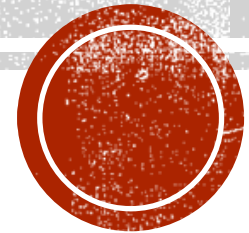


WORLD HAPPINESS

Analyzing World happiness scores and countries' future rank prediction



Presented by Bahareh Zohouri

OBJECTIVES

- Exploring the happiness underlying factors
- Predictors of Happiness
- Building model for predicting a country's happiness score
- Descriptive analysis of countries
- Studying the previous trends



DATA

- Data Source

- ✓ World Happiness Report for 2015 to 2020
- ✓ Kaggle website
- ✓ Data provider: Gallup

- Data pre-processing

- ✓ Discovering the differences between files

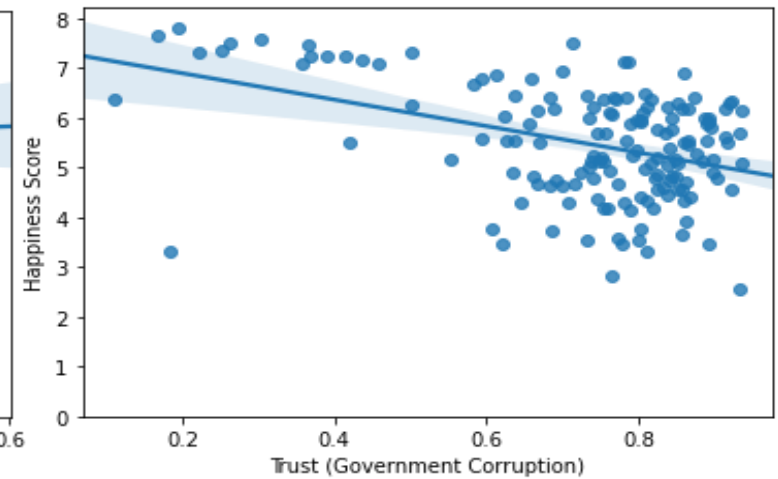
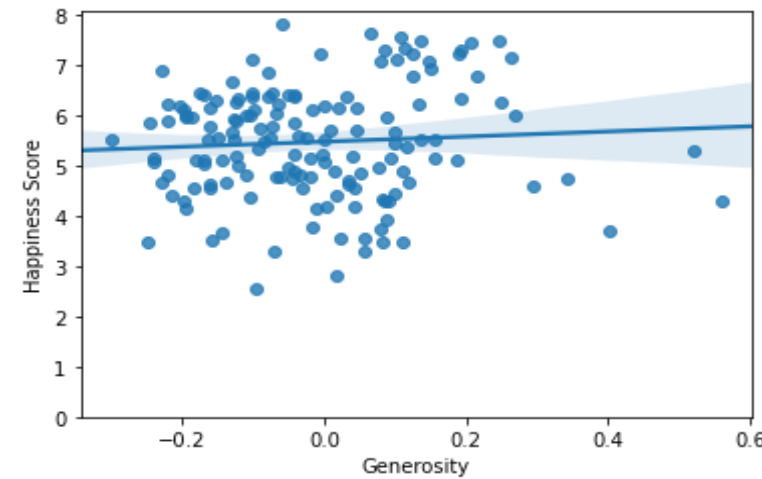
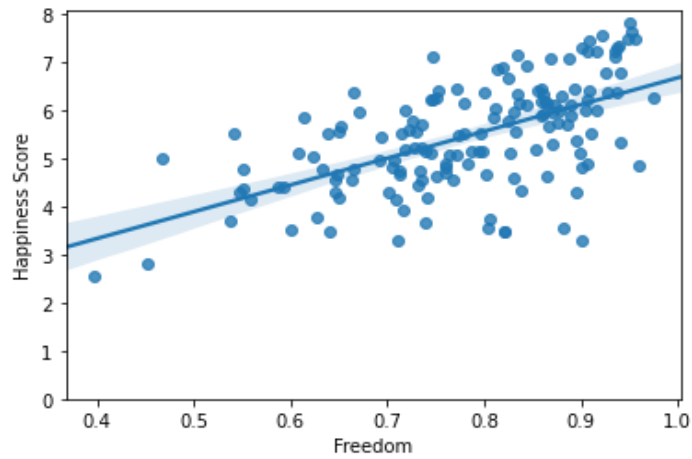
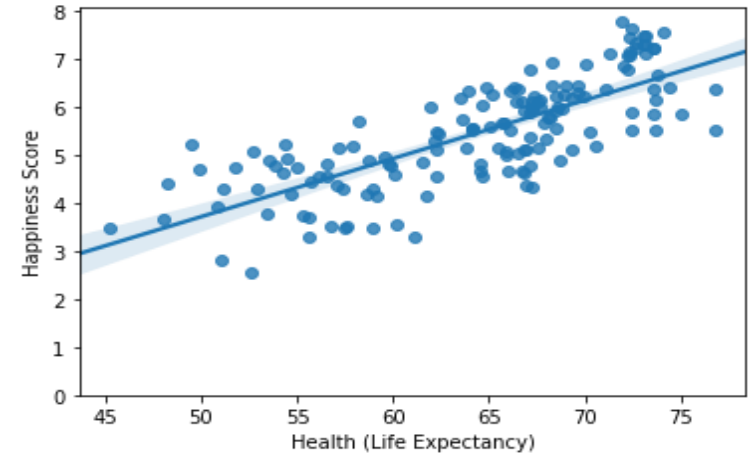
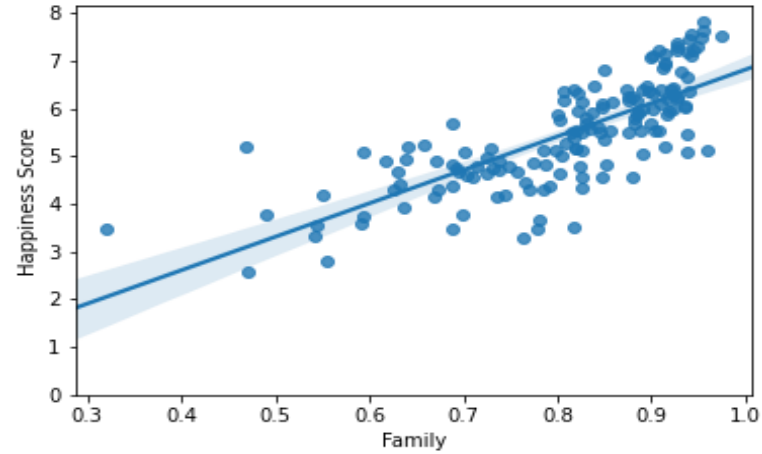
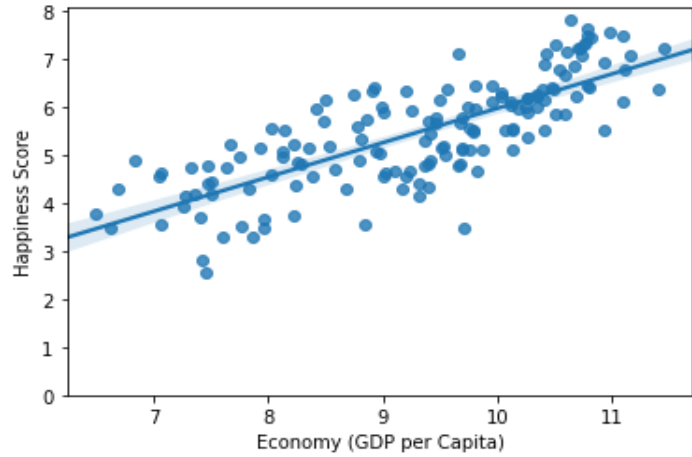
- Data wrangling

