FIT3152 Assignment 1 Report

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Question 1a

The dataset contains 50,000 rows and 40 columns, with each row representing an individual's social, political, economic, religious, or cultural values from various countries. Most of the attributes are ordinal variables that have been coded numerically, meaning they represent ranked categories and are treated as numeric for analysis purposes, like TPeople, TFamily, and TNeighbourhood. There is also one continuous numerical variable (Age), and one text variable (Country), which identifies the respondent's country of residence.

Initially, some of the ordinal attributes had negative values, like -1 to -5, which according to the CodeBook Variables report, these values represent that it is unanswered. These values

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were handled and are coded as NA. The total number of missing values (NA) is 37,964, with the total number of missing values per column shown in Appendix *Figure1a.1*.

In terms of distribution of the dataset's numerical attributes (excluding the "Age" column) in *Figure 1a.2*, most columns are on a similar scale, ranging from 1 to 10, while others range from 1 to 4 and the "Edu" column ranging from 0-8. The column names having the prefix "C", like CReligious and CPolice, show little variations, with tightly packed boxes and short whiskers, suggesting that responses cluster around a central value. The outliers here represent individuals with very different opinions from the majority and it can be seen in columns like TFamily, TKnow, and PTelevision. TPeople, TNeighbourhood, and TKnow tend to have lower median values and narrower interquartile ranges, suggesting that respondents generally rate these lower.
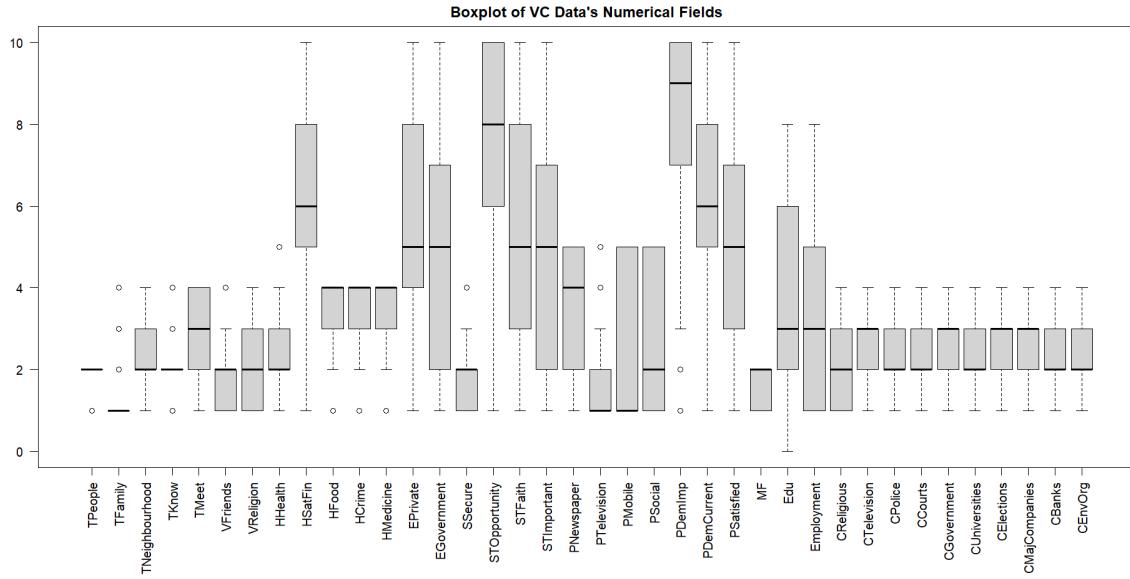
Figure 1: *Figure 1a.2: Distribution of Numerical Attributes (Excluding 'Age' Attribute)*

For the "Age" column distribution shown in Figure 1a.2, it is positively skewed since it has a longer whisker at the right end, suggesting that the respondents are generally younger. There are a few outliers at the right end, suggesting that there are individuals that are much older than most respondents.
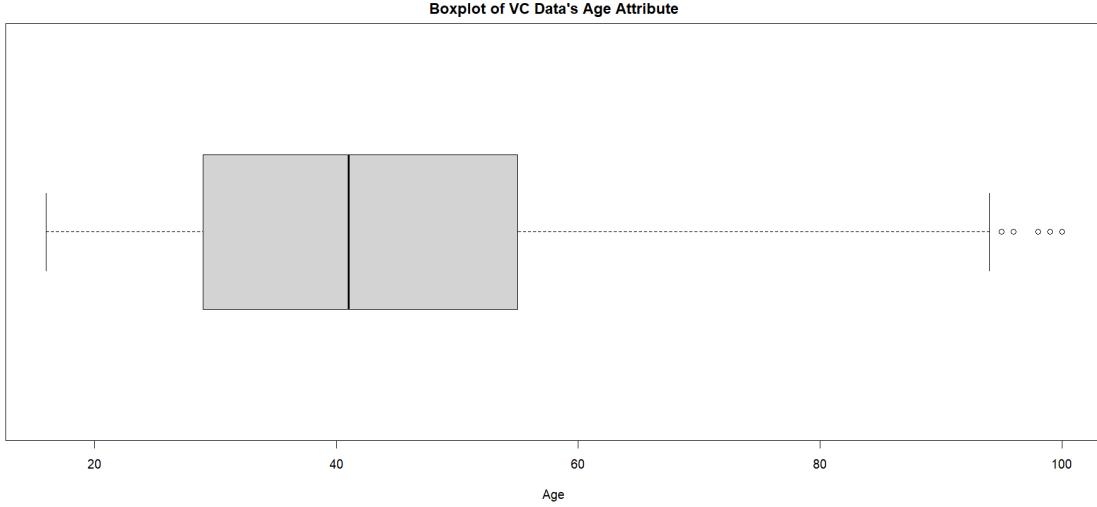
Figure 2: *Figure 1a.3: Distribution of Numerical Attribute (Age)*

In terms of the variety of the "Country" column shown in Figure 1a.4, the dataset contains responses from a wide range of countries, but the number of responses is unevenly distributed. While some countries contribute a lot of responses (more than 2000), others have much fewer (around 500). This could affect the representativeness of the data across countries, and it is something to keep in mind during analysis - especially for clustering or country-based comparisons.
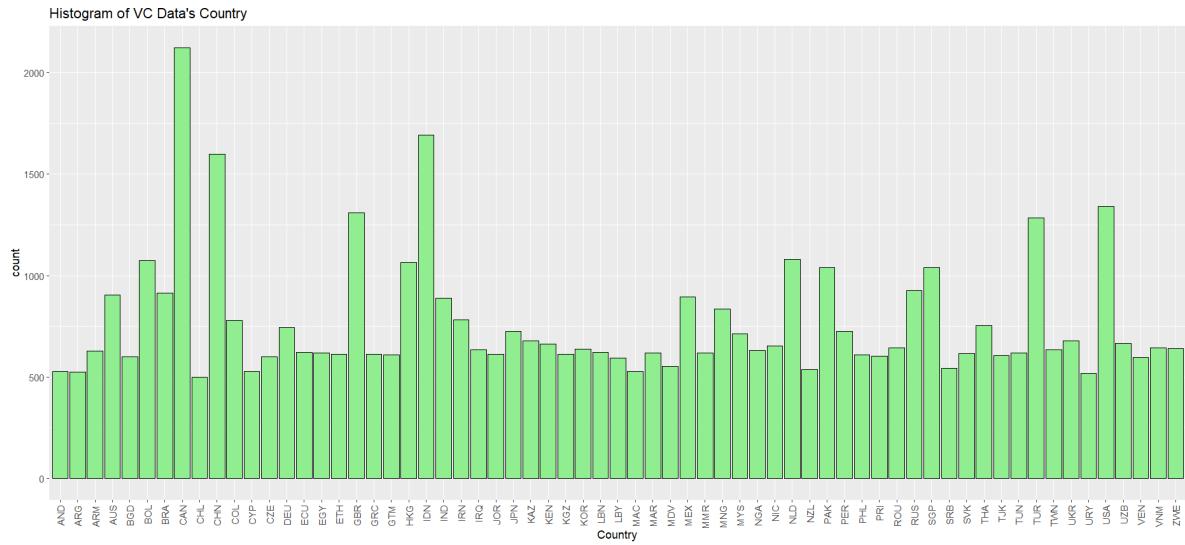
Figure 3: *Figure1a.4: Variety of Non-numerical Attribute (Country)*

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Question 2a

The focus country given was Singapore (SGP), 2 subsets of the dataset were created to compare the data of Singapore versus other countries. The Singapore dataset contains 1040 rows and 40 columns.

Comparing the distribution of Singapore's and other countries' numerical attributes (excluding the 'Age' column) shown in Figure 2a.1 and Figure 2a.2 respectively, all columns in Figure 2a.1 generally have a narrower interquartile range with 30% of the columns in Figure2a.1 having very narrow interquartile ranges.

For example, HFood, HCrime, and HMedicine for both figures have the similar median values, but for Singapore, all three columns have a very small interquartile range, indicating that unlike other countries, majority of Singaporeans have never gone without enough food to eat, or felt unsafe from crime in their own home, or gone without needed medicine or treatment that they needed in the last 12 months. To prove this difference, a t-test was done between the HCrime columns of Figure 2a.1 and 2a.2. The p-value obtained is 2.2e-16 which is smaller than 0.05 and this provides strong evidence against the null hypothesis that Singaporeans and other countries' individuals feel the same about their safetyness from crime in their own home

However, the VReligion column's distribution for both figures can be said to look similar as they have similar median values and interquartile ranges. To prove this similarity, a t-test was done between the VReligion columns of Figure 2a.1 and 2a.2. The p-value obtained is 0.0001173 which is not smaller than 0.05 and hence do not provide strong evidence against the null hypothesis that Singaporeans and other countries' individuals have the same opinions on the importance of religion in life.
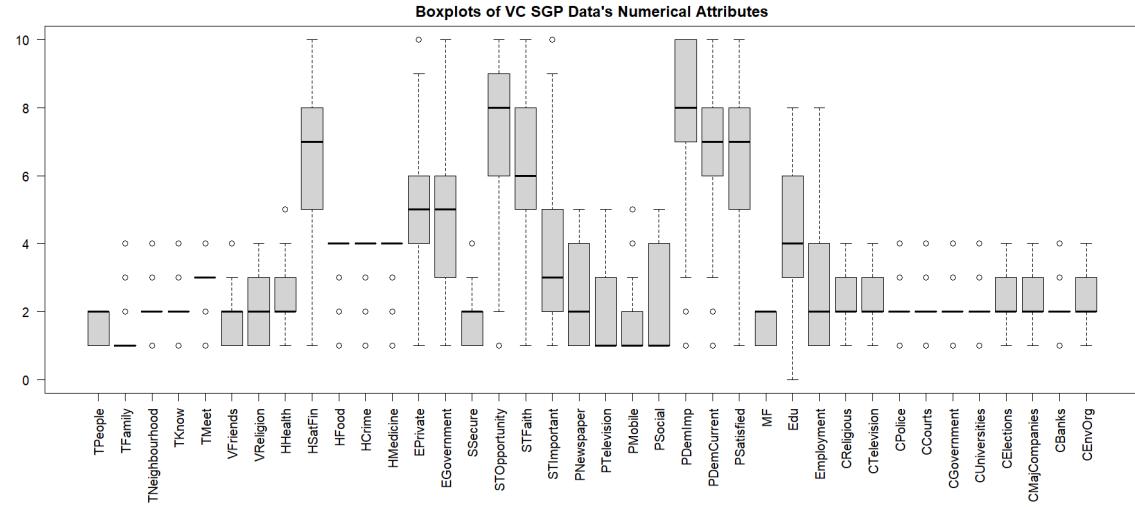
Figure 4: *Figure 2a.1: Distribution of Numerical Attributes for VC Focus Country (SGP) Data (Excluding 'Age' Attribute)*
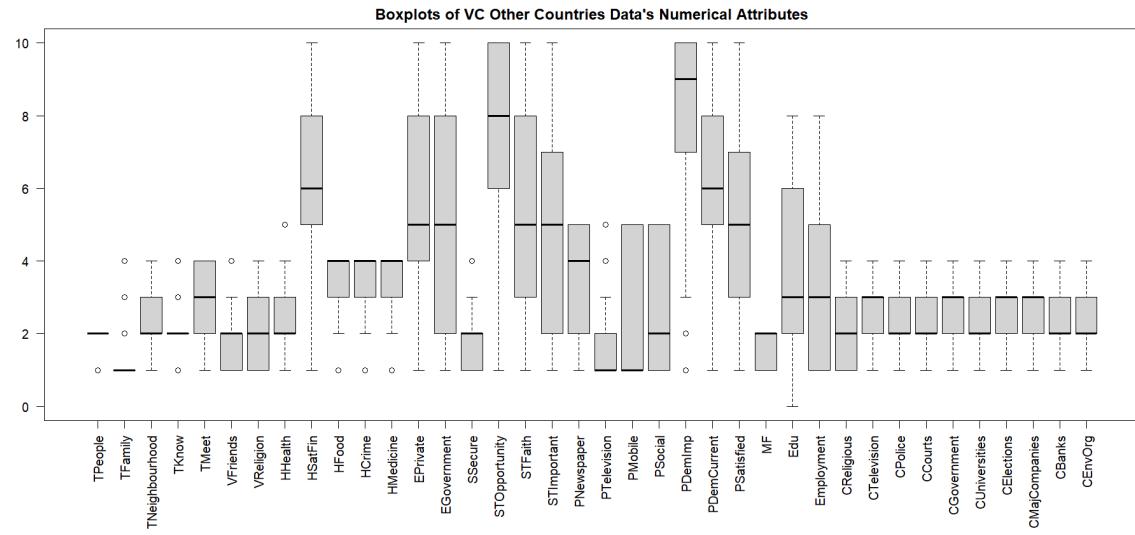
Figure 5: Figure2a.3: Distribution of Numerical Attributes for VC Non-Focus Countries Data (Excluding 'Age' Attribute)

Comparing Figure 2a.3 and 2a.4, the age distribution of Singapore has a smaller range with no outliers, but a wider interquartile range. The median of age in Singapore is also larger and more symmetrical compared to other countries. This indicates that Singaporeans are much younger than other countries' individuals in this dataset.
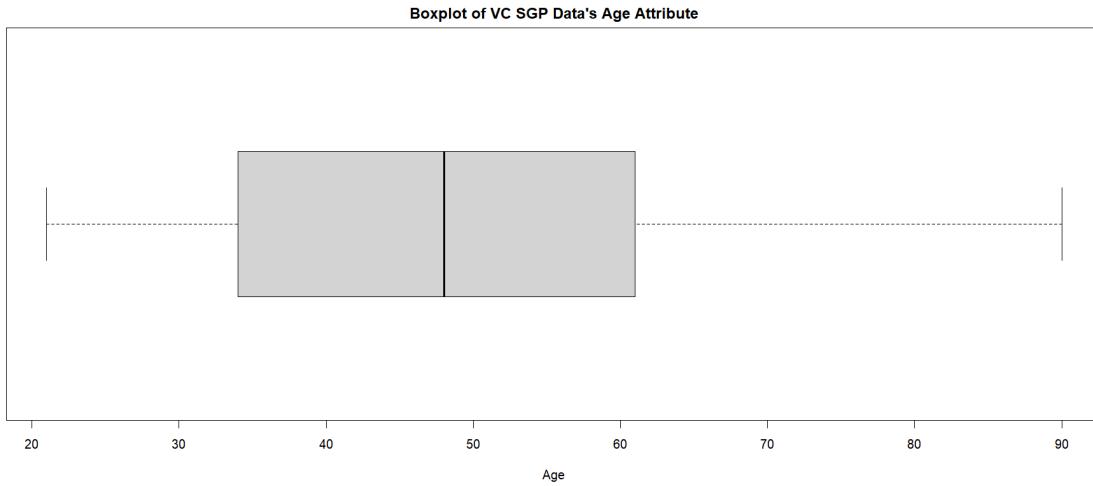
Figure 6: *Figure 2a.3: Distribution of Numerical Attribute (Age) for VC Focus Country (SGP) Data*
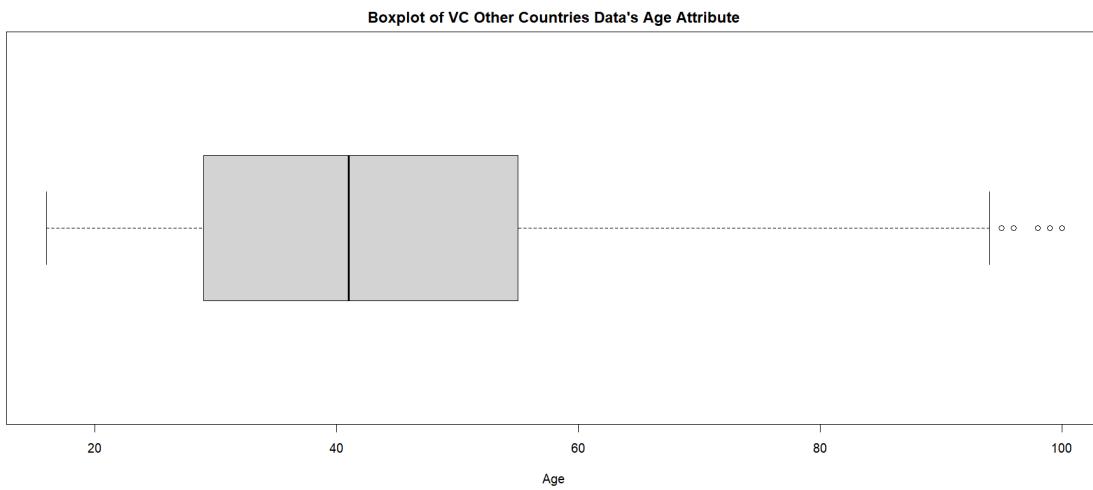
Figure 7: *Figure 2a.4: Distribution of Numerical Attribute (Age) for VC Non-Focus Countries Data*

Question 2b

Linear regression of attributes was fitted to each confidence in social organisations for Singapore. The top-10 smallest p-values were extracted and shown in Figure 2b.1.

Overall, the best predictor would be the SSecure attribute, because it appears in top-4 for all confidence in social organisations. Secondly, another good predictor would be the PSatisfied attribute, although it does not have a p-value < 0.05 in CReligious, CBanks, and CEnvOrg, it is top-5 for other confidence in social organisations.

With these two good predictors, the confidence in government can be more reliably predicted. This is because both predictors are in the top-2 for CGovernment according to Figure 2b.1, which indicates high accuracy in prediction. Although confidence in elections also have both predictors in their top-2, CGovernment has more predictors with p-values < 0.05 when comparing all top-10 predictors of CGovernment and CElections.
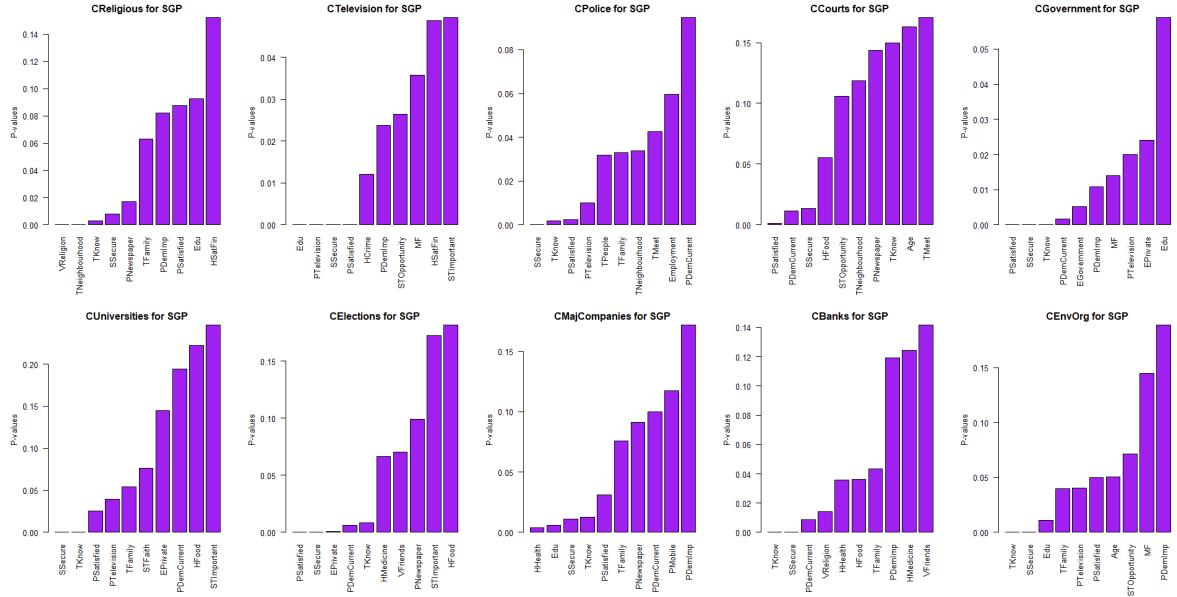
Figure 8: *Figure 2b.1: Top 10 Predictors for each Confidence in Social Organisations in VC Focus Country (SGP) Data*

Question 2c

Linear regression of attributes was fitted to each confidence in social organisations for other countries. The top-10 smallest p-values were extracted and shown in Figure 2c.1.

Overall, the best predictors are the SSecure, PSatisfied, Edu, and TNeighbourhood attributes as all have a p-value < 0.05 in all confidence values. Although attributes Edu and TNeighbourhood are only visible in the top-10 smallest p-values of all confidence values, excluding CElections and CEnvOrg. The p-value for Edu in CElections is 2.03e-05 which is < 0.05 hence proving Edu is still a strong predictor. Similarly, the p-value for TNeighbourhood in CEnvOrg is 1.20e-09 which is < 0.05 and this also proves TNeighbourhood to be a strong predictor.

