Alexander Chang

NURS 741| Big Data Analytics

What is the problem?

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Conclusion

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Background

This is a fun analysis that seeks to fulfill two goals:

1) Answer if a country's happiness score & alcohol consumption affects their net approval of Trump
2) Serve as practice for R's data visualization tools

More Booze = Happier?

Which type of Booze produces most happiness?

Why do we see these trends?

The Data Sources

World Health Organization, Global Information System on Alcohol and Health (GISAH), 2010

Sustainable Development Solutions Network, World Happiness Report 2015.

Pew Research Center, World Trust of Trump 2017

World Health Organization, Global Information System on Alcohol and Health (GISAH), 2010

country	beer_servings	spirit_servings	wine_servings	total_litres_of_pure_alcohol
Afghanistan	0	0	0	0.0
Albania	89	132	54	4.9
Algeria	25	0	14	0.7
Andorra	245	138	312	12.4
Angola	217	57	45	5.9
Antigua & Barbuda	102	128	45	4.9
Argentina	193	25	221	8.3
Armenia	21	179	11	3.8
Australia	261	72	212	10.4
Austria	279	75	191	9.7
Azerbaijan	21	46	5	1.3

Sustainable Development Solutions Network, World Happiness Report 2015.

Country	Happiness.Rank	Happiness.Score	Whisker.high	Whisker.low	Economy..GDP.per.Capita.	Family	Health..Life.Expectancy.	Freedom	Generosity	Trust..Government.Corruption.	Dystopia.Residual
[illegible]	1	7.53700017929077	7.59444482058287	7.47955553799868	1.61646318435669	1.53352355957031	0.796666502952576	0.635422587394714	0.36201223731041	0.315963834524155	2.27702665328979
[illegible]	2	7.52199983596802	7.58172806486487	7.46227160707116	1.48238301277161	1.55112159252167	0.792565524578094	0.626006722450256	0.355280488729477	0.40077006816864	2.31370735168457
[illegible]	3	7.50400018692017	7.62203047305346	7.38596990078688	1.480633020401	1.6105740070343	0.833552122116089	0.627162635326385	0.475540220737457	0.153526559472084	2.32271528244019
Switzerland	4	7.49399995803833	7.56177242040634	7.42622749567032	1.56497955322266	1.51691174507141	0.858131289482117	0.620070576667786	0.290549278259277	0.367007285356522	2.2767162322998
Finland	5	7.4689998626709	7.52754207581282	7.41045764952898	1.44357192516327	1.5402467250824	0.80915766954422	0.617950856685638	0.24548277258873	0.38261154294014	2.4301815032959
Netherlands	6	7.3769998550415	7.42742584124207	7.32657386884093	1.50394463539124	1.42893922328949	0.810696125030518	0.585384488105774	0.470489829778671	0.282661825418472	2.29480409622192
Canada	7	7.31599998474121	7.38440283536911	7.24759713411331	1.47920441627502	1.48134899139404	0.83455765247345	0.611100912094116	0.435539722442627	0.287371516227722	2.18726444244385
New Zealand	8	7.31400012969971	7.3795104418695	7.24848981752992	1.40570604801178	1.54819512367249	0.816759705543518	0.614062130451202	0.500005125999451	0.382816702127457	2.0464563369751
Sweden	9	7.28399991989136	7.34409487739205	7.22390496239066	1.49438726902008	1.47816216945648	0.830875158309937	0.612924098968506	0.385399252176285	0.384398728609085	2.09753799438477
Australia	10	7.28399991989136	7.35665122494102	7.2113486148417	1.484414935112	1.51004195213318	0.84388679265976	0.601607382297516	0.477699249982834	0.301183730363846	2.06521081924438
Israel	11	7.21299982070923	7.27985325649381	7.14614638492465	1.37538242340088	1.37628996372223	0.83840399980545	0.405988603830338	0.330082654953003	0.0852421000599861	2.80175733566284
Costa Rica	12	7.0789999961853	7.16811166629195	6.98988832607865	1.10970628261566	1.41640365123749	0.759509265422821	0.580131649971008	0.214613229036331	0.100106589496136	2.89863920211792
Austria	13	7.00600004196167	7.07066981211305	6.94133027181029	1.48709726333618	1.4599449634552	0.815328419208527	0.567766189575195	0.316472321748734	0.221060365438461	2.1385064125061
United States	14	6.99300003051758	7.07465674757957	6.91134331345558	1.54625928401947	1.41992056369781	0.77428662776947	0.505740523338318	0.392578780651093	0.135638788342476	2.2181134223938

Country
string

Pew Research Center, World Trust of Trump 2017

Country	net_approval	Approve	Disapprove	DK/Refused
Canada	-64	15	79	5
France	-81	9	90	1
Germany	-88	5	93	2
Greece	-71	11	82	7
Hungary	-62	13	75	12
Italy	-49	18	67	15
Netherlands	-83	8	91	2
Poland	-35	17	52	31
Spain	-83	8	91	1
Sweden	-87	6	93	1
United Kingdom	-66	14	80	6
Russia	-22	27	49	24