- ✓ Dealing with NaN
- ✓ Selecting Features



EXPLORATORY DATA ANALYSIS

RELATIONSHIP BETWEEN INDEPENDENT FEATURES AND HAPPINESS SCORE



HAPPINESS IN DIFFERENT REGIONS

World happiness dispersion in 2015

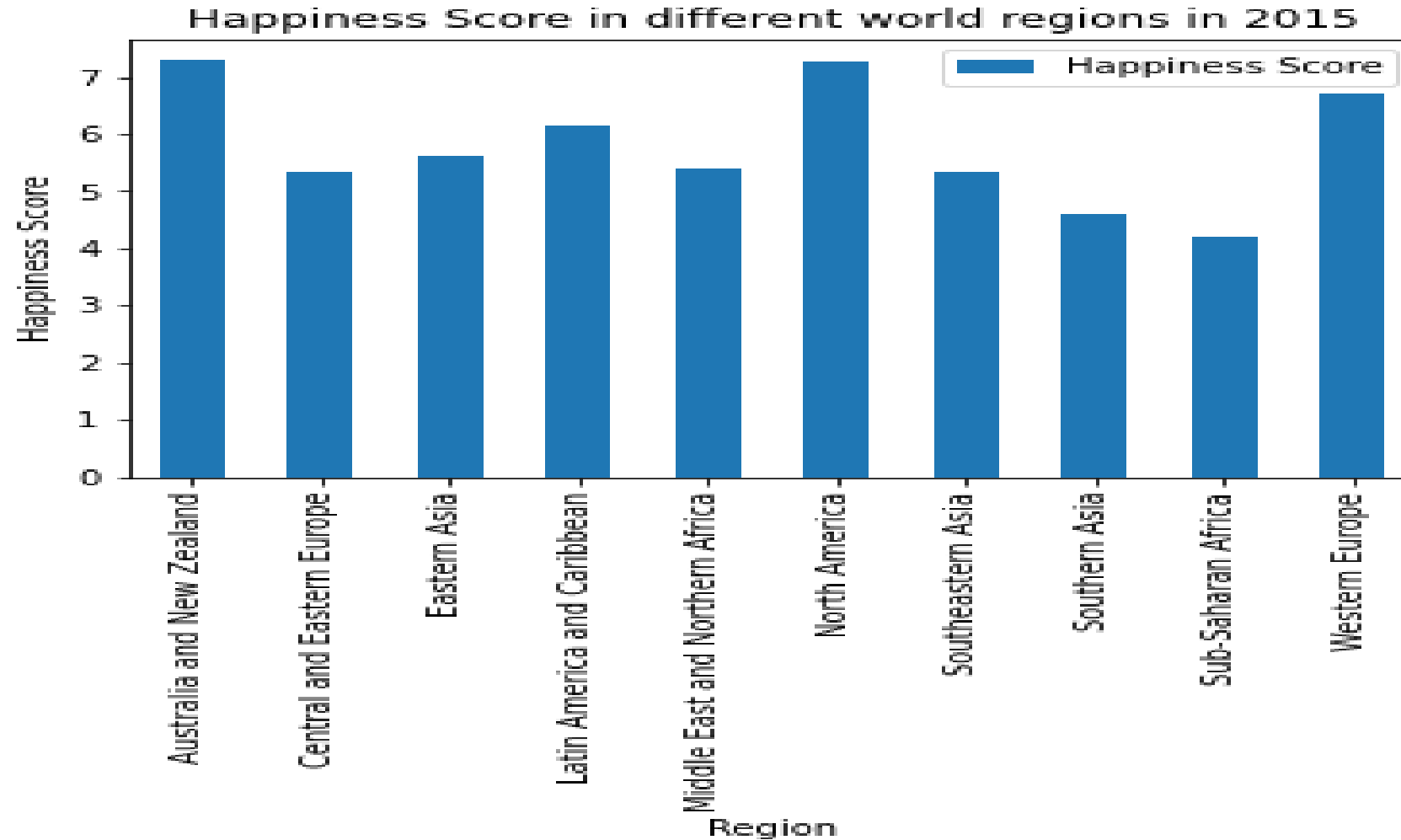
	Region	Happiness Score
0	Australia and New Zealand	7.285000
1	Central and Eastern Europe	5.332931
2	Eastern Asia	5.626167
3	Latin America and Caribbean	6.144682
4	Middle East and Northern Africa	5.406900
5	North America	7.273000
6	Southeastern Asia	5.317444
7	Southern Asia	4.580857
8	Sub-Saharan Africa	4.202800
9	Western Europe	6.689619

World happiness dispersion in 2016

	Region	Happiness Score
0	Australia and New Zealand	7.323500
1	Central and Eastern Europe	5.370690
2	Eastern Asia	5.624167
3	Latin America and Caribbean	6.101750
4	Middle East and Northern Africa	5.386053
5	North America	7.254000
6	Southeastern Asia	5.338889
7	Southern Asia	4.563286
8	Sub-Saharan Africa	4.136421
9	Western Europe	6.685667