Comparing the predictors for Singapore and other countries, both have SSecure and PSatisfied as their strongest predictor, which further proves that SSecure and PSatisfied are consistent and strong predictors. As for Edu and TNeighbourhood, it is evident that these attributes are not consistently strong in Singapore as only a few confidence values have p-values < 0.05 for these attributes.
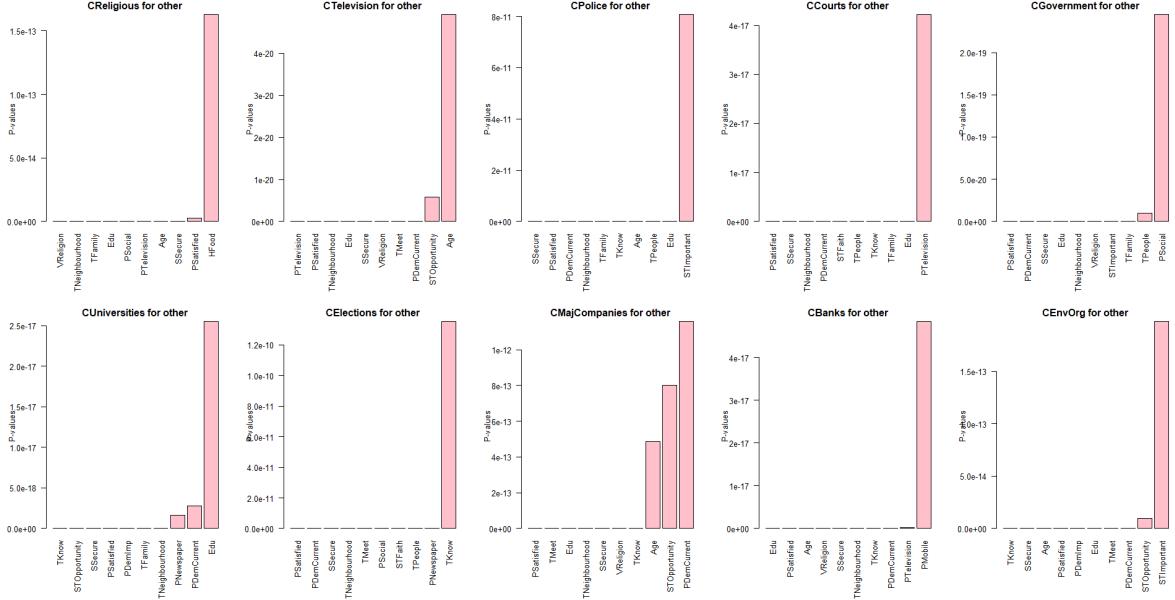
Figure 9: *Figure 2c.1: Top 10 Predictors for each Confidence in Social Organisations in VC Non-Focus Countries Data*

Question 3a

External data, "Global Country Data Set 2023", from Kaggle was chosen. The data was filtered and cleaned to extract the wanted indicators only. The indicators chosen from the data for analysis were Birth Rate, CO2 Emissions, Consumer Price Index (CPI), Fertility Rate, Gasoline Price, GDP, Gross Primary Education Enrollment, Gross Tertiary Education Enrollment, Infant Mortality, Life Expectancy, Maternal Mortality Ratio, Out of Pocket Health Expenditure, Physicians per thousand, Labour Force Participation in the Population, and Unemployment Rate of countries world-wide.

Before performing k-means clustering, the numerical data was scaled so that all variables had the same weight, since k-means is sensitive to different units. Then, a range of k-values (2 to 16) was used to compute the average silhouette scores and plotted it as a line graph shown in Appendix Figure 3a.1. The k-value with the highest score was chosen as the optimal number of clusters. After that, k-means clustering was performed using this optimal k-value, and the resulting cluster labels were factored. Finally, the results were visualized using the

"fviz_cluster()" functions from the "factoextra" package. The "ggrepel" package was also used to make the cluster plot labels clearer and easier to read. The cluster plot is shown in Appendix Figure 3a.2.

Question 3b

The similar countries to Singapore were chosen from the zoomed-in cluster plot shown in Appendix Figure 3a.3, and it includes Uruguay (URY), Netherlands (NLD), New Zeland (NZL), Cyprus (CYP), and Chile (CHL). The linear regression of all attributes was fitted to each confidence in social organisations for all similar countries and the top-10 smallest p-values for each confidence value is shown in Figure 3b.1.

Overall, the strongest predictor is the SSecure attribute because it is in top-4 for all confidence values with a p-value <0.05. PSatisfied is not the strongest predictor as CReligous and CEnvOrg have a p-value > 0.05 for this attribute. Similarly to Singapore, the confidence in government can be more reliably predicted since 9 out of 10 of its attributes' p-values are <0.05, making them strong predictors for this confidence value.

Comparing between Figure 3b.1 and Figure 2c.1, the difference is that the strongest predictors in Figure3b.1 only include SSecure and PSatisfied attributes. Thus, it can conclude that the cluster of similar countries gives a better match to the important attributes for predicting confidence in social organisations in Singapore. This may be because countries with similar cultural and societal norms tend to have similar patterns in how individual attitudes influence institutional trust. In contrast, when looking at all other countries combined, the predictors are more varied and less aligned with the context of Singapore, likely due to greater diversity in views on institutional trust. This highlights that clustering based on similarity allows for more context-specific insights and more reliable predictions regarding confidence in social organisations.
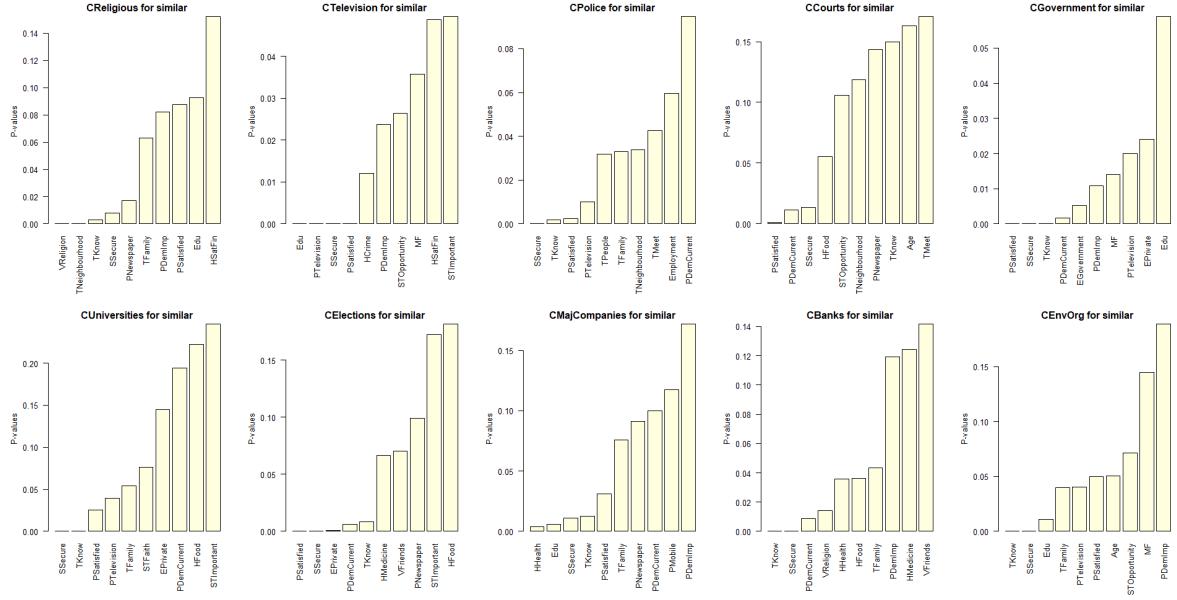
Figure 10: *Figure 3b.1: Top 10 Predictors for each Confidence in Social Organisations in VC Similar Countries to Focus Country (SGP) Data*

References

Elgiriyewithana, N. (2023). *Global country information dataset 2023.* https://doi.org/10.34740/KAGGLE/DSV/6101670

Appendix

Question 1a code

```r
rm(list = ls())

set.seed(33214476)

VCData = read.csv("WVSExtract.csv")

VC = VCData[sample(1:nrow(VCData),50000, replace=FALSE),]

VC = VC[,c(1:6, sort(sample(7:46,17, replace = FALSE)), 47:53,
          sort(sample(54:69,10, replace = FALSE)))]
```

```
# Handling of missing values
for (col in names(VC)) {
  VC[[col]][VC[[col]] %in% c(-1, -2, -3, -4, -5)] <- NA
}

na_count <- sum(is.na(VC))

na_count
```

```
[1] 37964
```

```
missing_values_df <- data.frame(
  missing_count = sapply(VC, function(x) sum(is.na(x)))
)

# Dimension of VC
dim(VC)
```

```
[1] 50000    40
```

```
ncol(VC)
```

```
[1] 40
```

```
nrow(VC)
```

```
[1] 50000
```

```
# Data types
data_types_df <- data.frame(
  data_type = sapply(VC, function(x) if (is.numeric(x) && length(unique(x)) <= 11) "Ordinal"
)

head(data_types_df)
```

```
            data_type
Country          Text
TPeople       Ordinal
```

```
TFamily          Ordinal
TNeighbourhood   Ordinal
TKnow            Ordinal
TMeet            Ordinal
```
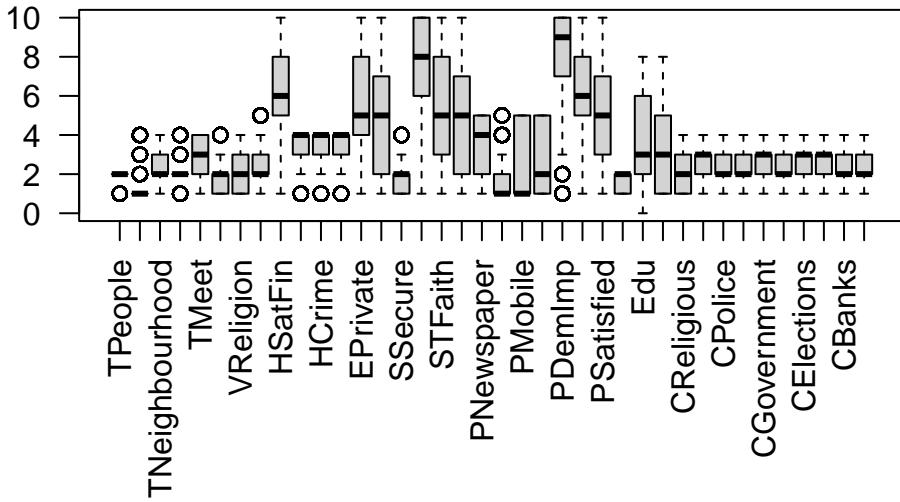
```r
# Boxplots of numerical attributes
par(mar=c(10, 4, 2, 2))

boxplot(VC[, c(2:27, 29:40)], las=2, main="Boxplot of VC Data's Numerical Fields")
```

Boxplot of VC Data's Numerical Fields
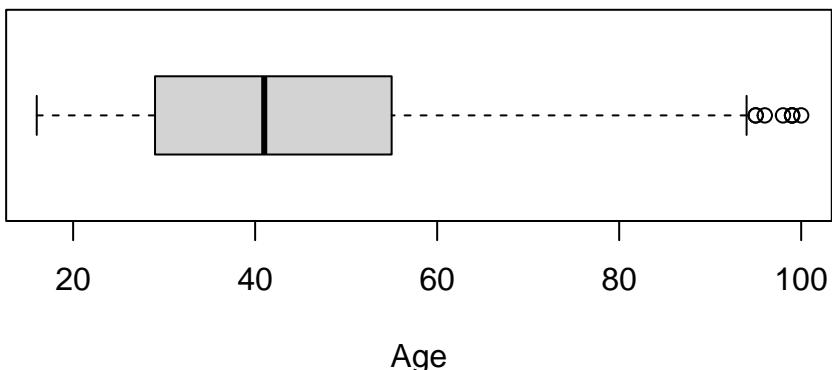

```r
boxplot(VC[, 28], las=1, horizontal = TRUE, main="Boxplot of VC Data's Age Attribute", xlab =

# Histogram of non-numerical attribute
library(ggplot2)
```

Boxplot of VC Data's Age Attribute


```
VC_country_hist <- ggplot(VC, aes(x=Country)) +
  geom_histogram(stat="count", binwidth = 3, color = "black", fill = "lightgreen") +
  ggtitle("Histogram of VC Data's Country") +
  theme(axis.text.x = element_text(angle = 90, vjust = 0.5, hjust = 1))
```

Question 2a code

```
# Extraction of data for focus country and non-focus countries
VC_SGP = VC[VC$Country == "SGP",]

VC_other_countries = VC[VC$Country != "SGP",]

# Dimension of data sets
dim(VC_SGP)
```

```
[1] 1040    40
```

```
dim(VC_other_countries)
```

```
[1] 48960    40
```

```
# Summary of data sets for comparison
head(VC_SGP)
```

```
       Country TPeople TFamily TNeighbourhood TKnow TMeet VFriends VReligion
60167      SGP       1       1              2     2     3        2         1
48871      SGP       2       1              1     1     2        1         1
28836      SGP       2       2              2     2     2        1         1
71135      SGP       1       3              2     2     3        2         4
56212      SGP       1       2              2     2     2        2         2
57486      SGP       1       1              2     2     3        2         4
       HHealth HSatFin HFood HCrime HMedicine EPrivate EGovernment SSecure
60167        2       6     4      4         4        6           5       1
48871        3       9     4      4         3        5           5       1
28836        1       7     3      3         3        7           6       1
71135        2       5     4      4         4        6           6       1
56212        2       8     4      4         4        5           5       1
57486        2       9     4      4         4        5           6       1
       STOpportunity STFaith STImportant PNewspaper PTelevision PMobile PSocial
60167              7       7           3          1           1       2       3
48871              7       6           8          4           1       2       1
28836              5       5           5          1           1       1       1
71135              8       7           4          1           1       4       4
56212              5       5           5          5           5       1       5
57486             10       2           5          5           3       1       4
       PDemImp PDemCurrent PSatisfied MF Age Edu Employment CReligious
60167        7           7          7  1  58   3          1          1
48871        6           5          8  1  22   4          7          1
28836        8           8          5  1  39   3          2          1
71135       10           6         10  2  44   2          3          3
56212       NA          NA         NA  1  57   0          4          2
57486        8          10          8  1  37   7          1          3
       CTelevision CPolice CCourts CGovernment CUniversities CElections
60167            2       2       2           2             2         NA
48871            3       1       1           2             2          2
28836            1       1       1           1             1          1
71135            2       1       2           1             2          1
56212            2       2       2           2             2          2
57486            3       1       2           2             2          2
       CMajCompanies CBanks CEnvOrg
60167              2      2      NA
48871              3      2       2
28836              1      1       1
```

```
71135             1      1       2
56212             2      2       2
57486             3      3       3
```

```
head(VC_other_countries)
```

```
      Country TPeople TFamily TNeighbourhood TKnow TMeet VFriends VReligion
7169      GRC       2       1              2     2     3        2         2
42276     IRN       2       1              3     2     3        3         3
38925     IRQ       2       1              1     2     3        1         1
1919      BRA       2       2              3     2     4        2         1
53733     GBR       1       2              2     2     3        2         4
64942     LBN       2       1              3     3     3        2         1
      HHealth HSatFin HFood HCrime HMedicine EPrivate EGovernment SSecure
7169        2       5     4      4         4        4           3       2
42276       3       4     2      2         3        1           1       2
38925       2       5     3      3         3        8           3       1
1919        1       7     4      4         4        5           1       4
53733       3       7     4      4         2        7           3       2
64942       2       6     3      1         3        6           7       3
      STOpportunity STFaith STImportant PNewspaper PTelevision PMobile PSocial
7169              8       8           4          1           2       1       1
42276            10       1           1          5           5       5       1
38925             9       9           3          5           1       1       1
1919              5       3           2          2           1       2       5
53733             5       1           1          5           2       5       1
64942             7       6           6          5           4       1       1
      PDemImp PDemCurrent PSatisfied MF Age Edu Employment CReligious
7169        6           2          2  1  50   3          1          2
42276       8           2          5  1  23   4          7          4
38925       9           8          7  2  19   1          5          1
1919       10           4          1  2  65   6          3          2
53733      10           8          4  2  33   6          1          3
64942       8           5          6  1  36   1          1          3
      CTelevision CPolice CCourts CGovernment CUniversities CElections
7169            3       3       3           3             2          3
42276           4       2       3           3             2          3
38925           1       1       1           1             1          1
1919            2       2       3           4             2          2
53733           3       2       2           3             2          2
64942           3       3       3           3             3          3
      CMajCompanies CBanks CEnvOrg
```
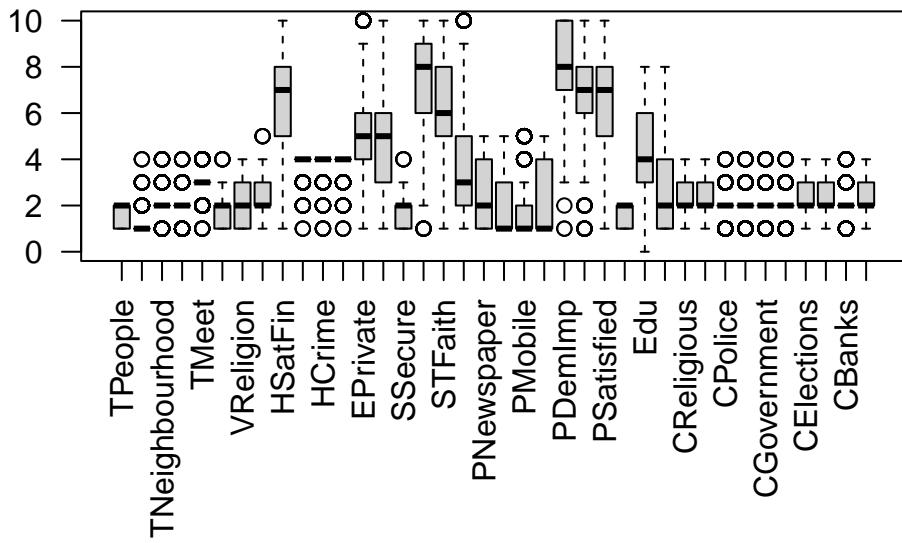
```
7169                    2       4       2
42276                   3       3       2
38925                   1       1       1
1919                    2       2       2
53733                   3       2       3
64942                   3       3       3
```

```r
# Boxplots and histogram for distribution of numerical attributes for focus country and non-
par(mar=c(9, 4, 2, 2))

par(mar=c(9, 4, 2, 2))

boxplot(VC_SGP[, c(2:27, 29:40)], las = 2, main = "Boxplots of VC SGP Data's Numerical Attri
```
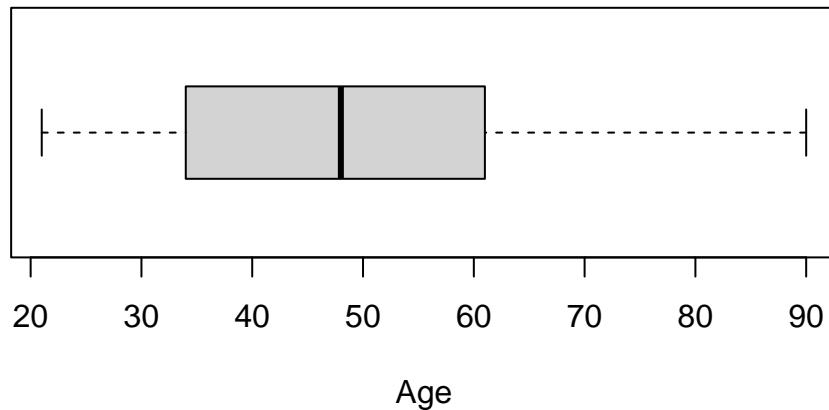

Boxplots of VC SGP Data's Numerical Attributes
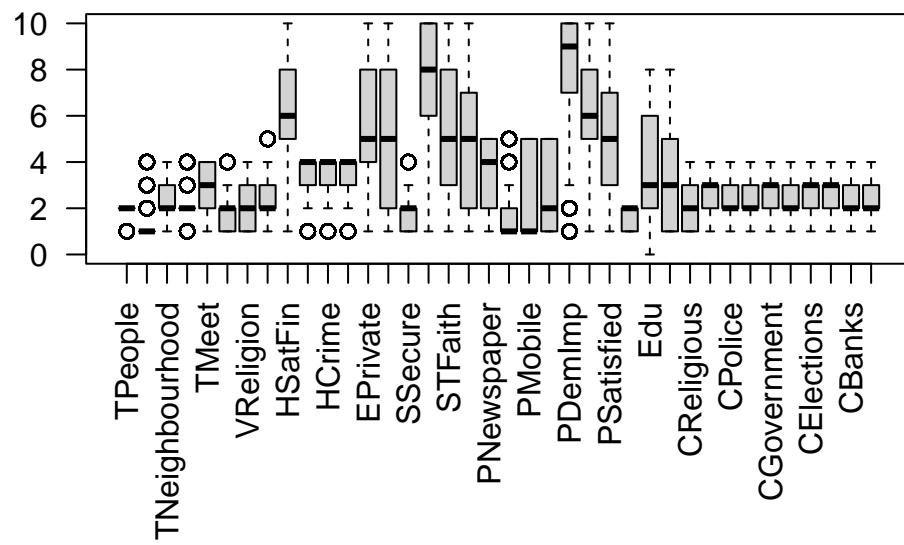
```r
boxplot(VC_SGP[, 28], las=1, horizontal = TRUE, main="Boxplot of VC SGP Data's Age Attribute"
```

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Boxplot of VC SGP Data's Age Attribute
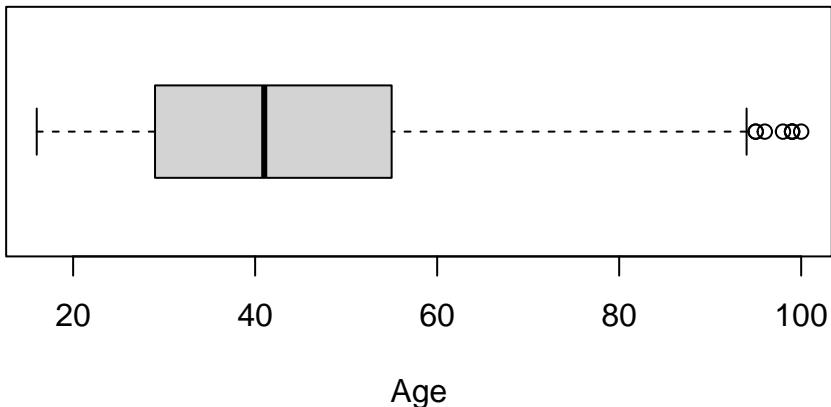

```
boxplot(VC_other_countries[, c(2:27, 29:40)], las = 2, main = "Boxplots of VC Other Countries
```

Boxplots of VC Other Countries Data's Numerical Attribute

```
boxplot(VC_other_countries[, 28], las=1, horizontal = TRUE, main="Boxplot of VC Other Countri
```

Boxplot of VC Other Countries Data's Age Attribute

Age

```
# t-Test for similarity or difference in numerial attributes for focus country and non-focus
t.test(VC_SGP$HCrime, VC_other_countries$HCrime, "two.sided", conf.level = 0.95)
```

```
	Welch Two Sample t-test

data:  VC_SGP$HCrime and VC_other_countries$HCrime
t = 24.512, df = 1188.7, p-value < 2.2e-16
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 0.3483795 0.4090009
sample estimates:
mean of x mean of y
 3.818882  3.440192
```

```
t.test(VC_SGP$VReligion, VC_other_countries$VReligion, "two.sided", conf.level = 0.95)
```

```
	Welch Two Sample t-test
```

```
data:  VC_SGP$VReligion and VC_other_countries$VReligion
t = 3.8658, df = 1088.3, p-value = 0.0001173
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 0.05911699 0.18098263
sample estimates:
mean of x mean of y
  2.10058   1.98053
```