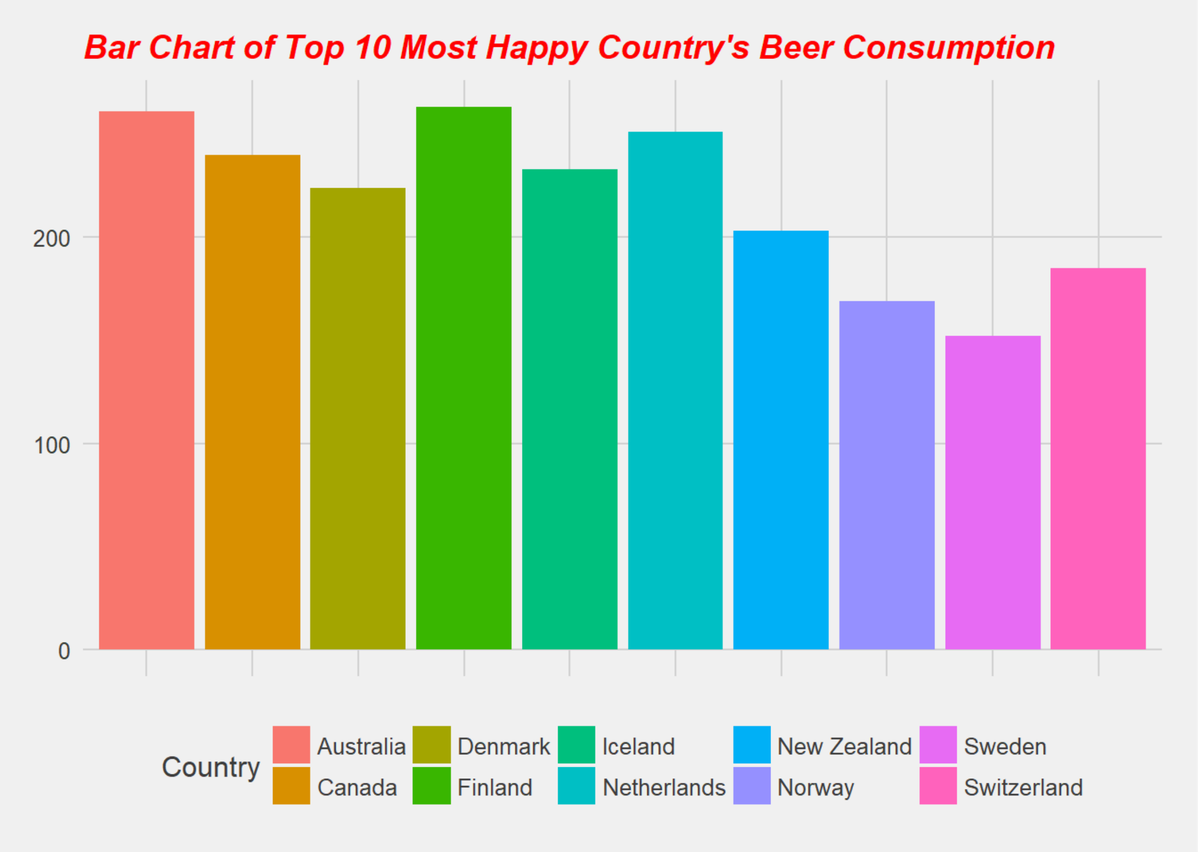
Analysis – Booze vs Happiness

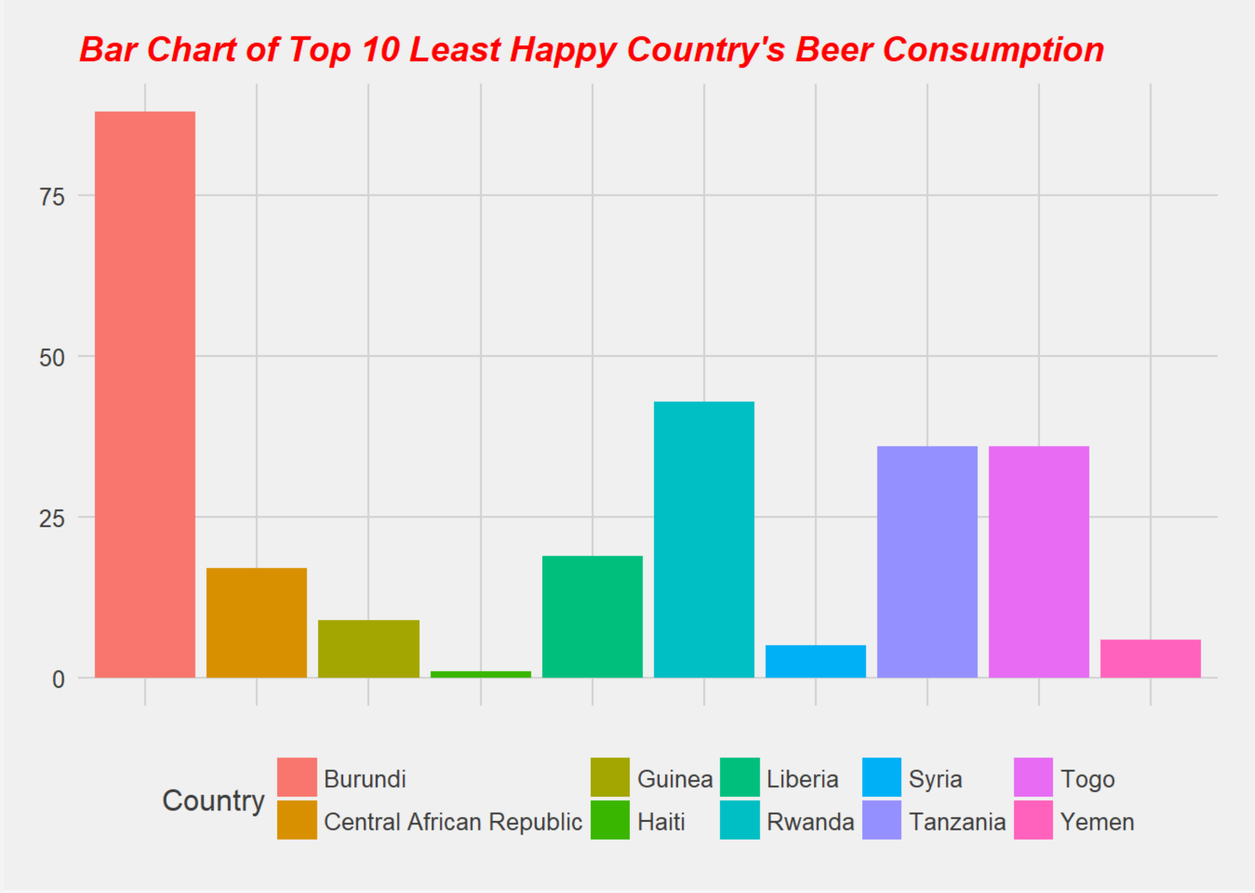
Happiness Score ~ Beer Servings = 0.51

Happiness Score ~ Wine Servings= 0.499

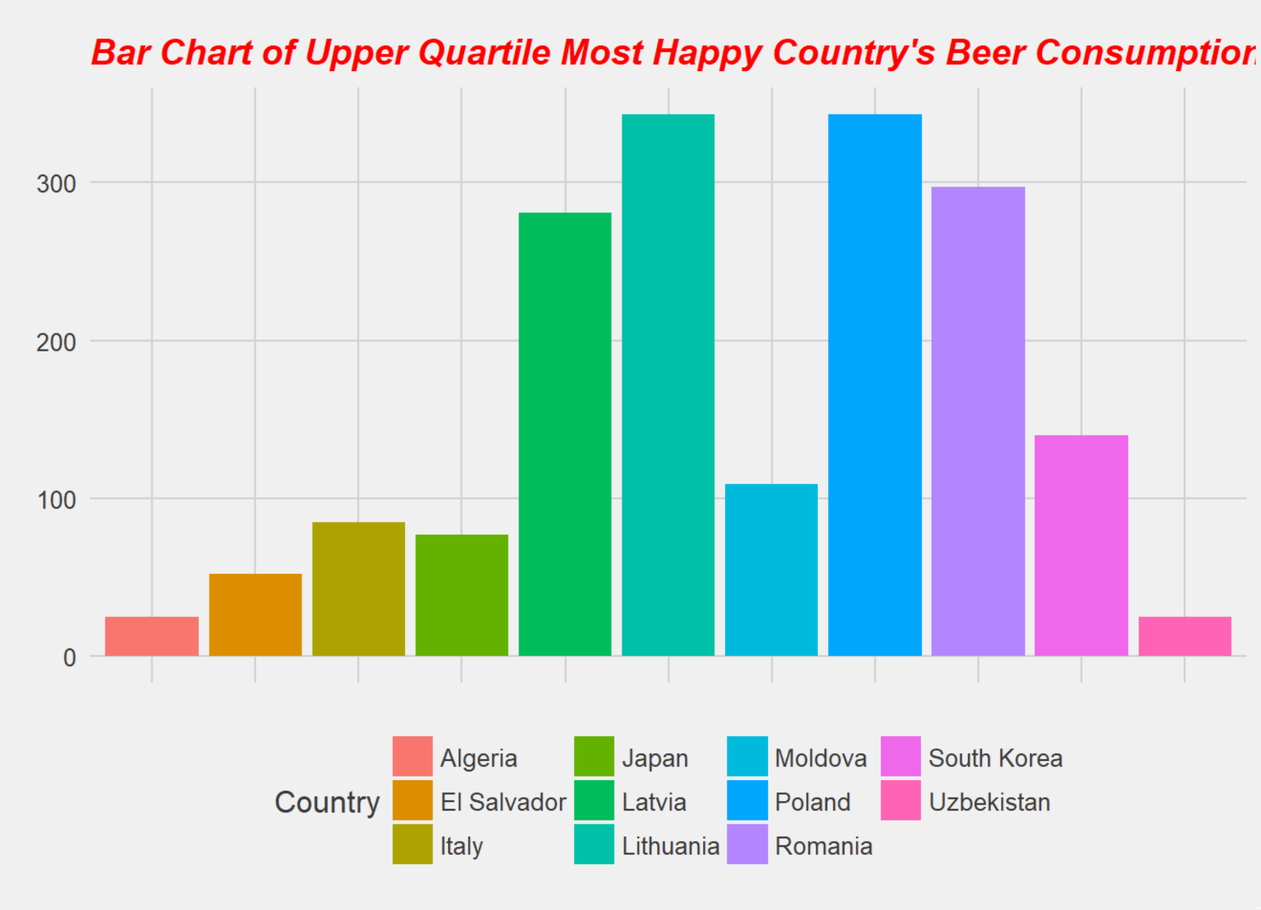
Happiness Score ~ Spirit Servings = 0.29