HAPPINESS SCORE IN DIFFERENT WORLD REGIONS IN 2015

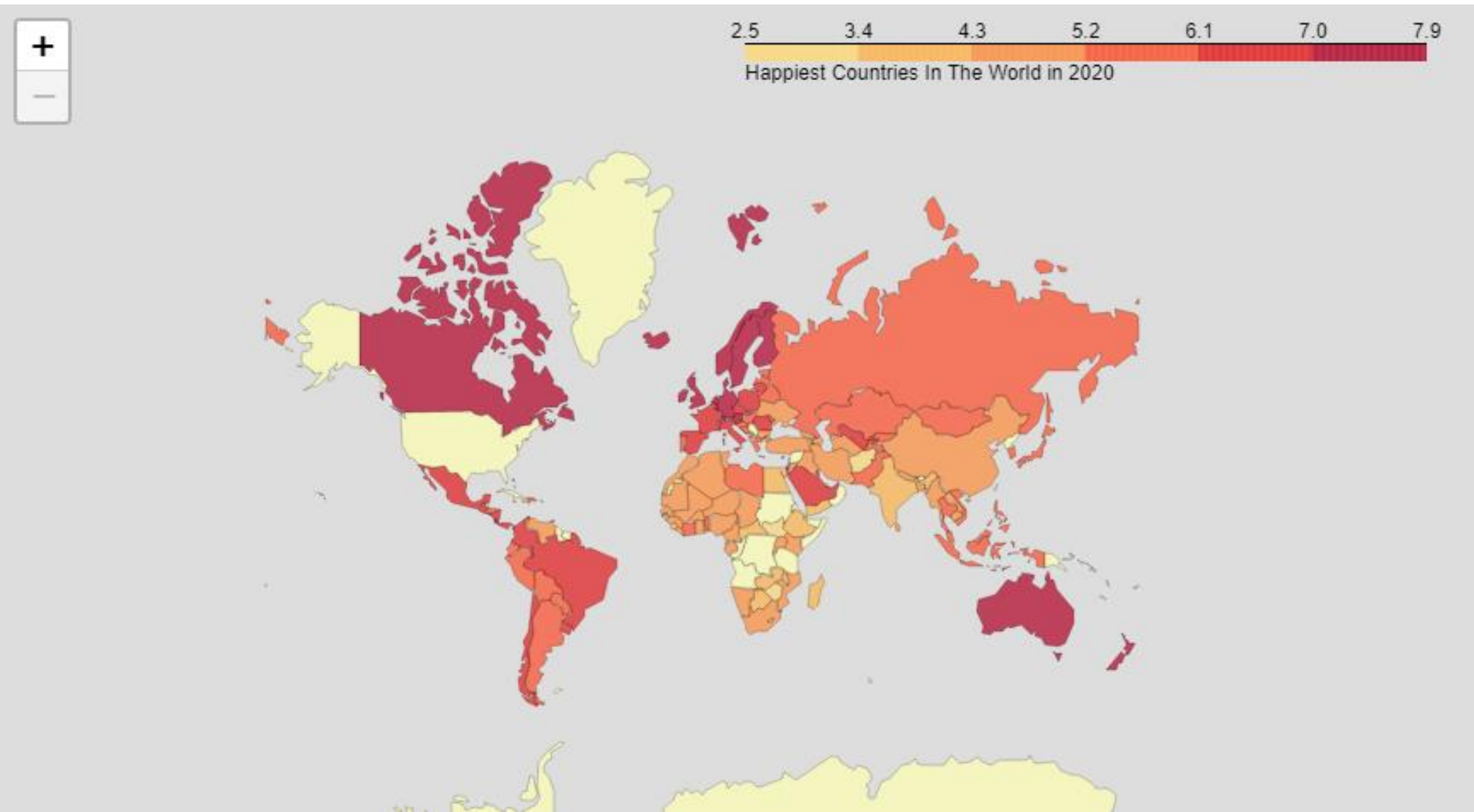


REGIONS WITH MOST UNHAPPY COUNTRIES

Region	Country
Sub-Saharan Africa	15
Middle East and North Africa	2
South Asia	2
Latin America and Caribbean	1



MAP OF WORLD HAPPINESS SCORE



MODEL DEVELOPMENT

- ✓ Multiple linear regression
- ✓ Calculating coefficient

Model features with all independent variables

R ² score for train	0.7726096772336093
R ² score for test	0.5782217120641335
mean squared error train	0.30241766040521667
mean squared error test	0.3496565987103075

Model features excluding “Generosity” variable

R ² score for train	0.7691473959749999
R ² score for test	0.5821926013248095
mean squared error train	0.30702231985226436
mean squared error test	0.34636470893680077



RESULTS & DISCUSSION

- Higher effect of economy situation, family support and life expectancy on happiness score
- Very weak relationship between generosity and happiness
- Negative correlation between perceived corruption and reported happiness
- Increasing happiness score of Finland and decreasing happiness score of India
- Happiest regions of the World are Australia and New Zealand, North America and western Europe
- Excluding New Zealand, ten healthiest countries in the world in 2020 are all western European countries



CONCLUSION & FUTURE DIRECTIONS

- Building a useful model for predicting a country's happiness score in future
- Extensive exploratory analysis of World happiness report
- Recommendations for future analysis:
 - ✓ Normalizing data
 - ✓ Studying variables interdependencies
 - ✓ Studying countries trend and progress in each variable