Question 2b code

```
VC_SGP_numerical_attr = VC_SGP[, 2:40]

# Fitting linear regression for each confidence in social organisations in VC focus country
CReligious_SGP_fit = lm(CReligious ~.-CTelevision-CPolice-CCourts-CGovernment-CUniversities-C

CTelevision_SGP_fit = lm(CTelevision ~.-CReligious-CPolice-CCourts-CGovernment-CUniversities-

CPolice_SGP_fit = lm(CPolice ~.-CReligious-CTelevision-CCourts-CGovernment-CUniversities-CEle

CCourts_SGP_fit = lm(CCourts ~.-CReligious-CTelevision-CPolice-CGovernment-CUniversities-CEle

CGovernment_SGP_fit = lm(CGovernment ~.-CReligious-CTelevision-CPolice-CCourts-CUniversities-

CUniversities_SGP_fit = lm(CUniversities ~.-CReligious-CTelevision-CPolice-CCourts-CGovernmen

CElections_SGP_fit = lm(CElections ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUni

CMajCompanies_SGP_fit = lm(CMajCompanies ~.-CReligious-CTelevision-CPolice-CCourts-CGovernmen

CBanks_SGP_fit = lm(CBanks ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUniversitie

CEnvOrg_SGP_fit = lm(CEnvOrg ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUniversit

# Analysing the linear regression fitted for each confidence in social organisation in VC foc
summary(CReligious_SGP_fit)
```

```
Call:
```

```
lm(formula = CReligious ~ . - CTelevision - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
    Min      1Q   Median      3Q      Max
-1.7054 -0.4144   0.0015   0.3933   2.3033

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     6.219e-01  4.004e-01   1.553 0.120785
TPeople         1.544e-02  5.329e-02   0.290 0.772141
TFamily         9.219e-02  4.950e-02   1.862 0.062919 .
TNeighbourhood  1.739e-01  4.789e-02   3.630 0.000301 ***
TKnow           1.397e-01  4.713e-02   2.964 0.003129 **
TMeet          -2.433e-02  4.176e-02  -0.583 0.560390
VFriends       -2.852e-02  3.855e-02  -0.740 0.459677
VReligion       3.146e-01  2.420e-02  13.001  < 2e-16 ***
HHealth        -5.412e-03  3.231e-02  -0.168 0.867011
HSatFin        -1.893e-02  1.321e-02  -1.434 0.152108
HFood           7.424e-02  7.077e-02   1.049 0.294495
HCrime         -4.556e-02  5.085e-02  -0.896 0.370555
HMedicine      -1.421e-02  6.340e-02  -0.224 0.822711
EPrivate       -8.142e-03  1.153e-02  -0.706 0.480291
EGovernment     1.339e-02  1.000e-02   1.338 0.181236
SSecure         1.089e-01  4.079e-02   2.669 0.007772 **
STOpportunity   1.809e-02  1.273e-02   1.421 0.155593
STFaith        -5.269e-03  1.010e-02  -0.522 0.601930
STImportant    -7.240e-04  1.047e-02  -0.069 0.944891
PNewspaper      3.843e-02  1.607e-02   2.392 0.016991 *
PTelevision     2.547e-02  1.882e-02   1.354 0.176198
PMobile        -1.885e-02  2.067e-02  -0.912 0.362114
PSocial         1.769e-02  1.829e-02   0.967 0.333848
PDemImp         2.522e-02  1.449e-02   1.741 0.082164 .
PDemCurrent    -2.265e-02  1.681e-02  -1.347 0.178251
PSatisfied     -2.782e-02  1.627e-02  -1.710 0.087704 .
MF             -1.667e-03  4.723e-02  -0.035 0.971855
Age            -4.576e-05  1.992e-03  -0.023 0.981677
Edu             2.612e-02  1.552e-02   1.683 0.092724 .
Employment      1.166e-02  1.139e-02   1.024 0.306129
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.6457 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.3378,    Adjusted R-squared:  0.3132
F-statistic: 13.69 on 29 and 778 DF,  p-value: < 2.2e-16
```

summary(CTelevision_SGP_fit)

```
Call:
lm(formula = CTelevision ~ . - CReligious - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min      1Q   Median       3Q      Max
-1.68760 -0.40151 -0.02371  0.43569  1.83608

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.373e+00  3.699e-01   3.711 0.000221 ***
TPeople         2.097e-02  4.923e-02   0.426 0.670239
TFamily         2.705e-02  4.574e-02   0.591 0.554460
TNeighbourhood  3.927e-02  4.425e-02   0.887 0.375092
TKnow           7.432e-02  4.355e-02   1.707 0.088277 .
TMeet           6.381e-02  3.858e-02   1.654 0.098579 .
VFriends        3.999e-02  3.562e-02   1.123 0.261910
VReligion      -1.997e-04  2.235e-02  -0.009 0.992874
HHealth         5.123e-03  2.985e-02   0.172 0.863757
HSatFin         2.408e-02  1.220e-02   1.974 0.048765 *
HFood          -2.300e-02  6.538e-02  -0.352 0.725147
HCrime          1.181e-01  4.698e-02   2.515 0.012110 *
HMedicine      -8.545e-02  5.858e-02  -1.459 0.145062
EPrivate       -1.045e-02  1.065e-02  -0.981 0.326911
EGovernment     6.588e-05  9.243e-03   0.007 0.994315
SSecure         1.533e-01  3.769e-02   4.068 5.23e-05 ***
STOpportunity  -2.615e-02  1.176e-02  -2.224 0.026449 *
STFaith         1.421e-02  9.329e-03   1.523 0.128117
STImportant    -1.903e-02  9.674e-03  -1.967 0.049492 *
PNewspaper      4.946e-03  1.484e-02   0.333 0.739057
PTelevision     7.079e-02  1.739e-02   4.072 5.14e-05 ***
PMobile         2.450e-02  1.910e-02   1.282 0.200078
PSocial         4.079e-03  1.690e-02   0.241 0.809342
```

```
PDemImp          3.032e-02  1.339e-02   2.265 0.023778 *
PDemCurrent     -2.089e-02  1.553e-02  -1.345 0.179043
PSatisfied      -5.979e-02  1.503e-02  -3.977 7.63e-05 ***
MF              -9.179e-02  4.363e-02  -2.104 0.035728 *
Age              1.196e-03  1.840e-03   0.650 0.515866
Edu              9.182e-02  1.433e-02   6.405 2.60e-10 ***
Employment       1.788e-02  1.052e-02   1.699 0.089626 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5966 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2484,    Adjusted R-squared:  0.2204
F-statistic: 8.868 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CPolice_SGP_fit)
```

```
Call:
lm(formula = CPolice ~ . - CReligious - CTelevision - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.45966 -0.45414  0.04605  0.30873  2.41223

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.3768680  0.3753589   3.668 0.000261 ***
TPeople        0.1075058  0.0499553   2.152 0.031701 *
TFamily        0.0991565  0.0464058   2.137 0.032932 *
TNeighbourhood 0.0954778  0.0448966   2.127 0.033766 *
TKnow          0.1388301  0.0441836   3.142 0.001741 **
TMeet         -0.0794626  0.0391488  -2.030 0.042721 *
VFriends       0.0065152  0.0361418   0.180 0.856989
VReligion      0.0218664  0.0226818   0.964 0.335319
HHealth       -0.0350556  0.0302853  -1.158 0.247419
HSatFin       -0.0047989  0.0123806  -0.388 0.698405
HFood          0.1109680  0.0663404   1.673 0.094787 .
HCrime        -0.0370378  0.0476672  -0.777 0.437390
HMedicine     -0.0379234  0.0594365  -0.638 0.523629
```

```
EPrivate       -0.0143972  0.0108083  -1.332 0.183234
EGovernment    -0.0060337  0.0093788  -0.643 0.520201
SSecure         0.1847906  0.0382394   4.832 1.62e-06 ***
STOpportunity  -0.0092476  0.0119333  -0.775 0.438610
STFaith         0.0059130  0.0094658   0.625 0.532374
STImportant    -0.0148291  0.0098155  -1.511 0.131249
PNewspaper     -0.0107666  0.0150605  -0.715 0.474891
PTelevision     0.0455606  0.0176405   2.583 0.009984 **
PMobile         0.0252953  0.0193815   1.305 0.192235
PSocial         0.0045400  0.0171476   0.265 0.791266
PDemImp         0.0037765  0.0135832   0.278 0.781065
PDemCurrent    -0.0263736  0.0157606  -1.673 0.094653 .
PSatisfied     -0.0462618  0.0152535  -3.033 0.002503 **
MF              0.0190112  0.0442726   0.429 0.667742
Age             0.0008064  0.0018671   0.432 0.665944
Edu            -0.0097569  0.0145448  -0.671 0.502538
Employment      0.0201444  0.0106751   1.887 0.059526 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6053 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2099,    Adjusted R-squared:  0.1804
F-statistic: 7.126 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CCourts_SGP_fit)
```

```
Call:
lm(formula = CCourts ~ . - CReligious - CTelevision - CPolice -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.52800 -0.42435  0.02223  0.34312  2.15355

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.7399614  0.4018263   4.330 1.69e-05 ***
TPeople      0.0299560  0.0534778   0.560  0.57553
TFamily      0.0403954  0.0496780   0.813  0.41638
```

```
TNeighbourhood  0.0750752  0.0480623   1.562  0.11869
TKnow           0.0681904  0.0472991   1.442  0.14979
TMeet           0.0574817  0.0419092   1.372  0.17059
VFriends        0.0018033  0.0386902   0.047  0.96284
VReligion       0.0158406  0.0242811   0.652  0.51435
HHealth        -0.0381987  0.0324208  -1.178  0.23907
HSatFin        -0.0178041  0.0132536  -1.343  0.17955
HFood           0.1362001  0.0710182   1.918  0.05550 .
HCrime         -0.0164800  0.0510283  -0.323  0.74681
HMedicine      -0.0600394  0.0636275  -0.944  0.34566
EPrivate       -0.0139535  0.0115704  -1.206  0.22820
EGovernment    -0.0105320  0.0100401  -1.049  0.29451
SSecure         0.1015356  0.0409358   2.480  0.01334 *
STOpportunity  -0.0206699  0.0127748  -1.618  0.10606
STFaith         0.0043716  0.0101333   0.431  0.66629
STImportant     0.0070079  0.0105076   0.667  0.50501
PNewspaper      0.0236079  0.0161225   1.464  0.14352
PTelevision     0.0227841  0.0188844   1.207  0.22799
PMobile         0.0180648  0.0207481   0.871  0.38420
PSocial         0.0001796  0.0183567   0.010  0.99220
PDemImp         0.0038995  0.0145410   0.268  0.78864
PDemCurrent    -0.0428799  0.0168719  -2.541  0.01123 *
PSatisfied     -0.0534263  0.0163291  -3.272  0.00112 **
MF             -0.0215798  0.0473943  -0.455  0.64900
Age             0.0027908  0.0019987   1.396  0.16302
Edu            -0.0099307  0.0155704  -0.638  0.52379
Employment      0.0156740  0.0114278   1.372  0.17059
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.648 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1795,    Adjusted R-squared:  0.1489
F-statistic: 5.867 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CGovernment_SGP_fit)
```

```
Call:
lm(formula = CGovernment ~ . - CReligious - CTelevision - CPolice -
    CCourts - CUniversities - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_SGP_numerical_attr)
```

```
Residuals:
     Min       1Q    Median       3Q      Max
-1.66035 -0.40029   0.01506  0.35363  2.22190

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.073499   0.366466   5.658 2.15e-08 ***
TPeople         0.060701   0.048772   1.245  0.21365
TFamily         0.040506   0.045306   0.894  0.37157
TNeighbourhood  0.017384   0.043833   0.397  0.69177
TKnow           0.183767   0.043137   4.260 2.29e-05 ***
TMeet          -0.010215   0.038221  -0.267  0.78934
VFriends       -0.024972   0.035285  -0.708  0.47933
VReligion       0.013155   0.022144   0.594  0.55264
HHealth         0.030973   0.029568   1.048  0.29518
HSatFin        -0.003846   0.012087  -0.318  0.75046
HFood           0.059406   0.064769   0.917  0.35932
HCrime          0.019168   0.046538   0.412  0.68054
HMedicine      -0.064301   0.058028  -1.108  0.26816
EPrivate       -0.023866   0.010552  -2.262  0.02399 *
EGovernment    -0.025690   0.009157  -2.806  0.00515 **
SSecure         0.196060   0.037333   5.252 1.95e-07 ***
STOpportunity  -0.002183   0.011651  -0.187  0.85140
STFaith         0.005637   0.009242   0.610  0.54204
STImportant    -0.009164   0.009583  -0.956  0.33922
PNewspaper      0.009461   0.014704   0.643  0.52015
PTelevision     0.040166   0.017223   2.332  0.01995 *
PMobile         0.026935   0.018922   1.423  0.15500
PSocial        -0.006191   0.016741  -0.370  0.71162
PDemImp         0.033876   0.013261   2.554  0.01082 *
PDemCurrent    -0.048440   0.015387  -3.148  0.00171 **
PSatisfied     -0.099937   0.014892  -6.711 3.73e-11 ***
MF             -0.106373   0.043224  -2.461  0.01407 *
Age            -0.002522   0.001823  -1.383  0.16693
Edu             0.026856   0.014200   1.891  0.05896 .
Employment      0.005756   0.010422   0.552  0.58092
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5909 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.3514,    Adjusted R-squared:  0.3272
```

```
F-statistic: 14.54 on 29 and 778 DF,  p-value: < 2.2e-16
```

summary(CUniversities_SGP_fit)

```
Call:
lm(formula = CUniversities ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.42827 -0.33025 -0.00496  0.26483  2.29829

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.4174103  0.3628439   3.906 0.000102 ***
TPeople        -0.0233759  0.0482897  -0.484 0.628468
TFamily         0.0866363  0.0448586   1.931 0.053806 .
TNeighbourhood -0.0275581  0.0433997  -0.635 0.525626
TKnow           0.1877714  0.0427105   4.396 1.25e-05 ***
TMeet           0.0260172  0.0378435   0.687 0.491976
VFriends        0.0091049  0.0349367   0.261 0.794461
VReligion      -0.0087521  0.0219255  -0.399 0.689876
HHealth         0.0195292  0.0292756   0.667 0.504918
HSatFin        -0.0040864  0.0119678  -0.341 0.732860
HFood           0.0783382  0.0641285   1.222 0.222236
HCrime          0.0032629  0.0460779   0.071 0.943565
HMedicine      -0.0658295  0.0574548  -1.146 0.252246
EPrivate       -0.0152534  0.0104479  -1.460 0.144709
EGovernment    -0.0022966  0.0090661  -0.253 0.800092
SSecure         0.1877700  0.0369645   5.080 4.73e-07 ***
STOpportunity   0.0064467  0.0115354   0.559 0.576419
STFaith         0.0162600  0.0091502   1.777 0.075958 .
STImportant     0.0110089  0.0094882   1.160 0.246296
PNewspaper      0.0089184  0.0145584   0.613 0.540321
PTelevision     0.0352056  0.0170523   2.065 0.039295 *
PMobile         0.0168886  0.0187353   0.901 0.367638
PSocial        -0.0033857  0.0165759  -0.204 0.838207
PDemImp        -0.0120933  0.0131303  -0.921 0.357323
PDemCurrent    -0.0198153  0.0152351  -1.301 0.193769
PSatisfied     -0.0330361  0.0147450  -2.240 0.025340 *
```

```
MF                0.0019242  0.0427965    0.045 0.964149
Age              -0.0003091  0.0018048   -0.171 0.864072
Edu              -0.0080698  0.0140599   -0.574 0.566163
Employment        0.0024955  0.0103192    0.242 0.808973
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5851 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1752,    Adjusted R-squared:  0.1445
F-statistic:   5.7 on 29 and 778 DF,  p-value: < 2.2e-16
```

```r
summary(CElections_SGP_fit)
```

```
Call:
lm(formula = CElections ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CMajCompanies - CBanks -
    CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.97731 -0.41241 -0.01293  0.42822  1.90467

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.629020   0.395108   6.654 5.38e-11 ***
TPeople         0.017932   0.052584   0.341 0.733183
TFamily         0.037370   0.048847   0.765 0.444481
TNeighbourhood  0.026479   0.047259   0.560 0.575437
TKnow           0.123120   0.046508   2.647 0.008279 **
TMeet           0.044414   0.041208   1.078 0.281458
VFriends       -0.069025   0.038043  -1.814 0.070004 .
VReligion       0.025834   0.023875   1.082 0.279568
HHealth         0.034061   0.031879   1.068 0.285643
HSatFin        -0.002312   0.013032  -0.177 0.859251
HFood           0.093395   0.069831   1.337 0.181470
HCrime          0.009630   0.050175   0.192 0.847848
HMedicine      -0.115035   0.062564  -1.839 0.066343 .
EPrivate       -0.037581   0.011377  -3.303 0.000999 ***
EGovernment    -0.012975   0.009872  -1.314 0.189130
SSecure         0.175063   0.040251   4.349 1.55e-05 ***
```

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```
STOpportunity  -0.004486   0.012561   -0.357 0.721079
STFaith        -0.012218   0.009964   -1.226 0.220498
STImportant     0.014106   0.010332    1.365 0.172556
PNewspaper      0.026170   0.015853    1.651 0.099181 .
PTelevision     0.012943   0.018569    0.697 0.485973
PMobile         0.010868   0.020401    0.533 0.594387
PSocial        -0.020741   0.018050   -1.149 0.250869
PDemImp         0.001918   0.014298    0.134 0.893312
PDemCurrent    -0.045406   0.016590   -2.737 0.006342 **
PSatisfied     -0.085722   0.016056   -5.339 1.23e-07 ***
MF             -0.042251   0.046602   -0.907 0.364878
Age            -0.001441   0.001965   -0.733 0.463568
Edu             0.013418   0.015310    0.876 0.381068
Employment     -0.001495   0.011237   -0.133 0.894221
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6371 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2746,    Adjusted R-squared:  0.2476
F-statistic: 10.16 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CMajCompanies_SGP_fit)
```

```
Call:
lm(formula = CMajCompanies ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CBanks -
    CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-1.8121 -0.3911 -0.1552  0.5027  1.8076

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.611018   0.369086    4.365 1.44e-05 ***
TPeople       -0.022880   0.049120   -0.466  0.64149
TFamily        0.081110   0.045630    1.778  0.07587 .
TNeighbourhood 0.037886   0.044146    0.858  0.39105
TKnow          0.108838   0.043445    2.505  0.01244 *
TMeet          0.052461   0.038495    1.363  0.17333
```

```
VFriends        -0.026333    0.035538   -0.741   0.45892
VReligion        0.024289    0.022303    1.089   0.27646
HHealth          0.087024    0.029779    2.922   0.00358 **
HSatFin         -0.004928    0.012174   -0.405   0.68571
HFood           -0.009186    0.065232   -0.141   0.88804
HCrime           0.034491    0.046871    0.736   0.46203
HMedicine       -0.035115    0.058443   -0.601   0.54813
EPrivate        -0.006755    0.010628   -0.636   0.52525
EGovernment     -0.002237    0.009222   -0.243   0.80838
SSecure          0.095570    0.037600    2.542   0.01122 *
STOpportunity   -0.011327    0.011734   -0.965   0.33469
STFaith         -0.006805    0.009308   -0.731   0.46492
STImportant      0.008699    0.009651    0.901   0.36773
PNewspaper       0.025042    0.014809    1.691   0.09124 .
PTelevision      0.011962    0.017346    0.690   0.49062
PMobile          0.029866    0.019058    1.567   0.11749
PSocial          0.005693    0.016861    0.338   0.73571
PDemImp          0.018269    0.013356    1.368   0.17176
PDemCurrent     -0.025519    0.015497   -1.647   0.10002
PSatisfied      -0.032373    0.014999   -2.158   0.03120 *
MF              -0.047020    0.043533   -1.080   0.28043
Age              0.002107    0.001836    1.148   0.25152
Edu              0.039634    0.014302    2.771   0.00572 **
Employment       0.004493    0.010497    0.428   0.66875
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5952 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1427,    Adjusted R-squared:  0.1108
F-statistic: 4.466 on 29 and 778 DF,  p-value: 2.388e-13
```

```r
summary(CBanks_SGP_fit)
```

```
Call:
lm(formula = CBanks ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CEnvOrg, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q    Median       3Q      Max
```

```
-1.76677 -0.31612 -0.02818  0.30708  2.08978

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.476893   0.384385   3.842 0.000132 ***
TPeople        -0.018600   0.051157  -0.364 0.716262
TFamily         0.096166   0.047522   2.024 0.043351 *
TNeighbourhood  0.061915   0.045976   1.347 0.178475
TKnow           0.174767   0.045246   3.863 0.000122 ***
TMeet          -0.025535   0.040090  -0.637 0.524358
VFriends       -0.054455   0.037011  -1.471 0.141610
VReligion       0.057121   0.023227   2.459 0.014140 *
HHealth         0.065265   0.031014   2.104 0.035664 *
HSatFin        -0.010168   0.012678  -0.802 0.422792
HFood           0.142642   0.067936   2.100 0.036081 *
HCrime         -0.045858   0.048813  -0.939 0.347790
HMedicine      -0.093655   0.060866  -1.539 0.124279
EPrivate       -0.011659   0.011068  -1.053 0.292496
EGovernment    -0.001032   0.009604  -0.107 0.914458
SSecure         0.142004   0.039159   3.626 0.000306 ***
STOpportunity  -0.008498   0.012220  -0.695 0.487008
STFaith        -0.002442   0.009693  -0.252 0.801200
STImportant     0.010988   0.010052   1.093 0.274678
PNewspaper      0.020737   0.015423   1.345 0.179152
PTelevision     0.017806   0.018065   0.986 0.324585
PMobile        -0.010195   0.019848  -0.514 0.607639
PSocial         0.012018   0.017560   0.684 0.493928
PDemImp         0.021690   0.013910   1.559 0.119324
PDemCurrent    -0.042536   0.016140  -2.636 0.008568 **
PSatisfied     -0.012286   0.015620  -0.787 0.431802
MF             -0.006437   0.045337  -0.142 0.887140
Age            -0.002502   0.001912  -1.309 0.191000
Edu             0.020179   0.014895   1.355 0.175868
Employment      0.001246   0.010932   0.114 0.909248
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6198 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1772,    Adjusted R-squared:  0.1465
F-statistic: 5.776 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CEnvOrg_SGP_fit)
```

```
Call:
lm(formula = CEnvOrg ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks, data = VC_SGP_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.60443 -0.30870 -0.08679  0.35766  2.11010

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)      1.875203   0.373148   5.025 6.24e-07 ***
TPeople         -0.056221   0.049661  -1.132  0.25794
TFamily          0.094909   0.046132   2.057  0.03999 *
TNeighbourhood   0.024040   0.044632   0.539  0.59030
TKnow            0.164717   0.043923   3.750  0.00019 ***
TMeet            0.029157   0.038918   0.749  0.45398
VFriends         0.013456   0.035929   0.375  0.70812
VReligion       -0.009758   0.022548  -0.433  0.66529
HHealth         -0.000625   0.030107  -0.021  0.98344
HSatFin         -0.015759   0.012308  -1.280  0.20079
HFood            0.041023   0.065950   0.622  0.53410
HCrime           0.001619   0.047386   0.034  0.97276
HMedicine       -0.036042   0.059086  -0.610  0.54205
EPrivate        -0.011166   0.010745  -1.039  0.29904
EGovernment      0.005554   0.009324   0.596  0.55154
SSecure          0.134413   0.038014   3.536  0.00043 ***
STOpportunity   -0.021429   0.011863  -1.806  0.07125 .
STFaith          0.002789   0.009410   0.296  0.76699
STImportant      0.003439   0.009758   0.352  0.72462
PNewspaper      -0.004104   0.014972  -0.274  0.78406
PTelevision      0.036016   0.017537   2.054  0.04033 *
PMobile          0.001863   0.019267   0.097  0.92298
PSocial         -0.015451   0.017047  -0.906  0.36499
PDemImp         -0.017764   0.013503  -1.316  0.18871
PDemCurrent     -0.018884   0.015668  -1.205  0.22845
PSatisfied      -0.029799   0.015164  -1.965  0.04975 *
MF              -0.064279   0.044012  -1.461  0.14456
Age              0.003640   0.001856   1.961  0.05022 .
```