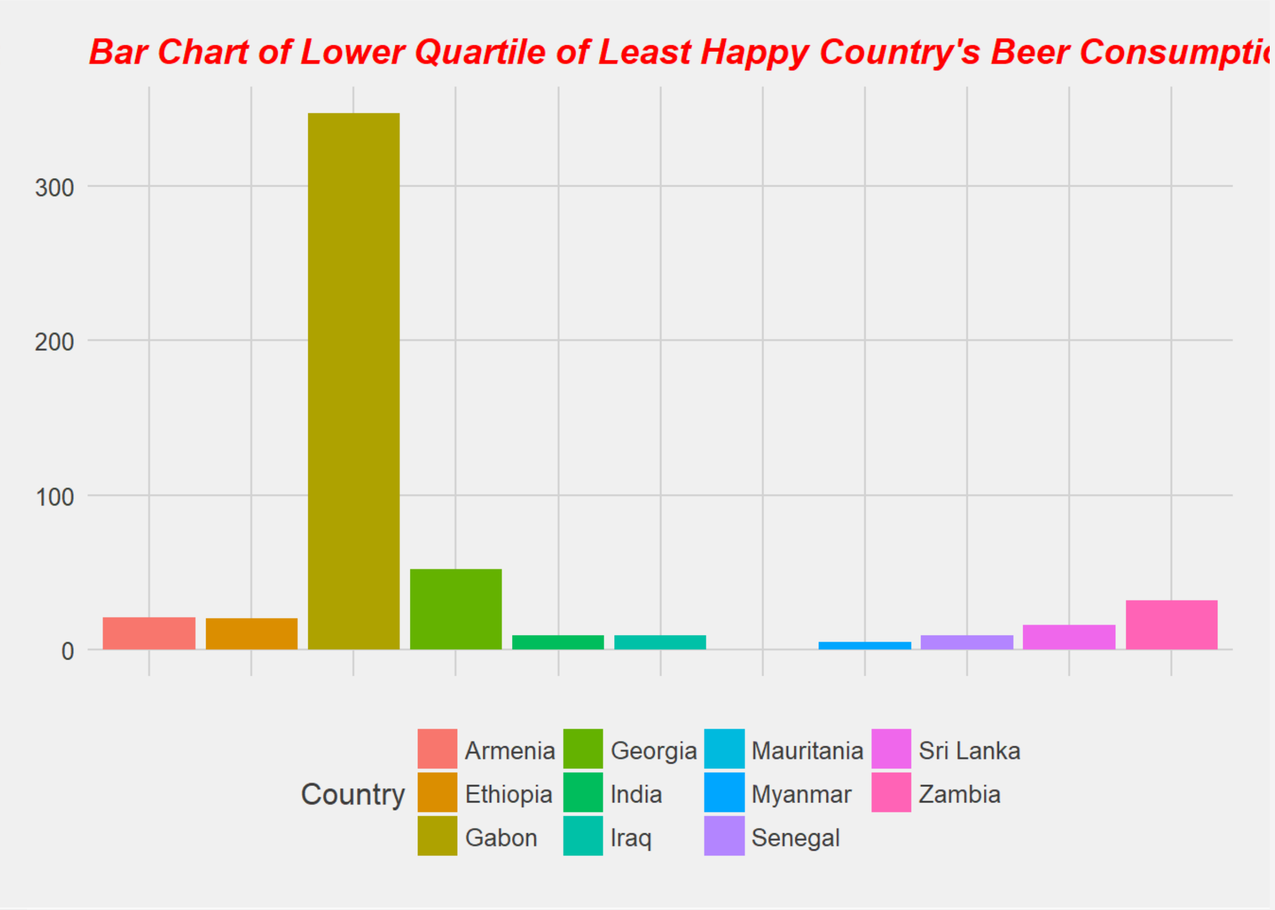
Analysis – Booze vs Happiness



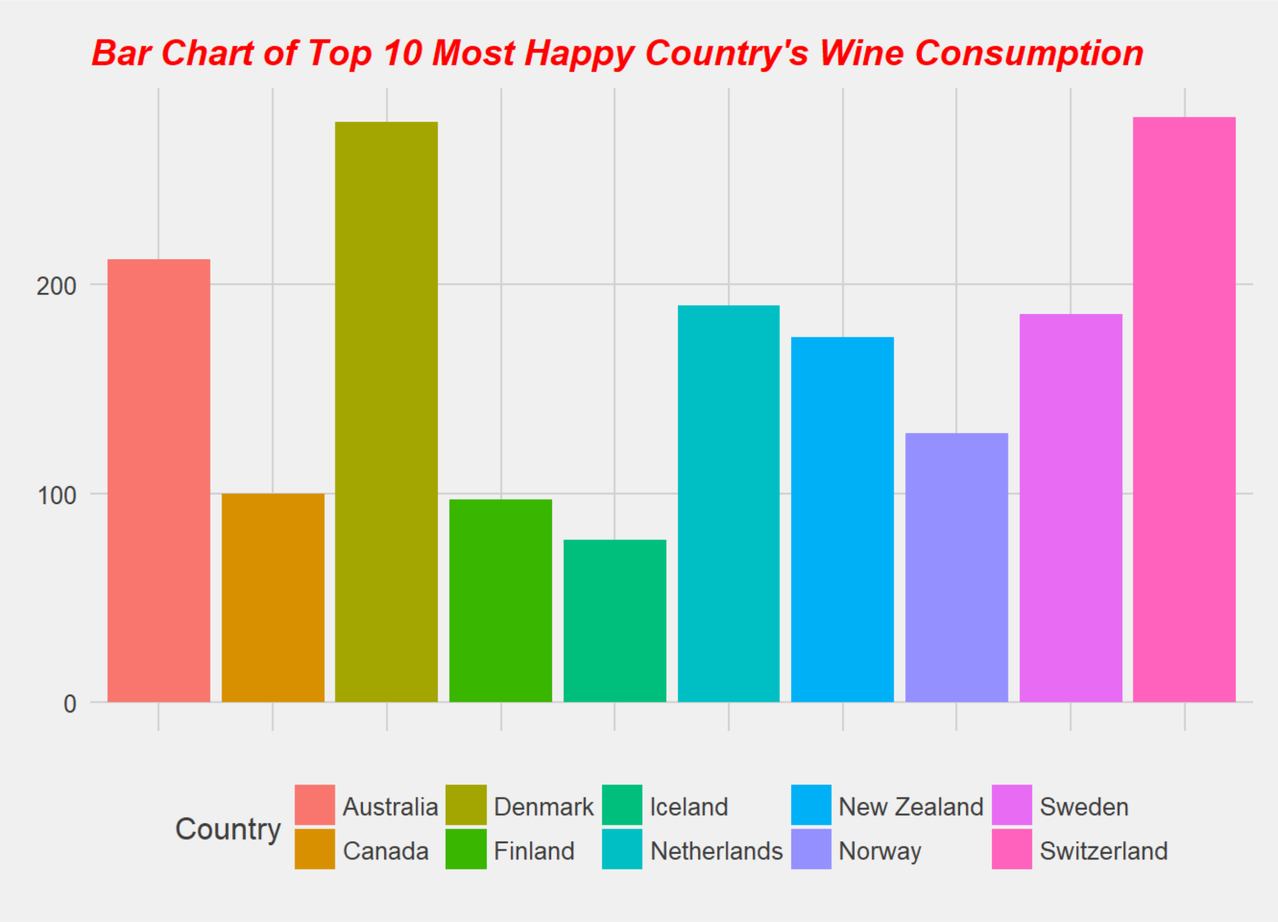


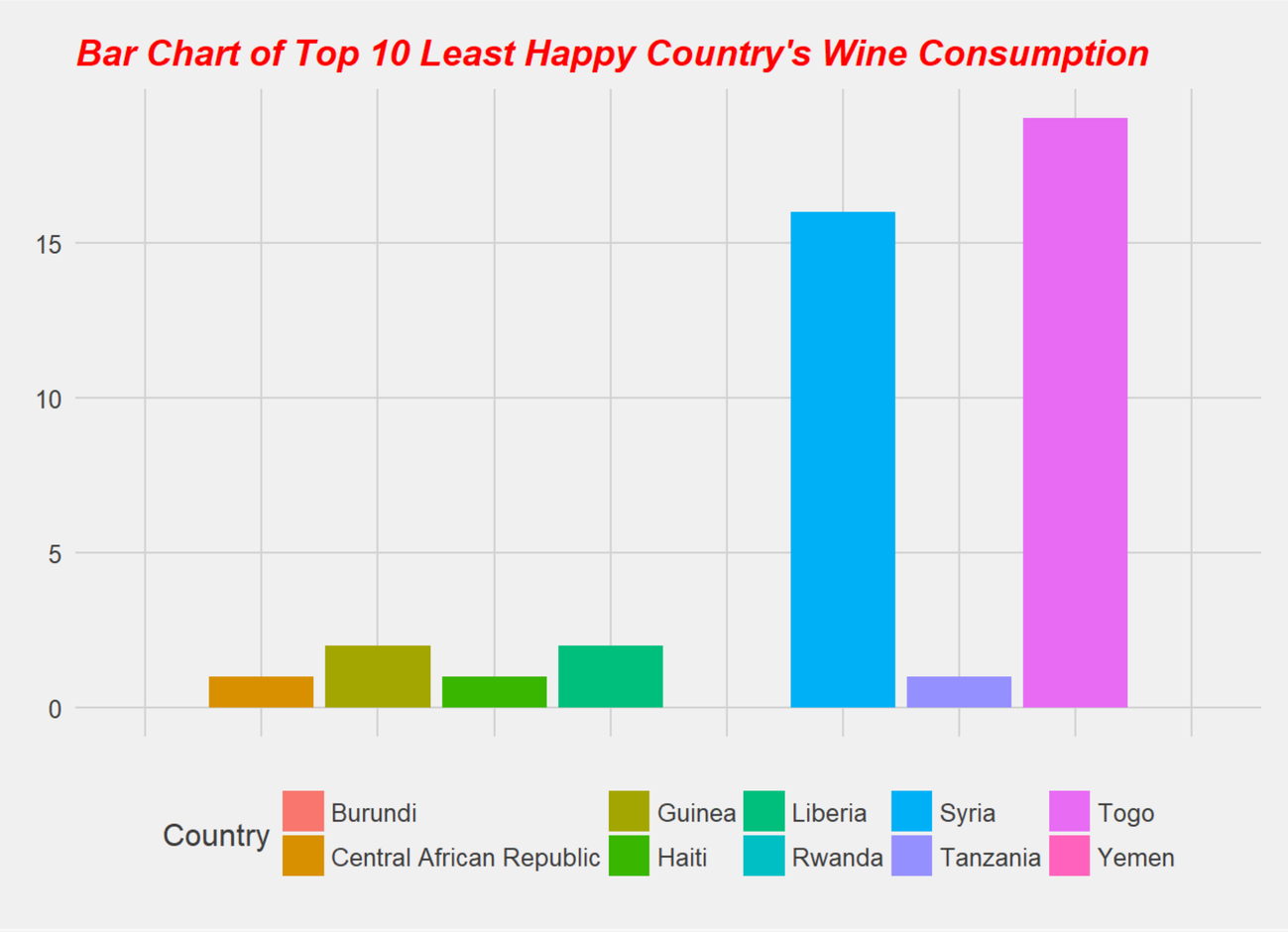
Analysis – Booze vs Happiness



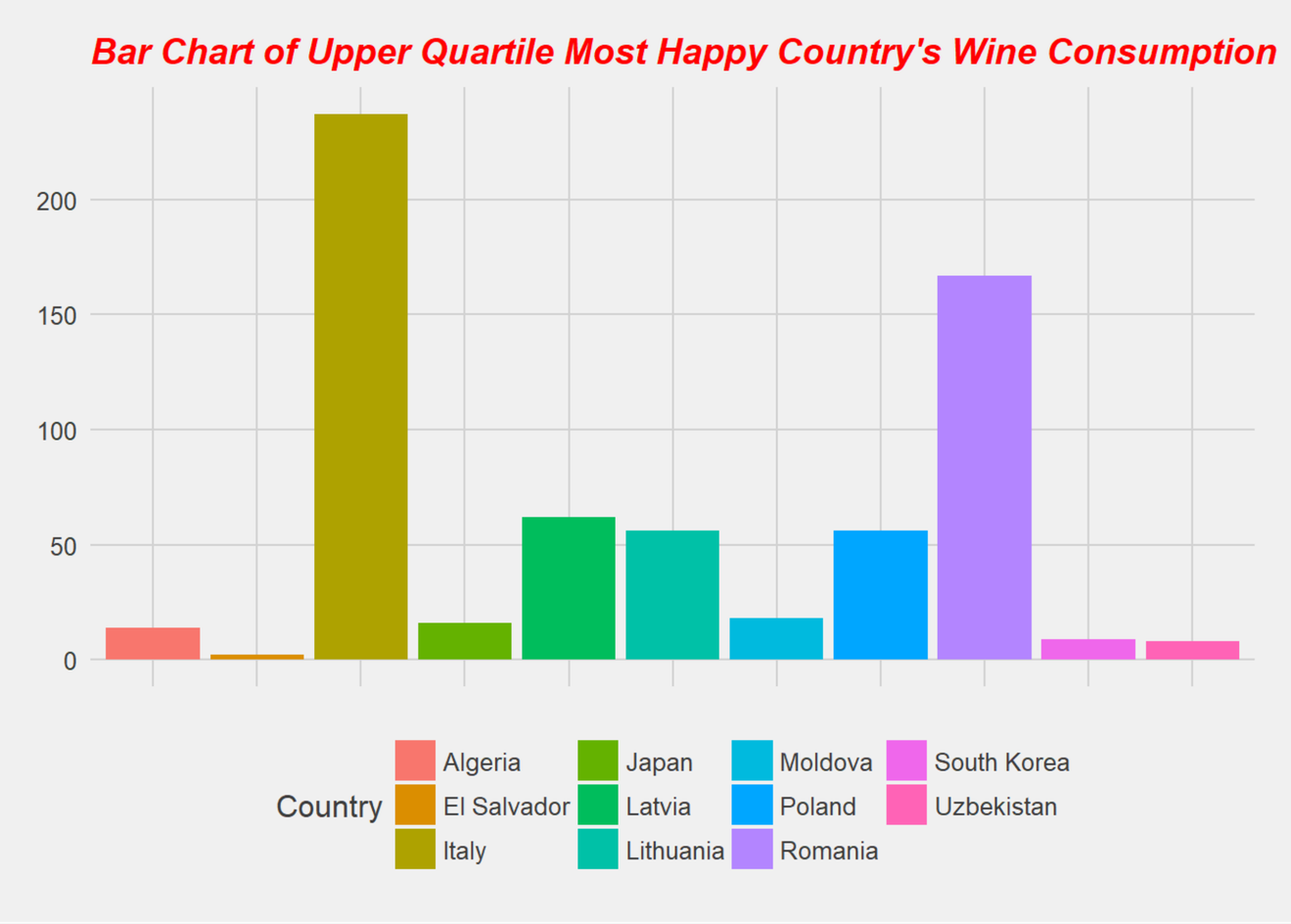


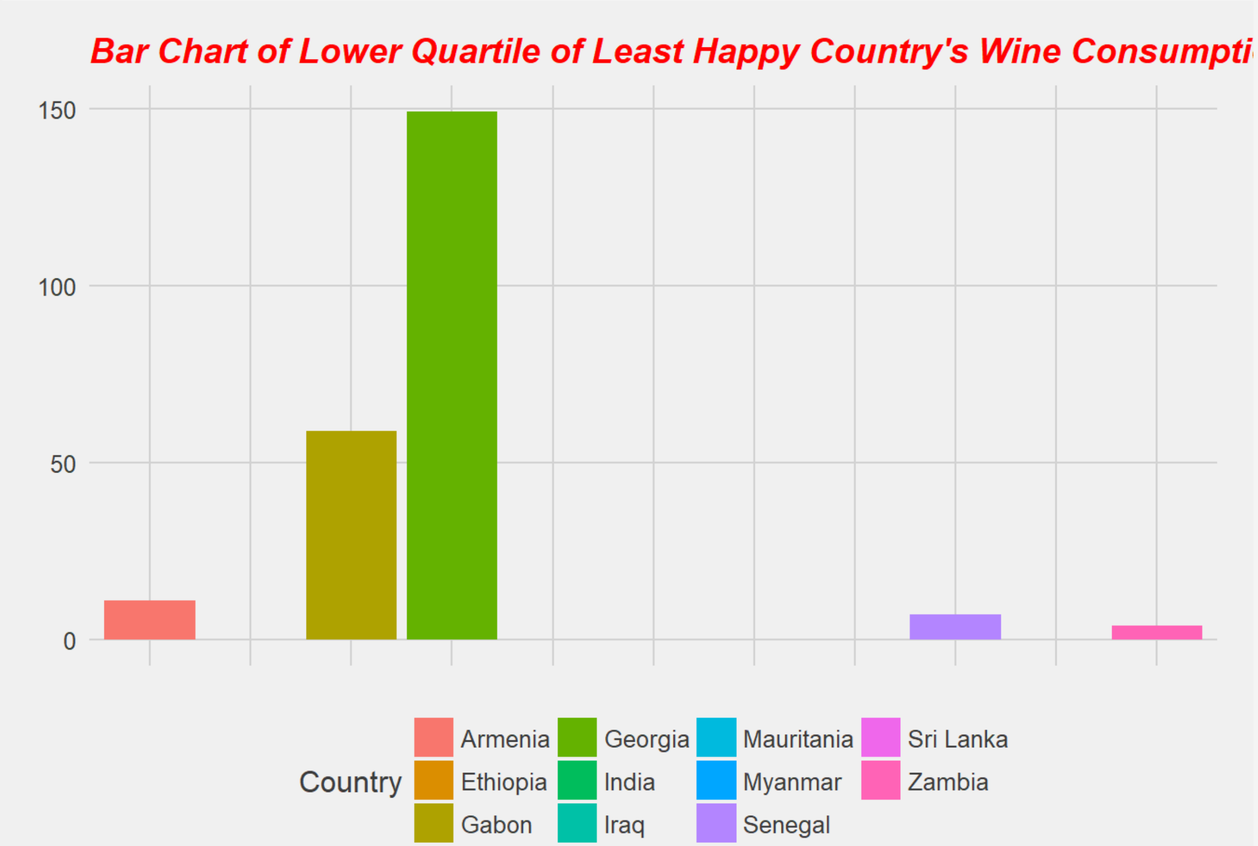
Analysis – Booze vs Happiness



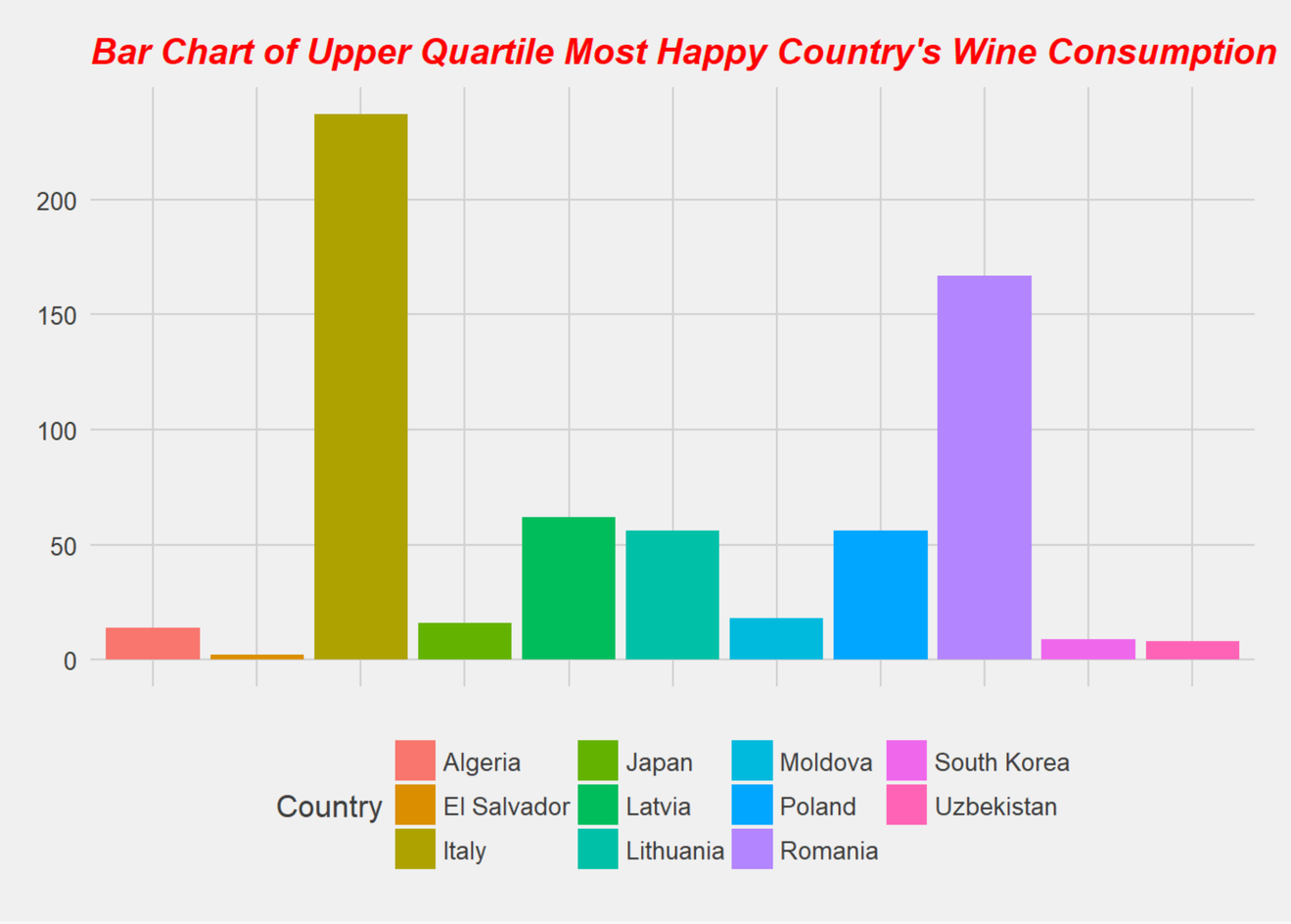


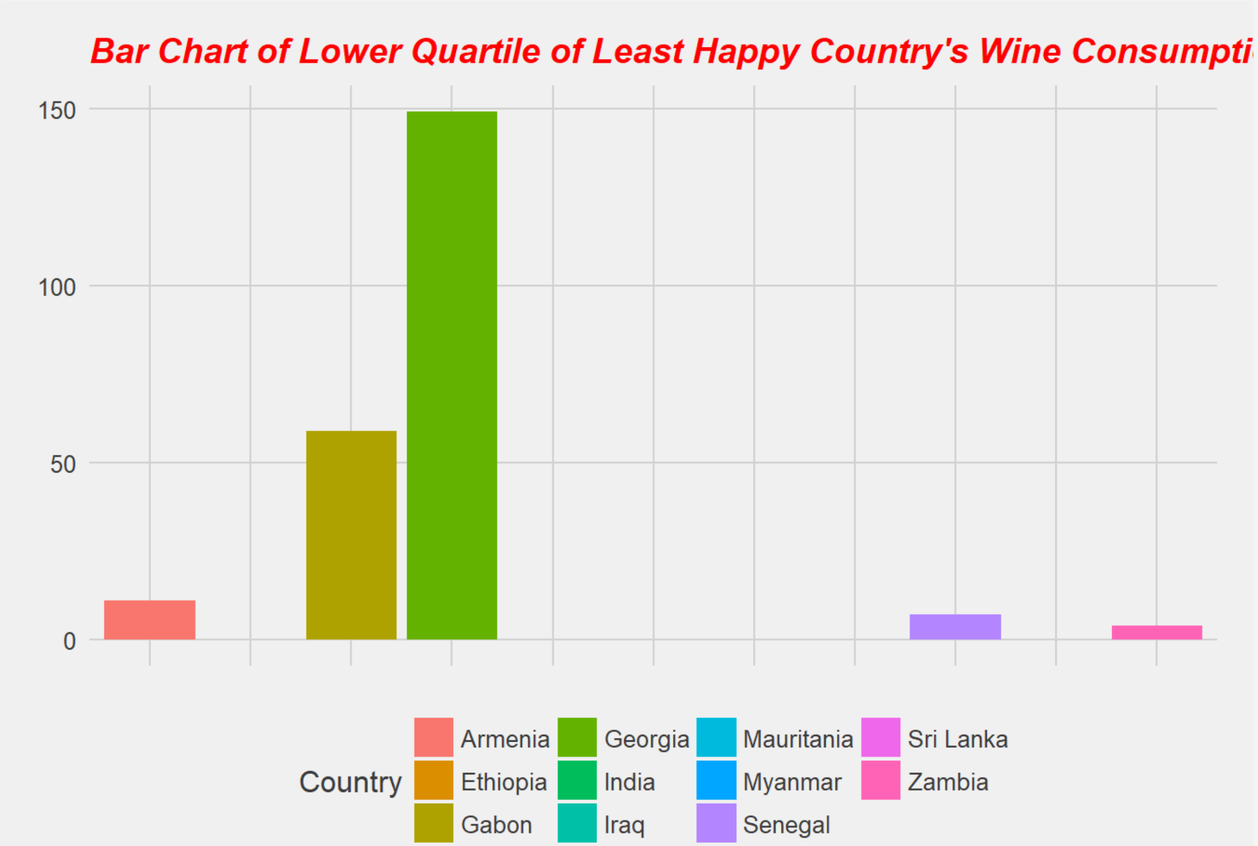
