

# mid\_project

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*2019/10/21*

## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
# Packages to be used
library(readxl)
library(tidyverse)

## -- Attaching packages ----- tidyverse 1.2.1 --

## v ggplot2 3.2.1      v purrr  0.3.2
## v tibble  2.1.3      v dplyr  0.8.3
## v tidyr   1.0.0      v stringr 1.4.0
## v readr   1.3.1      v forcats 0.4.0

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()

library(tidyr)

# install.packages("corpcor")
# install.packages("GPArotation")
# install.packages("psych")
library(corpcor);
library(GPArotation);
library(psych)

##
## Attaching package: 'psych'

## The following objects are masked from 'package:ggplot2':
##
##   %+%, alpha

# read num data
data<-read_excel("F00007625-WV6_Data_Taiwan_2012_Excel_v20180912.xlsx")
my_data <- as_tibble(data)
data1<-data%>%select(5,6,7,8,9,10,11,12,24,62,106:111,161,162,163,306,307,308)
head(data1)
```

```
## # A tibble: 6 x 22
##   `V4: Important ~` `V5: Important ~` `V6: Important ~` `V7: Important ~`
##   <dbl>           <dbl>           <dbl>           <dbl>
## 1             1             1             1             3
## 2             1             2             2             2
## 3             1             2             2             3
## 4             1             1             1             2
## 5             1             2             2             3
## 6             1             1             1             3
## # ... with 18 more variables: `V8: Important in life: Work` <dbl>, `V9:
## #   Important in life: Religion` <dbl>, `V10: Feeling of happiness` <dbl>,
## #   `V11: State of health (subjective)` <dbl>, `V23: Satisfaction with
## #   your life` <dbl>, `V59: Satisfaction with financial situation of
## #   household` <dbl>, `V102: How much you trust: Your family` <dbl>,
## #   `V103: How much you trust: Your neighborhood` <dbl>, `V104: How much
## #   you trust: People you know personally` <dbl>, `V105: How much you
## #   trust: People you meet for the first time` <dbl>, `V106: How much you
## #   trust: People of another religion` <dbl>, `V107: How much you trust:
## #   People of another nationality` <dbl>, `V140: Importance of
## #   democracy` <dbl>, `V141: How democratically is this country being
## #   governed today` <dbl>, `V142: How much respect is there for individual
## #   human rights nowadays in this country` <dbl>, `V237: Family savings
## #   during past year` <dbl>, `V238: Social class (subjective)` <dbl>,
## #   `V239: Scale of incomes` <dbl>
```

```
# Correlations between variables
raqMatrix <- cor(data1)
# head(round(raqMatrix, 2))

# Then, run Bartlett's test on the correlation matrix by using cortest.bartlett() from
# psych package.
cortest.bartlett(data1)
```

```
## R was not square, finding R from data
```

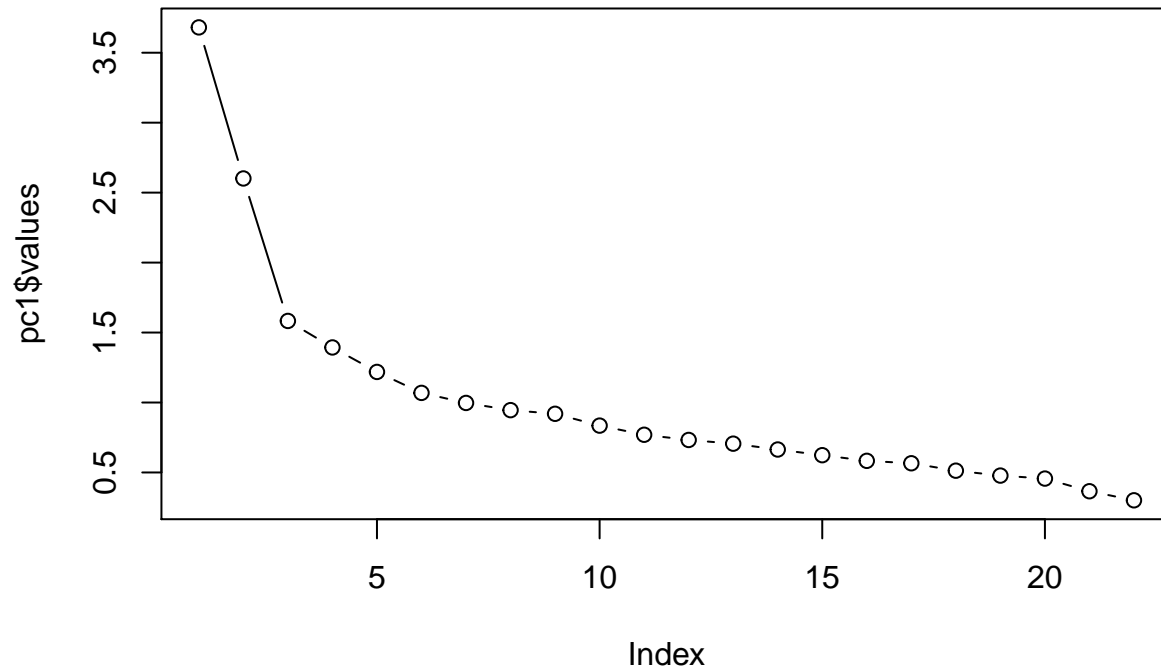
```
## $chisq
## [1] 5308.129
##
## $p.value
## [1] 0
##
## $df
## [1] 231
```

```
# For these data, Bartlett's test is highly significant, p < .001, and
# therefore factor analysis is appropriate.
# Then, we could get the determinant:
det(raqMatrix)
```

```
## [1] 0.01330455
```

*# This value is greater than the necessary value of 0.00001 (see section 17.5). As such, our determinant does not seem problematic.*

```
pc1 <- principal(data1, nfactors=22, rotate="none")
plot(pc1$values, type="b")
```



*# From the scree plot, we could find the point of inflexion (around the third point to the left). The evidence from the scree plot and from the eigenvalues suggests a fourcomponent solution may be the best.*

*# Redo PCA*

*# rerun the analysis, change nfactors = 23 to be nfactors = 4 because we now want only six factors.*

```
pc2 <- principal(data1, nfactors=4, rotate="none")
```

*# In this case, we will select oblique rotation (rotate = "oblimin")*

*# as we believe that there is correlation in the factors.*

*# We will use 'Ordinary Least Squared/Minres' factoring (fm = "minres"), as it is known to provide results similar to 'Maximum Likelihood' without assuming multivariate normal distribution and derives solutions through iterative eigendecomposition like principal axis.*

```
fourfactor <- fa(data1, nfactors = 4, rotate = "oblimin", fm="minres")
print(fourfactor)
```

