World Happiness Report

Capstone Project – Google Data Analyst

Introduction

World Happiness Report

The aim of this project is to analyze a public dataset taken from Kaggle to find out what are the parameters that influences happiness in the world. The World Happiness Report dataset provides annual insights into global happiness rankings based on factors like GDP per capita, social support, life expectancy, freedom, generosity, and corruption perceptions. This analysis aims to explore these factors to understand what influences happiness across different countries. I will be using R programming which I learnt from Google Data Analyst course to analyze the data for year 2019.

Understanding the data

World Happiness Report - 2019

Loading and preview

Load and preview of the top 6 data of the dataset.

Description: df [6 x 9]

	Overall.rank <int>	Country.or.region <chr>	Score <dbl>	GDP.per.capita <dbl>	Social.support <dbl>	Healthy.life.expectancy <dbl>	Freedom.to.make.life.choices <dbl>	Generosity <dbl>	Perceptions.of.corruption <dbl>
1	1	Finland	7.769	1.340	1.587	0.986	0.596	0.153	0.393
2	2	Denmark	7.600	1.383	1.573	0.996	0.592	0.252	0.410
3	3	Norway	7.554	1.488	1.582	1.028	0.603	0.271	0.341
4	4	Iceland	7.494	1.380	1.624	1.026	0.591	0.354	0.118
5	5	Netherlands	7.488	1.396	1.522	0.999	0.557	0.322	0.298
6	6	Switzerland	7.480	1.452	1.526	1.052	0.572	0.263	0.343

6 rows

Understanding the data

World Happiness Report - 2019

Column names of the dataset

Display and understand the column names.

```
[1] "Overall.rank"              "Country.or.region"    "Score"
[4] "GDP.per.capita"            "Social.support"       "Healthy.life.expectancy"
[7] "Freedom.to.make.life.choices" "Generosity"        "Perceptions.of.corruption"
```

Understanding the data

World Happiness Report - 2019

Structure of the dataset

There are total of 156 rows and 9 columns in the dataset. Most of the data are float type except Overall.rank which is integer type and Country.or.region which is char type.

```
'data.frame':   156 obs. of  9 variables:
 $ Overall.rank              : int  1 2 3 4 5 6 7 8 9 10 ...
 $ Country.or.region         : chr  "Finland" "Denmark" "Norway" "Iceland" ...
 $ Score                     : num  7.77 7.6 7.55 7.49 7.49 ...
 $ GDP.per.capita            : num  1.34 1.38 1.49 1.38 1.4 ...
 $ Social.support            : num  1.59 1.57 1.58 1.62 1.52 ...
 $ Healthy.life.expectancy   : num  0.986 0.996 1.028 1.026 0.999 ...
 $ Freedom.to.make.life.choices: num  0.596 0.592 0.603 0.591 0.557 0.572 0.574 0.585 0.584 0.532 ...
 $ Generosity                : num  0.153 0.252 0.271 0.354 0.322 0.263 0.267 0.33 0.285 0.244 ...
 $ Perceptions.of.corruption : num  0.393 0.41 0.341 0.118 0.298 0.343 0.373 0.38 0.308 0.226 ...
```