Analysis – Booze vs Happiness



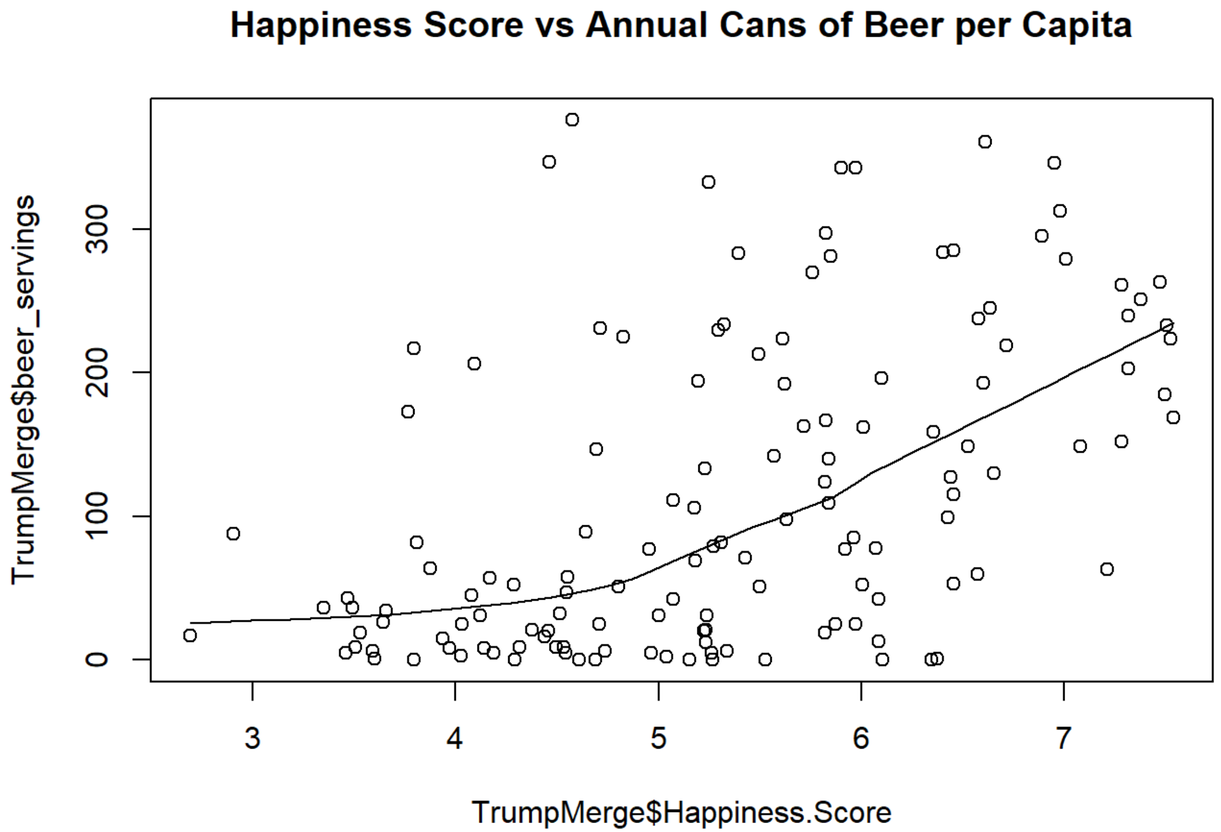


Analysis – Booze vs Happiness



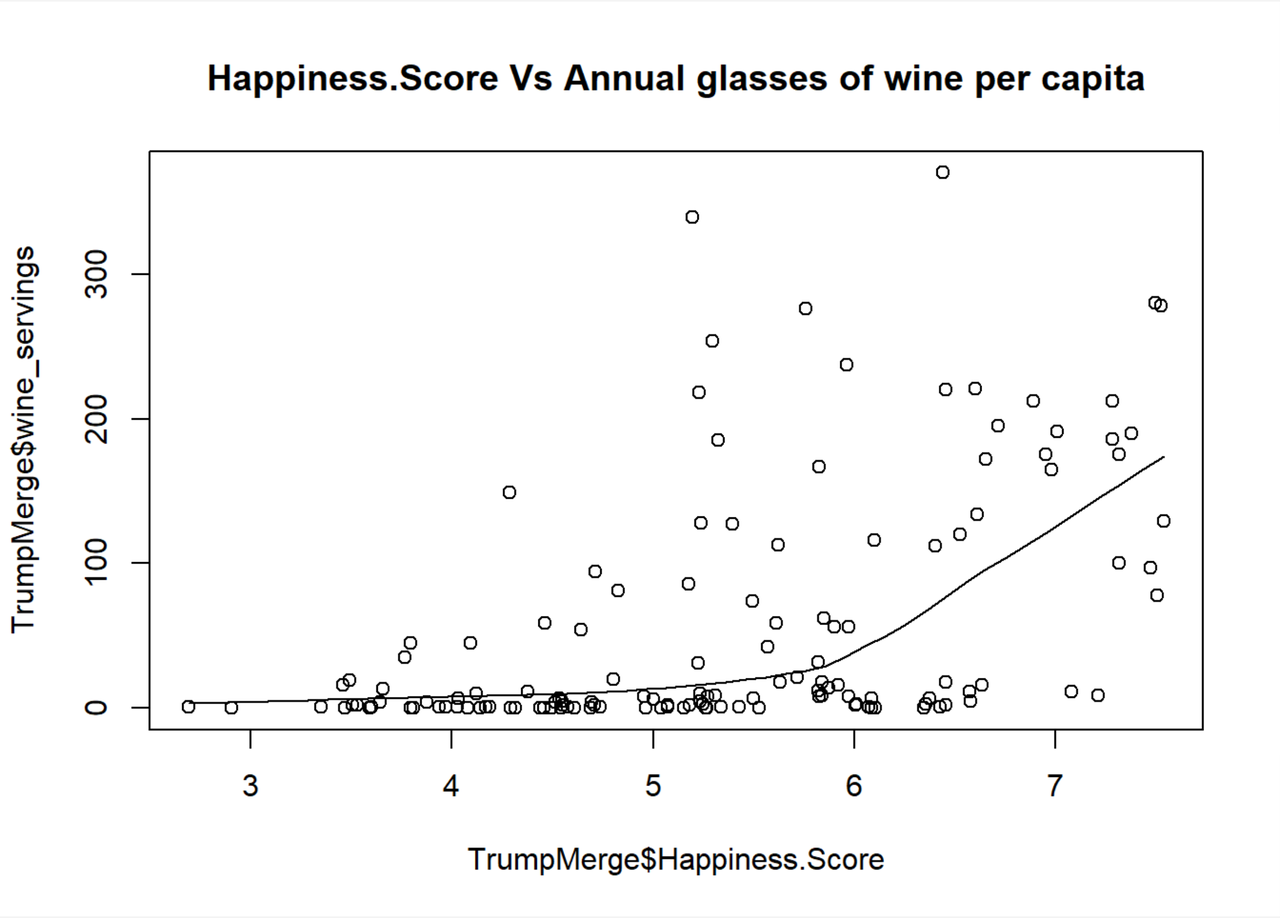


Analysis – Booze vs Happiness



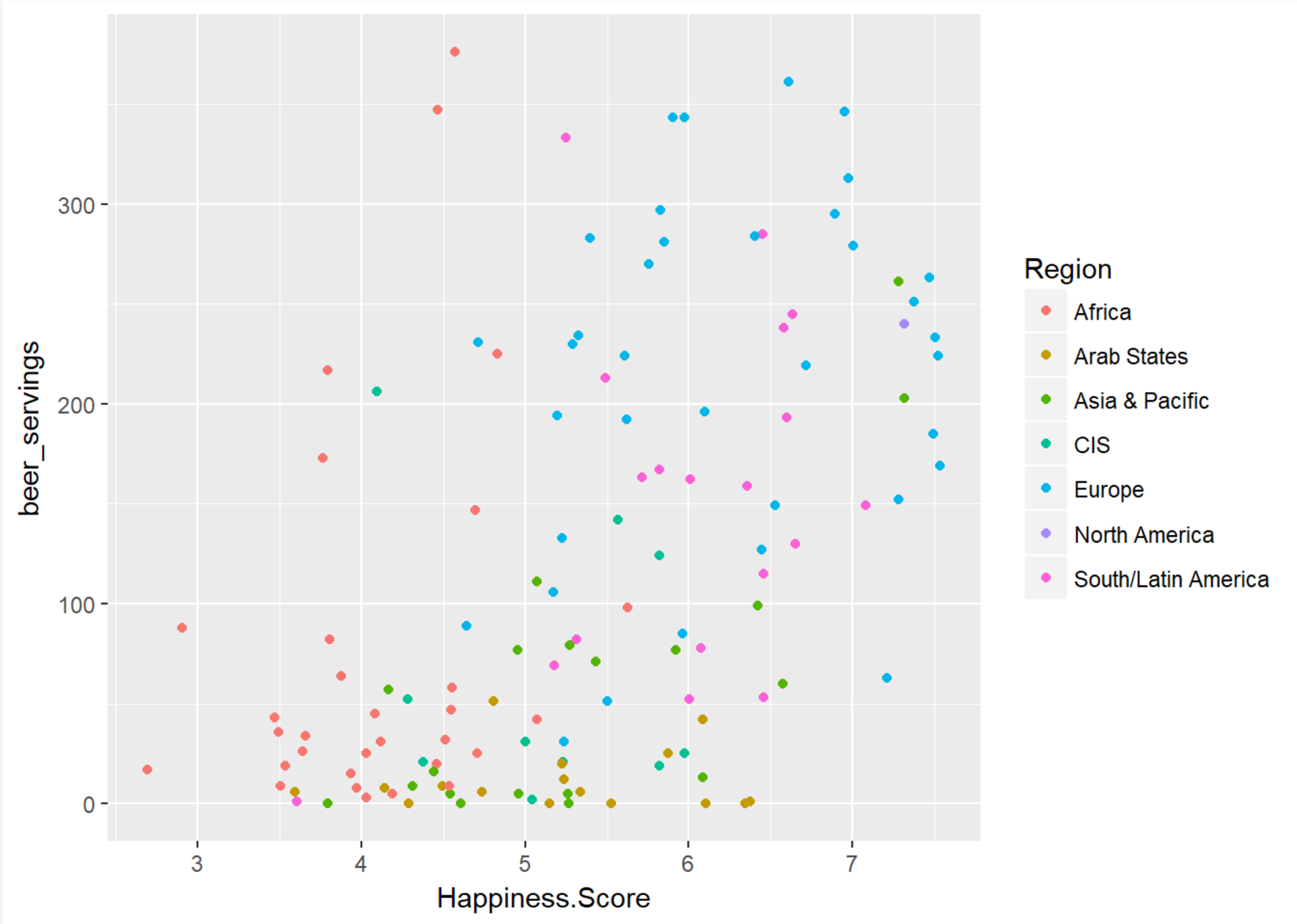

```
Call:
lm(formula = Happiness.Score ~ beer_servings, data = TrumpMerge)

Residuals:
     Min       1Q   Median       3Q      Max
-2.29928 -0.68846  0.06917  0.76413  2.14555