```
## Factor Analysis using method = minres
```

```
## Call: fa(r = data1, nfactors = 4, rotate = "oblimin", fm = "minres")
```

```
## Standardized loadings (pattern matrix) based upon correlation matrix
```

```
##
```

```
## V4: Important in life: Family
```

MR1

0.01

```
## V5: Important in life: Friends
```

0.13

## V6: Important in life: Leisure time	0.03
## V7: Important in life: Politics	0.00
## V8: Important in life: Work	-0.08
## V9: Important in life: Religion	0.00
## V10: Feeling of happiness	0.03
## V11: State of health (subjective)	0.00
## V23: Satisfaction with your life	0.04
## V59: Satisfaction with financial situation of household	0.04
## V102: How much you trust: Your family	0.26
## V103: How much you trust: Your neighborhood	0.56
## V104: How much you trust: People you know personally	0.59
## V105: How much you trust: People you meet for the first time	0.59
## V106: How much you trust: People of another religion	0.69
## V107: How much you trust: People of another nationality	0.71
## V140: Importance of democracy	0.02
## V141: How democratically is this country being governed today	-0.05
## V142: How much respect is there for individual human rights nowadays in this country	0.22
## V237: Family savings during past year	0.12
## V238: Social class (subjective)	0.16
## V239: Scale of incomes	0.05
##	MR2
## V4: Important in life: Family	-0.08
## V5: Important in life: Friends	-0.07
## V6: Important in life: Leisure time	-0.04
## V7: Important in life: Politics	0.11
## V8: Important in life: Work	0.05
## V9: Important in life: Religion	0.17
## V10: Feeling of happiness	-0.43
## V11: State of health (subjective)	-0.38
## V23: Satisfaction with your life	0.71
## V59: Satisfaction with financial situation of household	0.67
## V102: How much you trust: Your family	-0.17
## V103: How much you trust: Your neighborhood	-0.01
## V104: How much you trust: People you know personally	-0.06
## V105: How much you trust: People you meet for the first time	-0.03
## V106: How much you trust: People of another religion	0.06
## V107: How much you trust: People of another nationality	0.08
## V140: Importance of democracy	0.04
## V141: How democratically is this country being governed today	0.26
## V142: How much respect is there for individual human rights nowadays in this country	-0.10
## V237: Family savings during past year	-0.32
## V238: Social class (subjective)	-0.24
## V239: Scale of incomes	0.50
##	MR3
## V4: Important in life: Family	0.39
## V5: Important in life: Friends	0.43
## V6: Important in life: Leisure time	0.42
## V7: Important in life: Politics	0.43
## V8: Important in life: Work	0.37
## V9: Important in life: Religion	0.49
## V10: Feeling of happiness	0.27
## V11: State of health (subjective)	0.06
## V23: Satisfaction with your life	0.01
## V59: Satisfaction with financial situation of household	0.06

## V102: How much you trust: Your family	0.09
## V103: How much you trust: Your neighborhood	0.06
## V104: How much you trust: People you know personally	0.07
## V105: How much you trust: People you meet for the first time	0.02
## V106: How much you trust: People of another religion	-0.03
## V107: How much you trust: People of another nationality	-0.05
## V140: Importance of democracy	-0.03
## V141: How democratically is this country being governed today	0.07
## V142: How much respect is there for individual human rights nowadays in this country	0.05
## V237: Family savings during past year	0.00
## V238: Social class (subjective)	0.09
## V239: Scale of incomes	0.08
##	MR4
## V4: Important in life: Family	-0.14
## V5: Important in life: Friends	-0.11
## V6: Important in life: Leisure time	-0.01
## V7: Important in life: Politics	0.06
## V8: Important in life: Work	-0.06
## V9: Important in life: Religion	0.07
## V10: Feeling of happiness	0.19
## V11: State of health (subjective)	-0.03
## V23: Satisfaction with your life	0.02
## V59: Satisfaction with financial situation of household	0.02
## V102: How much you trust: Your family	-0.09
## V103: How much you trust: Your neighborhood	-0.01
## V104: How much you trust: People you know personally	-0.10
## V105: How much you trust: People you meet for the first time	-0.04
## V106: How much you trust: People of another religion	0.03
## V107: How much you trust: People of another nationality	0.07
## V140: Importance of democracy	0.73
## V141: How democratically is this country being governed today	0.40
## V142: How much respect is there for individual human rights nowadays in this country	0.29
## V237: Family savings during past year	0.25
## V238: Social class (subjective)	0.35
## V239: Scale of incomes	0.22
##	h2
## V4: Important in life: Family	0.17
## V5: Important in life: Friends	0.24
## V6: Important in life: Leisure time	0.18
## V7: Important in life: Politics	0.21
## V8: Important in life: Work	0.12
## V9: Important in life: Religion	0.29
## V10: Feeling of happiness	0.27
## V11: State of health (subjective)	0.16
## V23: Satisfaction with your life	0.52
## V59: Satisfaction with financial situation of household	0.47
## V102: How much you trust: Your family	0.11
## V103: How much you trust: Your neighborhood	0.34
## V104: How much you trust: People you know personally	0.35
## V105: How much you trust: People you meet for the first time	0.34
## V106: How much you trust: People of another religion	0.49
## V107: How much you trust: People of another nationality	0.54
## V140: Importance of democracy	0.56
## V141: How democratically is this country being governed today	0.29

## V142: How much respect is there for individual human rights nowadays in this country	0.18
## V237: Family savings during past year	0.15
## V238: Social class (subjective)	0.22
## V239: Scale of incomes	0.40
##	u2
## V4: Important in life: Family	0.83
## V5: Important in life: Friends	0.76
## V6: Important in life: Leisure time	0.82
## V7: Important in life: Politics	0.79
## V8: Important in life: Work	0.88
## V9: Important in life: Religion	0.71
## V10: Feeling of happiness	0.73
## V11: State of health (subjective)	0.84
## V23: Satisfaction with your life	0.48
## V59: Satisfaction with financial situation of household	0.53
## V102: How much you trust: Your family	0.89
## V103: How much you trust: Your neighborhood	0.66
## V104: How much you trust: People you know personally	0.65
## V105: How much you trust: People you meet for the first time	0.66
## V106: How much you trust: People of another religion	0.51
## V107: How much you trust: People of another nationality	0.46
## V140: Importance of democracy	0.44
## V141: How democratically is this country being governed today	0.71
## V142: How much respect is there for individual human rights nowadays in this country	0.82
## V237: Family savings during past year	0.85
## V238: Social class (subjective)	0.78
## V239: Scale of incomes	0.60
##	com
## V4: Important in life: Family	1.4
## V5: Important in life: Friends	1.4
## V6: Important in life: Leisure time	1.0
## V7: Important in life: Politics	1.2
## V8: Important in life: Work	1.2
## V9: Important in life: Religion	1.3
## V10: Feeling of happiness	2.1
## V11: State of health (subjective)	1.1
## V23: Satisfaction with your life	1.0
## V59: Satisfaction with financial situation of household	1.0
## V102: How much you trust: Your family	2.3
## V103: How much you trust: Your neighborhood	1.0
## V104: How much you trust: People you know personally	1.1
## V105: How much you trust: People you meet for the first time	1.0
## V106: How much you trust: People of another religion	1.0
## V107: How much you trust: People of another nationality	1.1
## V140: Importance of democracy	1.0
## V141: How democratically is this country being governed today	1.8
## V142: How much respect is there for individual human rights nowadays in this country	2.2
## V237: Family savings during past year	2.2
## V238: Social class (subjective)	2.4
## V239: Scale of incomes	1.5
##	
##	MR1 MR2 MR3 MR4
## SS loadings	2.27 1.88 1.24 1.19
## Proportion Var	0.10 0.09 0.06 0.05

```

## Cumulative Var      0.10 0.19 0.25 0.30
## Proportion Explained 0.35 0.29 0.19 0.18
## Cumulative Proportion 0.35 0.63 0.82 1.00
##
## With factor correlations of
##      MR1   MR2   MR3   MR4
## MR1 1.00  0.11  0.37  0.35
## MR2 0.11  1.00 -0.02  0.30
## MR3 0.37 -0.02  1.00  0.18
## MR4 0.35  0.30  0.18  1.00
##
## Mean item complexity = 1.4
## Test of the hypothesis that 4 factors are sufficient.
##
## The degrees of freedom for the null model are 231 and the objective function was 4.32 with Chi Square = 1023.34
## The degrees of freedom for the model are 149 and the objective function was 0.85
##
## The root mean square of the residuals (RMSR) is 0.04
## The df corrected root mean square of the residuals is 0.05
##
## The harmonic number of observations is 1238 with the empirical chi square 1023.34 with prob < 2.4e-16
## The total number of observations was 1238 with Likelihood Chi Square = 1037.51 with prob < 5.5e-16
##
## Tucker Lewis Index of factoring reliability = 0.728
## RMSEA index = 0.07 and the 90 % confidence intervals are 0.065 0.073
## BIC = -23.56
## Fit based upon off diagonal values = 0.94
## Measures of factor score adequacy
##
## Correlation of (regression) scores with factors      MR1 MR2 MR3 MR4
## Multiple R square of scores with factors             0.9 0.87 0.79 0.83
## Minimum correlation of possible factor scores         0.6 0.53 0.25 0.38

```

```
print(fourfactor$loadings,cutoff = 0.3)
```

```

##
## Loadings:
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness
## V11: State of health (subjective)
## V23: Satisfaction with your life
## V59: Satisfaction with financial situation of household
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion
## V107: How much you trust: People of another nationality

```

```

MR1
0.564
0.591
0.591
0.693
0.709

```

## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR2
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	-0.426
## V11: State of health (subjective)	-0.381
## V23: Satisfaction with your life	0.711
## V59: Satisfaction with financial situation of household	0.669
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	-0.324
## V238: Social class (subjective)	
## V239: Scale of incomes	0.500
##	MR3
## V4: Important in life: Family	0.388
## V5: Important in life: Friends	0.429
## V6: Important in life: Leisure time	0.417
## V7: Important in life: Politics	0.426
## V8: Important in life: Work	0.370
## V9: Important in life: Religion	0.485
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR4
## V4: Important in life: Family	



```
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness
## V11: State of health (subjective)
## V23: Satisfaction with your life
## V59: Satisfaction with financial situation of household
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion
## V107: How much you trust: People of another nationality
## V140: Importance of democracy 0.732
## V141: How democratically is this country being governed today 0.403
## V142: How much respect is there for individual human rights nowadays in this country
## V237: Family savings during past year
## V238: Social class (subjective) 0.352
## V239: Scale of incomes
##
##          MR1    MR2    MR3    MR4
## SS loadings  2.193 1.868 1.183 1.125
## Proportion Var 0.100 0.085 0.054 0.051
## Cumulative Var 0.100 0.185 0.238 0.290
```

*# The root mean square of residuals (RMSR) is 0.04. This is acceptable as this value should be closer to 0.05.  
 # Next we should check RMSEA (root mean square error of approximation) index. Its value, 0.07 shows  
 # not good model fit as it's beyond 0.05.*

```
fivefactor <- fa(data1, nfactors = 5, rotate = "oblimin", fm = "minres")
print(fivefactor)
```

