Assignment 4: Collaborating Together
Introduction to Applied Data Science
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https://github.com/Tirena822/Assignment4

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Assignment 4: Collaborating Together

Part 1: Contributing to another student's Github repository

In this assignment, you will create a Github repository, containing this document and the .pdf output, which analyzes a dataset individually using some of the tools we have developed.

This time, make sure to not only put your name and student e-mail in your Rmarkdown header, but also your Github account, as I have done myself.

However, you will also pair up with a class mate and contribute to each others' Github repository. Each student is supposed to contribute to another student's work by writing a short interpretation of 1 or 2 sentences at the designated place (this place is marked with **designated place**) in the other student's assignment.

This interpretation will not be graded, but a Github shows the contributors to a certain repository. This way, we can see whether you have contributed to a repository of a class mate.

Question 1.1: Fill in the **github username** of the class mate to whose repository you have contributed.

https://github.com/Tirena822/Assignment4

Part 2: Analyzing various linear models

In this part, we will summarize a dataset and create a couple of customized tables. Then, we will compare a couple of linear models to each other, and see which linear model fits the data the best, and yields the most interesting results.

We will use a dataset called `GrowthSW` from the `AER` package. This is a dataset containing 65 observations on 6 variables and investigates the determinants of economic growth. First, we will try to summarize the data using the `modelsummary` package.

```
library(AER)
data(GrowthSW)
GrowthSW
```

```
##                              growth    rgdp60 tradeshare education revolutions
```

```
## India                1.91516793  765.9998  0.1405020      1.45  0.13333334
## Argentina            0.61764508 4462.0015  0.1566230      4.99  0.93333334
## Japan                4.30475903 2953.9995  0.1577032      6.71  0.00000000
## Brazil               2.93009663 1783.9999  0.1604051      2.89  0.10000000
## United States        1.71226490 9895.0039  0.1608150      8.66  0.00000000
## Bangladesh           0.70826310  951.9998  0.2214584      0.79  0.30648148
## Spain                2.88032675 3123.0015  0.2994059      3.80  0.06666667
## Colombia             2.22701430 1684.0004  0.3130729      2.97  0.10000000
## Peru                 0.06020596 2019.0002  0.3246127      3.02  0.26666668
## Haiti               -0.65793407  923.9999  0.3247456      0.70  0.37407407
## Australia            1.97514737 7782.0024  0.3294792      9.03  0.00000000
## Italy                2.93298149 4564.0005  0.3300217      4.56  0.03333334
## Greece               3.22405005 2093.0000  0.3378790      4.37  0.16666667
## France               2.43128085 5823.0005  0.3397062      4.65  0.00000000
## Zaire               -2.81194448  488.9999  0.3523176      0.54  0.14814815
## Uruguay              1.02530861 3967.9998  0.3588567      5.07  0.00000000
## Mexico               1.97394180 2836.0002  0.3932509      2.41  0.00000000
## Pakistan             2.69816303  638.0000  0.4176039      0.63  0.26666668
## Niger               -2.75147796  531.9999  0.4258372      0.20  0.13333334
## Bolivia              0.35505781 1147.9998  0.4355793      4.68  0.97037035
## Germany              2.45368814 6569.9985  0.4421429      7.64  0.06666667
## Canada               2.38598847 7257.9971  0.4443746      8.07  0.00000000
## United Kingdom       1.96221948 6822.9990  0.4505467      7.67  0.26666668
## New Zealand          1.12413180 7960.0010  0.4557693      9.55  0.00000000
## Philippines          1.15874064 1133.0000  0.4683466      3.77  0.73333335
## Finland              2.79849434 5291.0020  0.4732549      7.51  0.00000000
## Venezuela           -0.88355076 6337.9980  0.4846008      2.53  0.26666668
## Korea, Republic of   7.15685463  904.0001  0.4889496      3.23  0.33333334
## Guatemala            0.92923063 1659.9998  0.5095903      1.42  0.54074073
## Honduras             0.59778476 1038.9999  0.5176646      1.69  0.26666668
## El Salvador         -0.60755610 1426.9999  0.5277733      1.70  0.63333333
## Chile                1.44699538 2885.0005  0.5346847      4.99  0.16666667
## Thailand             4.87669516  943.0000  0.5433371      3.45  0.40000001
## Sweden               1.88813424 7592.0024  0.5442435      7.67  0.00000000
## Senegal             -0.43782407 1047.0001  0.5508126      1.62  0.03333334
## Trinidad and Tobago  1.12078643 5627.0020  0.5527223      4.31  0.03333334
## Ecuador              