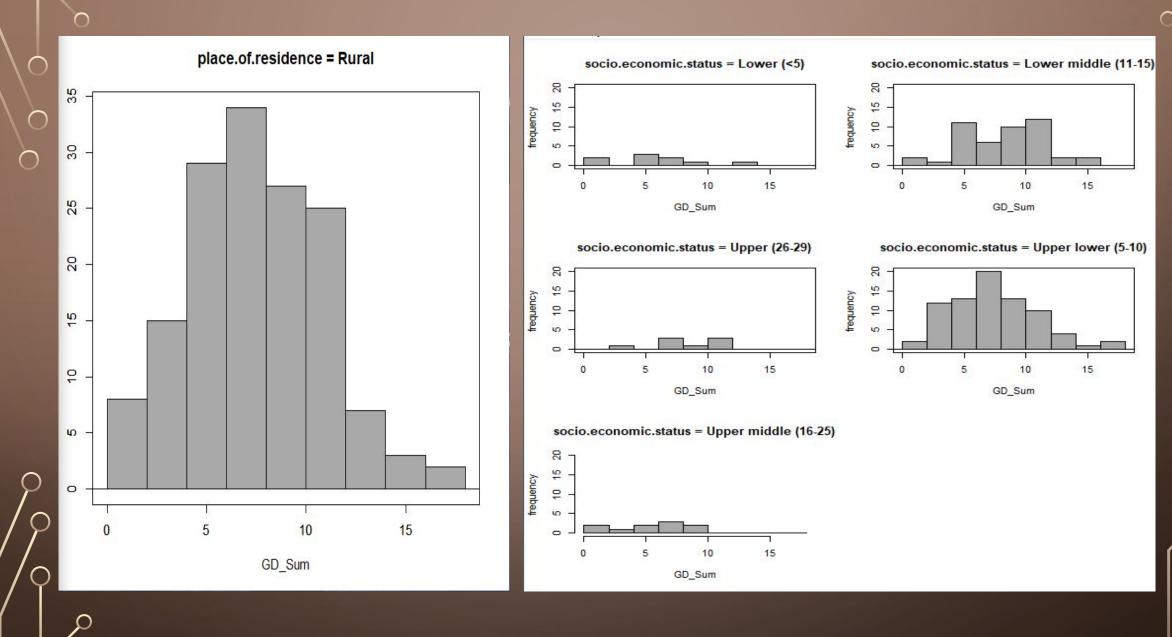


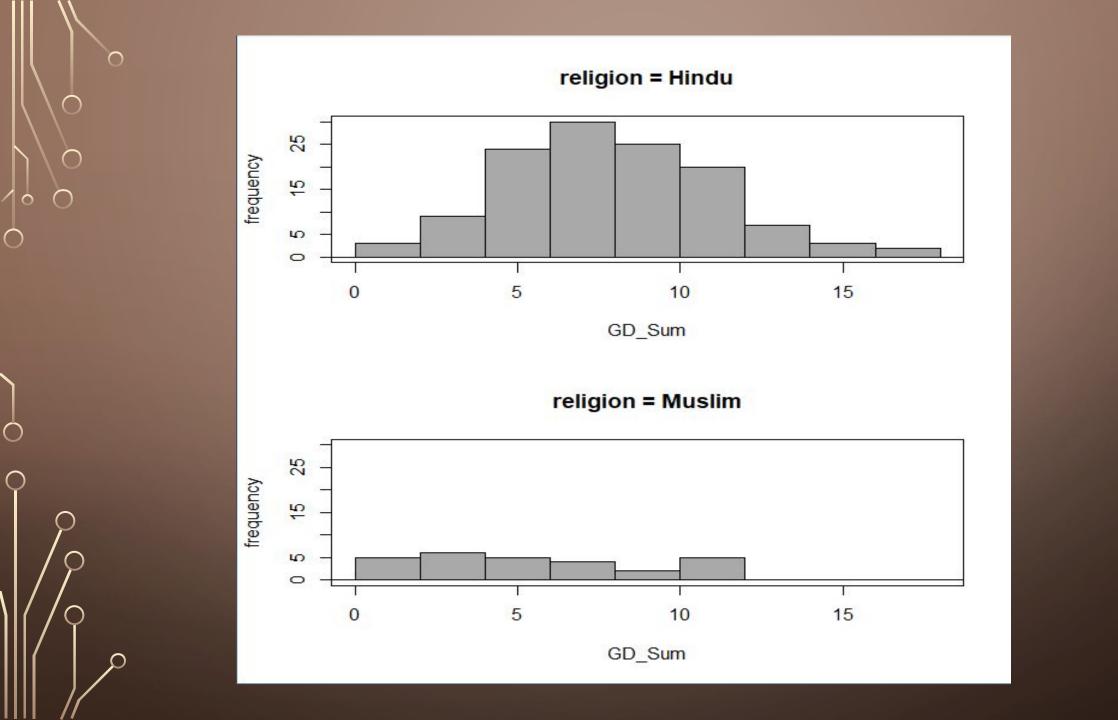
> with (Dataset, Hist (PN_Sum, groups=gender, scale="frequency", breaks="Sturges", col="darkgray")) gender = Female frequency PN_Sum gender = Male frequency PN_Sum

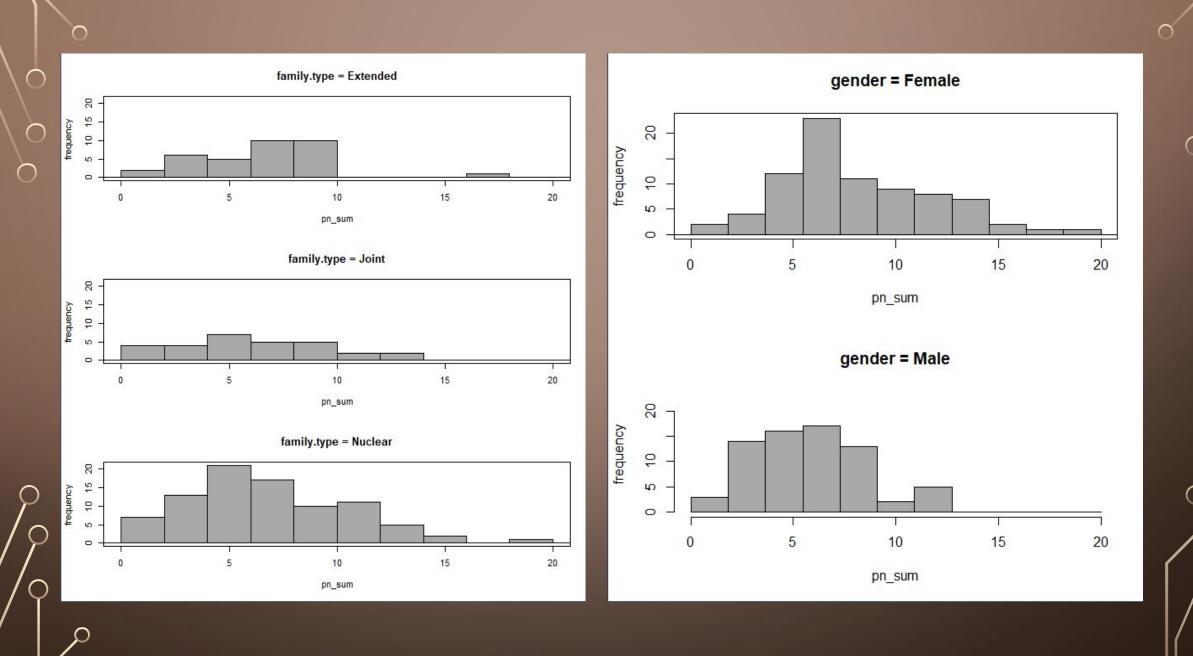
LIKE WISE WE CAN CREATE THE HISTOGRAMS TOO