```
Edu             0.036799   0.014459   2.545  0.01112 *
Employment      0.012971   0.010612   1.222  0.22197
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6017 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1497,    Adjusted R-squared:  0.118
F-statistic: 4.721 on 29 and 778 DF,  p-value: 1.901e-14
```

```r
# Extracting all p-values from each linear regression and sorting them to get the top-10 smal
p_values_CReligious_SGP = summary(CReligious_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CReligious_SGP = head(sort(p_values_CReligious_SGP), 10)


p_values_CTelevision_SGP = summary(CTelevision_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CTelevision_SGP = head(sort(p_values_CTelevision_SGP), 10)


p_values_CPolice_SGP = summary(CPolice_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CPolice_SGP = head(sort(p_values_CPolice_SGP), 10)


p_values_CCourts_SGP = summary(CCourts_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CCourts_SGP = head(sort(p_values_CCourts_SGP), 10)


p_values_CGovernment_SGP = summary(CGovernment_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CGovernment_SGP = head(sort(p_values_CGovernment_SGP), 10)


p_values_CUniversities_SGP = summary(CUniversities_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CUniversities_SGP = head(sort(p_values_CUniversities_SGP), 10)


p_values_CElections_SGP = summary(CElections_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CElections_SGP = head(sort(p_values_CElections_SGP), 10)


p_values_CMajCompanies_SGP = summary(CMajCompanies_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CMajCompanies_SGP = head(sort(p_values_CMajCompanies_SGP), 10)
```

```
p_values_CBanks_SGP = summary(CBanks_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CBanks_SGP = head(sort(p_values_CBanks_SGP), 10)


p_values_CEnvOrg_SGP = summary(CEnvOrg_SGP_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CEnvOrg_SGP = head(sort(p_values_CEnvOrg_SGP), 10)


# Plotting barcharts of the top-10 smallest p-values predictors for each confidence in social
par(mar=c(8, 4, 2, 2), mfrow = c(2,5))

barplot(top_10_sorted_p_values_CReligious_SGP,
        main = "CReligious for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CTelevision_SGP,
        main = "CTelevision for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CPolice_SGP,
        main = "CPolice for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CCourts_SGP,
        main = "CCourts for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CGovernment_SGP,
        main = "CGovernment for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CUniversities_SGP,
```
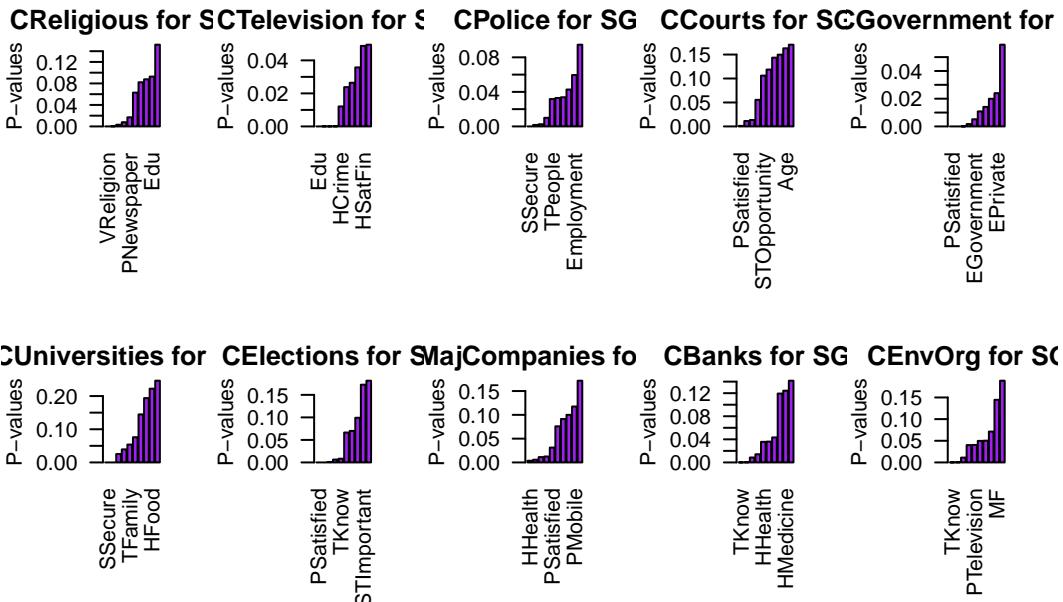
```
        main = "CUniversities for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CElections_SGP,
        main = "CElections for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CMajCompanies_SGP,
        main = "CMajCompanies for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CBanks_SGP,
        main = "CBanks for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)

barplot(top_10_sorted_p_values_CEnvOrg_SGP,
        main = "CEnvOrg for SGP",
        ylab = "P-values",
        col = "purple",
        las = 2)
```

CReligious for SC **Television for S** **CPolice for SG** **CCourts for SC** **Government for**

(P-values charts for: VReligion / PNewspaper / Edu; Edu / HCrime / HSatFin; SSecure / TPeople / Employment; PSatisfied / STOpportunity / Age; PSatisfied / EGovernment / EPrivate)

CUniversities for **CElections for S** **MajCompanies fo** **CBanks for SG** **CEnvOrg for SC**

(P-values charts for: SSecure / TFamily / HFood; PSatisfied / TKnow / STImportant; HHealth / PSatisfied / PMobile; TKnow / HHealth / HMedicine; TKnow / PTelevision / MF)

```
par(mfrow = c(1,1))
```

Question 2c code

```
VC_other_numerical_attr = VC_other_countries[, 2:40]

# Fitting linear regression for each confidence in social organisations in VC non-focus count
CReligious_other_fit = lm(CReligious ~.-CTelevision-CPolice-CCourts-CGovernment-CUniversities

CTelevision_other_fit = lm(CTelevision ~.-CReligious-CPolice-CCourts-CGovernment-CUniversitie

CPolice_other_fit = lm(CPolice ~.-CReligious-CTelevision-CCourts-CGovernment-CUniversities-CI

CCourts_other_fit = lm(CCourts ~.-CReligious-CTelevision-CPolice-CGovernment-CUniversities-CI

CGovernment_other_fit = lm(CGovernment ~.-CReligious-CTelevision-CPolice-CCourts-CUniversitie

CUniversities_other_fit = lm(CUniversities ~.-CReligious-CTelevision-CPolice-CCourts-CGovernm

CElections_other_fit = lm(CElections ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CU
```

```
CMajCompanies_other_fit = lm(CMajCompanies ~.-CReligious-CTelevision-CPolice-CCourts-CGovernn

CBanks_other_fit = lm(CBanks ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUniversit

CEnvOrg_other_fit = lm(CEnvOrg ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUnivers

# Analysing the linear regression fitted for each confidence in social organisation in VC nor
summary(CReligious_other_fit)
```

```
Call:
lm(formula = CReligious ~ . - CTelevision - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_other_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-2.71429 -0.60886 -0.08781  0.50690  2.94739

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     0.5561408  0.0524597  10.601  < 2e-16 ***
TPeople         0.0171489  0.0111851   1.533  0.12524
TFamily         0.1237942  0.0081578  15.175  < 2e-16 ***
TNeighbourhood  0.1018902  0.0066072  15.421  < 2e-16 ***
TKnow           0.0030748  0.0065380   0.470  0.63815
TMeet           0.0280846  0.0062018   4.528 5.96e-06 ***
VFriends       -0.0197163  0.0061157  -3.224  0.00127 **
VReligion       0.4673292  0.0043117 108.388  < 2e-16 ***
HHealth         0.0172491  0.0054028   3.193  0.00141 **
HSatFin        -0.0132314  0.0019723  -6.709 1.99e-11 ***
HFood           0.0461411  0.0062529   7.379 1.63e-13 ***
HCrime         -0.0172498  0.0056933  -3.030  0.00245 **
HMedicine       0.0309182  0.0056804   5.443 5.27e-08 ***
EPrivate       -0.0008943  0.0015349  -0.583  0.56014
EGovernment    -0.0004735  0.0014516  -0.326  0.74426
SSecure         0.0479548  0.0057609   8.324  < 2e-16 ***
STOpportunity  -0.0083218  0.0019165  -4.342 1.42e-05 ***
STFaith        -0.0014516  0.0015253  -0.952  0.34129
STImportant    -0.0080253  0.0015334  -5.234 1.67e-07 ***
PNewspaper      0.0153905  0.0029332   5.247 1.56e-07 ***
PTelevision     0.0421937  0.0035812  11.782  < 2e-16 ***
```

```
PMobile         0.0074253  0.0031154   2.383  0.01716 *
PSocial        -0.0364227  0.0030887 -11.792  < 2e-16 ***
PDemImp         0.0040519  0.0021226   1.909  0.05628 .
PDemCurrent    -0.0141477  0.0021208  -6.671 2.58e-11 ***
PSatisfied     -0.0160107  0.0020236  -7.912 2.61e-15 ***
MF             -0.0338476  0.0087507  -3.868  0.00011 ***
Age             0.0034722  0.0003125  11.112  < 2e-16 ***
Edu             0.0283290  0.0023776  11.915  < 2e-16 ***
Employment     -0.0056359  0.0021471  -2.625  0.00867 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8077 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.3441,    Adjusted R-squared:  0.3436
F-statistic: 643.5 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CTelevision_other_fit)
```

```
Call:
lm(formula = CTelevision ~ . - CReligious - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_other_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-2.60217 -0.54341  0.03782  0.54462  2.57736

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.5046837  0.0522988  28.771  < 2e-16 ***
TPeople         0.0676980  0.0111507   6.071 1.28e-09 ***
TFamily         0.0641241  0.0081327   7.885 3.24e-15 ***
TNeighbourhood  0.1221512  0.0065869  18.544  < 2e-16 ***
TKnow           0.0302623  0.0065179   4.643 3.45e-06 ***
TMeet           0.0626795  0.0061828  10.138  < 2e-16 ***
VFriends       -0.0159080  0.0060969  -2.609  0.00908 **
VReligion       0.0447229  0.0042984  10.404  < 2e-16 ***
HHealth         0.0049710  0.0053862   0.923  0.35606
HSatFin         0.0029893  0.0019662   1.520  0.12843
HFood           0.0426390  0.0062337   6.840 8.04e-12 ***
```

```
HCrime          0.0042123  0.0056758   0.742  0.45801
HMedicine       0.0046643  0.0056629   0.824  0.41014
EPrivate       -0.0041960  0.0015302  -2.742  0.00611 **
EGovernment     0.0057824  0.0014471   3.996 6.46e-05 ***
SSecure         0.0680604  0.0057432  11.851  < 2e-16 ***
STOpportunity  -0.0179603  0.0019107  -9.400  < 2e-16 ***
STFaith         0.0013800  0.0015207   0.907  0.36416
STImportant    -0.0003447  0.0015286  -0.225  0.82160
PNewspaper      0.0204231  0.0029242   6.984 2.92e-12 ***
PTelevision     0.0957337  0.0035703  26.814  < 2e-16 ***
PMobile         0.0090396  0.0031058   2.911  0.00361 **
PSocial        -0.0259919  0.0030792  -8.441  < 2e-16 ***
PDemImp         0.0155577  0.0021161   7.352 1.99e-13 ***
PDemCurrent    -0.0207410  0.0021143  -9.810  < 2e-16 ***
PSatisfied     -0.0492408  0.0020174 -24.408  < 2e-16 ***
MF             -0.0512603  0.0087238  -5.876 4.24e-09 ***
Age             0.0028570  0.0003115   9.171  < 2e-16 ***
Edu             0.0387554  0.0023703  16.351  < 2e-16 ***
Employment     -0.0061919  0.0021405  -2.893  0.00382 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8052 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.1466,     Adjusted R-squared:  0.1459
F-statistic: 210.8 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CPolice_other_fit)
```

```
Call:
lm(formula = CPolice ~ . - CReligious - CTelevision - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_other_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-2.55793 -0.58717 -0.04983  0.59605  2.57760

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.646e+00  5.523e-02  29.805  < 2e-16 ***
```

```
TPeople        1.148e-01  1.178e-02   9.752  < 2e-16 ***
TFamily        1.204e-01  8.589e-03  14.014  < 2e-16 ***
TNeighbourhood 1.062e-01  6.956e-03  15.260  < 2e-16 ***
TKnow          7.966e-02  6.883e-03  11.573  < 2e-16 ***
TMeet          3.710e-02  6.529e-03   5.682 1.34e-08 ***
VFriends       3.452e-02  6.439e-03   5.361 8.32e-08 ***
VReligion      2.654e-02  4.539e-03   5.847 5.05e-09 ***
HHealth        1.888e-02  5.688e-03   3.320 0.000902 ***
HSatFin       -6.751e-05  2.076e-03  -0.033 0.974062
HFood         -1.165e-02  6.583e-03  -1.770 0.076758 .
HCrime        -1.527e-02  5.994e-03  -2.547 0.010873 *
HMedicine     -2.529e-02  5.980e-03  -4.228 2.36e-05 ***
EPrivate       3.269e-03  1.616e-03   2.023 0.043070 *
EGovernment   -2.277e-03  1.528e-03  -1.490 0.136293
SSecure        1.362e-01  6.065e-03  22.448  < 2e-16 ***
STOpportunity -5.854e-03  2.018e-03  -2.901 0.003722 **
STFaith        8.294e-03  1.606e-03   5.164 2.43e-07 ***
STImportant    1.050e-02  1.614e-03   6.501 8.07e-11 ***
PNewspaper     2.102e-03  3.088e-03   0.681 0.496030
PTelevision    1.889e-02  3.770e-03   5.010 5.46e-07 ***
PMobile        8.036e-03  3.280e-03   2.450 0.014287 *
PSocial        1.300e-02  3.252e-03   3.999 6.38e-05 ***
PDemImp        8.031e-03  2.235e-03   3.594 0.000327 ***
PDemCurrent   -3.871e-02  2.233e-03 -17.335  < 2e-16 ***
PSatisfied    -4.479e-02  2.131e-03 -21.024  < 2e-16 ***
MF            -5.548e-02  9.213e-03  -6.022 1.74e-09 ***
Age           -3.466e-03  3.290e-04 -10.535  < 2e-16 ***
Edu            2.302e-02  2.503e-03   9.198  < 2e-16 ***
Employment    -2.928e-03  2.260e-03  -1.295 0.195272
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8504 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.1716,    Adjusted R-squared:  0.171
F-statistic: 254.1 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```r
summary(CCourts_other_fit)
```

```
Call:
lm(formula = CCourts ~ . - CReligious - CTelevision - CPolice -
```

```
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_other_numerical_attr)


Residuals:
     Min      1Q   Median      3Q      Max
-2.69584 -0.57861 -0.03781  0.59192  2.75975


Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.3728411  0.0548519  25.028  < 2e-16 ***
TPeople         0.1392410  0.0116951  11.906  < 2e-16 ***
TFamily         0.0927093  0.0085297  10.869  < 2e-16 ***
TNeighbourhood  0.1148264  0.0069085  16.621  < 2e-16 ***
TKnow           0.0773833  0.0068361  11.320  < 2e-16 ***
TMeet           0.0394449  0.0064846   6.083 1.19e-09 ***
VFriends        0.0212336  0.0063945   3.321 0.000899 ***
VReligion       0.0165782  0.0045083   3.677 0.000236 ***
HHealth         0.0213253  0.0056491   3.775 0.000160 ***
HSatFin        -0.0013827  0.0020622  -0.670 0.502544
HFood           0.0165763  0.0065380   2.535 0.011237 *
HCrime         -0.0333183  0.0059529  -5.597 2.20e-08 ***
HMedicine      -0.0050401  0.0059394  -0.849 0.396113
EPrivate       -0.0003454  0.0016049  -0.215 0.829605
EGovernment     0.0082489  0.0015178   5.435 5.52e-08 ***
SSecure         0.1278575  0.0060236  21.226  < 2e-16 ***
STOpportunity  -0.0111183  0.0020039  -5.548 2.91e-08 ***
STFaith         0.0197892  0.0015949  12.408  < 2e-16 ***
STImportant     0.0120721  0.0016033   7.530 5.21e-14 ***
PNewspaper      0.0100627  0.0030670   3.281 0.001035 **
PTelevision     0.0314949  0.0037445   8.411  < 2e-16 ***
PMobile         0.0178061  0.0032574   5.466 4.63e-08 ***
PSocial        -0.0113270  0.0032295  -3.507 0.000453 ***
PDemImp         0.0058024  0.0022194   2.614 0.008941 **
PDemCurrent    -0.0359951  0.0022175 -16.232  < 2e-16 ***
PSatisfied     -0.0567950  0.0021159 -26.842  < 2e-16 ***
MF             -0.0418228  0.0091497  -4.571 4.87e-06 ***
Age             0.0017942  0.0003267   5.491 4.01e-08 ***
Edu             0.0256788  0.0024860  10.329  < 2e-16 ***
Employment     -0.0004663  0.0022450  -0.208 0.835470
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


Residual standard error: 0.8446 on 35570 degrees of freedom
```

```
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.1841,    Adjusted R-squared:  0.1835
F-statistic: 276.8 on 29 and 35570 DF,  p-value: < 2.2e-16
```

summary(CGovernment_other_fit)

```
Call:
lm(formula = CGovernment ~ . - CReligious - CTelevision - CPolice -
    CCourts - CUniversities - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_other_numerical_attr)

Residuals:
     Min      1Q   Median      3Q      Max
-2.94619 -0.57916  0.00072  0.59837  2.84486

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.0769898  0.0546755  37.988  < 2e-16 ***
TPeople         0.1089215  0.0116575   9.343  < 2e-16 ***
TFamily         0.0826815  0.0085023   9.725  < 2e-16 ***
TNeighbourhood  0.1183673  0.0068863  17.189  < 2e-16 ***
TKnow           0.0154566  0.0068141   2.268 0.023317 *
TMeet           0.0306814  0.0064638   4.747 2.08e-06 ***
VFriends       -0.0065417  0.0063740  -1.026 0.304754
VReligion       0.0490262  0.0044938  10.910  < 2e-16 ***
HHealth         0.0082495  0.0056310   1.465 0.142925
HSatFin        -0.0015148  0.0020556  -0.737 0.461182
HFood           0.0417957  0.0065170   6.413 1.44e-10 ***
HCrime         -0.0391623  0.0059338  -6.600 4.17e-11 ***
HMedicine       0.0125777  0.0059203   2.125 0.033634 *
EPrivate       -0.0024195  0.0015998  -1.512 0.130441
EGovernment    -0.0009958  0.0015129  -0.658 0.510411
SSecure         0.1086090  0.0060042  18.089  < 2e-16 ***
STOpportunity  -0.0169355  0.0019975  -8.478  < 2e-16 ***
STFaith         0.0075850  0.0015898   4.771 1.84e-06 ***
STImportant     0.0161728  0.0015981  10.120  < 2e-16 ***
PNewspaper      0.0068290  0.0030571   2.234 0.025503 *
PTelevision     0.0267479  0.0037325   7.166 7.86e-13 ***
PMobile         0.0165187  0.0032470   5.087 3.65e-07 ***
PSocial        -0.0289598  0.0032191  -8.996  < 2e-16 ***
PDemImp         0.0157240  0.0022122   7.108 1.20e-12 ***
```

```
PDemCurrent   -0.0444123  0.0022104 -20.093  < 2e-16 ***
PSatisfied    -0.1157383  0.0021091 -54.875  < 2e-16 ***
MF            -0.0340929  0.0091203  -3.738 0.000186 ***
Age            0.0024275  0.0003257   7.454 9.28e-14 ***
Edu            0.0445708  0.0024780  17.987  < 2e-16 ***
Employment     0.0069348  0.0022378   3.099 0.001943 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8418 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.2712,    Adjusted R-squared:  0.2706
F-statistic: 456.5 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CUniversities_other_fit)
```

```
Call:
lm(formula = CUniversities ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_other_numerical_attr)

Residuals:
     Min      1Q  Median      3Q     Max
-2.18214 -0.50268 -0.06066  0.53775  2.66724

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.6671054  0.0518493  32.153  < 2e-16 ***
TPeople        0.0429404  0.0110549   3.884 0.000103 ***
TFamily        0.0834709  0.0080628  10.353  < 2e-16 ***
TNeighbourhood 0.0610990  0.0065303   9.356  < 2e-16 ***
TKnow          0.0945247  0.0064619  14.628  < 2e-16 ***
TMeet          0.0076930  0.0061297   1.255 0.209470
VFriends       0.0130047  0.0060445   2.151 0.031444 *
VReligion      0.0230117  0.0042615   5.400 6.71e-08 ***
HHealth        0.0255826  0.0053399   4.791 1.67e-06 ***
HSatFin       -0.0138592  0.0019493  -7.110 1.18e-12 ***
HFood         -0.0017250  0.0061801  -0.279 0.780148
HCrime         0.0171095  0.0056270   3.041 0.002363 **
HMedicine     -0.0006221  0.0056143  -0.111 0.911772
EPrivate      -0.0064228  0.0015171  -4.234 2.30e-05 ***
```

```
EGovernment      0.0115790  0.0014347   8.071 7.21e-16 ***
SSecure          0.0656119  0.0056939  11.523  < 2e-16 ***
STOpportunity   -0.0250402  0.0018942 -13.219  < 2e-16 ***
STFaith          0.0071101  0.0015076   4.716 2.41e-06 ***
STImportant      0.0080490  0.0015155   5.311 1.10e-07 ***
PNewspaper       0.0254699  0.0028991   8.785  < 2e-16 ***
PTelevision      0.0287544  0.0035396   8.124 4.67e-16 ***
PMobile          0.0231846  0.0030791   7.530 5.21e-14 ***
PSocial         -0.0183787  0.0030527  -6.020 1.76e-09 ***
PDemImp         -0.0221842  0.0020979 -10.575  < 2e-16 ***
PDemCurrent     -0.0182905  0.0020961  -8.726  < 2e-16 ***
PSatisfied      -0.0224158  0.0020001 -11.207  < 2e-16 ***
MF              -0.0161978  0.0086488  -1.873 0.061100 .
Age              0.0011388  0.0003088   3.687 0.000227 ***
Edu              0.0199034  0.0023499   8.470  < 2e-16 ***
Employment      -0.0070291  0.0021221  -3.312 0.000926 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7983 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.1006,    Adjusted R-squared:  0.09986
F-statistic: 137.2 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CElections_other_fit)
```

```
Call:
lm(formula = CElections ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CMajCompanies - CBanks -
    CEnvOrg, data = VC_other_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-2.72167 -0.57035 -0.00105  0.60427  2.76085

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.2081103  0.0546567  40.400  < 2e-16 ***
TPeople        0.1114644  0.0116535   9.565  < 2e-16 ***
TFamily        0.0263174  0.0084994   3.096 0.001960 **
TNeighbourhood 0.0928127  0.0068839  13.483  < 2e-16 ***
```