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)   4.7226462  0.1239787  38.092  < 2e-16 ***
beer_servings 0.0054731  0.0007981   6.858 2.28e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Analysis – Booze vs Happiness

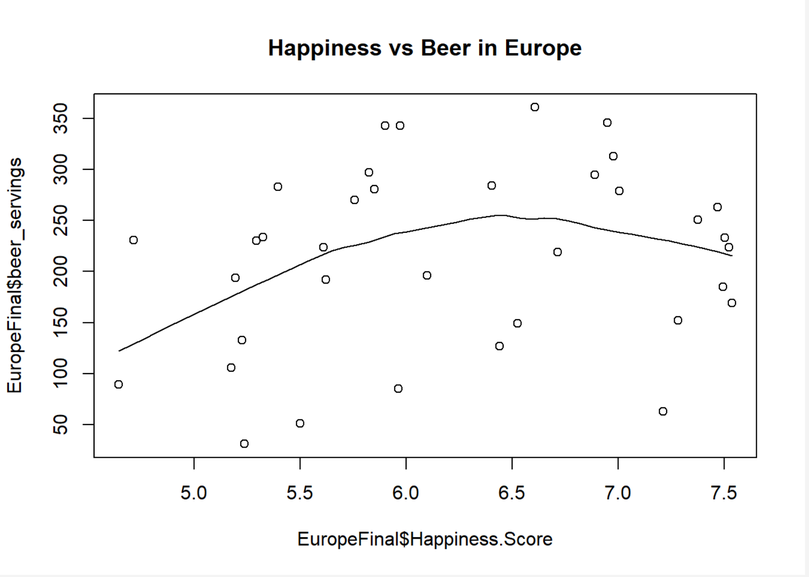


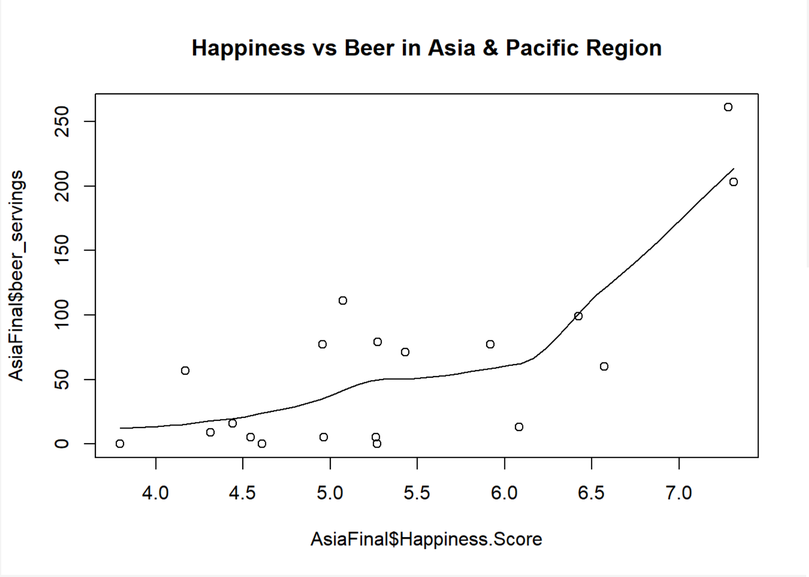

```
Call:
lm(formula = Happiness.Score ~ wine_servings, data = TrumpMerge)