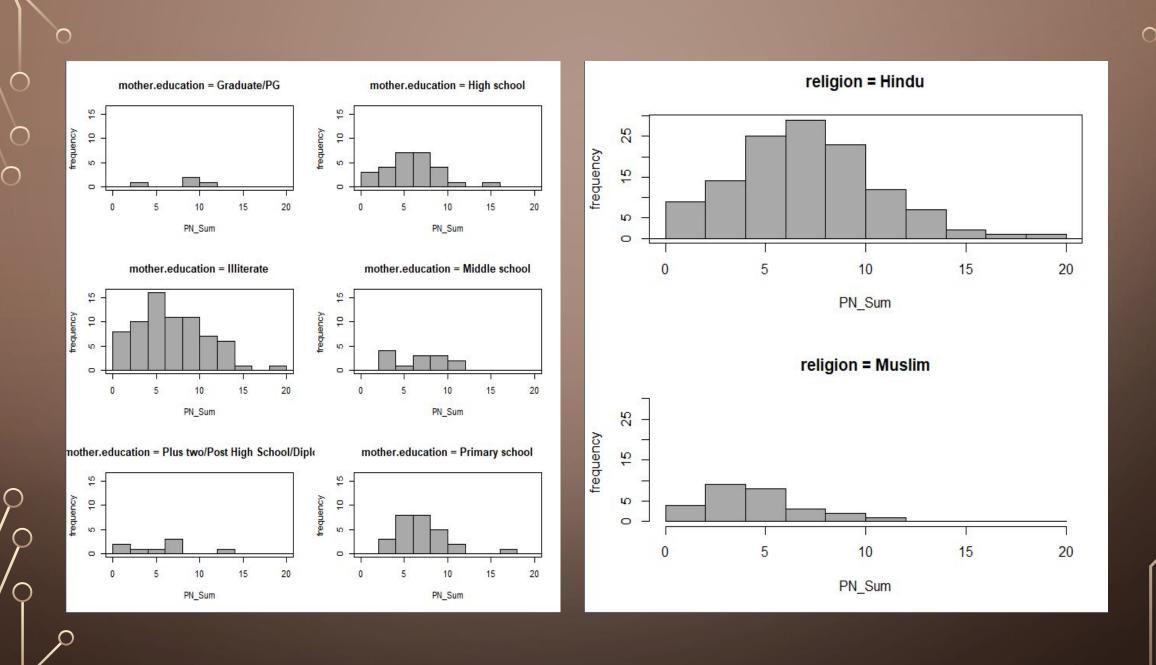


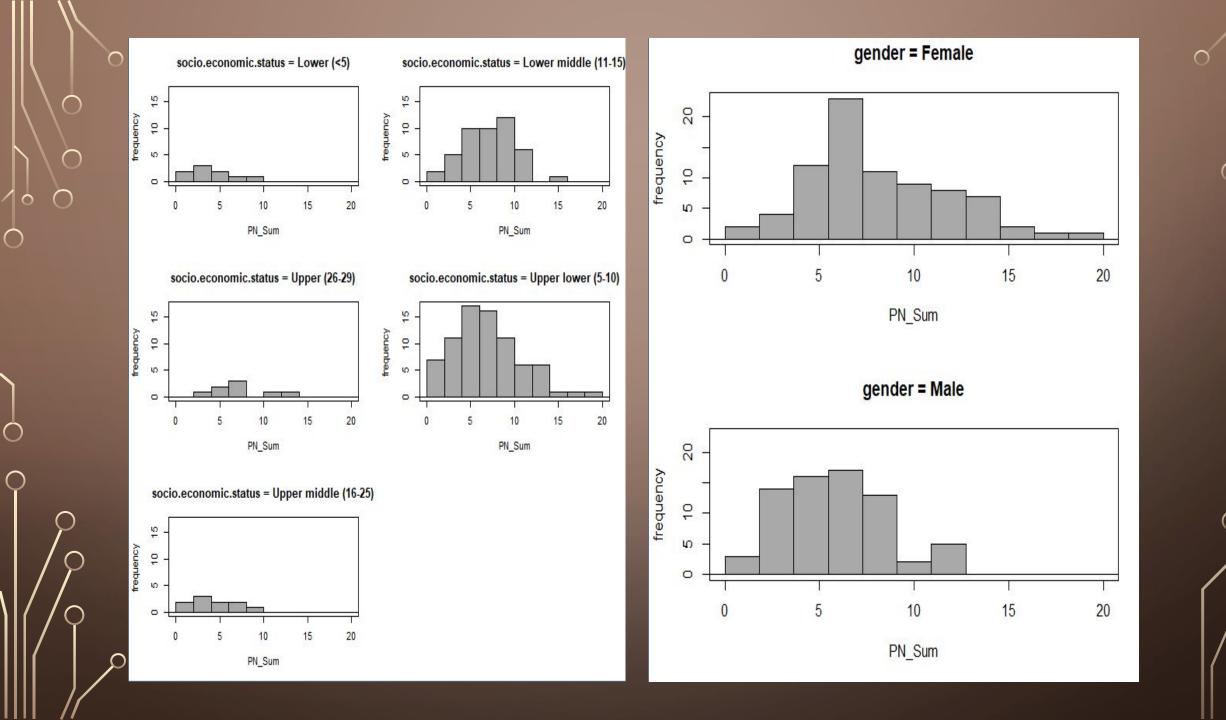


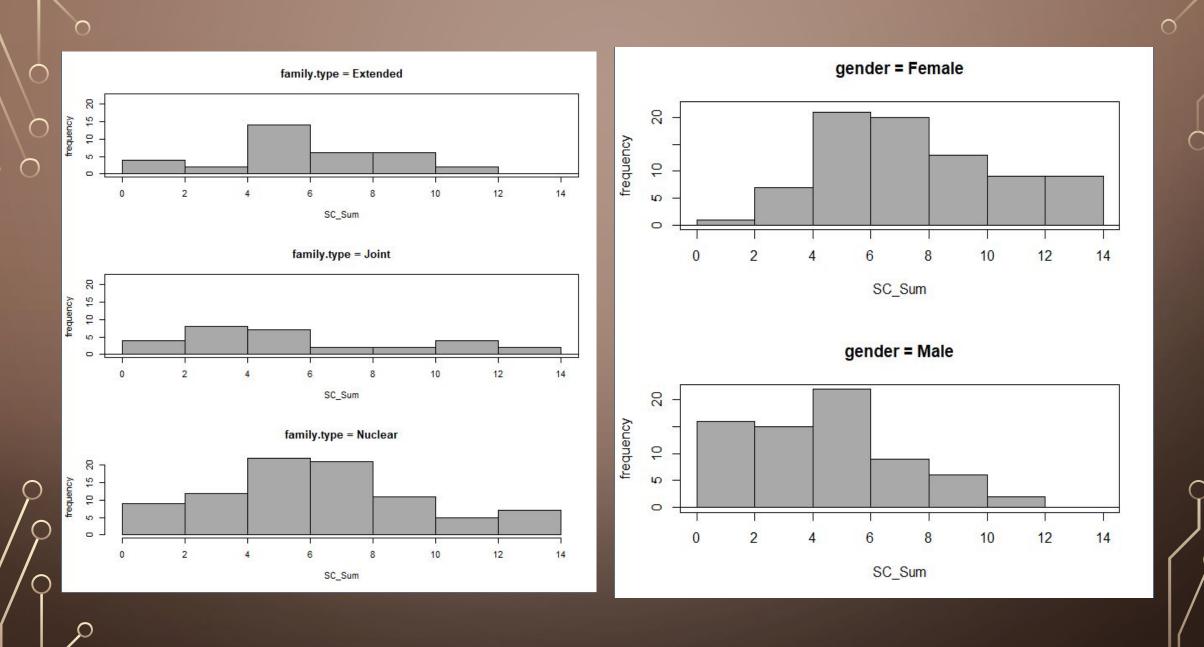