```
TKnow           0.0437526  0.0068118   6.423 1.35e-10 ***
TMeet           0.0855379  0.0064615  13.238  < 2e-16 ***
VFriends        0.0017699  0.0063718   0.278 0.781192
VReligion       0.0193639  0.0044922   4.311 1.63e-05 ***
HHealth         0.0306605  0.0056290   5.447 5.16e-08 ***
HSatFin        -0.0032067  0.0020549  -1.561 0.118636
HFood           0.0151755  0.0065147   2.329 0.019843 *
HCrime         -0.0321697  0.0059317  -5.423 5.89e-08 ***
HMedicine      -0.0019342  0.0059182  -0.327 0.743809
EPrivate       -0.0034191  0.0015992  -2.138 0.032527 *
EGovernment     0.0070286  0.0015124   4.647 3.37e-06 ***
SSecure         0.0896873  0.0060022  14.942  < 2e-16 ***
STOpportunity  -0.0103088  0.0019968  -5.163 2.45e-07 ***
STFaith         0.0153139  0.0015892   9.636  < 2e-16 ***
STImportant     0.0078313  0.0015976   4.902 9.53e-07 ***
PNewspaper      0.0292250  0.0030561   9.563  < 2e-16 ***
PTelevision     0.0239287  0.0037312   6.413 1.44e-10 ***
PMobile         0.0119644  0.0032458   3.686 0.000228 ***
PSocial        -0.0359829  0.0032180 -11.182  < 2e-16 ***
PDemImp        -0.0059757  0.0022115  -2.702 0.006893 **
PDemCurrent    -0.0487275  0.0022096 -22.052  < 2e-16 ***
PSatisfied     -0.0765904  0.0021084 -36.326  < 2e-16 ***
MF              0.0022487  0.0091171   0.247 0.805184
Age            -0.0003864  0.0003256  -1.187 0.235274
Edu             0.0105590  0.0024772   4.263 2.03e-05 ***
Employment     -0.0019530  0.0022370  -0.873 0.382636
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8415 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.2127,    Adjusted R-squared:  0.212
F-statistic: 331.3 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```r
summary(CMajCompanies_other_fit)
```

```
Call:
lm(formula = CMajCompanies ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CBanks -
    CEnvOrg, data = VC_other_numerical_attr)
```

```
Residuals:
     Min      1Q   Median      3Q      Max
-2.43554 -0.56858  0.06114  0.52276  2.34823

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.711525   0.052206  32.784  < 2e-16 ***
TPeople         0.038939   0.011131   3.498 0.000469 ***
TFamily         0.053852   0.008118   6.633 3.33e-11 ***
TNeighbourhood  0.068501   0.006575  10.418  < 2e-16 ***
TKnow           0.056417   0.006506   8.671  < 2e-16 ***
TMeet           0.081984   0.006172  13.284  < 2e-16 ***
VFriends       -0.002249   0.006086  -0.369 0.711769
VReligion       0.038230   0.004291   8.910  < 2e-16 ***
HHealth         0.032279   0.005377   6.004 1.95e-09 ***
HSatFin        -0.009227   0.001963  -4.701 2.60e-06 ***
HFood           0.028876   0.006223   4.641 3.49e-06 ***
HCrime          0.009156   0.005666   1.616 0.106114
HMedicine      -0.016786   0.005653  -2.969 0.002985 **
EPrivate        0.005518   0.001527   3.613 0.000304 ***
EGovernment    -0.003297   0.001445  -2.282 0.022488 *
SSecure         0.056476   0.005733   9.851  < 2e-16 ***
STOpportunity  -0.013662   0.001907  -7.163 8.03e-13 ***
STFaith        -0.004126   0.001518  -2.718 0.006574 **
STImportant     0.005392   0.001526   3.534 0.000410 ***
PNewspaper      0.016170   0.002919   5.540 3.05e-08 ***
PTelevision     0.024448   0.003564   6.860 7.00e-12 ***
PMobile         0.015203   0.003100   4.904 9.45e-07 ***
PSocial        -0.009851   0.003074  -3.205 0.001352 **
PDemImp         0.002148   0.002112   1.017 0.309111
PDemCurrent    -0.015012   0.002110  -7.113 1.16e-12 ***
PSatisfied     -0.035392   0.002014 -17.574  < 2e-16 ***
MF             -0.004332   0.008708  -0.497 0.618842
Age             0.002249   0.000311   7.232 4.87e-13 ***
Edu             0.029056   0.002366  12.280  < 2e-16 ***
Employment      0.001980   0.002137   0.927 0.354025
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8038 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.09208,   Adjusted R-squared:  0.09134
F-statistic: 124.4 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CBanks_other_fit)
```

```
Call:
lm(formula = CBanks ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CEnvOrg, data = VC_other_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-2.5768 -0.5791 -0.1193  0.6230  2.6402

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.6406329  0.0564506  29.063  < 2e-16 ***
TPeople         0.0603858  0.0120360   5.017 5.27e-07 ***
TFamily         0.0505431  0.0087783   5.758 8.60e-09 ***
TNeighbourhood  0.0780554  0.0071098  10.978  < 2e-16 ***
TKnow           0.0739928  0.0070354  10.517  < 2e-16 ***
TMeet           0.0348206  0.0066736   5.218 1.82e-07 ***
VFriends       -0.0071577  0.0065809  -1.088  0.27676
VReligion       0.0561514  0.0046397  12.102  < 2e-16 ***
HHealth         0.0250501  0.0058138   4.309 1.65e-05 ***
HSatFin        -0.0176325  0.0021223  -8.308  < 2e-16 ***
HFood           0.0348458  0.0067286   5.179 2.25e-07 ***
HCrime         -0.0378018  0.0061264  -6.170 6.89e-10 ***
HMedicine      -0.0056176  0.0061125  -0.919  0.35808
EPrivate       -0.0011290  0.0016517  -0.684  0.49426
EGovernment    -0.0040151  0.0015620  -2.570  0.01016 *
SSecure         0.0725229  0.0061992  11.699  < 2e-16 ***
STOpportunity  -0.0150135  0.0020623  -7.280 3.41e-13 ***
STFaith         0.0015037  0.0016414   0.916  0.35961
STImportant     0.0066633  0.0016500   4.038 5.39e-05 ***
PNewspaper      0.0087026  0.0031564   2.757  0.00583 **
PTelevision     0.0347937  0.0038537   9.029  < 2e-16 ***
PMobile         0.0281424  0.0033524   8.395  < 2e-16 ***
PSocial        -0.0181518  0.0033236  -5.461 4.75e-08 ***
PDemImp         0.0050787  0.0022841   2.224  0.02619 *
PDemCurrent    -0.0237715  0.0022821 -10.416  < 2e-16 ***
PSatisfied     -0.0375713  0.0021776 -17.254  < 2e-16 ***
MF             -0.0437938  0.0094164  -4.651 3.32e-06 ***
Age             0.0043638  0.0003363  12.978  < 2e-16 ***
```

```
Edu             0.0449268  0.0025585  17.560  < 2e-16 ***
Employment      0.0017367  0.0023104   0.752  0.45224
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8692 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.1092,    Adjusted R-squared:  0.1085
F-statistic: 150.4 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```
summary(CEnvOrg_other_fit)
```

```
Call:
lm(formula = CEnvOrg ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks, data = VC_other_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-2.2814 -0.5035 -0.1346  0.5976  2.5308

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.6216975  0.0543596  29.833  < 2e-16 ***
TPeople         0.0502981  0.0115901   4.340 1.43e-05 ***
TFamily         0.0325646  0.0084532   3.852 0.000117 ***
TNeighbourhood  0.0416409  0.0068465   6.082 1.20e-09 ***
TKnow           0.0927695  0.0067748  13.693  < 2e-16 ***
TMeet           0.0595926  0.0064264   9.273  < 2e-16 ***
VFriends        0.0113440  0.0063372   1.790 0.073450 .
VReligion       0.0231911  0.0044678   5.191 2.11e-07 ***
HHealth         0.0137869  0.0055984   2.463 0.013797 *
HSatFin        -0.0121731  0.0020437  -5.956 2.60e-09 ***
HFood           0.0317836  0.0064793   4.905 9.37e-07 ***
HCrime          0.0060876  0.0058995   1.032 0.302132
HMedicine       0.0050398  0.0058861   0.856 0.391884
EPrivate       -0.0097158  0.0015905  -6.109 1.02e-09 ***
EGovernment     0.0097493  0.0015042   6.482 9.20e-11 ***
SSecure         0.0792843  0.0059695  13.281  < 2e-16 ***
STOpportunity  -0.0153808  0.0019860  -7.745 9.83e-15 ***
STFaith         0.0083885  0.0015806   5.307 1.12e-07 ***
```

```
STImportant     0.0116835  0.0015889   7.353 1.98e-13 ***
PNewspaper      0.0194278  0.0030395   6.392 1.66e-10 ***
PTelevision     0.0167019  0.0037109   4.501 6.79e-06 ***
PMobile         0.0188002  0.0032282   5.824 5.80e-09 ***
PSocial        -0.0051010  0.0032005  -1.594 0.110990
PDemImp        -0.0235409  0.0021995 -10.703  < 2e-16 ***
PDemCurrent    -0.0193900  0.0021976  -8.823  < 2e-16 ***
PSatisfied     -0.0245844  0.0020969 -11.724  < 2e-16 ***
MF             -0.0550419  0.0090676  -6.070 1.29e-09 ***
Age             0.0040860  0.0003238  12.619  < 2e-16 ***
Edu             0.0236342  0.0024637   9.593  < 2e-16 ***
Employment     -0.0067628  0.0022248  -3.040 0.002370 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.837 on 35570 degrees of freedom
  (13360 observations deleted due to missingness)
Multiple R-squared:  0.08909,   Adjusted R-squared:  0.08834
F-statistic:   120 on 29 and 35570 DF,  p-value: < 2.2e-16
```

```r
# Extracting all p-values from each linear regression and sorting them to get the top-10 smal
p_values_CReligious_other = summary(CReligious_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CReligious_other = head(sort(p_values_CReligious_other), 10)


p_values_CTelevision_other = summary(CTelevision_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CTelevision_other = head(sort(p_values_CTelevision_other), 10)


p_values_CPolice_other = summary(CPolice_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CPolice_other = head(sort(p_values_CPolice_other), 10)


p_values_CCourts_other = summary(CCourts_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CCourts_other = head(sort(p_values_CCourts_other), 10)


p_values_CGovernment_other = summary(CGovernment_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CGovernment_other = head(sort(p_values_CGovernment_other), 10)


p_values_CUniversities_other = summary(CUniversities_other_fit)$coefficients[2:30, "Pr(>|t|)"
```

```
top_10_sorted_p_values_CUniversities_other = head(sort(p_values_CUniversities_other), 10)


p_values_CElections_other = summary(CElections_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CElections_other = head(sort(p_values_CElections_other), 10)


p_values_CMajCompanies_other = summary(CMajCompanies_other_fit)$coefficients[2:30, "Pr(>|t|)"
top_10_sorted_p_values_CMajCompanies_other = head(sort(p_values_CMajCompanies_other), 10)


p_values_CBanks_other = summary(CBanks_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CBanks_other = head(sort(p_values_CBanks_other), 10)


p_values_CEnvOrg_other = summary(CEnvOrg_other_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CEnvOrg_other = head(sort(p_values_CEnvOrg_other), 10)


par(mar=c(8, 4, 2, 2), mfrow = c(2,5))

barplot(top_10_sorted_p_values_CReligious_other,
        main = "CReligious for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CTelevision_other,
        main = "CTelevision for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CPolice_other,
        main = "CPolice for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CCourts_other,
        main = "CCourts for other",
        ylab = "P-values",
```

```
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CGovernment_other,
        main = "CGovernment for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CUniversities_other,
        main = "CUniversities for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CElections_other,
        main = "CElections for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CMajCompanies_other,
        main = "CMajCompanies for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CBanks_other,
        main = "CBanks for other",
        ylab = "P-values",
        col = "pink",
        las = 2)

barplot(top_10_sorted_p_values_CEnvOrg_other,
        main = "CEnvOrg for other",
        ylab = "P-values",
        col = "pink",
        las = 2)
```
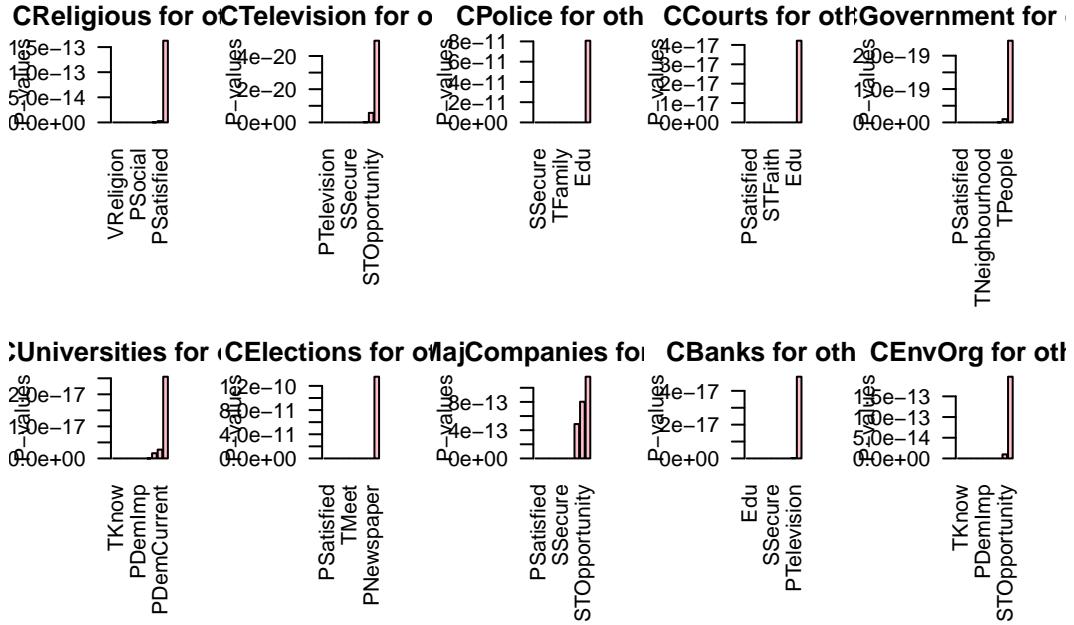
CReligious for o | **CTelevision for o** | **CPolice for oth** | **CCourts for oth** | **Government for**

```
1.5e-13        4e-20         8e-11        4e-17         2.0e-19
1.0e-13        2e-20         6e-11        3e-17         1.5e-19
5.0e-14        0e+00         4e-11        2e-17         1.0e-19
0.0e+00                      2e-11        1e-17
                             0e+00        0e+00         0.0e+00
```

VReligion / PSocial / PSatisfied   PTelevision / SSecure / STOpportunity   SSecure / TFamily / Edu   PSatisfied / STFaith / Edu   PSatisfied / TNeighbourhood / TPeople

Universities for | **CElections for o** | **MajCompanies for** | **CBanks for oth** | **CEnvOrg for oth**

```
2.0e-17        1.2e-10        8e-13         4e-17         1.5e-13
1.5e-17        8.0e-11        4e-13         2e-17         1.0e-13
               4.0e-11                                    5.0e-14
0.0e+00        0.0e+00        0e+00         0e+00         0.0e+00
```

TKnow / PDemImp / PDemCurrent   PSatisfied / TMeet / PNewspaper   PSatisfied / SSecure / STOpportunity   Edu / SSecure / PTelevision   TKnow / PDemImp / STOpportunity

```r
par(mfrow = c(1,1))
```

Question 3a code

```r
library(cluster)
library(ggrepel)
library(factoextra)

world_data = read.csv("world-data-2023.csv")

# Extract indicators
external_data = world_data[, c(1,7,10,11,14,16:20,22,23,26,27,29,32)]

# Handle missing values
for (col in names(external_data)) {
  external_data[[col]][external_data[[col]] == ""] <- NA
}

external_data = na.omit(external_data)

# Change character data types to numerical data types
```

```r
for (col in names(external_data)[-1]) {  # skip "Country"
  if (is.character(external_data[[col]])) {
    external_data[[col]] <- as.numeric(gsub("[$,%]", "", gsub(",", "", external_data[[col]]))
  }
}

external_data[, 2:length(external_data)] = scale(external_data[, 2:length(external_data)])

# Plotting average silhouette score graph
silhouette_value <- function(k) {
  km <- kmeans(external_data[, 2:length(external_data)], k, nstart = 1)
  ss <- silhouette(km$cluster, dist(external_data[, 2:length(external_data)]))
  mean(ss[, 3])
}

# Plot average silhouette score for 2-16 clusters on a line graph
k <- 2:length(external_data)
avg_sil <- sapply(k, silhouette_value)
# plot(k, type='b', avg_sil, xlab='Number of clusters', ylab='Average Silhouette Scores')

# Checking the best number of k-clusters
best_k <- k[which.max(avg_sil)]

best_k
```

```
[1] 3
```

```r
# K-means clustering and create cluster plot
cluster_fit = kmeans(external_data[, 2:length(external_data)], best_k, nstart = 20)

cluster_fit$cluster <- factor(cluster_fit$cluster)

rownames(external_data) = external_data$Country

p <- fviz_cluster(cluster_fit, data = external_data[, 2:length(external_data)],
            ggtheme = theme_minimal())
```

Question 3b code

```
VC_similar = VC[VC$Country %in% c("URY", "NZL", "CYP", "NLD", "CHL"), ]

VC_similar_numerical_attr = VC_SGP[, 2:40]

CReligious_similar_fit = lm(CReligious ~.-CTelevision-CPolice-CCourts-CGovernment-CUniversit

CTelevision_similar_fit = lm(CTelevision ~.-CReligious-CPolice-CCourts-CGovernment-CUniversit

CPolice_similar_fit = lm(CPolice ~.-CReligious-CTelevision-CCourts-CGovernment-CUniversities-

CCourts_similar_fit = lm(CCourts ~.-CReligious-CTelevision-CPolice-CGovernment-CUniversities-

CGovernment_similar_fit = lm(CGovernment ~.-CReligious-CTelevision-CPolice-CCourts-CUniversit

CUniversities_similar_fit = lm(CUniversities ~.-CReligious-CTelevision-CPolice-CCourts-CGover

CElections_similar_fit = lm(CElections ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-

CMajCompanies_similar_fit = lm(CMajCompanies ~.-CReligious-CTelevision-CPolice-CCourts-CGover

CBanks_similar_fit = lm(CBanks ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUnivers

CEnvOrg_similar_fit = lm(CEnvOrg ~.-CReligious-CTelevision-CPolice-CCourts-CGovernment-CUnive

summary(CReligious_similar_fit)
```

```
Call:
lm(formula = CReligious ~ . - CTelevision - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-1.7054 -0.4144  0.0015  0.3933  2.3033

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  6.219e-01  4.004e-01   1.553 0.120785
TPeople      1.544e-02  5.329e-02   0.290 0.772141
TFamily      9.219e-02  4.950e-02   1.862 0.062919 .
```

```
TNeighbourhood  1.739e-01  4.789e-02   3.630 0.000301 ***
TKnow           1.397e-01  4.713e-02   2.964 0.003129 **
TMeet          -2.433e-02  4.176e-02  -0.583 0.560390
VFriends       -2.852e-02  3.855e-02  -0.740 0.459677
VReligion       3.146e-01  2.420e-02  13.001  < 2e-16 ***
HHealth        -5.412e-03  3.231e-02  -0.168 0.867011
HSatFin        -1.893e-02  1.321e-02  -1.434 0.152108
HFood           7.424e-02  7.077e-02   1.049 0.294495
HCrime         -4.556e-02  5.085e-02  -0.896 0.370555
HMedicine      -1.421e-02  6.340e-02  -0.224 0.822711
EPrivate       -8.142e-03  1.153e-02  -0.706 0.480291
EGovernment     1.339e-02  1.000e-02   1.338 0.181236
SSecure         1.089e-01  4.079e-02   2.669 0.007772 **
STOpportunity   1.809e-02  1.273e-02   1.421 0.155593
STFaith        -5.269e-03  1.010e-02  -0.522 0.601930
STImportant    -7.240e-04  1.047e-02  -0.069 0.944891
PNewspaper      3.843e-02  1.607e-02   2.392 0.016991 *
PTelevision     2.547e-02  1.882e-02   1.354 0.176198
PMobile        -1.885e-02  2.067e-02  -0.912 0.362114
PSocial         1.769e-02  1.829e-02   0.967 0.333848
PDemImp         2.522e-02  1.449e-02   1.741 0.082164 .
PDemCurrent    -2.265e-02  1.681e-02  -1.347 0.178251
PSatisfied     -2.782e-02  1.627e-02  -1.710 0.087704 .
MF             -1.667e-03  4.723e-02  -0.035 0.971855
Age            -4.576e-05  1.992e-03  -0.023 0.981677
Edu             2.612e-02  1.552e-02   1.683 0.092724 .
Employment      1.166e-02  1.139e-02   1.024 0.306129
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6457 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.3378,    Adjusted R-squared:  0.3132
F-statistic: 13.69 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CTelevision_similar_fit)
```

```
Call:
lm(formula = CTelevision ~ . - CReligious - CPolice - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_similar_numerical_attr)
```

```
Residuals:
     Min       1Q   Median       3Q      Max
-1.68760 -0.40151 -0.02371  0.43569  1.83608

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.373e+00  3.699e-01   3.711 0.000221 ***
TPeople         2.097e-02  4.923e-02   0.426 0.670239
TFamily         2.705e-02  4.574e-02   0.591 0.554460
TNeighbourhood  3.927e-02  4.425e-02   0.887 0.375092
TKnow           7.432e-02  4.355e-02   1.707 0.088277 .
TMeet           6.381e-02  3.858e-02   1.654 0.098579 .
VFriends        3.999e-02  3.562e-02   1.123 0.261910
VReligion      -1.997e-04  2.235e-02  -0.009 0.992874
HHealth         5.123e-03  2.985e-02   0.172 0.863757
HSatFin         2.408e-02  1.220e-02   1.974 0.048765 *
HFood          -2.300e-02  6.538e-02  -0.352 0.725147
HCrime          1.181e-01  4.698e-02   2.515 0.012110 *
HMedicine      -8.545e-02  5.858e-02  -1.459 0.145062
EPrivate       -1.045e-02  1.065e-02  -0.981 0.326911
EGovernment     6.588e-05  9.243e-03   0.007 0.994315
SSecure         1.533e-01  3.769e-02   4.068 5.23e-05 ***
STOpportunity  -2.615e-02  1.176e-02  -2.224 0.026449 *
STFaith         1.421e-02  9.329e-03   1.523 0.128117
STImportant    -1.903e-02  9.674e-03  -1.967 0.049492 *
PNewspaper      4.946e-03  1.484e-02   0.333 0.739057
PTelevision     7.079e-02  1.739e-02   4.072 5.14e-05 ***
PMobile         2.450e-02  1.910e-02   1.282 0.200078
PSocial         4.079e-03  1.690e-02   0.241 0.809342
PDemImp         3.032e-02  1.339e-02   2.265 0.023778 *
PDemCurrent    -2.089e-02  1.553e-02  -1.345 0.179043
PSatisfied     -5.979e-02  1.503e-02  -3.977 7.63e-05 ***
MF             -9.179e-02  4.363e-02  -2.104 0.035728 *
Age             1.196e-03  1.840e-03   0.650 0.515866
Edu             9.182e-02  1.433e-02   6.405 2.60e-10 ***
Employment      1.788e-02  1.052e-02   1.699 0.089626 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5966 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2484,    Adjusted R-squared:  0.2204
```

```
F-statistic: 8.868 on 29 and 778 DF,  p-value: < 2.2e-16
```

summary(CPolice_similar_fit)