2.38809299 1460.9996  0.5606425      2.95  0.53333336
## Denmark              2.17937016 6759.9990  0.5607497     10.07  0.00000000
## Switzerland          1.42186534 9408.9971  0.5671310      6.87  0.00000000
## Austria              2.88918519 5143.0010  0.5752748      3.65  0.00000000
## Zimbabwe             0.83815551  988.9999  0.5828143      1.54  0.20000000
## Paraguay             2.38193154 1176.9999  0.6030353      3.35  0.06666667
## Costa Rica           1.61369658 2096.0002  0.6050313      3.92  0.00000000
## Portugal             3.64730978 1869.0000  0.6136169      1.94  0.23333333
## Togo                 0.46277532  366.9999  0.6260797      0.27  0.16666667
## Iceland              3.01238894 4963.9985  0.6394842      5.63  0.00000000
## Israel               2.81096935 3476.9993  0.6469135      6.99  0.06666667
## South Africa         0.39202112 2191.0002  0.6512036      4.06  0.10000000
## Norway               3.18249369 5610.0005  0.6815552      5.56  0.00000000
## Sierra Leone        -0.33983421  877.9999  0.6994329      0.53  0.47407407
## Dominican Republic   2.49876904 1194.9998  0.7048199      2.38  0.30000001
## Ghana               -0.96316224  894.0000  0.7292323      0.69  0.43703705
## Sri Lanka            2.70459843 1258.9999  0.7429716      3.43  0.20000000
## Taiwan, China        6.62473440 1256.0000  0.7454978      3.32  0.03333334
```

```
## Panama                2.02718854 1574.9999  0.7798471       4.26  0.13333334
## Papua New Guinea      1.12037110 1235.0001  0.7983758       1.13  0.03333334
## Kenya                 1.96250916  659.0001  0.8147100       1.20  0.03333334
## Ireland               3.25449395 3310.9990  0.8229564       6.45  0.00000000
## Jamaica               0.41779017 1772.9999  0.8302383       2.46  0.00000000
## Netherlands           2.20057726 6076.9971  0.8342042       5.27  0.00000000
## Cyprus                5.38418436 2037.0004  0.9793554       4.29  0.10000000
## Malaysia              4.11454391 1420.0002  1.1053642       2.34  0.03333334
## Belgium               2.65133452 5495.0020  1.1159170       7.46  0.00000000
## Mauritius             3.02417779 2861.9993  1.1279370       2.44  0.00000000
## Malta                 6.65283775 1374.0000  1.9926157       5.64  0.00000000
##                      assassinations
## India                    0.86666667
## Argentina                1.93333328
## Japan                    0.20000000
## Brazil                   0.10000000
## United States            0.43333334
## Bangladesh               0.17500000
## Spain                    1.43333328
## Colombia                 0.76666665
## Peru                     0.56666666
## Haiti                    0.20000000
## Australia                0.06666667
## Italy                    1.20000005
## Greece                   0.16666667
## France                   0.30000001
## Zaire                    0.05555556
## Uruguay                  0.16666667
## Mexico                   0.16666667
## Pakistan                 0.26666668
## Niger                    0.00000000
## Bolivia                  0.20000000
## Germany                  0.23333333
## Canada                   0.06666667
## United Kingdom           0.33333334
## New Zealand              0.00000000
## Philippines              1.03333330
## Finland                  0.00000000
## Venezuela                0.10000000
## Korea, Republic of       0.10000000
## Guatemala                2.46666670
## Honduras                 0.06666667
## El Salvador              1.73333335
## Chile                    0.46666667
## Thailand                 0.03333334
## Sweden                   0.00000000
## Senegal                  0.06666667
## Trinidad and Tobago      0.00000000
## Ecuador                  0.00000000
## Denmark                  0.00000000
## Switzerland              0.00000000
## Austria                  0.00000000
## Zimbabwe                 0.23333333
## Paraguay                 0.03333334
```

```
## Costa Rica             0.00000000
## Portugal               0.00000000
## Togo                   0.03333334
## Iceland                0.00000000
## Israel                 0.20000000
## South Africa           0.36666667
## Norway                 0.00000000
## Sierra Leone           0.03333334
## Dominican Republic     0.20000000
## Ghana                  0.10000000
## Sri Lanka              0.20000000
## Taiwan, China          0.06666667
## Panama                 0.06666667
## Papua New Guinea       0.00000000
## Kenya                  0.14444445
## Ireland                0.06666667
## Jamaica                0.13333334
## Netherlands            0.00000000
## Cyprus                 0.16666667
## Malaysia               0.03333334
## Belgium                0.00000000
## Mauritius              0.00000000
## Malta                  0.00000000
```