Residuals:
     Min       1Q   Median       3Q      Max
-2.27468 -0.79968  0.08013  0.74931  2.19087

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)   4.960872   0.102843  48.238  < 2e-16 ***
wine_servings 0.006807   0.001019   6.678 5.78e-10 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

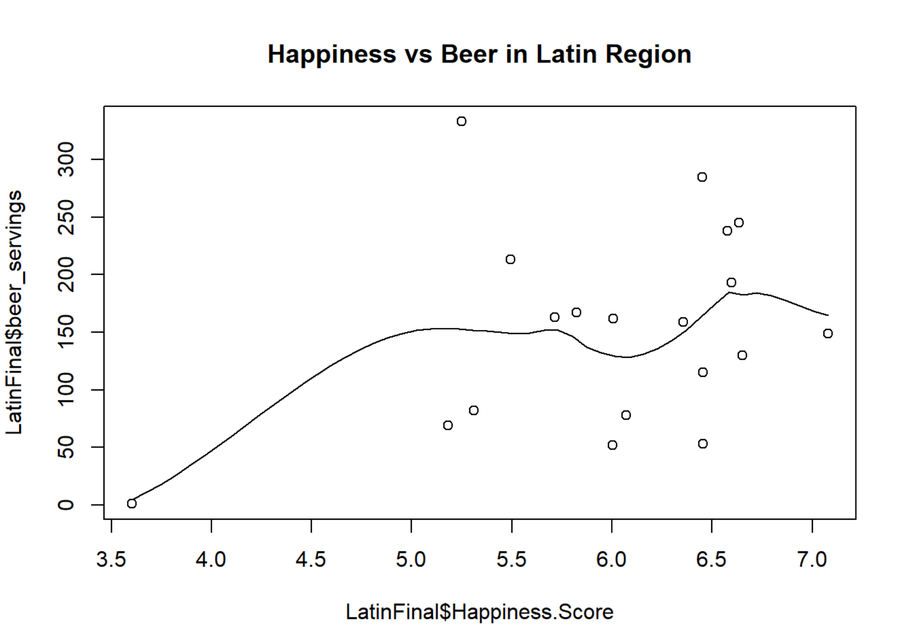
Analysis – Happiness by Region (Beer)