```
Call:
lm(formula = CPolice ~ . - CReligious - CTelevision - CCourts -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
    Min      1Q   Median      3Q     Max
-1.45966 -0.45414  0.04605  0.30873  2.41223

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.3768680  0.3753589   3.668 0.000261 ***
TPeople         0.1075058  0.0499553   2.152 0.031701 *
TFamily         0.0991565  0.0464058   2.137 0.032932 *
TNeighbourhood  0.0954778  0.0448966   2.127 0.033766 *
TKnow           0.1388301  0.0441836   3.142 0.001741 **
TMeet          -0.0794626  0.0391488  -2.030 0.042721 *
VFriends        0.0065152  0.0361418   0.180 0.856989
VReligion       0.0218664  0.0226818   0.964 0.335319
HHealth        -0.0350556  0.0302853  -1.158 0.247419
HSatFin        -0.0047989  0.0123806  -0.388 0.698405
HFood           0.1109680  0.0663404   1.673 0.094787 .
HCrime         -0.0370378  0.0476672  -0.777 0.437390
HMedicine      -0.0379234  0.0594365  -0.638 0.523629
EPrivate       -0.0143972  0.0108083  -1.332 0.183234
EGovernment    -0.0060337  0.0093788  -0.643 0.520201
SSecure         0.1847906  0.0382394   4.832 1.62e-06 ***
STOpportunity  -0.0092476  0.0119333  -0.775 0.438610
STFaith         0.0059130  0.0094658   0.625 0.532374
STImportant    -0.0148291  0.0098155  -1.511 0.131249
PNewspaper     -0.0107666  0.0150605  -0.715 0.474891
PTelevision     0.0455606  0.0176405   2.583 0.009984 **
PMobile         0.0252953  0.0193815   1.305 0.192235
PSocial         0.0045400  0.0171476   0.265 0.791266
PDemImp         0.0037765  0.0135832   0.278 0.781065
PDemCurrent    -0.0263736  0.0157606  -1.673 0.094653 .
PSatisfied     -0.0462618  0.0152535  -3.033 0.002503 **
```

```
MF                0.0190112  0.0442726   0.429 0.667742
Age               0.0008064  0.0018671   0.432 0.665944
Edu              -0.0097569  0.0145448  -0.671 0.502538
Employment        0.0201444  0.0106751   1.887 0.059526 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6053 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2099,    Adjusted R-squared:  0.1804
F-statistic: 7.126 on 29 and 778 DF,  p-value: < 2.2e-16
```

summary(CCourts_similar_fit)

```
Call:
lm(formula = CCourts ~ . - CReligious - CTelevision - CPolice -
    CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks - CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.52800 -0.42435  0.02223  0.34312  2.15355

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.7399614  0.4018263   4.330 1.69e-05 ***
TPeople         0.0299560  0.0534778   0.560  0.57553
TFamily         0.0403954  0.0496780   0.813  0.41638
TNeighbourhood  0.0750752  0.0480623   1.562  0.11869
TKnow           0.0681904  0.0472991   1.442  0.14979
TMeet           0.0574817  0.0419092   1.372  0.17059
VFriends        0.0018033  0.0386902   0.047  0.96284
VReligion       0.0158406  0.0242811   0.652  0.51435
HHealth        -0.0381987  0.0324208  -1.178  0.23907
HSatFin        -0.0178041  0.0132536  -1.343  0.17955
HFood           0.1362001  0.0710182   1.918  0.05550 .
HCrime         -0.0164800  0.0510283  -0.323  0.74681
HMedicine      -0.0600394  0.0636275  -0.944  0.34566
EPrivate       -0.0139535  0.0115704  -1.206  0.22820
EGovernment    -0.0105320  0.0100401  -1.049  0.29451
SSecure         0.1015356  0.0409358   2.480  0.01334 *
```

```
STOpportunity  -0.0206699   0.0127748   -1.618   0.10606
STFaith         0.0043716   0.0101333    0.431   0.66629
STImportant     0.0070079   0.0105076    0.667   0.50501
PNewspaper      0.0236079   0.0161225    1.464   0.14352
PTelevision     0.0227841   0.0188844    1.207   0.22799
PMobile         0.0180648   0.0207481    0.871   0.38420
PSocial         0.0001796   0.0183567    0.010   0.99220
PDemImp         0.0038995   0.0145410    0.268   0.78864
PDemCurrent    -0.0428799   0.0168719   -2.541   0.01123 *
PSatisfied     -0.0534263   0.0163291   -3.272   0.00112 **
MF             -0.0215798   0.0473943   -0.455   0.64900
Age             0.0027908   0.0019987    1.396   0.16302
Edu            -0.0099307   0.0155704   -0.638   0.52379
Employment      0.0156740   0.0114278    1.372   0.17059
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.648 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1795,    Adjusted R-squared:  0.1489
F-statistic: 5.867 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CGovernment_similar_fit)
```

```
Call:
lm(formula = CGovernment ~ . - CReligious - CTelevision - CPolice -
    CCourts - CUniversities - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.66035 -0.40029  0.01506  0.35363  2.22190

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.073499   0.366466   5.658 2.15e-08 ***
TPeople         0.060701   0.048772   1.245  0.21365
TFamily         0.040506   0.045306   0.894  0.37157
TNeighbourhood  0.017384   0.043833   0.397  0.69177
TKnow           0.183767   0.043137   4.260 2.29e-05 ***
TMeet          -0.010215   0.038221  -0.267  0.78934
```

```
VFriends        -0.024972   0.035285  -0.708  0.47933
VReligion        0.013155   0.022144   0.594  0.55264
HHealth          0.030973   0.029568   1.048  0.29518
HSatFin         -0.003846   0.012087  -0.318  0.75046
HFood            0.059406   0.064769   0.917  0.35932
HCrime           0.019168   0.046538   0.412  0.68054
HMedicine       -0.064301   0.058028  -1.108  0.26816
EPrivate        -0.023866   0.010552  -2.262  0.02399 *
EGovernment     -0.025690   0.009157  -2.806  0.00515 **
SSecure          0.196060   0.037333   5.252 1.95e-07 ***
STOpportunity   -0.002183   0.011651  -0.187  0.85140
STFaith          0.005637   0.009242   0.610  0.54204
STImportant     -0.009164   0.009583  -0.956  0.33922
PNewspaper       0.009461   0.014704   0.643  0.52015
PTelevision      0.040166   0.017223   2.332  0.01995 *
PMobile          0.026935   0.018922   1.423  0.15500
PSocial         -0.006191   0.016741  -0.370  0.71162
PDemImp          0.033876   0.013261   2.554  0.01082 *
PDemCurrent     -0.048440   0.015387  -3.148  0.00171 **
PSatisfied      -0.099937   0.014892  -6.711 3.73e-11 ***
MF              -0.106373   0.043224  -2.461  0.01407 *
Age             -0.002522   0.001823  -1.383  0.16693
Edu              0.026856   0.014200   1.891  0.05896 .
Employment       0.005756   0.010422   0.552  0.58092
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5909 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.3514,    Adjusted R-squared:  0.3272
F-statistic: 14.54 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CUniversities_similar_fit)
```

```
Call:
lm(formula = CUniversities ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CElections - CMajCompanies - CBanks -
    CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
    Min       1Q   Median       3Q      Max
```

```
-1.42827 -0.33025 -0.00496  0.26483  2.29829

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.4174103  0.3628439   3.906 0.000102 ***
TPeople        -0.0233759  0.0482897  -0.484 0.628468
TFamily         0.0866363  0.0448586   1.931 0.053806 .
TNeighbourhood -0.0275581  0.0433997  -0.635 0.525626
TKnow           0.1877714  0.0427105   4.396 1.25e-05 ***
TMeet           0.0260172  0.0378435   0.687 0.491976
VFriends        0.0091049  0.0349367   0.261 0.794461
VReligion      -0.0087521  0.0219255  -0.399 0.689876
HHealth         0.0195292  0.0292756   0.667 0.504918
HSatFin        -0.0040864  0.0119678  -0.341 0.732860
HFood           0.0783382  0.0641285   1.222 0.222236
HCrime          0.0032629  0.0460779   0.071 0.943565
HMedicine      -0.0658295  0.0574548  -1.146 0.252246
EPrivate       -0.0152534  0.0104479  -1.460 0.144709
EGovernment    -0.0022966  0.0090661  -0.253 0.800092
SSecure         0.1877700  0.0369645   5.080 4.73e-07 ***
STOpportunity   0.0064467  0.0115354   0.559 0.576419
STFaith         0.0162600  0.0091502   1.777 0.075958 .
STImportant     0.0110089  0.0094882   1.160 0.246296
PNewspaper      0.0089184  0.0145584   0.613 0.540321
PTelevision     0.0352056  0.0170523   2.065 0.039295 *
PMobile         0.0168886  0.0187353   0.901 0.367638
PSocial        -0.0033857  0.0165759  -0.204 0.838207
PDemImp        -0.0120933  0.0131303  -0.921 0.357323
PDemCurrent    -0.0198153  0.0152351  -1.301 0.193769
PSatisfied     -0.0330361  0.0147450  -2.240 0.025340 *
MF              0.0019242  0.0427965   0.045 0.964149
Age            -0.0003091  0.0018048  -0.171 0.864072
Edu            -0.0080698  0.0140599  -0.574 0.566163
Employment      0.0024955  0.0103192   0.242 0.808973
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5851 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1752,    Adjusted R-squared:  0.1445
F-statistic:   5.7 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CElections_similar_fit)
```

Call:
lm(formula = CElections ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CMajCompanies - CBanks -
    CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
     Min   1Q Median   3Q   Max
-1.97731 -0.41241 -0.01293 0.42822 1.90467

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)   2.629020   0.395108   6.654 5.38e-11 ***
TPeople   0.017932   0.052584   0.341 0.733183
TFamily   0.037370   0.048847   0.765 0.444481
TNeighbourhood 0.026479   0.047259   0.560 0.575437
TKnow   0.123120   0.046508   2.647 0.008279 **
TMeet   0.044414   0.041208   1.078 0.281458
VFriends   -0.069025   0.038043 -1.814 0.070004 .
VReligion   0.025834   0.023875   1.082 0.279568
HHealth   0.034061   0.031879   1.068 0.285643
HSatFin   -0.002312   0.013032 -0.177 0.859251
HFood   0.093395   0.069831   1.337 0.181470
HCrime   0.009630   0.050175   0.192 0.847848
HMedicine   -0.115035   0.062564 -1.839 0.066343 .
EPrivate   -0.037581   0.011377 -3.303 0.000999 ***
EGovernment   -0.012975   0.009872 -1.314 0.189130
SSecure   0.175063   0.040251   4.349 1.55e-05 ***
STOpportunity -0.004486   0.012561 -0.357 0.721079
STFaith   -0.012218   0.009964 -1.226 0.220498
STImportant   0.014106   0.010332   1.365 0.172556
PNewspaper   0.026170   0.015853   1.651 0.099181 .
PTelevision   0.012943   0.018569   0.697 0.485973
PMobile   0.010868   0.020401   0.533 0.594387
PSocial   -0.020741   0.018050 -1.149 0.250869
PDemImp   0.001918   0.014298   0.134 0.893312
PDemCurrent   -0.045406   0.016590 -2.737 0.006342 **
PSatisfied   -0.085722   0.016056 -5.339 1.23e-07 ***
MF   -0.042251   0.046602 -0.907 0.364878
Age   -0.001441   0.001965 -0.733 0.463568
```

```
Edu                  0.013418    0.015310    0.876 0.381068
Employment          -0.001495    0.011237   -0.133 0.894221
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6371 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.2746,    Adjusted R-squared:  0.2476
F-statistic: 10.16 on 29 and 778 DF,  p-value: < 2.2e-16
```

summary(CMajCompanies_similar_fit)

```
Call:
lm(formula = CMajCompanies ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CBanks -
    CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
    Min      1Q  Median      3Q     Max
-1.8121 -0.3911 -0.1552  0.5027  1.8076

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.611018   0.369086    4.365 1.44e-05 ***
TPeople        -0.022880   0.049120   -0.466  0.64149
TFamily         0.081110   0.045630    1.778  0.07587 .
TNeighbourhood  0.037886   0.044146    0.858  0.39105
TKnow           0.108838   0.043445    2.505  0.01244 *
TMeet           0.052461   0.038495    1.363  0.17333
VFriends       -0.026333   0.035538   -0.741  0.45892
VReligion       0.024289   0.022303    1.089  0.27646
HHealth         0.087024   0.029779    2.922  0.00358 **
HSatFin        -0.004928   0.012174   -0.405  0.68571
HFood          -0.009186   0.065232   -0.141  0.88804
HCrime          0.034491   0.046871    0.736  0.46203
HMedicine      -0.035115   0.058443   -0.601  0.54813
EPrivate       -0.006755   0.010628   -0.636  0.52525
EGovernment    -0.002237   0.009222   -0.243  0.80838
SSecure         0.095570   0.037600    2.542  0.01122 *
STOpportunity  -0.011327   0.011734   -0.965  0.33469
STFaith        -0.006805   0.009308   -0.731  0.46492
```

```
STImportant     0.008699   0.009651    0.901  0.36773
PNewspaper      0.025042   0.014809    1.691  0.09124 .
PTelevision     0.011962   0.017346    0.690  0.49062
PMobile         0.029866   0.019058    1.567  0.11749
PSocial         0.005693   0.016861    0.338  0.73571
PDemImp         0.018269   0.013356    1.368  0.17176
PDemCurrent    -0.025519   0.015497   -1.647  0.10002
PSatisfied     -0.032373   0.014999   -2.158  0.03120 *
MF             -0.047020   0.043533   -1.080  0.28043
Age             0.002107   0.001836    1.148  0.25152
Edu             0.039634   0.014302    2.771  0.00572 **
Employment      0.004493   0.010497    0.428  0.66875
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5952 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1427,    Adjusted R-squared:  0.1108
F-statistic: 4.466 on 29 and 778 DF,  p-value: 2.388e-13
```

```
summary(CBanks_similar_fit)
```

```
Call:
lm(formula = CBanks ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CEnvOrg, data = VC_similar_numerical_attr)

Residuals:
     Min       1Q   Median       3Q      Max
-1.76677 -0.31612 -0.02818  0.30708  2.08978

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.476893   0.384385   3.842 0.000132 ***
TPeople       -0.018600   0.051157  -0.364 0.716262
TFamily        0.096166   0.047522   2.024 0.043351 *
TNeighbourhood 0.061915   0.045976   1.347 0.178475
TKnow          0.174767   0.045246   3.863 0.000122 ***
TMeet         -0.025535   0.040090  -0.637 0.524358
VFriends      -0.054455   0.037011  -1.471 0.141610
VReligion      0.057121   0.023227   2.459 0.014140 *
```

```
HHealth           0.065265    0.031014    2.104 0.035664 *
HSatFin          -0.010168    0.012678   -0.802 0.422792
HFood             0.142642    0.067936    2.100 0.036081 *
HCrime           -0.045858    0.048813   -0.939 0.347790
HMedicine        -0.093655    0.060866   -1.539 0.124279
EPrivate         -0.011659    0.011068   -1.053 0.292496
EGovernment      -0.001032    0.009604   -0.107 0.914458
SSecure           0.142004    0.039159    3.626 0.000306 ***
STOpportunity    -0.008498    0.012220   -0.695 0.487008
STFaith          -0.002442    0.009693   -0.252 0.801200
STImportant       0.010988    0.010052    1.093 0.274678
PNewspaper        0.020737    0.015423    1.345 0.179152
PTelevision       0.017806    0.018065    0.986 0.324585
PMobile          -0.010195    0.019848   -0.514 0.607639
PSocial           0.012018    0.017560    0.684 0.493928
PDemImp           0.021690    0.013910    1.559 0.119324
PDemCurrent      -0.042536    0.016140   -2.636 0.008568 **
PSatisfied       -0.012286    0.015620   -0.787 0.431802
MF               -0.006437    0.045337   -0.142 0.887140
Age              -0.002502    0.001912   -1.309 0.191000
Edu               0.020179    0.014895    1.355 0.175868
Employment        0.001246    0.010932    0.114 0.909248
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6198 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1772,    Adjusted R-squared:  0.1465
F-statistic: 5.776 on 29 and 778 DF,  p-value: < 2.2e-16
```

```
summary(CEnvOrg_similar_fit)
```

```
Call:
lm(formula = CEnvOrg ~ . - CReligious - CTelevision - CPolice -
    CCourts - CGovernment - CUniversities - CElections - CMajCompanies -
    CBanks, data = VC_similar_numerical_attr)

Residuals:
    Min       1Q   Median       3Q      Max
-1.60443 -0.30870 -0.08679  0.35766  2.11010
```

```
Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
(Intercept)       1.875203   0.373148   5.025 6.24e-07 ***
TPeople          -0.056221   0.049661  -1.132  0.25794
TFamily           0.094909   0.046132   2.057  0.03999 *
TNeighbourhood    0.024040   0.044632   0.539  0.59030
TKnow             0.164717   0.043923   3.750  0.00019 ***
TMeet             0.029157   0.038918   0.749  0.45398
VFriends          0.013456   0.035929   0.375  0.70812
VReligion        -0.009758   0.022548  -0.433  0.66529
HHealth          -0.000625   0.030107  -0.021  0.98344
HSatFin          -0.015759   0.012308  -1.280  0.20079
HFood             0.041023   0.065950   0.622  0.53410
HCrime            0.001619   0.047386   0.034  0.97276
HMedicine        -0.036042   0.059086  -0.610  0.54205
EPrivate         -0.011166   0.010745  -1.039  0.29904
EGovernment       0.005554   0.009324   0.596  0.55154
SSecure           0.134413   0.038014   3.536  0.00043 ***
STOpportunity    -0.021429   0.011863  -1.806  0.07125 .
STFaith           0.002789   0.009410   0.296  0.76699
STImportant       0.003439   0.009758   0.352  0.72462
PNewspaper       -0.004104   0.014972  -0.274  0.78406
PTelevision       0.036016   0.017537   2.054  0.04033 *
PMobile           0.001863   0.019267   0.097  0.92298
PSocial          -0.015451   0.017047  -0.906  0.36499
PDemImp          -0.017764   0.013503  -1.316  0.18871
PDemCurrent      -0.018884   0.015668  -1.205  0.22845
PSatisfied       -0.029799   0.015164  -1.965  0.04975 *
MF               -0.064279   0.044012  -1.461  0.14456
Age               0.003640   0.001856   1.961  0.05022 .
Edu               0.036799   0.014459   2.545  0.01112 *
Employment        0.012971   0.010612   1.222  0.22197
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6017 on 778 degrees of freedom
  (232 observations deleted due to missingness)
Multiple R-squared:  0.1497,    Adjusted R-squared:  0.118
F-statistic: 4.721 on 29 and 778 DF,  p-value: 1.901e-14
```

```r
p_values_CReligious_similar = summary(CReligious_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CReligious_similar = head(sort(p_values_CReligious_similar), 10)
```

```
p_values_CTelevision_similar = summary(CTelevision_similar_fit)$coefficients[2:30, "Pr(>|t|)"
top_10_sorted_p_values_CTelevision_similar = head(sort(p_values_CTelevision_similar), 10)


p_values_CPolice_similar = summary(CPolice_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CPolice_similar = head(sort(p_values_CPolice_similar), 10)


p_values_CCourts_similar = summary(CCourts_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CCourts_similar = head(sort(p_values_CCourts_similar), 10)


p_values_CGovernment_similar = summary(CGovernment_similar_fit)$coefficients[2:30, "Pr(>|t|)"
top_10_sorted_p_values_CGovernment_similar = head(sort(p_values_CGovernment_similar), 10)


p_values_CUniversities_similar = summary(CUniversities_similar_fit)$coefficients[2:30, "Pr(>
top_10_sorted_p_values_CUniversities_similar = head(sort(p_values_CUniversities_similar), 10)


p_values_CElections_similar = summary(CElections_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CElections_similar = head(sort(p_values_CElections_similar), 10)


p_values_CMajCompanies_similar = summary(CMajCompanies_similar_fit)$coefficients[2:30, "Pr(>
top_10_sorted_p_values_CMajCompanies_similar = head(sort(p_values_CMajCompanies_similar), 10)


p_values_CBanks_similar = summary(CBanks_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CBanks_similar = head(sort(p_values_CBanks_similar), 10)


p_values_CEnvOrg_similar = summary(CEnvOrg_similar_fit)$coefficients[2:30, "Pr(>|t|)"]
top_10_sorted_p_values_CEnvOrg_similar = head(sort(p_values_CEnvOrg_similar), 10)


par(mar=c(8, 4, 2, 2), mfrow = c(2,5))

barplot(top_10_sorted_p_values_CReligious_similar,
        main = "CReligious for similar",
        ylab = "P-values",
```

```
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CTelevision_similar,
        main = "CTelevision for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CPolice_similar,
        main = "CPolice for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CCourts_similar,
        main = "CCourts for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CGovernment_similar,
        main = "CGovernment for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CUniversities_similar,
        main = "CUniversities for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CElections_similar,
        main = "CElections for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CMajCompanies_similar,
        main = "CMajCompanies for similar",
        ylab = "P-values",
```
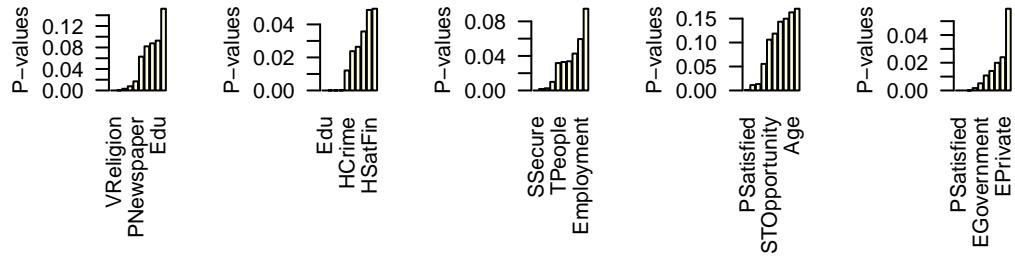
```
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CBanks_similar,
        main = "CBanks for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)

barplot(top_10_sorted_p_values_CEnvOrg_similar,
        main = "CEnvOrg for similar",
        ylab = "P-values",
        col = "lightyellow",
        las = 2)
```
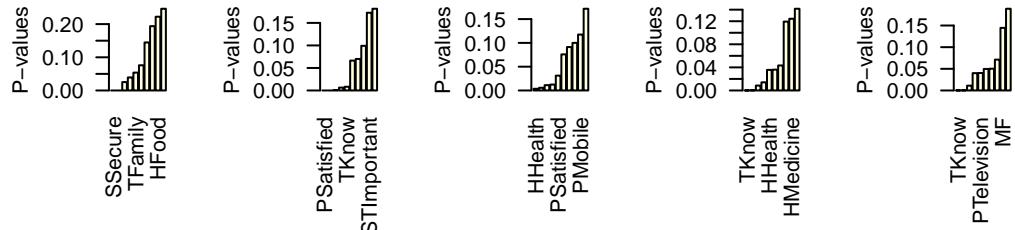


```
par(mfrow = c(1,1))
```