One of the variables in the dataset is `revolutions`, the number of revolutions, insurrections and coup d'etats in country i from 1965 to 1995.

Question 2.1: Using the function `datasummary`, summarize the mean, median, sd, min, and max of the variables `growth`, and `rgdp60` between two groups: countries with `revolutions` equal to 0, and countries with more than 0 revolutions. Call this variable `treat`. Make sure to also write the resulting data set to memory. Hint: you can check some examples here.

```
library(modelsummary); library(tidyverse)

GrowthSW$treat <- ifelse(GrowthSW$revolutions > 0, 1, 0)
GrowthSW
```

```
##                           growth    rgdp60 tradeshare education revolutions
## India                 1.91516793  765.9998  0.1405020      1.45  0.13333334
## Argentina             0.61764508 4462.0015  0.1566230      4.99  0.93333334
## Japan                 4.30475903 2953.9995  0.1577032      6.71  0.00000000
## Brazil                2.93009663 1783.9999  0.1604051      2.89  0.10000000
## United States         1.71226490 9895.0039  0.1608150      8.66  0.00000000
## Bangladesh            0.70826310  951.9998  0.2214584      0.79  0.30648148
## Spain                 2.88032675 3123.0015  0.2994059      3.80  0.06666667
## Colombia              2.22701430 1684.0004  0.3130729      2.97  0.10000000
## Peru                  0.06020596 2019.0002  0.3246127      3.02  0.26666668
## Haiti                -0.65793407  923.9999  0.3247456      0.70  0.37407407
## Australia             1.97514737 7782.0024  0.3294792      9.03  0.00000000
## Italy                 2.93298149 4564.0005  0.3300217      4.56  0.03333334
## Greece                3.22405005 2093.0000  0.3378790      4.37  0.16666667
## France                2.43128085 5823.0005  0.3397062      4.65  0.00000000
## Zaire                -2.81194448  488.9999  0.3523176      0.54  0.14814815
## Uruguay               1.02530861 3967.9998  0.3588567      5.07  0.00000000
```

```
## Mexico              1.97394180 2836.0002  0.3932509      2.41  0.00000000
## Pakistan            2.69816303  638.0000  0.4176039      0.63  0.26666668
## Niger              -2.75147796  531.9999  0.4258372      0.20  0.13333334
## Bolivia             0.35505781 1147.9998  0.4355793      4.68  0.97037035
## Germany             2.45368814 6569.9985  0.4421429      7.64  0.06666667
## Canada              2.38598847 7257.9971  0.4443746      8.07  0.00000000
## United Kingdom      1.96221948 6822.9990  0.4505467      7.67  0.26666668
## New Zealand         1.12413180 7960.0010  0.4557693      9.55  0.00000000
## Philippines         1.15874064 1133.0000  0.4683466      3.77  0.73333335
## Finland             2.79849434 5291.0020  0.4732549      7.51  0.00000000
## Venezuela          -0.88355076 6337.9980  0.4846008      2.53  0.26666668
## Korea, Republic of  7.15685463  904.0001  0.4889496      3.23  0.33333334
## Guatemala           0.92923063 1659.9998  0.5095903      1.42  0.54074073
## Honduras            0.59778476 1038.9999  0.5176646      1.69  0.26666668
## El Salvador        -0.60755610 1426.9999  0.5277733      1.70  0.63333333
## Chile               1.44699538 2885.0005  0.5346847      4.99  0.16666667
## Thailand            4.87669516  943.0000  0.5433371      3.45  0.40000001
## Sweden              1.88813424 7592.0024  0.5442435      7.67  0.00000000
## Senegal            -0.43782407 1047.0001  0.5508126      1.62  0.03333334
## Trinidad and Tobago 1.12078643 5627.0020  0.5527223      4.31  0.03333334
## Ecuador             2.38809299 1460.9996  0.5606425      2.95  0.53333336
## Denmark             2.17937016 6759.9990  0.5607497     10.07  0.00000000
## Switzerland         1.42186534 9408.9971  0.5671310      6.87  0.00000000
## Austria             2.88918519 5143.0010  0.5752748      3.65  0.00000000
## Zimbabwe            0.83815551  988.9999  0.5828143      1.54  0.20000000
## Paraguay            2.38193154 1176.9999  0.6030353      3.35  0.06666667
## Costa Rica          1.61369658 2096.0002  0.6050313      3.92  0.00000000
## Portugal            3.64730978 1869.0000  0.6136169      1.94  0.23333333
## Togo                0.46277532  366.9999  0.6260797      0.27  0.16666667
## Iceland             3.01238894 4963.9985  0.6394842      5.63  0.00000000
## Israel              2.81096935 3476.9993  0.6469135      6.99  0.06666667
## South Africa        0.39202112 2191.0002  0.6512036      4.06  0.10000000
## Norway              3.18249369 5610.0005  0.6815552      5.56  0.00000000
## Sierra Leone       -0.33983421  877.9999  0.6994329      0.53  0.47407407
## Dominican Republic  2.49876904 1194.9998  0.7048199      2.38  0.30000001
## Ghana              -0.96316224  894.0000  0.7292323      0.69  0.43703705
## Sri Lanka           2.70459843 1258.9999  0.7429716      3.43  0.20000000
## Taiwan, China       6.62473440 1256.0000  0.7454978      