

What Affects Happiness

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November 15, 2018

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Background



- Gallup Conducts a survey called the Gallup World Poll for around 155 countries.
- In this Poll they ask random individuals questions that relate to their trust in government, family size, health, freedom, economy and their happiness.
- This data is often used by governments, organizations to inform their policy decision making.

Background



- Sustainable Development Solutions Network summarizes this data.
- They use a question called the "Cantril ladder" from the poll.
- They use some of the questions asked in the poll and condense them into 6 different factors.

Data Presentation

Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	Trust (Government Corruption)	Generosity	Dystopia Residual
Switzerland	Western Europe	1	7.587	0.03411	1.39051	1.34951	0.94143	0.66557	0.41978	0.29678	2.51738
Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.62877	0.14145	0.4363	2.70201
Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.64938	0.48357	0.34139	2.49204
Norway	Western Europe	4	7.522	0.0388	1.459	1.33095	0.88521	0.66973	0.36503	0.34699	2.46531
Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.63297	0.32957	0.45811	2.45176

Table: Head of World Happiness Data of 2015.

Country	Region	Happiness Rank	Happiness Score	Lower Confidence Interval	Upper Confidence Interval	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	Trust (Government Corruption)	Generosity	Dystopia Residual
Denmark	Western Europe	1	7.526	7.46	7.592	1.44178	1.16374	0.79504	0.57941	0.44453	0.36171	2.73939
Switzerland	Western Europe	2	7.509	7.428	7.59	1.52733	1.14524	0.86303	0.58557	0.41203	0.28083	2.69463
Iceland	Western Europe	3	7.501	7.333	7.669	1.42666	1.18326	0.86734	0.56624	0.14075	0.47678	2.83337
Norway	Western Europe	4	7.498	7.421	7.575	1.57744	1.1260	0.79570	0.59609	0.35776	0.37895	2.66465
Finland	Western Europe	5	7.413	7.351	7.475	1.40598	1.13464	0.81091	0.57104	0.41004	0.25492	2.82596

Table: Head of World Happiness Data of 2016.

Country	Happiness Rank	Happiness Score	Whisker high	Whisker low	Economy GDP per Capita	Family	Health Life Expectancy	Freedom	Generosity	Trust Government Corruption	Dystopia Residual
Norway	1	7.53700017629077	7.59444482058287	7.4795553790888	1.61648318459699	1.53352355967031	0.796666502952576	0.635422587394714	0.38201223731041	0.315963834524155	2.27702865328979
Denmark	2	7.52109983596802	7.5812806486467	7.46227160707116	1.48238301277161	1.55112159252167	0.792565524578094	0.62606722450256	0.355280488729477	0.40077006816864	2.31370735168457
Iceland	3	7.50400018862017	7.62203047305346	7.3859696078668	1.480633020401	1.6105740070343	0.83355122116089	0.627162635326385	0.475940220737467	0.153526599472084	2.3271528244019
Switzerland	4	7.49399995803819	7.56177242040634	7.42622749567032	1.55407955322266	1.51691174807141	0.858131289462117	0.620070576667786	0.296540278259277	0.397007265356522	2.2767482322998
Finland	5	7.4689999826709	7.52754207581282	7.41045760562898	1.44357182516327	1.5402467250824	0.80915766954422	0.617950856685636	0.2454827258873	0.38261154294014	2.4301815032959

Table: Head of World Happiness Data of 2017.

Data Presentation

- Economy (GDP per Capita)
- Family - how much Family contributes to happiness score.
- Health (Life Expectancy) - how much Health contributes to happiness score.
- Freedom - how much Freedom contributes to happiness score.
- Trust (Government Corruption)
- Generosity
- Dystopia Residual

Objectives

Main Goal

Build A Prediction Model for the Happiness Score of a Country.

Questions

- Is Happiness increasing over time?
- For the factors in the data, what has the highest correlation with Happiness score?
- Is there a general difference in Regions?

Research Methods

- two-way ANOVA (year effects and region effects)
- Linear Regression (happiness score as response variable, and six factors as predictors.
- Transformation
- Model Selection
- Prediction

References

<https://www.kaggle.com/unsdsn/world-happiness/activity>

<https://www.gallup.com/178667/gallup-world-poll-work.aspx>

The End