```
## Factor Analysis using method = minres
## Call: fa(r = data1, nfactors = 5, rotate = "oblimin", fm = "minres")
## Standardized loadings (pattern matrix) based upon correlation matrix
##
## V4: Important in life: Family 0.02
## V5: Important in life: Friends 0.09
## V6: Important in life: Leisure time -0.01
## V7: Important in life: Politics 0.01
## V8: Important in life: Work -0.06
## V9: Important in life: Religion 0.02
## V10: Feeling of happiness 0.05
## V11: State of health (subjective) 0.02
## V23: Satisfaction with your life 0.02
## V59: Satisfaction with financial situation of household 0.06
## V102: How much you trust: Your family 0.29
## V103: How much you trust: Your neighborhood 0.61
## V104: How much you trust: People you know personally 0.60
## V105: How much you trust: People you meet for the first time 0.58
## V106: How much you trust: People of another religion 0.69
```

## V107: How much you trust: People of another nationality	0.69
## V140: Importance of democracy	0.04
## V141: How democratically is this country being governed today	-0.01
## V142: How much respect is there for individual human rights nowadays in this country	0.20
## V237: Family savings during past year	0.05
## V238: Social class (subjective)	0.08
## V239: Scale of incomes	0.10
##	MR2
## V4: Important in life: Family	-0.11
## V5: Important in life: Friends	0.03
## V6: Important in life: Leisure time	0.05
## V7: Important in life: Politics	0.06
## V8: Important in life: Work	-0.05
## V9: Important in life: Religion	0.06
## V10: Feeling of happiness	-0.52
## V11: State of health (subjective)	-0.45
## V23: Satisfaction with your life	0.75
## V59: Satisfaction with financial situation of household	0.56
## V102: How much you trust: Your family	-0.26
## V103: How much you trust: Your neighborhood	-0.11
## V104: How much you trust: People you know personally	-0.07
## V105: How much you trust: People you meet for the first time	-0.01
## V106: How much you trust: People of another religion	0.05
## V107: How much you trust: People of another nationality	0.10
## V140: Importance of democracy	0.00
## V141: How democratically is this country being governed today	0.08
## V142: How much respect is there for individual human rights nowadays in this country	0.01
## V237: Family savings during past year	-0.10
## V238: Social class (subjective)	-0.02
## V239: Scale of incomes	0.30
##	MR4
## V4: Important in life: Family	-0.12
## V5: Important in life: Friends	-0.20
## V6: Important in life: Leisure time	-0.09
## V7: Important in life: Politics	0.10
## V8: Important in life: Work	0.02
## V9: Important in life: Religion	0.15
## V10: Feeling of happiness	0.22
## V11: State of health (subjective)	-0.01
## V23: Satisfaction with your life	0.04
## V59: Satisfaction with financial situation of household	0.15
## V102: How much you trust: Your family	-0.03
## V103: How much you trust: Your neighborhood	0.05
## V104: How much you trust: People you know personally	-0.11
## V105: How much you trust: People you meet for the first time	-0.07
## V106: How much you trust: People of another religion	0.03
## V107: How much you trust: People of another nationality	0.05
## V140: Importance of democracy	0.69
## V141: How democratically is this country being governed today	0.55
## V142: How much respect is there for individual human rights nowadays in this country	0.16
## V237: Family savings during past year	0.04
## V238: Social class (subjective)	0.16
## V239: Scale of incomes	0.40
##	MR3

## V4: Important in life: Family	0.38
## V5: Important in life: Friends	0.47
## V6: Important in life: Leisure time	0.45
## V7: Important in life: Politics	0.41
## V8: Important in life: Work	0.36
## V9: Important in life: Religion	0.46
## V10: Feeling of happiness	0.23
## V11: State of health (subjective)	0.03
## V23: Satisfaction with your life	0.06
## V59: Satisfaction with financial situation of household	0.08
## V102: How much you trust: Your family	0.06
## V103: How much you trust: Your neighborhood	0.04
## V104: How much you trust: People you know personally	0.07
## V105: How much you trust: People you meet for the first time	0.02
## V106: How much you trust: People of another religion	-0.03
## V107: How much you trust: People of another nationality	-0.04
## V140: Importance of democracy	-0.05
## V141: How democratically is this country being governed today	0.04
## V142: How much respect is there for individual human rights nowadays in this country	0.05
## V237: Family savings during past year	0.01
## V238: Social class (subjective)	0.11
## V239: Scale of incomes	0.07
##	MR5
## V4: Important in life: Family	-0.04
## V5: Important in life: Friends	0.15
## V6: Important in life: Leisure time	0.16
## V7: Important in life: Politics	0.01
## V8: Important in life: Work	-0.11
## V9: Important in life: Religion	-0.06
## V10: Feeling of happiness	0.00
## V11: State of health (subjective)	-0.08
## V23: Satisfaction with your life	0.01
## V59: Satisfaction with financial situation of household	-0.13
## V102: How much you trust: Your family	-0.13
## V103: How much you trust: Your neighborhood	-0.12
## V104: How much you trust: People you know personally	-0.02
## V105: How much you trust: People you meet for the first time	0.04
## V106: How much you trust: People of another religion	0.03
## V107: How much you trust: People of another nationality	0.08
## V140: Importance of democracy	0.17
## V141: How democratically is this country being governed today	-0.09
## V142: How much respect is there for individual human rights nowadays in this country	0.27
## V237: Family savings during past year	0.45
## V238: Social class (subjective)	0.51
## V239: Scale of incomes	-0.21
##	h2
## V4: Important in life: Family	0.16
## V5: Important in life: Friends	0.29
## V6: Important in life: Leisure time	0.22
## V7: Important in life: Politics	0.20
## V8: Important in life: Work	0.13
## V9: Important in life: Religion	0.28
## V10: Feeling of happiness	0.33
## V11: State of health (subjective)	0.19

## V23: Satisfaction with your life	0.59
## V59: Satisfaction with financial situation of household	0.45
## V102: How much you trust: Your family	0.14
## V103: How much you trust: Your neighborhood	0.38
## V104: How much you trust: People you know personally	0.36
## V105: How much you trust: People you meet for the first time	0.34
## V106: How much you trust: People of another religion	0.49
## V107: How much you trust: People of another nationality	0.53
## V140: Importance of democracy	0.52
## V141: How democratically is this country being governed today	0.35
## V142: How much respect is there for individual human rights nowadays in this country	0.20
## V237: Family savings during past year	0.25
## V238: Social class (subjective)	0.36
## V239: Scale of incomes	0.44
##	u2
## V4: Important in life: Family	0.84
## V5: Important in life: Friends	0.71
## V6: Important in life: Leisure time	0.78
## V7: Important in life: Politics	0.80
## V8: Important in life: Work	0.87
## V9: Important in life: Religion	0.72
## V10: Feeling of happiness	0.67
## V11: State of health (subjective)	0.81
## V23: Satisfaction with your life	0.41
## V59: Satisfaction with financial situation of household	0.55
## V102: How much you trust: Your family	0.86
## V103: How much you trust: Your neighborhood	0.62
## V104: How much you trust: People you know personally	0.64
## V105: How much you trust: People you meet for the first time	0.66
## V106: How much you trust: People of another religion	0.51
## V107: How much you trust: People of another nationality	0.47
## V140: Importance of democracy	0.48
## V141: How democratically is this country being governed today	0.65
## V142: How much respect is there for individual human rights nowadays in this country	0.80
## V237: Family savings during past year	0.75
## V238: Social class (subjective)	0.64
## V239: Scale of incomes	0.56
##	com
## V4: Important in life: Family	1.4
## V5: Important in life: Friends	1.7
## V6: Important in life: Leisure time	1.4
## V7: Important in life: Politics	1.2
## V8: Important in life: Work	1.3
## V9: Important in life: Religion	1.3
## V10: Feeling of happiness	1.8
## V11: State of health (subjective)	1.1
## V23: Satisfaction with your life	1.0
## V59: Satisfaction with financial situation of household	1.3
## V102: How much you trust: Your family	2.5
## V103: How much you trust: Your neighborhood	1.2
## V104: How much you trust: People you know personally	1.1
## V105: How much you trust: People you meet for the first time	1.0
## V106: How much you trust: People of another religion	1.0
## V107: How much you trust: People of another nationality	1.1

```

## V140: Importance of democracy 1.1
## V141: How democratically is this country being governed today 1.1
## V142: How much respect is there for individual human rights nowadays in this country 2.7
## V237: Family savings during past year 1.1
## V238: Social class (subjective) 1.4
## V239: Scale of incomes 2.6
##
##          MR1  MR2  MR4  MR3  MR5
## SS loadings      2.26 1.65 1.29 1.23 0.79
## Proportion Var    0.10 0.08 0.06 0.06 0.04
## Cumulative Var    0.10 0.18 0.24 0.29 0.33
## Proportion Explained 0.31 0.23 0.18 0.17 0.11
## Cumulative Proportion 0.31 0.54 0.72 0.89 1.00
##
## With factor correlations of
##          MR1  MR2  MR4  MR3  MR5
## MR1 1.00  0.10 0.31  0.36  0.21
## MR2 0.10  1.00 0.34 -0.02 -0.19
## MR4 0.31  0.34 1.00  0.16  0.05
## MR3 0.36 -0.02 0.16  1.00  0.08
## MR5 0.21 -0.19 0.05  0.08  1.00
##
## Mean item complexity = 1.4
## Test of the hypothesis that 5 factors are sufficient.
##
## The degrees of freedom for the null model are 231 and the objective function was 4.32 with Chi Sq
## The degrees of freedom for the model are 131 and the objective function was 0.67
##
## The root mean square of the residuals (RMSR) is 0.04
## The df corrected root mean square of the residuals is 0.05
##
## The harmonic number of observations is 1238 with the empirical chi square 714.08 with prob < 4.6
## The total number of observations was 1238 with Likelihood Chi Square = 826.57 with prob < 2.1e-
##
## Tucker Lewis Index of factoring reliability = 0.758
## RMSEA index = 0.066 and the 90 % confidence intervals are 0.061 0.07
## BIC = -106.31
## Fit based upon off diagonal values = 0.96
## Measures of factor score adequacy
##
##          MR1  MR2  MR4  MR3  MR5
## Correlation of (regression) scores with factors 0.90 0.87 0.84 0.79 0.74
## Multiple R square of scores with factors 0.80 0.76 0.70 0.63 0.54
## Minimum correlation of possible factor scores 0.61 0.52 0.40 0.26 0.08

print(fivefactor$loadings,cutoff = 0.3)