3.32  0.03333334
## Panama              2.02718854 1574.9999  0.7798471      4.26  0.13333334
## Papua New Guinea    1.12037110 1235.0001  0.7983758      1.13  0.03333334
## Kenya               1.96250916  659.0001  0.8147100      1.20  0.03333334
## Ireland             3.25449395 3310.9990  0.8229564      6.45  0.00000000
## Jamaica             0.41779017 1772.9999  0.8302383      2.46  0.00000000
## Netherlands         2.20057726 6076.9971  0.8342042      5.27  0.00000000
## Cyprus              5.38418436 2037.0004  0.9793554      4.29  0.10000000
## Malaysia            4.11454391 1420.0002  1.1053642      2.34  0.03333334
## Belgium             2.65133452 5495.0020  1.1159170      7.46  0.00000000
## Mauritius           3.02417779 2861.9993  1.1279370      2.44  0.00000000
## Malta               6.65283775 1374.0000  1.9926157      5.64  0.00000000
##                    assassinations treat
## India                  0.86666667     1
## Argentina              1.93333328     1
## Japan                  0.20000000     0
## Brazil                 0.10000000     1
```

```
## United States           0.43333334     0
## Bangladesh              0.17500000     1
## Spain                   1.43333328     1
## Colombia                0.76666665     1
## Peru                    0.56666666     1
## Haiti                   0.20000000     1
## Australia               0.06666667     0
## Italy                   1.20000005     1
## Greece                  0.16666667     1
## France                  0.30000001     0
## Zaire                   0.05555556     1
## Uruguay                 0.16666667     0
## Mexico                  0.16666667     0
## Pakistan                0.26666668     1
## Niger                   0.00000000     1
## Bolivia                 0.20000000     1
## Germany                 0.23333333     1
## Canada                  0.06666667     0
## United Kingdom          0.33333334     1
## New Zealand             0.00000000     0
## Philippines             1.03333330     1
## Finland                 0.00000000     0
## Venezuela               0.10000000     1
## Korea, Republic of      0.10000000     1
## Guatemala               2.46666670     1
## Honduras                0.06666667     1
## El Salvador             1.73333335     1
## Chile                   0.46666667     1
## Thailand                0.03333334     1
## Sweden                  0.00000000     0
## Senegal                 0.06666667     1
## Trinidad and Tobago     0.00000000     1
## Ecuador                 0.00000000     1
## Denmark                 0.00000000     0
## Switzerland             0.00000000     0
## Austria                 0.00000000     0
## Zimbabwe                0.23333333     1
## Paraguay                0.03333334     1
## Costa Rica              0.00000000     0
## Portugal                0.00000000     1
## Togo                    0.03333334     1
## Iceland                 0.00000000     0
## Israel                  0.20000000     1
## South Africa            0.36666667     1
## Norway                  0.00000000     0
## Sierra Leone            0.03333334     1
## Dominican Republic      0.20000000     1
## Ghana                   0.10000000     1
## Sri Lanka               0.20000000     1
## Taiwan, China           0.06666667     1
## Panama                  0.06666667     1
## Papua New Guinea        0.00000000     1
## Kenya                   0.14444445     1
## Ireland                 0.06666667     0
```

```
## Jamaica                  0.13333334     0
## Netherlands              0.00000000     0
## Cyprus                   0.16666667     1
## Malaysia                 0.03333334     1
## Belgium                  0.00000000     0
## Mauritius                0.00000000     0
## Malta                    0.00000000     0
```

```
subset_data_with_revolution <- subset(GrowthSW, treat == 1)
wtih_revolution <- datasummary(growth+rgdp60~Mean + Median + SD +Min + Max,data=subset_data_with_revolu
print(wtih_revolution)
```

```
## \begin{table}
## \centering
## \begin{tabular}[t]{lrrrrr}
## \toprule
##   & Mean & Median & SD & Min & Max\\
## \midrule
## growth & \num{1.68} & \num{1.92} & \num{2.11} & \num{-2.81} & \num{7.16}\\
## rgdp60 & \num{1988.67} & \num{1259.00} & \num{1698.18} & \num{367.00} & \num{6823.00}\\
## \bottomrule
## \end{tabular}
## \end{table}
```

```
subset_data_without_revolution <- subset(GrowthSW, treat == 0)
wtihout_revolution <- datasummary(growth+rgdp60~Mean + Median + SD +Min + Max,data=subset_data_without_
print(wtihout_revolution)
```

```
## \begin{table}
## \centering
## \begin{tabular}[t]{lrrrrr}
## \toprule
##   & Mean & Median & SD & Min & Max\\
## \midrule
## growth & \num{2.46} & \num{2.29} & \num{1.28} & \num{0.42} & \num{6.65}\\
## rgdp60 & \num{5283.32} & \num{5393.00} & \num{2439.39} & \num{1374.00} & \num{9895.00}\\
## \bottomrule
## \end{tabular}
## \end{table}
```