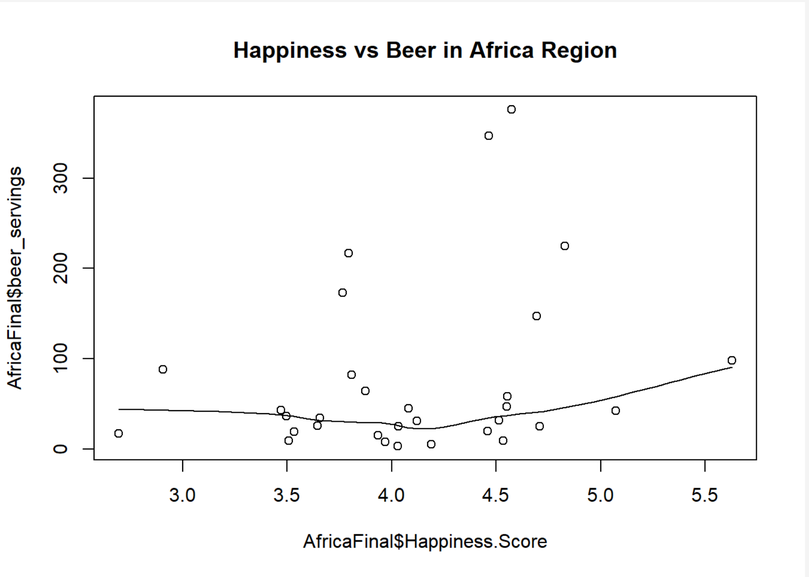


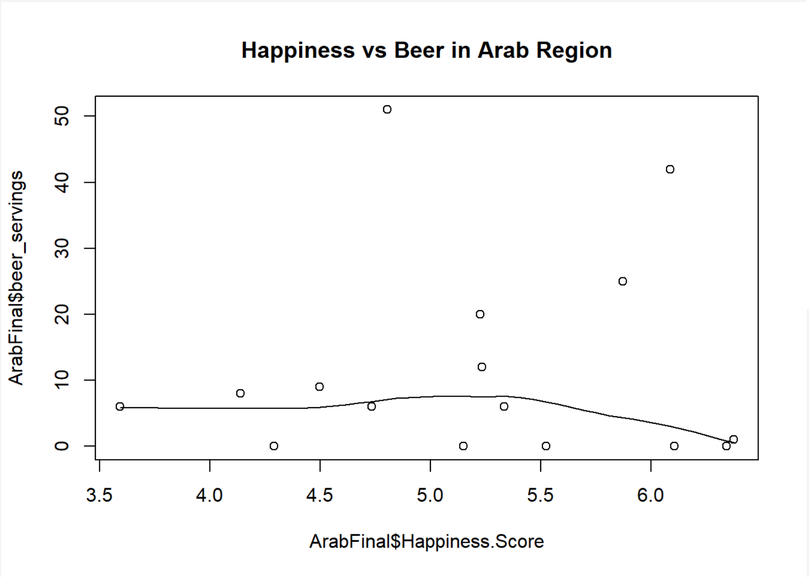
Analysis – Happiness by Region (Beer)



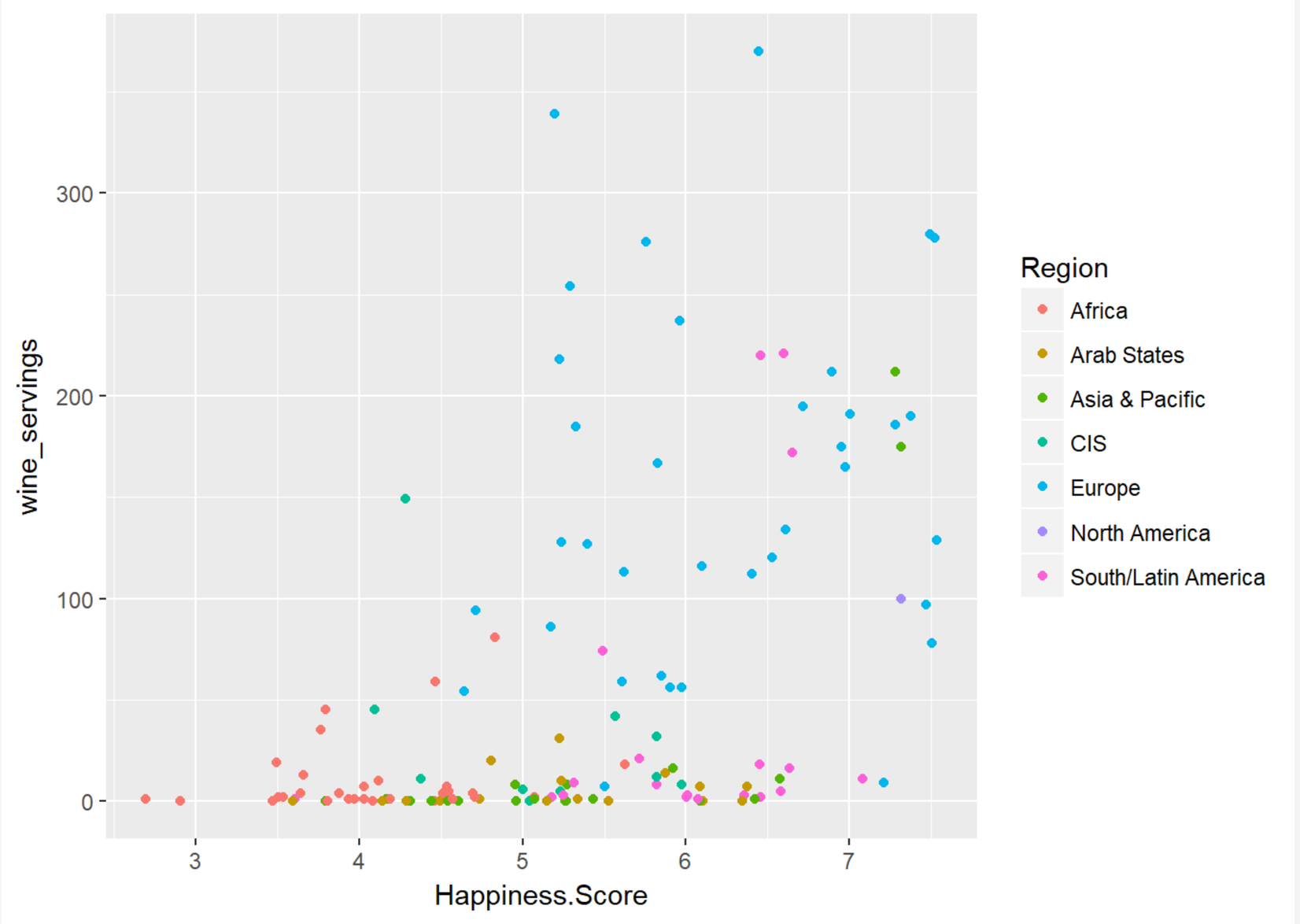




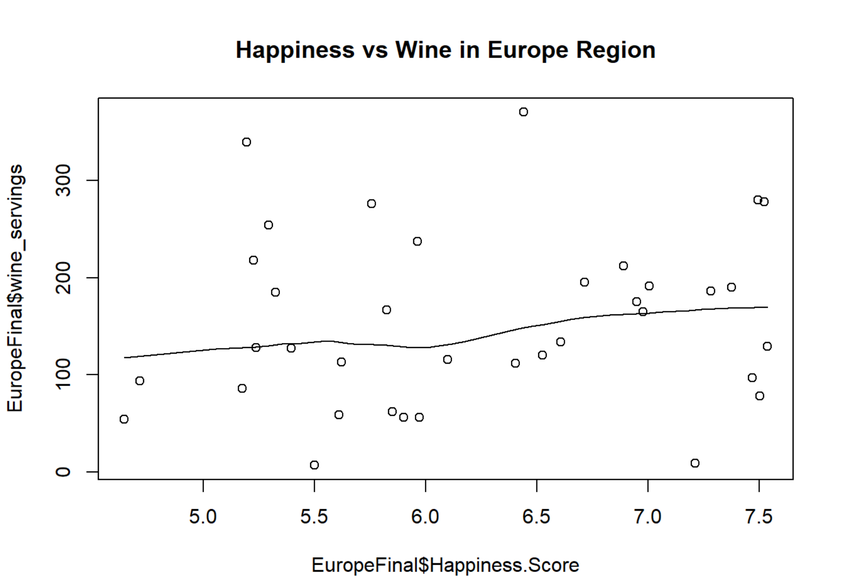


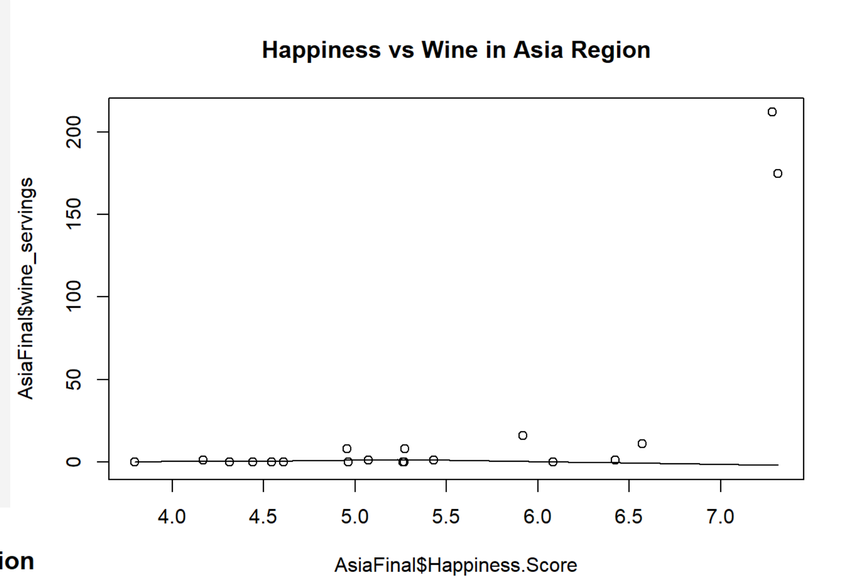


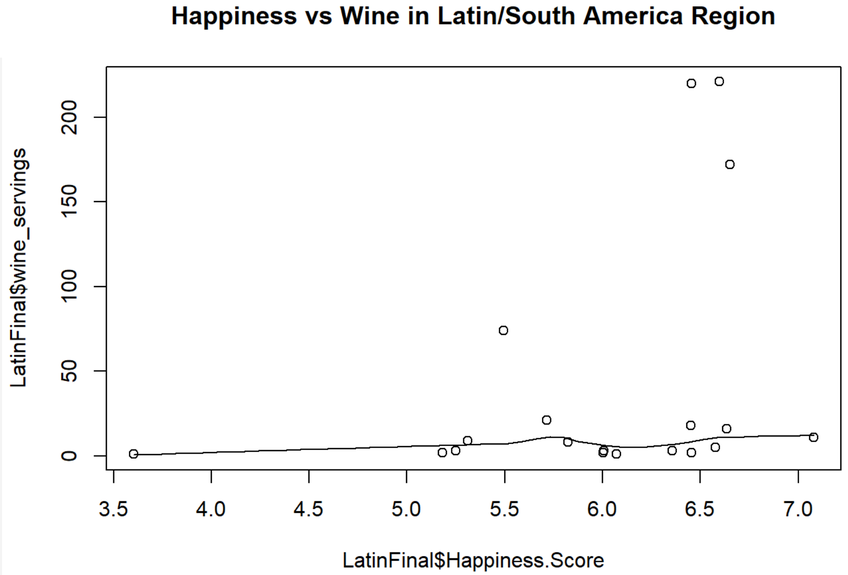
Analysis – Happiness by Region (Wine)