##
## Loadings:
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work

```

## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	0.607
## V104: How much you trust: People you know personally	0.595
## V105: How much you trust: People you meet for the first time	0.584
## V106: How much you trust: People of another religion	0.686
## V107: How much you trust: People of another nationality	0.693
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR2
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	-0.525
## V11: State of health (subjective)	-0.446
## V23: Satisfaction with your life	0.749
## V59: Satisfaction with financial situation of household	0.558
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	0.301
##	MR4
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	

## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	0.687
## V141: How democratically is this country being governed today	0.554
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	0.403
##	MR3
## V4: Important in life: Family	0.378
## V5: Important in life: Friends	0.466
## V6: Important in life: Leisure time	0.447
## V7: Important in life: Politics	0.410
## V8: Important in life: Work	0.355
## V9: Important in life: Religion	0.465
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR5
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	0.454
## V238: Social class (subjective)	0.506

```
## V239: Scale of incomes
##
##           MR1    MR2    MR4    MR3    MR5
## SS loadings  2.179 1.577 1.187 1.172 0.742
## Proportion Var 0.099 0.072 0.054 0.053 0.034
## Cumulative Var 0.099 0.171 0.225 0.278 0.312
```

*# Next we should check RMSEA (root mean square error of approximation) index. Its value, 0.066 shows # not good model fit as it's beyond 0.05.*

```
sixfactor <- fa(data1,nfactors = 6,rotate = "oblimin",fm="minres")
print(sixfactor)
```

```
## Factor Analysis using method = minres
## Call: fa(r = data1, nfactors = 6, rotate = "oblimin", fm = "minres")
## Standardized loadings (pattern matrix) based upon correlation matrix
##
## V4: Important in life: Family -0.10
## V5: Important in life: Friends 0.08
## V6: Important in life: Leisure time 0.05
## V7: Important in life: Politics 0.01
## V8: Important in life: Work -0.06
## V9: Important in life: Religion 0.02
## V10: Feeling of happiness -0.50
## V11: State of health (subjective) -0.43
## V23: Satisfaction with your life 0.78
## V59: Satisfaction with financial situation of household 0.57
## V102: How much you trust: Your family -0.22
## V103: How much you trust: Your neighborhood -0.06
## V104: How much you trust: People you know personally 0.02
## V105: How much you trust: People you meet for the first time 0.03
## V106: How much you trust: People of another religion -0.02
## V107: How much you trust: People of another nationality 0.06
## V140: Importance of democracy 0.02
## V141: How democratically is this country being governed today 0.11
## V142: How much respect is there for individual human rights nowadays in this country 0.02
## V237: Family savings during past year -0.11
## V238: Social class (subjective) -0.03
## V239: Scale of incomes 0.31
##
## MR1
## V4: Important in life: Family -0.06
## V5: Important in life: Friends -0.14
## V6: Important in life: Leisure time -0.03
## V7: Important in life: Politics 0.18
## V8: Important in life: Work -0.02
## V9: Important in life: Religion 0.13
## V10: Feeling of happiness -0.03
## V11: State of health (subjective) -0.05
## V23: Satisfaction with your life -0.01
## V59: Satisfaction with financial situation of household 0.04
## V102: How much you trust: Your family 0.03
## V103: How much you trust: Your neighborhood 0.17
## V104: How much you trust: People you know personally 0.04
```



## V105: How much you trust: People you meet for the first time	0.24
## V106: How much you trust: People of another religion	0.87
## V107: How much you trust: People of another nationality	0.70
## V140: Importance of democracy	-0.01
## V141: How democratically is this country being governed today	-0.03
## V142: How much respect is there for individual human rights nowadays in this country	0.13
## V237: Family savings during past year	0.08
## V238: Social class (subjective)	0.13
## V239: Scale of incomes	0.07
##	MR6
## V4: Important in life: Family	0.13
## V5: Important in life: Friends	0.31
## V6: Important in life: Leisure time	0.09
## V7: Important in life: Politics	-0.14
## V8: Important in life: Work	-0.01
## V9: Important in life: Religion	-0.07
## V10: Feeling of happiness	0.12
## V11: State of health (subjective)	0.08
## V23: Satisfaction with your life	0.03
## V59: Satisfaction with financial situation of household	0.02
## V102: How much you trust: Your family	0.31
## V103: How much you trust: Your neighborhood	0.51
## V104: How much you trust: People you know personally	0.70
## V105: How much you trust: People you meet for the first time	0.41
## V106: How much you trust: People of another religion	0.00
## V107: How much you trust: People of another nationality	0.10
## V140: Importance of democracy	0.03
## V141: How democratically is this country being governed today	0.00
## V142: How much respect is there for individual human rights nowadays in this country	0.09
## V237: Family savings during past year	-0.02
## V238: Social class (subjective)	-0.02
## V239: Scale of incomes	0.03
##	MR4
## V4: Important in life: Family	-0.12
## V5: Important in life: Friends	-0.17
## V6: Important in life: Leisure time	-0.09
## V7: Important in life: Politics	0.03
## V8: Important in life: Work	-0.03
## V9: Important in life: Religion	0.09
## V10: Feeling of happiness	0.22
## V11: State of health (subjective)	-0.01
## V23: Satisfaction with your life	0.04
## V59: Satisfaction with financial situation of household	0.12
## V102: How much you trust: Your family	0.01
## V103: How much you trust: Your neighborhood	0.13
## V104: How much you trust: People you know personally	0.00
## V105: How much you trust: People you meet for the first time	0.01
## V106: How much you trust: People of another religion	-0.04
## V107: How much you trust: People of another nationality	0.03
## V140: Importance of democracy	0.74
## V141: How democratically is this country being governed today	0.52
## V142: How much respect is there for individual human rights nowadays in this country	0.21
## V237: Family savings during past year	0.08
## V238: Social class (subjective)	0.20

## V239: Scale of incomes	0.37
##	MR3
## V4: Important in life: Family	0.34
## V5: Important in life: Friends	0.37
## V6: Important in life: Leisure time	0.38
## V7: Important in life: Politics	0.47
## V8: Important in life: Work	0.36
## V9: Important in life: Religion	0.51
## V10: Feeling of happiness	0.23
## V11: State of health (subjective)	0.03
## V23: Satisfaction with your life	0.03
## V59: Satisfaction with financial situation of household	0.08
## V102: How much you trust: Your family	0.04
## V103: How much you trust: Your neighborhood	0.01
## V104: How much you trust: People you know personally	-0.04
## V105: How much you trust: People you meet for the first time	-0.02
## V106: How much you trust: People of another religion	0.03
## V107: How much you trust: People of another nationality	0.00
## V140: Importance of democracy	-0.04
## V141: How democratically is this country being governed today	0.08
## V142: How much respect is there for individual human rights nowadays in this country	0.02
## V237: Family savings during past year	-0.03
## V238: Social class (subjective)	0.06
## V239: Scale of incomes	0.12
##	MR5
## V4: Important in life: Family	0.00
## V5: Important in life: Friends	0.23
## V6: Important in life: Leisure time	0.20
## V7: Important in life: Politics	0.01
## V8: Important in life: Work	-0.09
## V9: Important in life: Religion	-0.06
## V10: Feeling of happiness	0.01
## V11: State of health (subjective)	-0.06
## V23: Satisfaction with your life	0.02
## V59: Satisfaction with financial situation of household	-0.13
## V102: How much you trust: Your family	-0.10
## V103: How much you trust: Your neighborhood	-0.10
## V104: How much you trust: People you know personally	0.01
## V105: How much you trust: People you meet for the first time	0.06
## V106: How much you trust: People of another religion	-0.01
## V107: How much you trust: People of another nationality	0.07
## V140: Importance of democracy	0.13
## V141: How democratically is this country being governed today	-0.12
## V142: How much respect is there for individual human rights nowadays in this country	0.26
## V237: Family savings during past year	0.45
## V238: Social class (subjective)	0.49
## V239: Scale of incomes	-0.23
##	h2
## V4: Important in life: Family	0.16
## V5: Important in life: Friends	0.34
## V6: Important in life: Leisure time	0.22
## V7: Important in life: Politics	0.26
## V8: Important in life: Work	0.13
## V9: Important in life: Religion	0.32

## V10: Feeling of happiness	0.32
## V11: State of health (subjective)	0.19
## V23: Satisfaction with your life	0.63
## V59: Satisfaction with financial situation of household	0.45
## V102: How much you trust: Your family	0.15
## V103: How much you trust: Your neighborhood	0.40
## V104: How much you trust: People you know personally	0.51
## V105: How much you trust: People you meet for the first time	0.34
## V106: How much you trust: People of another religion	0.75
## V107: How much you trust: People of another nationality	0.61
## V140: Importance of democracy	0.57
## V141: How democratically is this country being governed today	0.35
## V142: How much respect is there for individual human rights nowadays in this country	0.20
## V237: Family savings during past year	0.24
## V238: Social class (subjective)	0.35
## V239: Scale of incomes	0.44
##	u2
## V4: Important in life: Family	0.84
## V5: Important in life: Friends	0.66
## V6: Important in life: Leisure time	0.78
## V7: Important in life: Politics	0.74
## V8: Important in life: Work	0.87
## V9: Important in life: Religion	0.68
## V10: Feeling of happiness	0.68
## V11: State of health (subjective)	0.81
## V23: Satisfaction with your life	0.37
## V59: Satisfaction with financial situation of household	0.55
## V102: How much you trust: Your family	0.85
## V103: How much you trust: Your neighborhood	0.60
## V104: How much you trust: People you know personally	0.49
## V105: How much you trust: People you meet for the first time	0.66
## V106: How much you trust: People of another religion	0.25
## V107: How much you trust: People of another nationality	0.39
## V140: Importance of democracy	0.43
## V141: How democratically is this country being governed today	0.65
## V142: How much respect is there for individual human rights nowadays in this country	0.80
## V237: Family savings during past year	0.76
## V238: Social class (subjective)	0.65
## V239: Scale of incomes	0.56
##	com
## V4: Important in life: Family	1.8
## V5: Important in life: Friends	3.6
## V6: Important in life: Leisure time	1.8
## V7: Important in life: Politics	1.5
## V8: Important in life: Work	1.2
## V9: Important in life: Religion	1.3
## V10: Feeling of happiness	2.0
## V11: State of health (subjective)	1.2
## V23: Satisfaction with your life	1.0
## V59: Satisfaction with financial situation of household	1.3
## V102: How much you trust: Your family	2.1
## V103: How much you trust: Your neighborhood	1.5
## V104: How much you trust: People you know personally	1.0
## V105: How much you trust: People you meet for the first time	1.7