Data cleansing

World Happiness Report - 2019

Checking NA value

There is no NA value in the dataset.

```r
#### Check for any NA values
```{r}
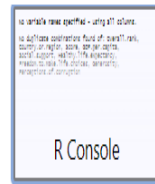sum(is.na(df))
```

[1] 0

Data cleansing

World Happiness Report – 2019

Checking for duplicates

There is no duplicate found in the dataset.

No variable names specified - using all columns.

No duplicate combinations found of: Overall.rank, Country.or.region, Score, GDP.per.capita, Social.support, Healthy.life.expectancy, Freedom.to.make.life.choices, Generosity, Perceptions.of.corruption

Factors that affect Happiness Score

Happiness Score Correlation Heatmap

Findings

Strongest Positive Correlations:

• **Score and GDP per Capita (0.79):** Higher GDP per capita correlates with higher Happiness Scores.

• **Score and Social Support (0.78):** Strong social support networks are associated with higher Happiness Scores.

• **Score and Healthy Life Expectancy (0.78):** Higher life expectancy correlates with higher Happiness Scores.

Happiness Score Correlation Heatmap

	Score	GDP.per.capita	Social.support	Healthy.life.expectancy	Freedom.to.make.life.choices	Perceptions.of.corruption	Generosity
Generosity	0.08	-0.08	-0.05	-0.03	0.27	0.33	1
Perceptions.of.corruption	0.39	0.3	0.18	0.3	0.44	1	0.33
Freedom.to.make.life.choices	0.57	0.38	0.45	0.39	1	0.44	0.27
Healthy.life.expectancy	0.78	0.84	0.72	1	0.39	0.3	-0.03
Social.support	0.78	0.75	1	0.72	0.45	0.18	-0.05
GDP.per.capita	0.79	1	0.75	0.84	0.38	0.3	-0.08
Score	1	0.79	0.78	0.78	0.57	0.39	0.08

Mean and Median

Mean & Median of the Score and affecting factors

We calculated the mean and median for the happiness score and the contributing factors that affect happiness.