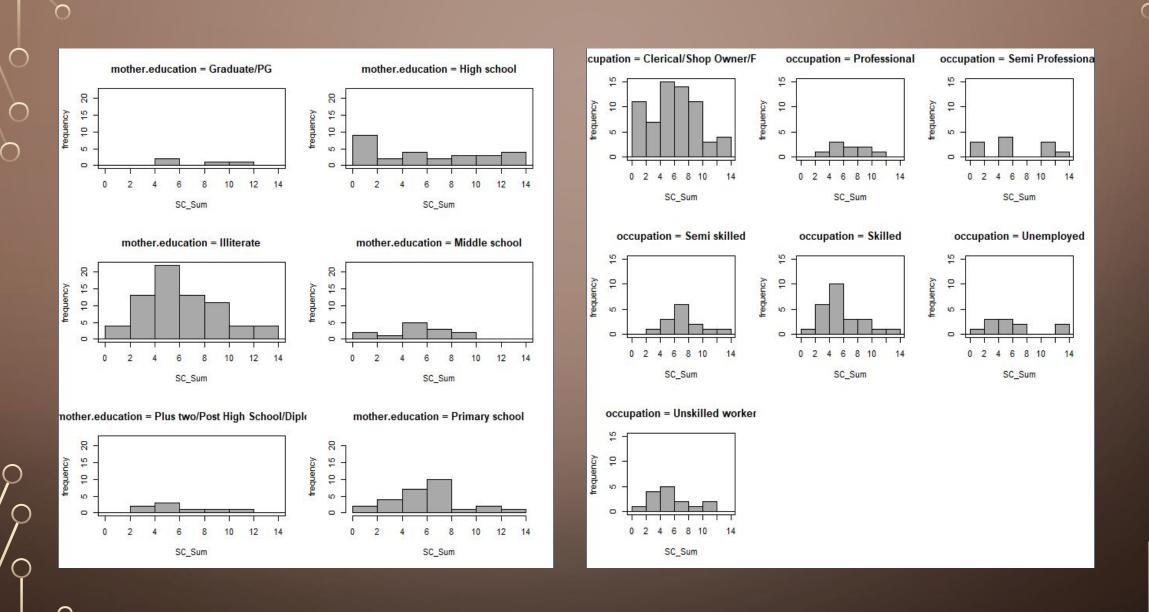


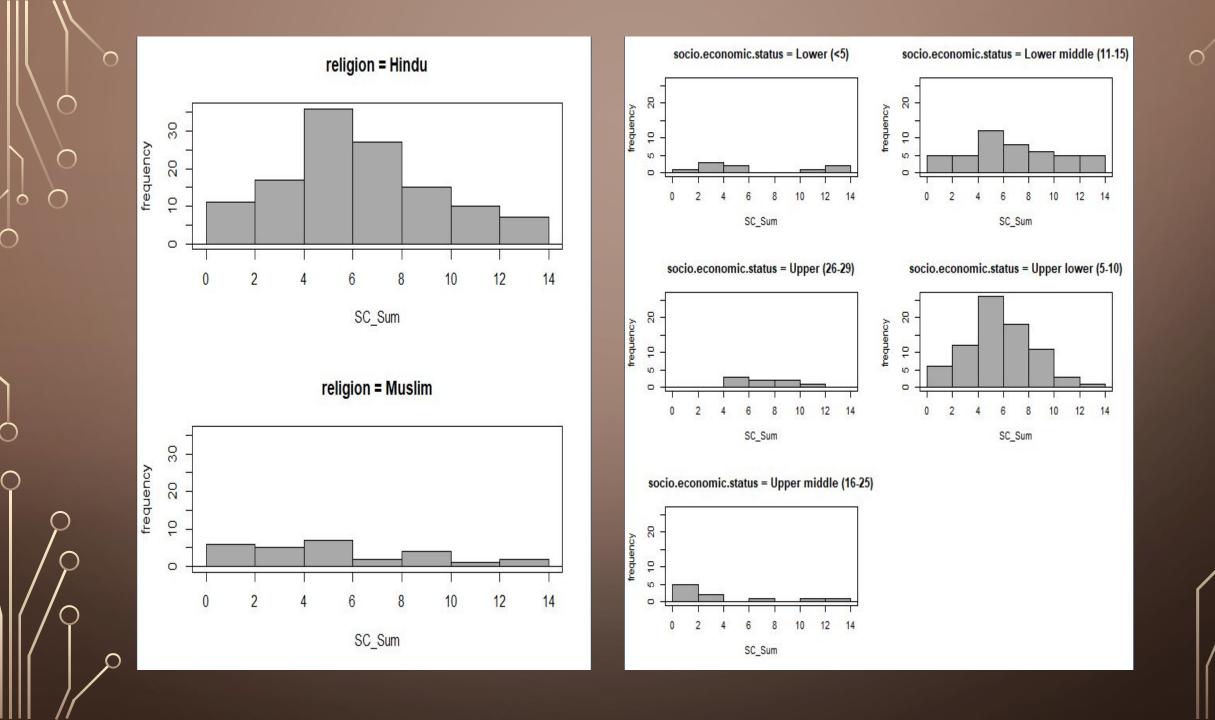












THANK YOU