```

## V106: How much you trust: People of another religion 1.0
## V107: How much you trust: People of another nationality 1.1
## V140: Importance of democracy 1.1
## V141: How democratically is this country being governed today 1.2
## V142: How much respect is there for individual human rights nowadays in this country 2.7
## V237: Family savings during past year 1.3
## V238: Social class (subjective) 1.5
## V239: Scale of incomes 3.0
##
##          MR2  MR1  MR6  MR4  MR3  MR5
## SS loadings      1.65 1.64 1.36 1.29 1.17 0.81
## Proportion Var    0.07 0.07 0.06 0.06 0.05 0.04
## Cumulative Var    0.07 0.15 0.21 0.27 0.32 0.36
## Proportion Explained 0.21 0.21 0.17 0.16 0.15 0.10
## Cumulative Proportion 0.21 0.42 0.59 0.75 0.90 1.00
##
## With factor correlations of
##          MR2  MR1  MR6  MR4  MR3  MR5
## MR2  1.00 0.14 -0.02 0.31 0.07 -0.21
## MR1  0.14 1.00  0.45 0.31 0.21  0.11
## MR6 -0.02 0.45  1.00 0.14 0.27  0.21
## MR4  0.31 0.31  0.14 1.00 0.17  0.02
## MR3  0.07 0.21  0.27 0.17 1.00  0.10
## MR5 -0.21 0.11  0.21 0.02 0.10  1.00
##
## Mean item complexity = 1.6
## Test of the hypothesis that 6 factors are sufficient.
##
## The degrees of freedom for the null model are 231 and the objective function was 4.32 with Chi Squ
## The degrees of freedom for the model are 114 and the objective function was 0.4
##
## The root mean square of the residuals (RMSR) is 0.03
## The df corrected root mean square of the residuals is 0.04
##
## The harmonic number of observations is 1238 with the empirical chi square 449.09 with prob < 2.7
## The total number of observations was 1238 with Likelihood Chi Square = 493.96 with prob < 9.7e-
##
## Tucker Lewis Index of factoring reliability = 0.848
## RMSEA index = 0.052 and the 90 % confidence intervals are 0.047 0.057
## BIC = -317.86
## Fit based upon off diagonal values = 0.97
## Measures of factor score adequacy
##          MR2  MR1  MR6  MR4  MR3
## Correlation of (regression) scores with factors 0.88 0.91 0.84 0.84 0.79
## Multiple R square of scores with factors 0.77 0.83 0.71 0.71 0.62
## Minimum correlation of possible factor scores 0.54 0.66 0.42 0.43 0.24
##          MR5
## Correlation of (regression) scores with factors 0.74
## Multiple R square of scores with factors 0.55
## Minimum correlation of possible factor scores 0.10

```