Designated place: type one or two sentences describing this table of a fellow student below. For example, comment on the mean and median growth of both groups. Then stage, commit and push it to their github repository.

For the countries that have experienced a revolution, the average growth rate is 1.68, which is lower than the average growth rate of 2.46 for countries without a revolution. The median growth rate is slightly higher in the countries with a revolution at 1.92 compared to 2.29 in countries without a revolution.

Part 3: Make a table summarizing reressions using modelsummary and kable

In question 2, we have seen that growth rates differ markedly between countries that experienced at least one revolution/episode of political stability and countries that did not.

Question 3.1: Try to make this more precise this by performing a t-test on the variable growth according to the group variable you have created in the previous question.

```
t_test_result <- t.test(subset_data_with_revolution$growth, subset_data_without_revolution$growth)
t_test_result
```

```
##
##  Welch Two Sample t-test
##
## data:  subset_data_with_revolution$growth and subset_data_without_revolution$growth
## t = -1.8531, df = 61.015, p-value = 0.06871
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.62566475  0.06182741
## sample estimates:
## mean of x mean of y
##  1.678066  2.459985
```

Question 3.2: What is the p-value of the test, and what does that mean? Write down your answer below.

p-value = 0.06871

We can also control for other factors by including them in a linear model, for example:

$$\text{growth}_i = \beta_0 + \beta_1 \cdot \text{treat}_i + \beta_2 \cdot \text{rgdp60}_i + \beta_3 \cdot \text{tradeshare}_i + \beta_4 \cdot \text{education}_i + \epsilon_i$$

Question 3.3: What do you think the purpose of including the variable `rgdp60` is? Look at `?GrowthSW` to find out what the variables mean.

rgdp60 means value of GDP per capita in 1960, converted to 1960 US dollars.

```
?GrowthSW
```

We now want to estimate a stepwise model. Stepwise means that we first estimate a univariate regression $\text{growth}_i = \beta_0 + \beta_1 \cdot \text{treat}_i + \epsilon_i$, and in each subsequent model, we add one control variable.