Figures

column	missing_count
Country	0
TPeople	649
TFamily	138
TNeighbourhood	392
TKnow	278
TMeet	669
VFriends	156
VReligion	480
HHealth	121
HSatFin	310
HFood	248
HCrime	281
HMedicine	292
EPrivate	1730
EGovernment	579
SSecure	328
STOpportunity	1408
STFaith	1929
STImportant	1751
PNewspaper	463
PTelevision	282
PMobile	491
PSocial	1851
PDemImp	926
PDemCurrent	1377
PSatisfied	1848
MF	51
Age	246
Edu	520
Employment	606
CReligious	1016
CTelevision	715
CPolice	1193
CCourts	1760
CGovernment	1563
CUniversities	1977
CElections	1930
CMajCompanies	2706
CBanks	1447
CEnvOrg	3257

Figure 11: *Figure 1a.1: Total Number of Missing Values per Column*
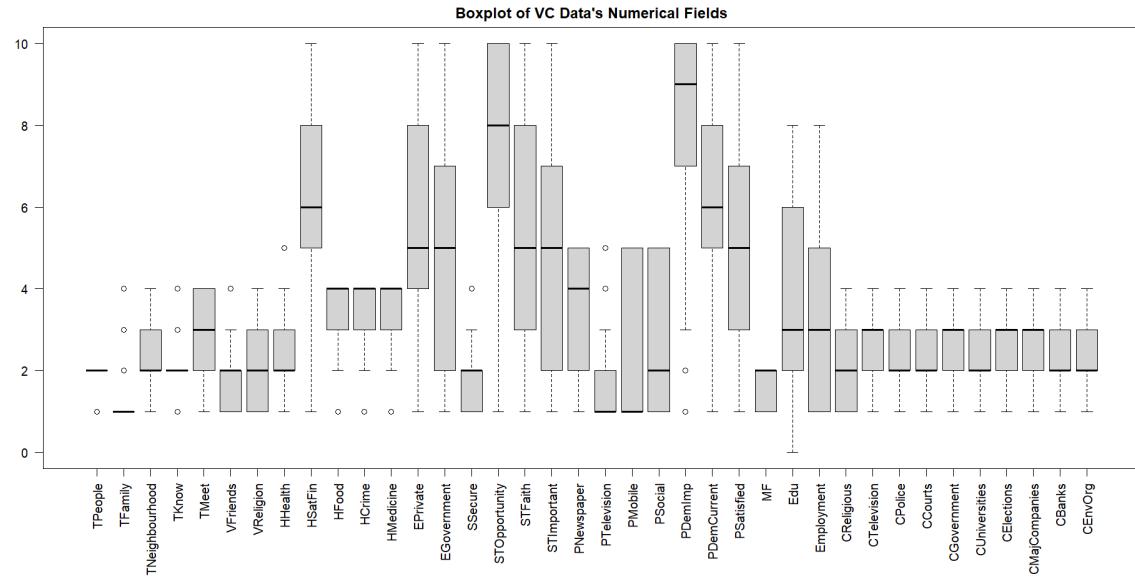
Figure 12: *Figure 1a.2: Distribution of Numerical Attributes (Excluding 'Age' Attribute)*
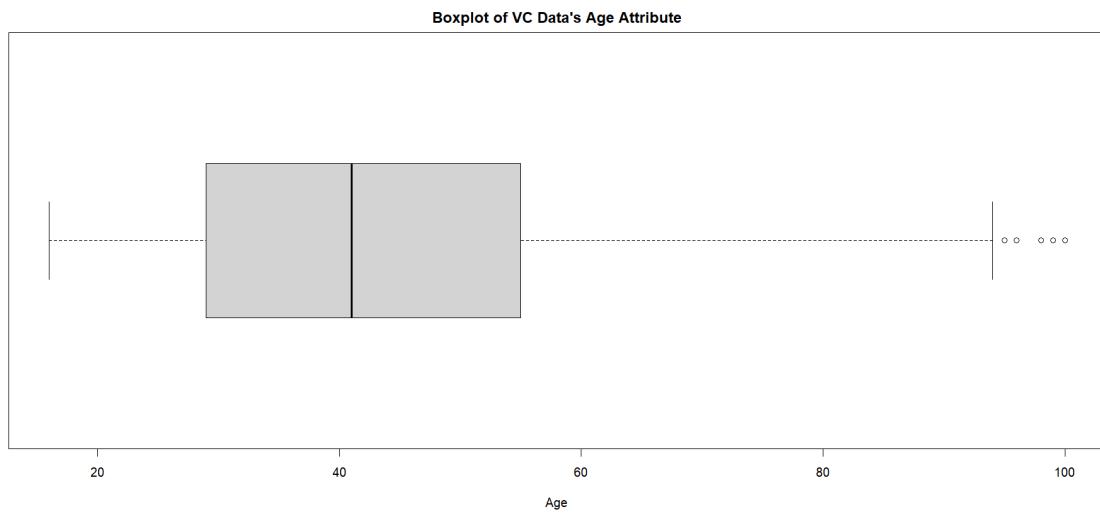
Figure 13: *Figure 1a.3: Distribution of Numerical Attribute (Age)*
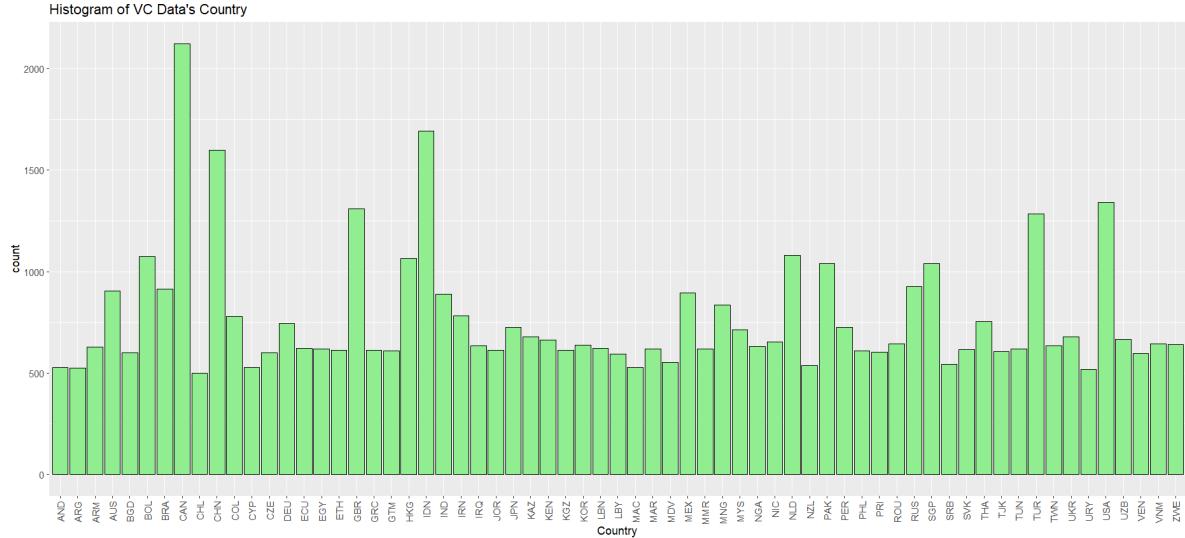
Figure 14: *Figure1a.4: Variety of Non-numerical Attribute (Country)*
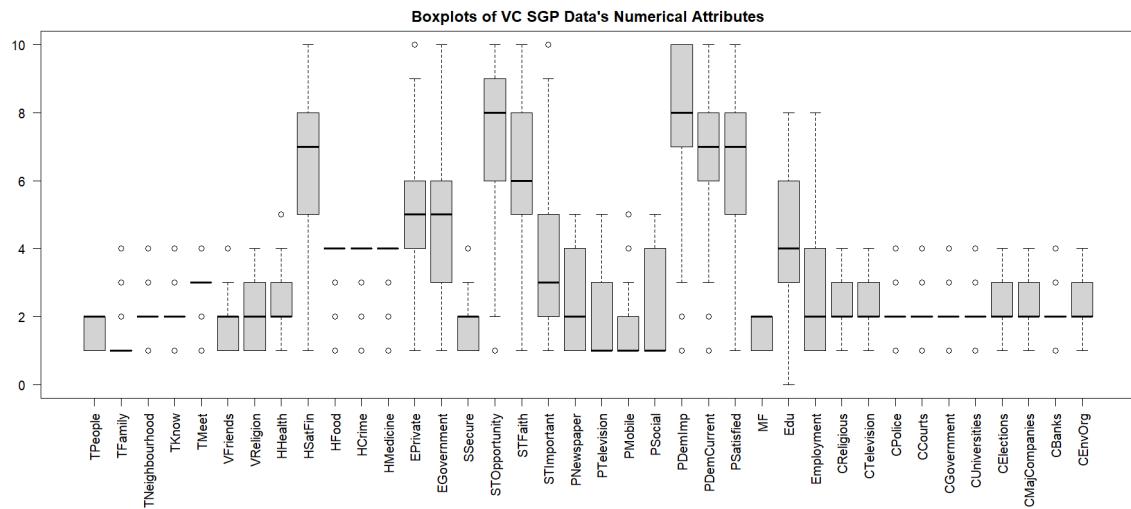
Figure 15: *Figure 2a.1: Distribution of Numerical Attributes for VC Focus Country (SGP) Data (Excluding 'Age' Attribute)*
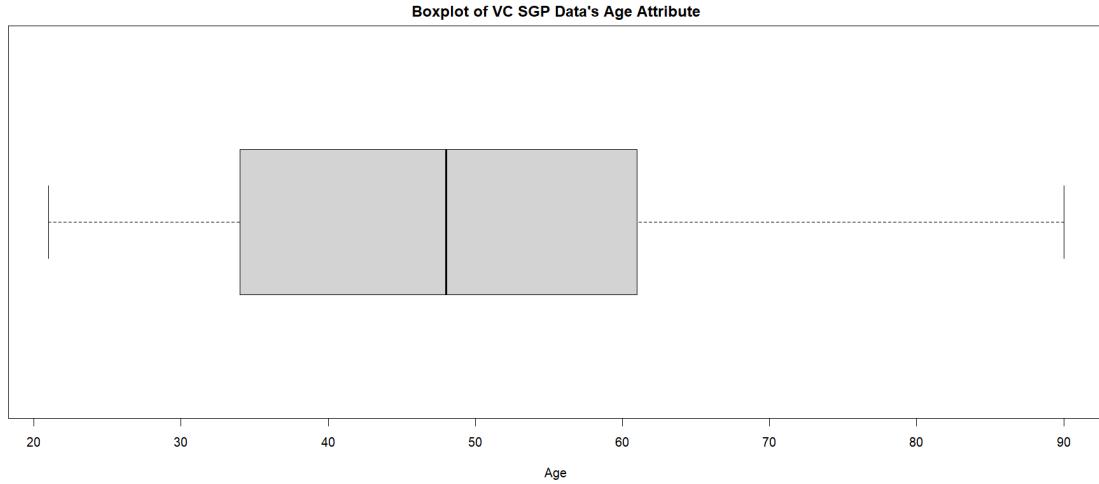
Figure 16: *Figure 2a.2: Distribution of Numerical Attribute (Age) for VC Focus Country (SGP) Data*
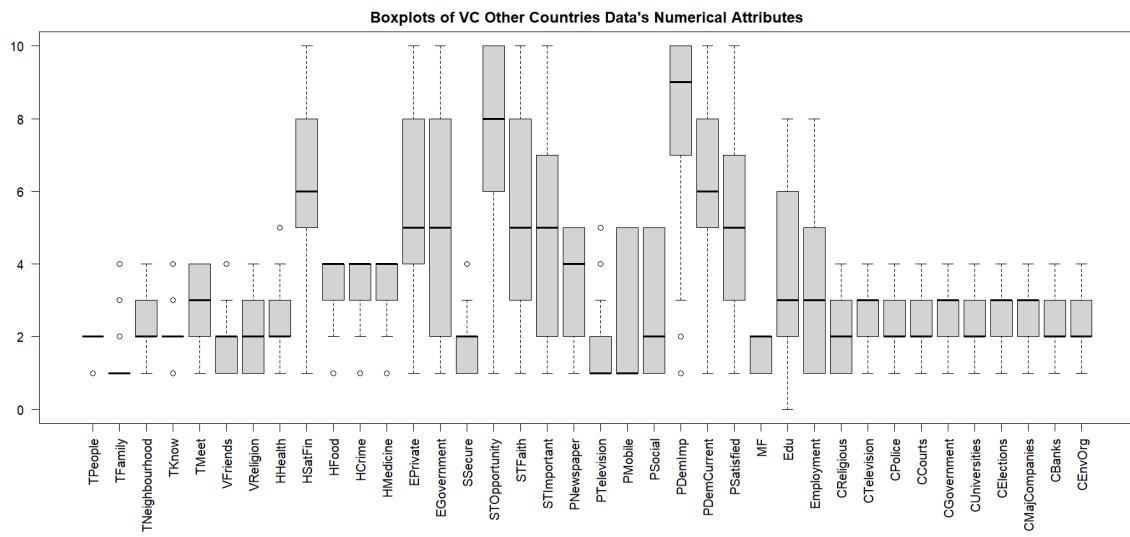
Figure 17: *Figure2a.3: Distribution of Numerical Attributes for VC Non-Focus Countries Data (Excluding 'Age' Attribute)*
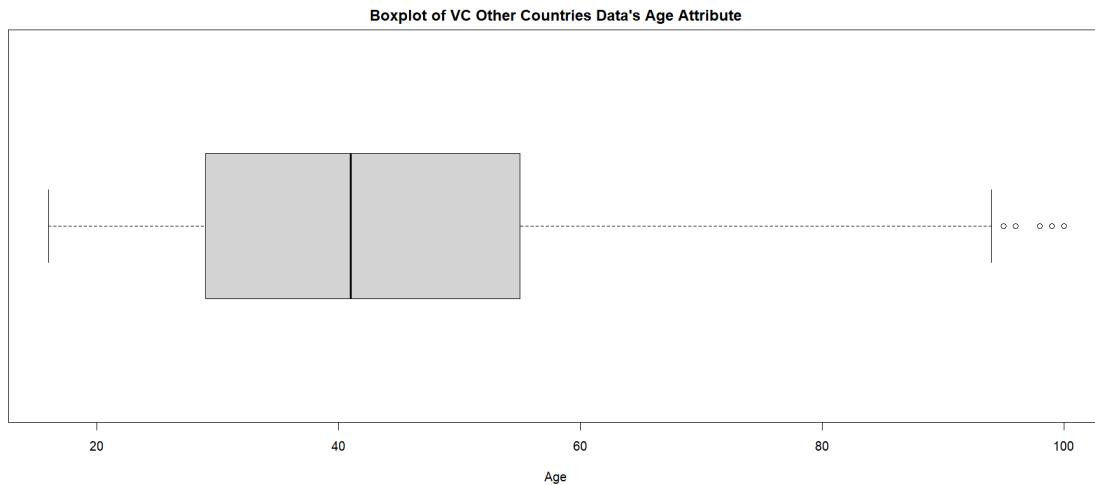
Figure 18: *Figure 2a.4: Distribution of Numerical Attribute (Age) for VC Non-Focus Countries Data*
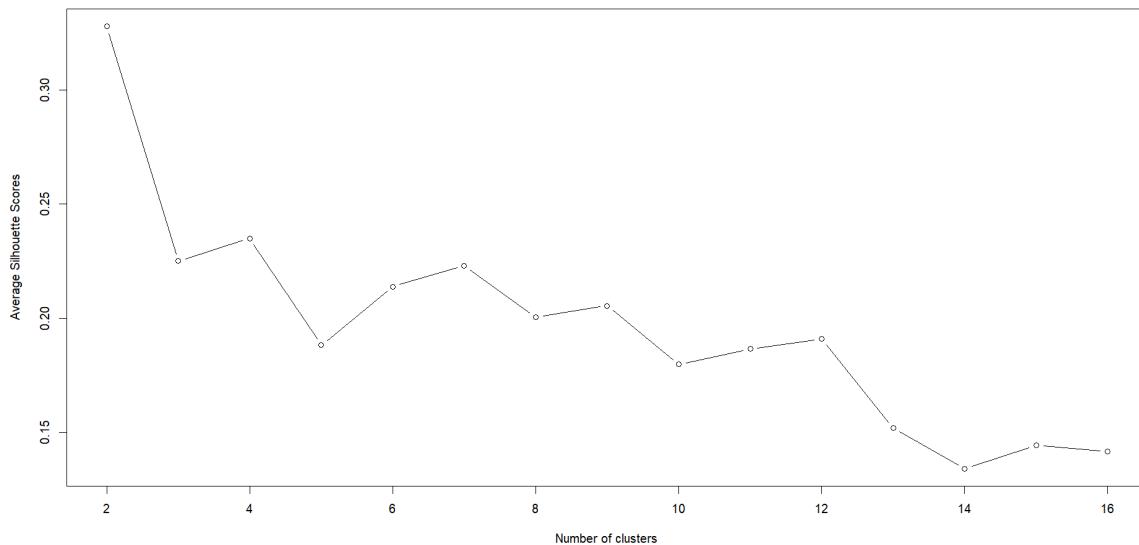
Figure 19: *Figure 3a.1: Average Silhouette Scores Against The Number of Clusters*
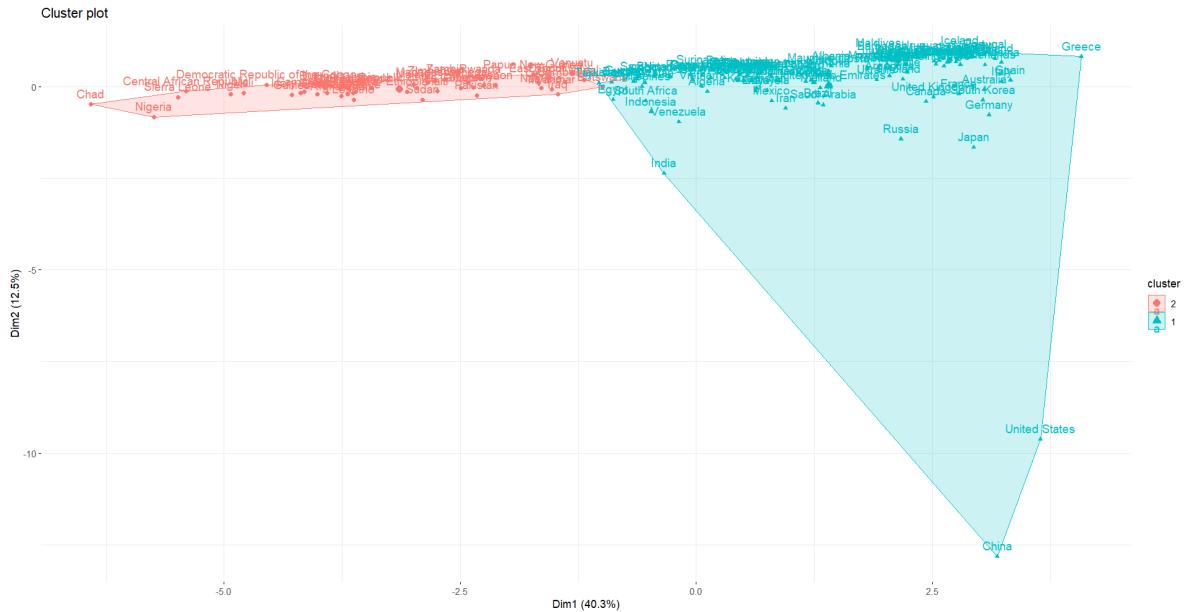
Figure 20: *Figure 3a.2: External Data Cluster Plot (k=2)*
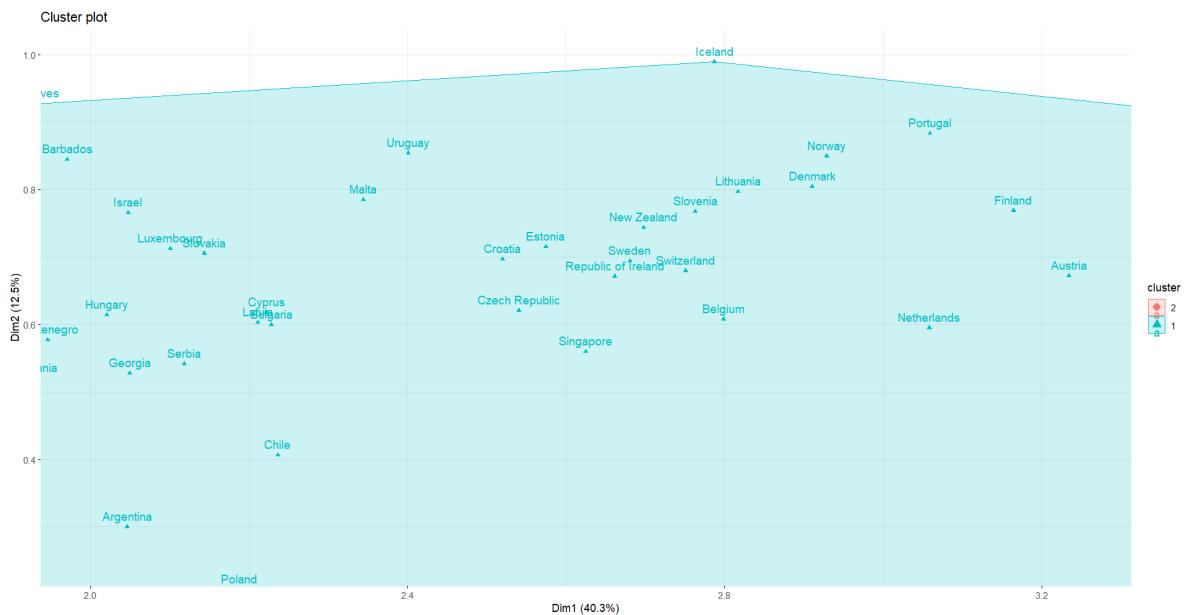
Figure 21: *Figure 3a.3: External Data Cluster Plot (k=2) - Zoomed into Focus Country (Singapore)*

External Dataset:

Country	Birth.Rate	Co2.Emissions	CPI	Fertility.Rate	Gasoline.Price ($)	GDP ($)	Gross.primary.education.enrollment (%)	Gross.tertiary.education.enrollment (%)	Infant.mortality	Life.expectancy	Maternal.mortality.ratio	Out.of.pocket.health.expenditure (%)	Physicians.per.thousand	Population..Labor.force.participation (%)	Unemployment.rate
Afghanistan	32.49	8672	149.9	4.47	0.7	19101353833	104	9.7	47.9	64.5	638	78.4	0.28	48.9	11.12
Albania	11.78	4536	119.05	1.62	1.36	15278077447	107	55	7.8	78.5	15	56.9	1.2	55.7	12.33
Algeria	24.28	150006	151.36	3.02	0.28	1.70E+11	109.9	51.4	20.1	76.7	112	28.1	1.72	41.2	11.7
Angola	40.73	34693	261.73	5.52	0.97	94635451870	113.5	9.3	51.6	60.8	241	33.4	0.21	77.5	6.89
Argentina	17.02	201348	232.75	2.26	1.1	4.50E+11	109.7	90	8.8	76.5	39	17.6	3.96	61.3	9.79
Armenia	13.99	5156	129.18	1.76	0.77	13672802158	92.7	54.6	11	74.9	26	81.6	4.4	55.6	16.99
Australia	12.6	375908	119.8	1.74	0.93	1.39E+12	100.3	113.1	3.1	82.7	6	19.6	3.68	65.5	5.27
Austria	9.7	61448	118.06	1.47	1.2	4.46E+11	103.1	85.1	2.9	81.6	5	17.9	5.17	60.7	4.67
Azerbaijan	14	37620	156.32	1.73	0.56	3.92E+10	99.7	27.7	19.2	72.9	26	78.6	3.45	66.5	5.51
The Bahamas	13.97	1786	116.22	1.75	0.92	1.28E+10	81.4	15.1	8.3	73.8	70	27.8	1.94	74.6	10.36
Bahrain	13.99	31694	117.59	1.99	0.43	38574069149	99.4	50.5	6.1	77.2	14	25.1	0.93	73.4	0.71
Bangladesh	18.18	84246	179.68	2.04	1.12	3.03E+11	116.5	20.6	25.1	72.3	173	71.8	0.58	59	4.19
Barbados	10.65	1276	134.09	1.62	1.81	5.21E+09	99.4	65.4	11.3	79.1	27	45.2	2.48	65.2	10.33
Belgium	10.3	96889	117.11	1.62	1.43	5.30E+11	103.9	79.7	2.9	81.6	5	17.6	3.07	53.6	5.59
Belize	20.79	568	105.68	2.31	1.13	1879613600	111.7	24.7	11.2	74.5	36	22.7	1.12	65.1	6.41
Benin	36.22	6476	110.71	4.84	0.72	14390709095	122	12.3	60.5	61.5	397	40.5	0.08	70.9	2.23
Bhutan	17.26	1261	167.18	1.98	0.98	2446674101	100.1	15.6	24.8	71.5	183	19.8	0.42	66.7	2.34
Botswana	24.82	6340	149.75	2.87	0.71	18340510789	103.2	24.9	30	69.3	144	5.3	0.37	70.8	18.19
Brazil	13.92	462299	167.4	1.73	1.02	1.84E+12	115.4	51.3	12.8	75.7	60	28.3	2.15	63.9	12.08
Brunei	14.9	7664	99.03	1.85	0.37	13469422941	103.2	31.4	9.8	75.7	31	6	1.61	64.7	9.12
Bulgaria	8.9	41708	114.42	1.56	1.11	8.60E+10	89.3	71	5.9	74.9	10	47.7	4.03	55.4	4.34
Burkina Faso	37.93	3418	106.58	5.19	0.98	15745810235	96.1	6.5	49	61.2	320	36.1	0.08	66.4	6.26
Burundi	39.01	495	182.11	5.41	1.21	3012334882	121.4	6.1	41	61.2	548	19.1	0.1	79.2	1.43
Ivory Coast	35.74	9674	111.61	4.65	0.93	58792205642	99.8	9.3	59.4	57.4	617	36	0.23	57	3.32
Cape Verde	19.49	543	110.5	2.27	1.02	1981845741	104	23.6	16.7	72.8	58	23.2	0.77	60.5	12.25
Cambodia	22.46	9919	127.63	2.5	0.9	27089389787	107.4	13.7	24	69.6	160	59.4	0.17	82.3	0.68
Cameroon	35.39	8291	118.65	4.57	1.03	38760467033	103.4	12.8	50.6	58.9	529	69.7	0.09	76.1	3.38
Canada	10.1	544894	116.76	1.5	0.81	1.74E+12	100.9	68.9	4.3	81.9	10	14.6	2.61	65.1	5.56
Central African Republic	35.35	297	186.86	4.72	1.41	2220307369	102	3	84.5	52.8	829	39.6	0.06	72	3.68
Chad	42.17	1016	117.7	5.75	0.78	11314951343	86.8	3.3	71.4	54	1140	56.4	0.04	70.7	1.89
Chile	12.43	85822	131.91	1.65	1.03	2.82E+11	101.4	88.5	6.2	80	13	32.2	2.59	62.6	7.09
China	10.9	9893038	125.08	1.69	0.96	1.99E+13	100.2	50.6	7.4	77	29	32.4	1.98	68	4.32
Colombia	14.88	97814	140.95	1.81	0.68	3.24E+11	114.5	55.3	12.2	77.1	83	18.3	2.18	68.8	9.71
Republic of the Congo	32.86	3282	124.74	4.43	0.97	10820591131	106.6	12.7	36.2	64.3	378	43.8	0.12	69.4	9.47
Costa Rica	13.97	8023	128.85	1.75	0.98	61773944174	113.3	55.2	7.6	80.1	27	21.5	2.89	62.1	11.85
Croatia	9	17488	109.82	1.47	1.26	60415553039	96.5	67.9	4	78.1	8	15.2	3	51.2	6.93
Cyprus	10.46	6626	102.51	1.33	1.23	24564647935	99.3	75.9	1.9	80.8	6	43.9	1.95	63.1	7.27
Czech Republic	10.7	102218	116.48	1.69	1.17	2.46E+11	100.7	64.1	2.7	79	3	14.8	4.12	60.6	1.93
Democratic Republic of the Congo	41.18	2021	133.85	5.92	1.49	47319624204	108	6.6	68.2	60.4	473	37.4	0.07	63.5	4.24
Denmark	10.6	31786	110.35	1.73	1.55	3.48E+11	101.3	80.6	3.6	81	4	13.7	4.01	62.2	4.91
Djibouti	21.47	620	120.25	2.73	1.32	3318716359	75.3	5.3	49.8	66.6	248	20.4	0.22	60.2	10.3
Dominican Republic	19.51	25258	135.5	2.35	1.07	88941298258	105.7	59.9	24.1	73.9	95	43.7	1.56	64.3	5.84
Ecuador	19.72	41155	124.14	2.43	0.61	1.07E+11	103.3	44.9	12.2	76.8	59	43.7	2.04	68	3.97
Egypt	26.38	238560	288.57	3.33	0.4	3.03E+11	106.3	35.2	18.1	71.8	37	62	0.45	46.4	10.76
El Salvador	18.25	7169	111.23	2.04	0.83	27022640000	94.8	29.4	11.8	73.1	46	27.9	1.57	59.1	4.11
Estonia	10.9	16590	122.14	1.59	1.14	31386949981	97.2	69.6	2.1	78.2	9	22.8	4.48	63.6	5.11
Ethiopia	32.34	14870	143.86	4.25	0.75	96107662398	101	8.1	39.1	66.2	401	37.8	0.08	79.6	2.08
Fiji	21.28	2046	132.3	2.77	0.82	5535548972	106.4	16.1	21.6	67.3	34	21.4	0.84	57.6	4.1
Finland	8.6	45871	112.33	1.41	1.45	2.69E+11	100.2	88.2	1.4	81.7	3	19.9	3.81	59.1	6.59
France	11.3	303276	110.05	1.88	1.39	2.72E+12	102.5	65.6	3.4	82.5	8	6.8	3.27	55.1	8.43
Gabon	31.61	5321	122.19	3.97	0.92	16657960228	139.9	8.3	32.7	66.2	252	25.9	0.68	52.9	20
The Gambia	38.54	532	172.73	5.22	1.18	1763819048	98	2.7	39	61.7	597	20.3	0.1	59.4	9.06
Georgia	13.47	10128	133.61	2.06	0.76	17743195770	98.6	63.9	8.7	73.6	25	57.3	7.12	68.3	14.4
Germany	9.5	727973	112.85	1.56	1.39	3.85E+12	104	70.2	3.1	80.9	7	12.5	4.25	60.8	3.04
Ghana	29.41	16670	268.36	3.87	0.92	66983634224	104.8	15.7	34.9	63.8	308	36.1	0.14	67.8	4.33
Greece	8.1	62434	101.87	1.35	1.54	2.10E+11	99.6	136.6	3.6	81.3	3	35.5	5.48	51.8	17.24
Guatemala	24.56	16777	142.92	2.87	0.79	76710385880	101.9	21.8	22.1	74.1	95	55.8	0.35	62.3	2.46
Guinea	36.36	2996	262.95	4.7	0.9	13590281809	91.5	11.6	64.9	61.2	576	54.5	0.08	61.5	4.3
Guyana	19.97	2384	116.19	2.46	0.9	4280443645	97.8	11.6	25.1	69.8	169	40.5	0.8	56.2	11.85
Haiti	24.35	2978	179.29	2.94	0.81	8498981821	113.6	1.1	49.5	63.7	480	36.3	0.23	67.2	13.78
Honduras	21.6	9813	150.34	2.46	0.98	25095395475	91.5	26.2	15.1	75.1	65	49.1	0.31	68.8	5.39
Hungary	9.6	45537	121.64	1.54	1.18	1.61E+11	100.8	48.5	3.6	75.8	12	29	3.41	56.5	3.4
Iceland	12	2065	129	1.71	1.69	24188035739	100.4	71.8	1.5	82.7	4	17	4.08	75	2.84
India	17.86	2407672	180.44	2.22	0.97	2.61E+12	113	28.1	29.9	69.4	145	65.1	0.86	49.3	5.36
Indonesia	18.07	563325	151.18	2.31	0.63	1.12E+12	106.4	36.3	21.1	71.5	177	48.3	0.43	67.5	4.69
Iran	18.78	661710	550.93	2.14	0.4	4.45E+11	110.7	68.1	12.4	76.5	16	39.7	1.58	44.7	11.38
Iraq	29.08	190061	119.86	3.67	0.61	2.34E+11	108.7	16.2	22.5	70.5	79	76.5	0.71	43	12.82
Republic of Ireland	12.5	37711	106.58	1.75	1.37	3.89E+11	100.9	77.8	3.1	82.3	5	15.2	3.31	62.1	4.93
Israel	20.8	65166	108.15	3.09	1.57	3.95E+11	104.9	63.4	3	82.8	3	24.4	4.62	64	3.86
Italy	7.3	320411	110.62	1.29	1.61	2.00E+12	101.9	61.9	2.6	82.9	2	22.8	3.98	49.6	9.89
Jamaica	16.1	8225	162.47	1.98	1.11	16458071068	91	27.1	12.4	74.4	80	23.7	1.31	66	8
Japan	7.4	1135886	105.48	1.42	1.06	5.08E+12	98.8	63.2	1.8	84.2	5	13.1	2.41	61.7	2.29
Jordan	21.98	25108	125.6	2.76	1.1	43743661972	81.5	34.4	13.9	74.4	46	25.1	2.32	39.3	14.72
Kazakhstan	21.77	247207	182.75	2.84	0.42	1.80E+11	104.4	61.7	8.8	73.2	10	38.8	3.25	68.8	4.59
Kenya	28.75	17910	180.51	3.49	0.95	95503088538	103.2	11.5	30.6	66.3	342	33.4	0.16	74.7	2.64
Kuwait	13.94	98734	126.6	2.08	0.35	1.35E+11	92.4	54.4	6.7	75.4	12	14.4	2.58	73.5	2.18
Kyrgyzstan	27.1	9787	155.68	3.3	0.56	8454619608	107.6	41.3	16.9	71.4	60	48.2	1.88	59.8	6.33
Laos	23.55	17763	135.87	2.67	0.93	18173839128	102.4	15	37.6	67.6	185	45.4	0.37	78.5	0.63
Latvia	10	7004	116.86	1.6	1.16	34117202555	99.4	88.1	3.3	74.7	19	41.6	3.19	61.4	6.52
Lebanon	17.55	24796	130.02	2.09	0.74	53367042272	95.1	26.3	6.4	78.9	29	32.1	2.1	47	6.23
Lesotho	26.81	2512	155.86	3.14	0.7	2460072444	120.9	10.2	65.7	53.7	544	16.9	0.07	67.9	23.41
Liberia	33.04	1386	223.13	4.32	0.8	3070518100	85.1	11.9	53.5	63.7	661	19.6	0.04	76.3	2.81
Libya	18.83	50564	125.71	2.24	0.11	52076250948	109	60.5	10.2	72.7	72	36.7	2.09	49.7	18.56
Lithuania	10	12963	118.38	1.63	1.16	54219315600	103.9	72.4	3.3	75.7	8	32.1	6.35	61.6	6.35
Luxembourg	10.3	8988	115.09	1.37	1.19	71104919108	102.3	19.2	1.9	82.1	5	10.6	3.01	59.3	5.36
Madagascar	32.66	3905	184.33	4.08	1.11	14083906357	142.5	5.4	38.2	66.7	335	21.7	0.18	86.1	1.76

Malawi	34.12	1298	418.34	4.21	1.15	7666704427	142.5	0.8	35.3	63.8	349	11	0.04	76.7	5.65
Malaysia	16.75	248289	121.46	2	0.45	3.65E+11	105.3	45.1	6.7	76	29	36.7	1.51	64.3	3.32
Maldives	14.2	1445	99.7	1.87	1.63	5729248472	97.1	31.2	7.4	78.6	53	16.4	4.56	69.8	6.14
Mali	41.54	3179	108.73	5.88	1.12	17510141171	75.6	4.5	62	58.9	562	46.3	0.13	70.8	7.22
Malta	9.2	1342	113.45	1.23	1.36	14786156563	105	54.3	6.1	82.3	6	37.1	2.86	56.5	3.47
Mauritania	33.69	2739	135.02	4.56	1.13	7593752450	99.9	5	51.5	64.7	766	48.2	0.19	45.9	9.55
Mauritius	10.2	4349	129.91	1.41	1.12	14180444557	101.1	40.6	13.6	74.4	61	50.7	2.53	58.3	6.67
Mexico	17.6	486406	141.54	2.13	0.73	1.26E+12	105.8	40.2	11	75	33	41.4	2.38	60.7	3.42
Moldova	10.1	5115	166.2	1.26	0.8	11955435457	90.6	39.8	13.6	71.8	19	46.2	3.21	43.1	5.47
Mongolia	24.13	25368	195.76	2.9	0.72	13852850259	104	65.6	14	69.7	45	39.3	2.86	59.7	6.01
Montenegro	11.73	2017	116.32	1.75	1.16	5494736901	100	56.1	2.3	76.8	6	31.8	2.76	54.4	14.88
Morocco	18.94	61276	111.07	2.42	0.99	1.19E+11	113.9	35.9	19.2	76.5	70	53.1	0.73	45.3	9.02
Mozambique	37.52	7943	182.31	4.85	0.65	14934159926	112.6	7.3	54	60.2	289	6.8	0.08	78.1	3.24
Myanmar	17.55	25280	168.18	2.15	0.54	76085852617	112.3	18.8	36.8	66.9	250	73.9	0.68	61.7	1.58
Namibia	28.64	4228	157.97	3.4	0.76	12366527719	124.2	22.9	29	63.4	195	8.3	0.42	59.5	20.27
Nepal	19.89	9105	188.73	1.92	0.91	30641380604	142.1	12.4	26.7	70.5	186	60.4	0.75	83.8	1.41
Netherlands	9.7	10780	115.91	1.59	1.68	9.09E+11	104.2	85	3.3	81.8	5	12.3	3.61	63.6	3.2
New Zealand	11.98	34382	114.24	1.71	1.4	2.07E+11	100	82	4.7	81.9	9	12.6	3.59	69.9	4.07
Nicaragua	20.64	5592	162.74	2.4	0.91	12520915291	120.6	17.4	15.7	74.3	98	36	0.98	66.4	6.84
Niger	46.08	2017	109.32	6.91	0.88	12928145120	74.7	4.4	48	62	509	52.3	0.04	72	0.47
Nigeria	37.91	120369	267.51	5.39	0.46	4.48E+11	84.7	10.2	75.7	54.3	917	72.2	0.38	52.9	8.1
Norway	10.4	41023	120.27	1.56	1.78	4.03E+11	100.3	82	2.1	82.8	2	14.3	2.92	63.8	3.35
Oman	19.19	63457	113.53	2.89	0.45	76983094928	103.4	38	9.8	77.6	19	6.4	2	72.4	2.67
Pakistan	28.25	201150	182.32	3.51	0.79	3.04E+11	94.3	9	57.2	67.1	140	66.5	0.98	52.6	4.45
Panama	18.98	10715	122.07	2.46	0.74	66800800000	94.4	47.8	13.1	78.3	52	30.5	1.57	66.6	3.9
Papua New Guinea	27.07	7536	155.99	3.56	1.36	24969611435	108.5	1.8	38	64.3	145	5.8	0.07	47.2	2.46
Paraguay	20.57	7407	143.82	2.43	1.04	38145288940	104.4	34.6	17.2	74.1	129	36.5	1.35	72.1	4.81
Peru	17.95	57414	129.78	2.25	0.99	2.27E+11	106.9	70.7	11.1	76.5	88	30.9	1.27	77.6	3.31
Philippines	20.55	122287	129.61	2.58	0.86	3.77E+11	107.5	35.5	22.5	71.1	121	53.5	0.6	59.6	2.15
Poland	10.2	299037	114.11	1.46	1.07	5.92E+11	100	67.8	3.8	77.6	2	23.2	2.38	56.7	3.47
Portugal	8.5	48742	110.62	1.38	1.54	2.38E+11	106.2	63.9	3.1	81.3	8	27.7	5.12	58.8	6.33
Qatar	9.54	103259	115.38	1.87	0.4	1.83E+11	103.8	17.9	5.8	80.1	9	6.2	2.49	86.8	0.09
Romania	9.6	69259	123.78	1.71	1.16	2.50E+11	85.2	49.4	6.1	75.4	19	21.3	2.98	54.7	3.98
Russia	11.5	1732027	180.75	1.57	0.59	1.70E+12	102.6	81.9	6.1	72.7	17	36.4	4.01	61.8	4.59
Rwanda	31.7	1115	151.09	4.04	1.17	10122472590	133	6.7	27	68.7	248	26	0.13	83.7	1.03
Saint Lucia	12	414	110.13	1.44	1.3	2122450630	102.6	14.1	14.9	76.1	117	48.4	0.64	67.1	20.71
Samoa	24.38	246	117.56	3.88	0.91	850655017	110.5	7.6	13.6	73.2	43	11.5	0.34	43.7	8.36
Saudi Arabia	17.8	563449	118.4	2.32	0.24	7.93E+11	99.8	68	6	75	17	15	2.61	55.9	5.93
Senegal	34.52	10902	109.25	4.63	1.14	23578084052	81	12.8	31.8	67.7	315	44.2	0.07	45.7	6.6
Serbia	9.2	45221	144	1.49	1.16	51409167351	100.3	67.2	4.8	75.5	12	40.6	3.11	54.9	12.69
Sierra Leone	33.41	1093	234.16	4.26	1.08	3941474311	112.8	2	78.5	54.3	1120	38.2	0.03	57.9	4.43
Singapore	8.8	37535	114.41	1.14	1.25	3.72E+11	100.6	84.8	2.3	83.1	8	36.7	2.29	70.5	4.11
Slovakia	10.6	32424	115.34	1.52	1.32	1.05E+11	98.7	46.6	4.6	77.2	5	18.4	3.42	59.5	5.56
Slovenia	9.4	12633	111.05	1.6	1.32	53742159517	100.4	78.6	1.7	81	7	12.5	3.09	58.4	4.2
South Africa	20.51	476644	158.93	2.41	0.92	3.51E+11	100.9	22.4	28.5	63.9	119	7.7	0.91	56	28.18
South Korea	6.4	620302	115.16	0.98	1.22	2.03E+11	98.1	94.3	2.7	82.6	11	36.8	2.36	63	4.15
Spain	7.9	244002	110.96	1.26	1.26	1.39E+12	102.7	88.9	2.5	83.3	4	24.2	3.87	57.5	13.96
Sri Lanka	15.83	23362	155.53	2.2	0.88	74008783756	100.2	19.6	6.4	76.8	36	38.4	1	53.9	4.2
Sudan	32.18	20000	1344.19	4.41	0.95	18902284476	76.8	16.9	42.1	65.1	295	63.2	0.26	48.4	16.53
Suriname	18.54	1738	294.66	2.42	1.29	3985250737	108.8	12.6	16.9	71.6	120	10.1	1.21	51.1	7.33
Sweden	11.4	43252	110.51	1.76	1.42	5.31E+11	126.6	67	2.2	82.5	4	15.2	3.98	64.6	6.48
Switzerland	10	34477	99.55	1.52	1.45	7.03E+11	105.2	59.6	3.7	83.6	5	28.3	4.3	68.3	4.58
Syria	23.69	28830	143.2	2.81	0.83	40405000607	81.7	40.1	14	71.8	31	53.7	1.22	44.1	8.37
Tajikistan	30.76	5310	148.57	3.59	0.71	8116626794	100.9	31.3	30.4	70.9	17	63.1	1.7	42	11.02
Tanzania	36.7	11973	187.43	4.89	0.87	63177068175	94.2	4	37.6	65	524	26.1	0.01	83.4	1.98
Thailand	10.34	283763	113.27	1.53	0.71	5.44E+11	99.8	49.3	7.8	76.9	37	11.8	0.81	67.3	0.75
East Timor	29.42	495	145.38	4.02	1.1	1673540300	115.3	17.8	39.3	69.3	142	10.2	0.72	67.3	4.55
Togo	33.11	3000	113.3	4.32	0.71	5459979417	123.8	14.5	47.4	60.8	396	51	0.08	77.6	2.04
Trinidad and Tobago	12.94	43868	141.75	1.73	0.54	24100202834	106.2	12	16.4	73.4	67	37.3	4.17	60	2.69
Tunisia	17.56	29937	155.33	2.2	0.73	38797709924	115.4	31.7	14.6	76.5	43	39.8	1.3	46.1	16.02
Turkey	16.03	372725	234.44	2.07	1.42	7.54E+11	93.2	23.9	9.1	77.4	17	16.9	1.85	52.8	13.49
Uganda	38.14	5680	173.87	4.96	0.94	34387229486	102.7	4.8	33.8	63	375	40.5	0.17	70.3	1.84
Ukraine	8.7	202250	281.66	1.3	0.83	1.54E+11	99	82.7	7.5	71.6	19	47.8	2.99	54.2	8.88
United Arab Emirates	10.33	206324	114.52	1.41	0.49	4.21E+11	108.4	36.8	6.5	77.8	3	17.8	2.53	82.1	2.35
United Kingdom	11	379025	119.62	1.68	1.46	2.83E+12	101.2	60	3.6	81.3	7	14.8	2.81	62.8	3.85
United States	11.6	5006302	117.24	1.73	0.71	2.14E+13	101.8	88.2	5.6	78.5	19	11.1	2.61	62	14.7
Uruguay	13.86	6766	202.92	1.97	1.5	56045912952	108.5	63.1	6.4	77.8	17	16.2	5.05	64	8.73
Vanuatu	29.6	147	117.13	3.78	1.31	917058851	109.3	4.7	22.3	70.3	72	8.9	0.17	69.9	4.39
Venezuela	17.88	164175	2740.27	2.27	0	4.82E+11	97.2	79.3	21.4	72.1	125	45.8	1.92	59.7	8.8
Vietnam	16.75	192668	163.52	2.05	0.8	2.62E+11	110.6	28.5	16.5	75.3	43	43.5	0.82	77.4	2.01
Yemen	30.45	10609	157.58	3.79	0.92	26914402224	93.6	10.2	42.9	66.1	164	81	0.31	38	12.91
Zambia	36.19	5141	212.31	4.63	1.4	23064722446	98.7	4.1	40.4	63.5	213	27.5	1.19	74.6	11.43
Zimbabwe	30.68	10983	105.51	3.62	1.34	21440758800	109.9	10	33.9	61.2	458	25.8	0.21	83.1	4.95