```
print(sixfactor$loadings,cutoff = 0.3)
```

```
##
```

```

## Loadings:
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness -0.498
## V11: State of health (subjective) -0.426
## V23: Satisfaction with your life 0.783
## V59: Satisfaction with financial situation of household 0.567
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion
## V107: How much you trust: People of another nationality
## V140: Importance of democracy
## V141: How democratically is this country being governed today
## V142: How much respect is there for individual human rights nowadays in this country
## V237: Family savings during past year
## V238: Social class (subjective)
## V239: Scale of incomes 0.308
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness
## V11: State of health (subjective)
## V23: Satisfaction with your life
## V59: Satisfaction with financial situation of household
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion 0.871
## V107: How much you trust: People of another nationality 0.696
## V140: Importance of democracy
## V141: How democratically is this country being governed today
## V142: How much respect is there for individual human rights nowadays in this country
## V237: Family savings during past year
## V238: Social class (subjective)
## V239: Scale of incomes
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion

```

MR2

MR1

MR6

0.308

## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	0.315
## V103: How much you trust: Your neighborhood	0.514
## V104: How much you trust: People you know personally	0.700
## V105: How much you trust: People you meet for the first time	0.412
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR4
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	0.738
## V141: How democratically is this country being governed today	0.525
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	0.369
##	MR3
## V4: Important in life: Family	0.338
## V5: Important in life: Friends	0.370
## V6: Important in life: Leisure time	0.382
## V7: Important in life: Politics	0.471
## V8: Important in life: Work	0.360
## V9: Important in life: Religion	0.515
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	



## V10: Feeling of happiness	-0.51
## V11: State of health (subjective)	-0.43
## V23: Satisfaction with your life	0.76
## V59: Satisfaction with financial situation of household	0.60
## V102: How much you trust: Your family	-0.21
## V103: How much you trust: Your neighborhood	-0.05
## V104: How much you trust: People you know personally	0.03
## V105: How much you trust: People you meet for the first time	0.04
## V106: How much you trust: People of another religion	-0.02
## V107: How much you trust: People of another nationality	0.07
## V140: Importance of democracy	0.03
## V141: How democratically is this country being governed today	0.12
## V142: How much respect is there for individual human rights nowadays in this country	0.01
## V237: Family savings during past year	-0.12
## V238: Social class (subjective)	-0.05
## V239: Scale of incomes	0.32
##	MR1
## V4: Important in life: Family	0.01
## V5: Important in life: Friends	-0.06
## V6: Important in life: Leisure time	0.00
## V7: Important in life: Politics	0.06
## V8: Important in life: Work	0.02
## V9: Important in life: Religion	0.02
## V10: Feeling of happiness	0.04
## V11: State of health (subjective)	0.05
## V23: Satisfaction with your life	0.01
## V59: Satisfaction with financial situation of household	0.11
## V102: How much you trust: Your family	0.04
## V103: How much you trust: Your neighborhood	0.02
## V104: How much you trust: People you know personally	0.05
## V105: How much you trust: People you meet for the first time	0.22
## V106: How much you trust: People of another religion	0.94
## V107: How much you trust: People of another nationality	0.67
## V140: Importance of democracy	0.01
## V141: How democratically is this country being governed today	-0.01
## V142: How much respect is there for individual human rights nowadays in this country	0.07
## V237: Family savings during past year	0.06
## V238: Social class (subjective)	0.12
## V239: Scale of incomes	0.01
##	MR5
## V4: Important in life: Family	0.02
## V5: Important in life: Friends	0.14
## V6: Important in life: Leisure time	0.01
## V7: Important in life: Politics	-0.03
## V8: Important in life: Work	-0.07
## V9: Important in life: Religion	0.04
## V10: Feeling of happiness	0.02
## V11: State of health (subjective)	-0.03
## V23: Satisfaction with your life	0.00
## V59: Satisfaction with financial situation of household	-0.06
## V102: How much you trust: Your family	0.28
## V103: How much you trust: Your neighborhood	0.70
## V104: How much you trust: People you know personally	0.63
## V105: How much you trust: People you meet for the first time	0.39



## V106: How much you trust: People of another religion	-0.02
## V107: How much you trust: People of another nationality	0.11
## V140: Importance of democracy	0.03
## V141: How democratically is this country being governed today	0.01
## V142: How much respect is there for individual human rights nowadays in this country	0.14
## V237: Family savings during past year	-0.02
## V238: Social class (subjective)	-0.03
## V239: Scale of incomes	0.12
##	MR4
## V4: Important in life: Family	-0.09
## V5: Important in life: Friends	-0.11
## V6: Important in life: Leisure time	-0.05
## V7: Important in life: Politics	-0.03
## V8: Important in life: Work	0.00
## V9: Important in life: Religion	0.03
## V10: Feeling of happiness	0.26
## V11: State of health (subjective)	0.04
## V23: Satisfaction with your life	0.07
## V59: Satisfaction with financial situation of household	0.16
## V102: How much you trust: Your family	0.00
## V103: How much you trust: Your neighborhood	0.04
## V104: How much you trust: People you know personally	-0.02
## V105: How much you trust: People you meet for the first time	0.00
## V106: How much you trust: People of another religion	-0.04
## V107: How much you trust: People of another nationality	0.05
## V140: Importance of democracy	0.73
## V141: How democratically is this country being governed today	0.51
## V142: How much respect is there for individual human rights nowadays in this country	0.20
## V237: Family savings during past year	0.11
## V238: Social class (subjective)	0.24
## V239: Scale of incomes	0.31
##	MR3
## V4: Important in life: Family	0.14
## V5: Important in life: Friends	0.09
## V6: Important in life: Leisure time	0.21
## V7: Important in life: Politics	0.59
## V8: Important in life: Work	0.21
## V9: Important in life: Religion	0.57
## V10: Feeling of happiness	0.05
## V11: State of health (subjective)	-0.13
## V23: Satisfaction with your life	0.01
## V59: Satisfaction with financial situation of household	-0.02
## V102: How much you trust: Your family	-0.03
## V103: How much you trust: Your neighborhood	0.10
## V104: How much you trust: People you know personally	-0.10
## V105: How much you trust: People you meet for the first time	-0.05
## V106: How much you trust: People of another religion	0.02
## V107: How much you trust: People of another nationality	-0.01
## V140: Importance of democracy	-0.01
## V141: How democratically is this country being governed today	0.08
## V142: How much respect is there for individual human rights nowadays in this country	0.07
## V237: Family savings during past year	-0.02
## V238: Social class (subjective)	0.04
## V239: Scale of incomes	0.20

##	MR7
## V4: Important in life: Family	0.34
## V5: Important in life: Friends	0.55
## V6: Important in life: Leisure time	0.35
## V7: Important in life: Politics	0.02
## V8: Important in life: Work	0.24
## V9: Important in life: Religion	0.07
## V10: Feeling of happiness	0.26
## V11: State of health (subjective)	0.17
## V23: Satisfaction with your life	0.06
## V59: Satisfaction with financial situation of household	0.13
## V102: How much you trust: Your family	0.10
## V103: How much you trust: Your neighborhood	-0.10
## V104: How much you trust: People you know personally	0.16
## V105: How much you trust: People you meet for the first time	0.09
## V106: How much you trust: People of another religion	-0.03
## V107: How much you trust: People of another nationality	0.03
## V140: Importance of democracy	-0.04
## V141: How democratically is this country being governed today	-0.03
## V142: How much respect is there for individual human rights nowadays in this country	0.01
## V237: Family savings during past year	0.07
## V238: Social class (subjective)	0.14
## V239: Scale of incomes	-0.13
##	MR6
## V4: Important in life: Family	-0.08
## V5: Important in life: Friends	0.12
## V6: Important in life: Leisure time	0.12
## V7: Important in life: Politics	0.06
## V8: Important in life: Work	-0.16
## V9: Important in life: Religion	-0.04
## V10: Feeling of happiness	-0.09
## V11: State of health (subjective)	-0.15
## V23: Satisfaction with your life	0.00
## V59: Satisfaction with financial situation of household	-0.20
## V102: How much you trust: Your family	-0.11
## V103: How much you trust: Your neighborhood	-0.04
## V104: How much you trust: People you know personally	0.02
## V105: How much you trust: People you meet for the first time	0.07
## V106: How much you trust: People of another religion	-0.01
## V107: How much you trust: People of another nationality	0.07
## V140: Importance of democracy	0.12
## V141: How democratically is this country being governed today	-0.13
## V142: How much respect is there for individual human rights nowadays in this country	0.27
## V237: Family savings during past year	0.43
## V238: Social class (subjective)	0.44
## V239: Scale of incomes	-0.17
##	h2
## V4: Important in life: Family	0.17
## V5: Important in life: Friends	0.39
## V6: Important in life: Leisure time	0.22
## V7: Important in life: Politics	0.36
## V8: Important in life: Work	0.14
## V9: Important in life: Religion	0.38
## V10: Feeling of happiness	0.36

## V11: State of health (subjective)	0.24
## V23: Satisfaction with your life	0.61
## V59: Satisfaction with financial situation of household	0.53
## V102: How much you trust: Your family	0.15
## V103: How much you trust: Your neighborhood	0.53
## V104: How much you trust: People you know personally	0.48
## V105: How much you trust: People you meet for the first time	0.33
## V106: How much you trust: People of another religion	0.84
## V107: How much you trust: People of another nationality	0.59
## V140: Importance of democracy	0.57
## V141: How democratically is this country being governed today	0.35
## V142: How much respect is there for individual human rights nowadays in this country	0.21
## V237: Family savings during past year	0.25
## V238: Social class (subjective)	0.34
## V239: Scale of incomes	0.43
##	u2
## V4: Important in life: Family	0.83
## V5: Important in life: Friends	0.61
## V6: Important in life: Leisure time	0.78
## V7: Important in life: Politics	0.64
## V8: Important in life: Work	0.86
## V9: Important in life: Religion	0.62
## V10: Feeling of happiness	0.64
## V11: State of health (subjective)	0.76
## V23: Satisfaction with your life	0.39
## V59: Satisfaction with financial situation of household	0.47
## V102: How much you trust: Your family	0.85
## V103: How much you trust: Your neighborhood	0.47
## V104: How much you trust: People you know personally	0.52
## V105: How much you trust: People you meet for the first time	0.67
## V106: How much you trust: People of another religion	0.16
## V107: How much you trust: People of another nationality	0.41
## V140: Importance of democracy	0.43
## V141: How democratically is this country being governed today	0.65
## V142: How much respect is there for individual human rights nowadays in this country	0.79
## V237: Family savings during past year	0.75
## V238: Social class (subjective)	0.66
## V239: Scale of incomes	0.57
##	com
## V4: Important in life: Family	1.9
## V5: Important in life: Friends	1.5
## V6: Important in life: Leisure time	2.0
## V7: Important in life: Politics	1.1
## V8: Important in life: Work	3.2
## V9: Important in life: Religion	1.1
## V10: Feeling of happiness	2.2
## V11: State of health (subjective)	1.9
## V23: Satisfaction with your life	1.0
## V59: Satisfaction with financial situation of household	1.6
## V102: How much you trust: Your family	2.6
## V103: How much you trust: Your neighborhood	1.1
## V104: How much you trust: People you know personally	1.2
## V105: How much you trust: People you meet for the first time	1.8
## V106: How much you trust: People of another religion	1.0

```

## V107: How much you trust: People of another nationality 1.1
## V140: Importance of democracy 1.1
## V141: How democratically is this country being governed today 1.3
## V142: How much respect is there for individual human rights nowadays in this country 2.8
## V237: Family savings during past year 1.4
## V238: Social class (subjective) 2.0
## V239: Scale of incomes 3.9
##
##          MR2 MR1 MR5 MR4 MR3 MR7 MR6
## SS loadings      1.68 1.58 1.36 1.23 0.97 0.92 0.71
## Proportion Var    0.08 0.07 0.06 0.06 0.04 0.04 0.03
## Cumulative Var    0.08 0.15 0.21 0.27 0.31 0.35 0.38
## Proportion Explained 0.20 0.19 0.16 0.15 0.11 0.11 0.08
## Cumulative Proportion 0.20 0.39 0.55 0.69 0.81 0.92 1.00
##
## With factor correlations of
##          MR2 MR1 MR5 MR4 MR3 MR7 MR6
## MR2  1.00 0.12 0.02 0.27 0.14 -0.12 -0.18
## MR1  0.12 1.00 0.50 0.28 0.27 0.14 0.11
## MR5  0.02 0.50 1.00 0.20 0.21 0.25 0.12
## MR4  0.27 0.28 0.20 1.00 0.24 0.05 0.01
## MR3  0.14 0.27 0.21 0.24 1.00 0.18 -0.02
## MR7 -0.12 0.14 0.25 0.05 0.18 1.00 0.11
## MR6 -0.18 0.11 0.12 0.01 -0.02 0.11 1.00
##
## Mean item complexity = 1.8
## Test of the hypothesis that 7 factors are sufficient.
##
## The degrees of freedom for the null model are 231 and the objective function was 4.32 with Chi Squ
## The degrees of freedom for the model are 98 and the objective function was 0.29
##
## The root mean square of the residuals (RMSR) is 0.02
## The df corrected root mean square of the residuals is 0.04
##
## The harmonic number of observations is 1238 with the empirical chi square 310.45 with prob < 6.6
## The total number of observations was 1238 with Likelihood Chi Square = 356.67 with prob < 4.5e-
##
## Tucker Lewis Index of factoring reliability = 0.879
## RMSEA index = 0.047 and the 90 % confidence intervals are 0.041 0.051
## BIC = -341.22
## Fit based upon off diagonal values = 0.98
## Measures of factor score adequacy
##          MR2 MR1 MR5 MR4 MR3
## Correlation of (regression) scores with factors 0.88 0.94 0.85 0.84 0.78
## Multiple R square of scores with factors 0.77 0.88 0.73 0.70 0.60
## Minimum correlation of possible factor scores 0.54 0.75 0.45 0.41 0.21
##          MR7 MR6
## Correlation of (regression) scores with factors 0.76 0.72
## Multiple R square of scores with factors 0.57 0.51
## Minimum correlation of possible factor scores 0.14 0.02

```