Question 3.4: Write four models, titled `model1`, `model2`, `model3`, `model4` (using the `lm` function) to memory. Hint: you can also use the `update` function to add variables to an already existing specification.

```
model1 <- lm(growth ~ treat, data = GrowthSW)

model2 <- update(model1, . ~ . + rgdp60)

model3 <- update(model2, . ~ . + tradeshare)

model4 <- update(model3, . ~ . + education)
```

Now, we put the models in a list, and see what `modelsummary` gives us:

```
list(model1, model2, model3, model4) |>
  modelsummary(stars=T,gof_map = c("nobs", "r.squared"))
```

Question 3.5: Edit the code chunk above to remove many statistics from the table, but keep only the number of observations N, and the R^2 statistic.

	(1)	(2)	(3)	(4)
(Intercept)	2.460***	2.854***	0.839	−0.050
	(0.400)	(0.751)	(1.045)	(0.967)
treat	−0.782	−1.028	−0.415	−0.069
	(0.491)	(0.633)	(0.647)	(0.589)
rgdp60		0.000	0.000	0.000*
		(0.000)	(0.000)	(0.000)
tradeshare			2.233*	1.813*
			(0.842)	(0.765)
education				0.564***
				(0.144)
Num.Obs.	65	65	65	65
R2	0.039	0.045	0.143	0.318

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Question 3.6: According to this analysis, what is the main driver of economic growth? Why?

From our analysis, we can see the results of four models. Each model gradually adds one or more explanatory variables to test the impact of these variables on economic growth.

The following analysis is based on the coefficient estimates of this model, the significance of variables (ie, p-values), and the R-squared value (ie, the explanatory degree of economic growth corresponding to explanatory variables).

treat: In all four models, the coefficient of treat is not significant, indicating that the impact of this variable on economic growth is not statistically significant.

rgdp60: The coefficient for rgdp60 is not significant until in model (4). However, its coefficient is very close to 0, suggesting that its actual impact on economic growth is likely to be minimal.

Tradeshare: In model (3) and model (4), the coefficient of tradeshare is significant, and the coefficient value is relatively large, indicating that it may have a certain impact on economic growth.

Education: In model (4), the coefficient of education is the most significant and has a large value, which indicates that education level may be the main driving factor of economic growth.

As for why education is the main driver of economic growth, it may be because education improves the skills and productivity of the labor force, thereby increasing economic output. In addition, education can promote innovation and technological progress, which is also an important factor in driving economic growth.

Question 3.7: In the code chunk below, edit the table such that the cells (including standard errors) corresponding to the variable `treat` have a red background and white text. Make sure to load the `kableExtra` library beforehand.

```
#install.packages("kableExtra")
library(modelsummary)
library(kableExtra)
list(model1, model2, model3, model4) |>
  modelsummary(output = "kableExtra",stars=T, gof_map = c("nobs", "r.squared"))|>
  row_spec(row = 3, background = "red", color = "white") |>
  row_spec(row = 4, background = "red", color = "white") |>
  kable_styling()
```

Question 3.8: Write a piece of code that exports this table (without the formatting) to a Word document.

	(1)	(2)	(3)	(4)
(Intercept)	2.460***	2.854***	0.839	−0.050
	(0.400)	(0.751)	(1.045)	(0.967)
treat	−0.782	−1.028	−0.415	−0.069
	(0.491)	(0.633)	(0.647)	(0.589)
rgdp60		0.000	0.000	0.000*
		(0.000)	(0.000)	(0.000)
tradeshare			2.233*	1.813*
			(0.842)	(0.765)
education				0.564***
				(0.144)
Num.Obs.	65	65	65	65
R2	0.039	0.045	0.143	0.318

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

```r
#install.packages("officer")
library(officer)
library(officer)
library(modelsummary)

model_summary <- list(model1, model2, model3, model4) |>
  modelsummary(output = "data.frame", stars = T, gof_map = c("nobs", "r.squared"))

model_summary_df <- as.data.frame(model_summary)

doc <- read_docx()

doc <- body_add_table(doc, value = model_summary_df)

print(doc, target = "model_summary_table.docx")
```

The End