Analysis – Happiness by Region (Wine)







Analysis – Trump & …Happiness

```
Call:
lm(formula = net_approval ~ Happiness.Score, data = final2)

Residuals:
    Min      1Q  Median      3Q     Max
-36.656 -14.342   2.184  11.980  38.383

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)        26.70      18.76   1.423 0.164338
Happiness.Score   -13.46       3.16  -4.259 0.000168 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 17.35 on 32 degrees of freedom
Multiple R-squared:  0.3618, Adjusted R-squared:  0.3418
F-statistic: 18.14 on 1 and 32 DF,  p-value: 0.0001684
```

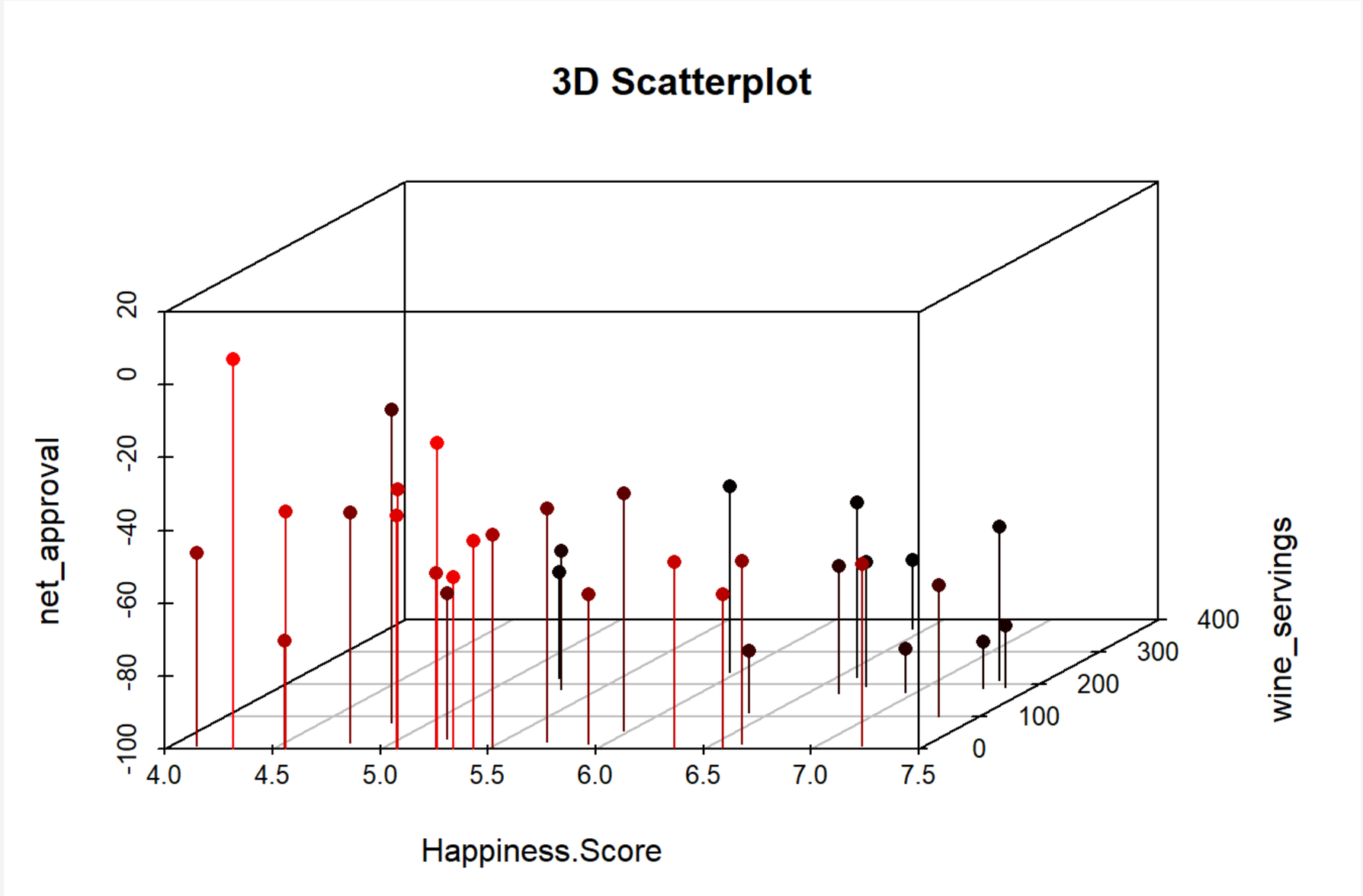
Analysis – Trump & …Happiness w/Booze

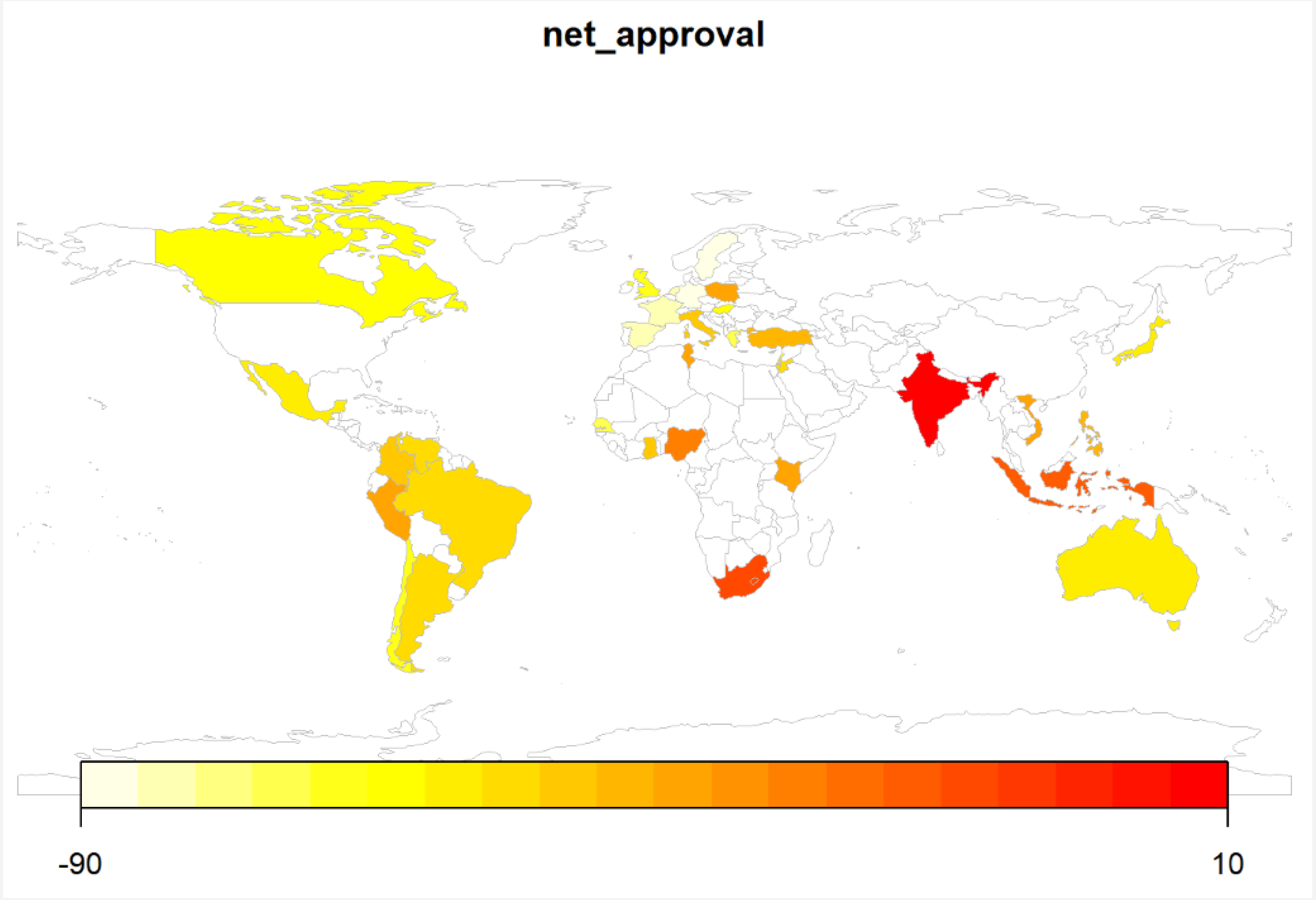
	Df	Sum of Sq	RSS	AIC
<none>			8136.3	192.24
+ total_litres_of_pure_alcohol	1	27.24	8109.1	194.13
+ beer_servings	1	6.06	8130.3	194.22
+ spirit_servings	1	0.00	8136.3	194.24
- wine_servings	1	1499.21	9635.5	195.99
- Happiness.Score	1	1958.76	10095.1	197.58

Analysis – Trump & …Happiness w/Booze

```
Call:
lm(formula = net_approval ~ Happiness.Score + wine_servings,
    data = final2)

Residuals:
    Min      1Q  Median      3Q     Max
-37.218 -11.786   0.555   9.305  38.183

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      9.10746   18.99607   0.479   0.6350
Happiness.Score -9.33721    3.41791  -2.732   0.0103 *
wine_servings   -0.07796    0.03262  -2.390   0.0231 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Analysis – Trump & …Happiness w/Booze




net_approval
-90
10

Conclusion

If you're a country that drinks, you're happier, and if you so happen to drink wine, you probably don't approve of Trump's leadership.