```
print(sevenfactor$loadings,cutoff = 0.3)
```

```
##
```

```

## Loadings:
##
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness -0.508
## V11: State of health (subjective) -0.433
## V23: Satisfaction with your life 0.759
## V59: Satisfaction with financial situation of household 0.598
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion
## V107: How much you trust: People of another nationality
## V140: Importance of democracy
## V141: How democratically is this country being governed today
## V142: How much respect is there for individual human rights nowadays in this country
## V237: Family savings during past year
## V238: Social class (subjective)
## V239: Scale of incomes 0.321
## MR1
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion
## V10: Feeling of happiness
## V11: State of health (subjective)
## V23: Satisfaction with your life
## V59: Satisfaction with financial situation of household
## V102: How much you trust: Your family
## V103: How much you trust: Your neighborhood
## V104: How much you trust: People you know personally
## V105: How much you trust: People you meet for the first time
## V106: How much you trust: People of another religion 0.935
## V107: How much you trust: People of another nationality 0.669
## V140: Importance of democracy
## V141: How democratically is this country being governed today
## V142: How much respect is there for individual human rights nowadays in this country
## V237: Family savings during past year
## V238: Social class (subjective)
## V239: Scale of incomes
## MR5
## V4: Important in life: Family
## V5: Important in life: Friends
## V6: Important in life: Leisure time
## V7: Important in life: Politics
## V8: Important in life: Work
## V9: Important in life: Religion

```

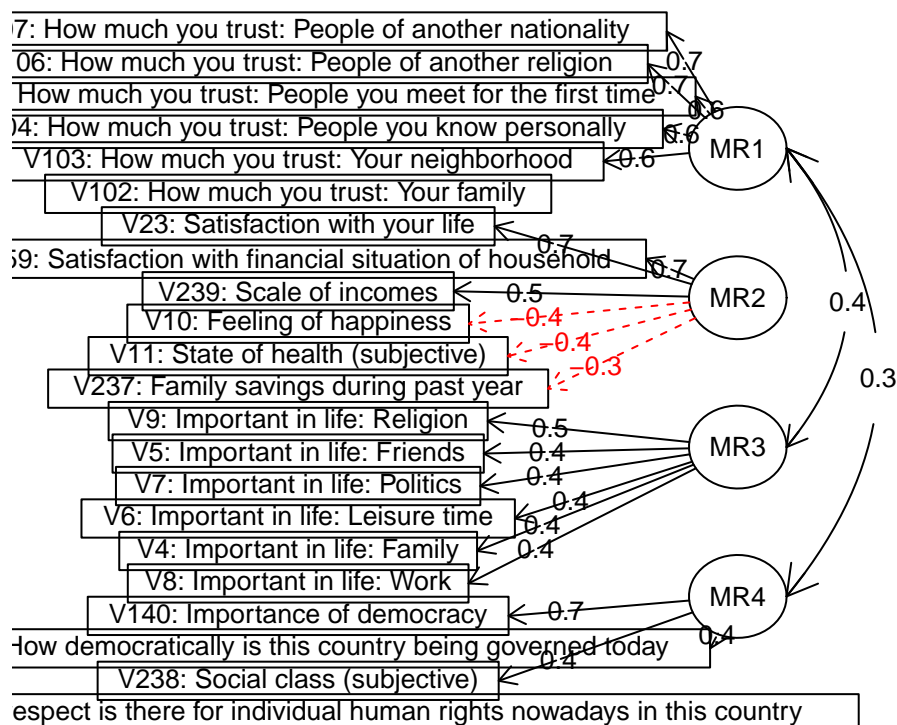
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	0.702
## V104: How much you trust: People you know personally	0.628
## V105: How much you trust: People you meet for the first time	0.395
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR4
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	0.734
## V141: How democratically is this country being governed today	0.506
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	0.306
##	MR3
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	0.586
## V8: Important in life: Work	
## V9: Important in life: Religion	0.569
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	

## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR7
## V4: Important in life: Family	0.337
## V5: Important in life: Friends	0.550
## V6: Important in life: Leisure time	0.352
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	
## V238: Social class (subjective)	
## V239: Scale of incomes	
##	MR6
## V4: Important in life: Family	
## V5: Important in life: Friends	
## V6: Important in life: Leisure time	
## V7: Important in life: Politics	
## V8: Important in life: Work	
## V9: Important in life: Religion	
## V10: Feeling of happiness	
## V11: State of health (subjective)	
## V23: Satisfaction with your life	
## V59: Satisfaction with financial situation of household	
## V102: How much you trust: Your family	
## V103: How much you trust: Your neighborhood	
## V104: How much you trust: People you know personally	
## V105: How much you trust: People you meet for the first time	
## V106: How much you trust: People of another religion	
## V107: How much you trust: People of another nationality	
## V140: Importance of democracy	
## V141: How democratically is this country being governed today	
## V142: How much respect is there for individual human rights nowadays in this country	
## V237: Family savings during past year	0.431
## V238: Social class (subjective)	0.438
## V239: Scale of incomes	

```
##
##              MR2   MR1   MR5   MR4   MR3   MR7   MR6
## SS loadings   1.591 1.424 1.199 1.130 0.883 0.815 0.674
## Proportion Var 0.072 0.065 0.055 0.051 0.040 0.037 0.031
## Cumulative Var 0.072 0.137 0.192 0.243 0.283 0.320 0.351
```

*# Next we should check RMSEA (root mean square error of approximation) index. Its value, 0.047 shows  
# not good model fit as it's beyond 0.05.  
# Finally, the Tucker-Lewis Index (TLI) is 0.93 - an acceptable value considering it's over 0.9.  
# Hit the following to look at the factor mapping:*  
fa.diagram(fourfactor)

## Factor Analysis



## Including Plots

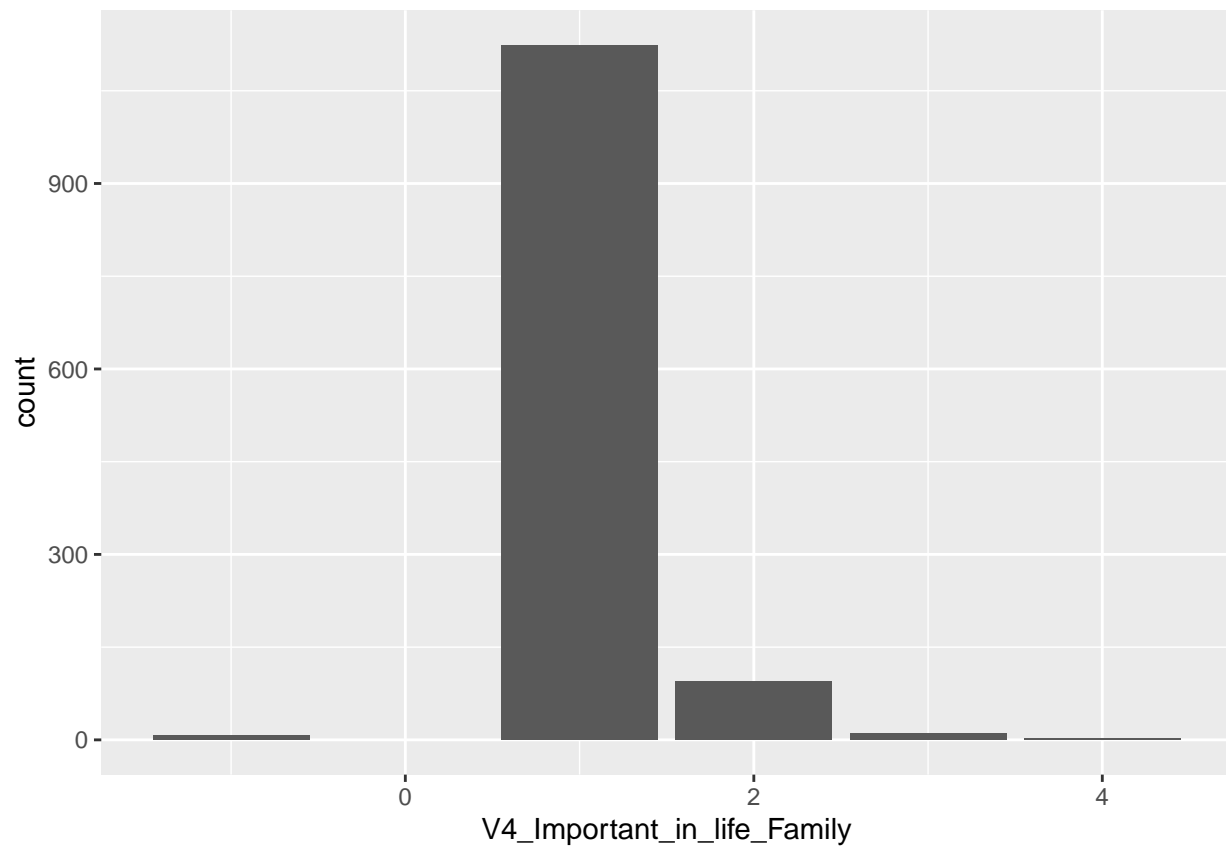
```
# change column name

tw_select_col <- colnames(data1)

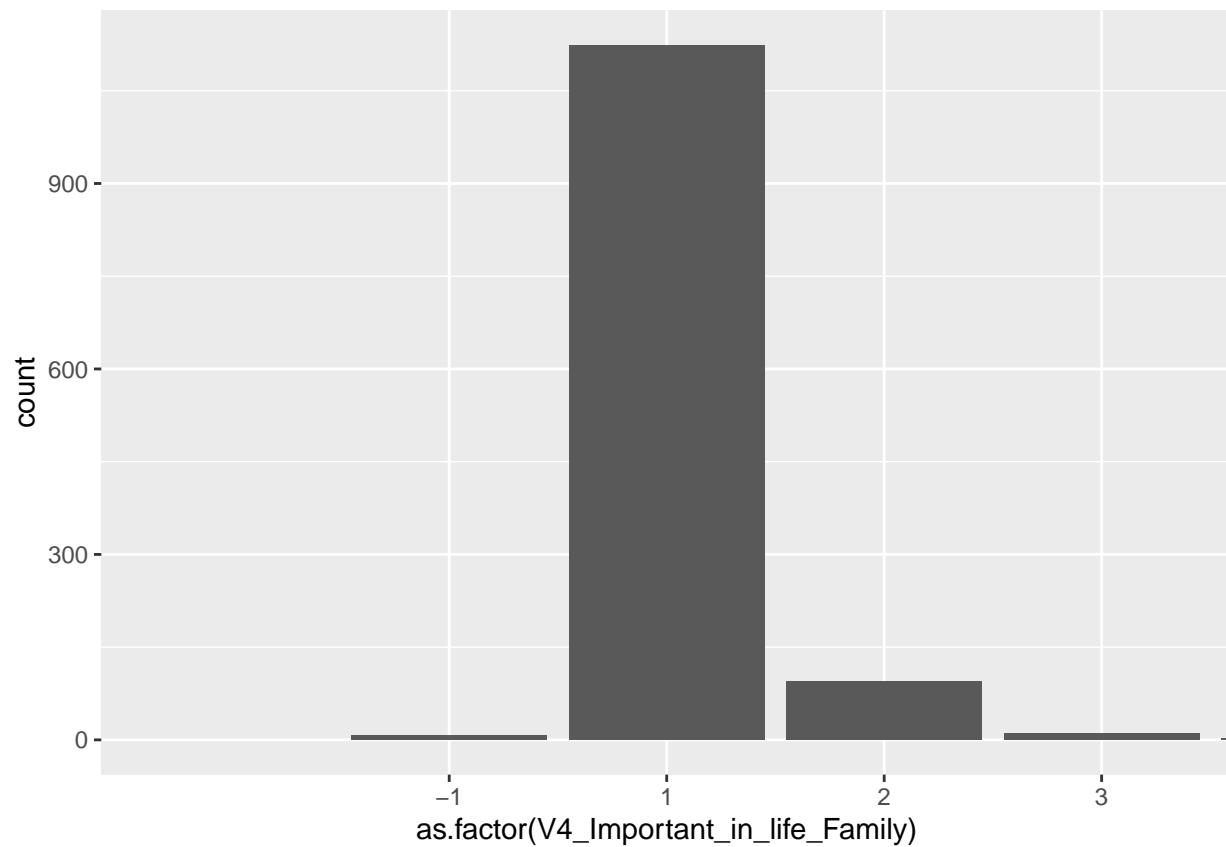
tw_select_col <- str_replace_all(tw_select_col, ": ", "_")
tw_select_col <- str_replace_all(tw_select_col, " ", "_")
colnames(data1) <- tw_select_col

ggplot(data = data1) +
  geom_bar(mapping = aes(x = V4_Important_in_life_Family, fill = V5_Important_in_life_Friends))
```



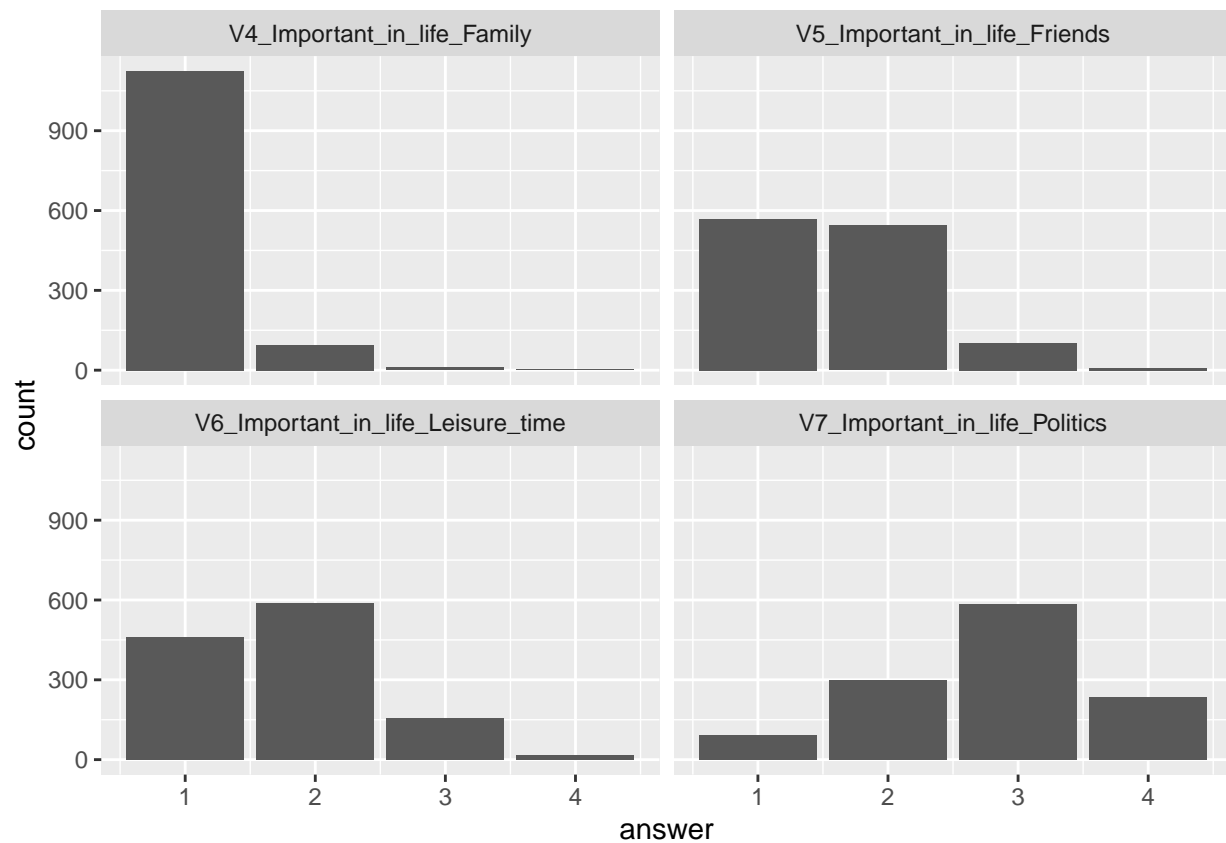


```
# view the count for question V4_Important_in_life_Family.  
ggplot(data = data1) +  
  geom_bar(mapping=aes(x=as.factor(V4_Important_in_life_Family)))+  
  coord_cartesian(xlim=c(0,4))
```



```
# view the count for each answer of the first 4 questions together.
testdf <- data1%>%select(1:4)%>%
  pivot_longer(cols = 1:4,names_to = "Question",values_to = "answer") %>%
  filter(answer>=0)

ggplot(testdf)+
  aes(x = answer)+
  geom_bar(position = "dodge")+facet_wrap(as.factor(testdf$Question),ncol = 2)
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.