```
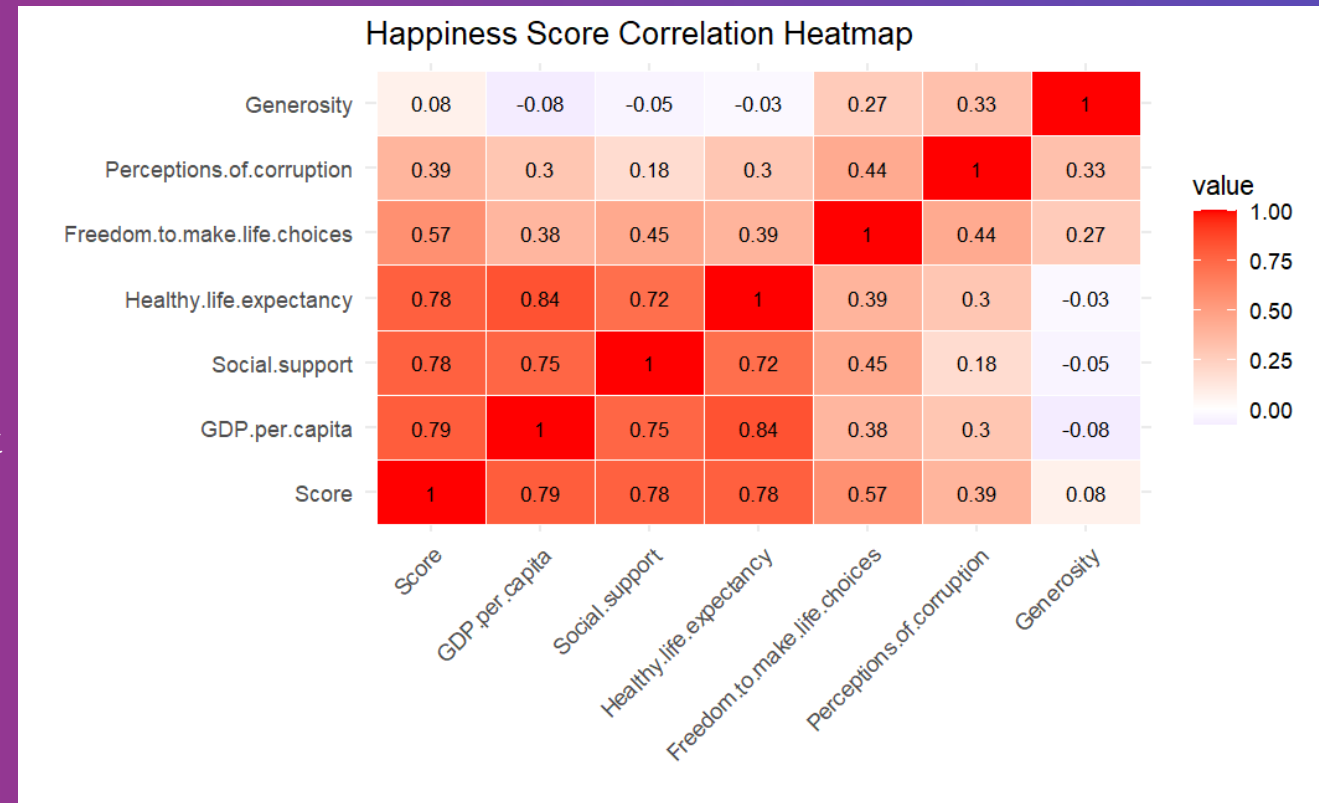[1] "Median Happiness Score: 5.38"
[1] "Mean Happiness Score: 5.41"
[1] "Median GDP per captia: 0.96"
[1] "Mean GDP per captia: 0.91"
[1] "Median Health Life Expectancy: 0.79"
[1] "Mean Health Life Expectancy: 0.73"
[1] "Median Social Support: 1.27"
[1] "Mean Social Support: 1.21"
```

Countries with higher happiness score, GDP, Healthy and Social than average

Findings

___

We can see that top 10 countries are mostly from Europe and only New Zealand is a non-Europe country. Singapore is in number 33.

Country.or.region	Score	GDP.per.capita	Healthy.life.expectancy	Social.support
<chr>	<dbl>	<dbl>	<dbl>	<dbl>
Finland	7.769	1.340	0.986	1.587
Denmark	7.600	1.383	0.996	1.573
Norway	7.554	1.488	1.028	1.582
Iceland	7.494	1.380	1.026	1.624
Netherlands	7.488	1.396	0.999	1.522
Switzerland	7.480	1.452	1.052	1.526
Sweden	7.343	1.387	1.009	1.487
New Zealand	7.307	1.303	1.026	1.557
Canada	7.278	1.365	1.039	1.505
Austria	7.246	1.376	1.016	1.475
Australia	7.228	1.372	1.036	1.548
Costa Rica	7.167	1.034	0.963	1.441
Israel	7.139	1.276	1.029	1.455
Luxembourg	7.090	1.609	1.012	1.479
United Kingdom	7.054	1.333	0.996	1.538
Ireland	7.021	1.499	0.999	1.553
Germany	6.985	1.373	0.987	1.454
Belgium	6.923	1.356	0.986	1.504
United States	6.892	1.433	0.874	1.457
Czech Republic	6.852	1.269	0.920	1.487
United Arab Emirates	6.825	1.503	0.825	1.310
Malta	6.726	1.300	0.999	1.520
Mexico	6.595	1.070	0.861	1.323
France	6.592	1.324	1.045	1.472
Taiwan	6.446	1.368	0.914	1.430
Chile	6.444	1.159	0.920	1.369
Saudi Arabia	6.375	1.403	0.795	1.357
Qatar	6.374	1.684	0.871	1.313
Spain	6.354	1.286	1.062	1.484
Panama	6.321	1.149	0.910	1.442
Brazil	6.300	1.004	0.802	1.439
Uruguay	6.293	1.124	0.891	1.465
Singapore	6.262	1.572	1.141	1.463
Italy	6.223	1.294	1.039	1.488
Bahrain	6.199	1.362	0.871	1.368
Slovakia	6.198	1.246	0.881	1.504
Poland	6.182	1.206	0.884	1.438
Lithuania	6.149	1.238	0.818	1.515
Colombia	6.125	0.985	0.841	1.410
Slovenia	6.118	1.258	0.953	1.523
Argentina	6.086	1.092	0.881	1.432
Romania	6.070	1.162	0.825	1.232
Cyprus	6.046	1.263	1.042	1.223
Ecuador	6.028	0.912	0.868	1.312
Kuwait	6.021	1.500	0.808	1.319
Thailand	6.008	1.050	0.828	1.409
Latvia	5.940	1.187	0.812	1.465
South Korea	5.895	1.301	1.036	1.219
Estonia	5.893	1.237	0.874	1.528
Mauritius	5.888	1.120	0.798	1.402
Japan	5.886	1.327	1.088	1.419
Hungary	5.758	1.201	0.828	1.410
Northern Cyprus	5.718	1.263	1.042	1.252
Peru	5.697	0.960	0.854	1.274
Portugal	5.693	1.221	0.999	1.431
Serbia	5.603	1.004	0.854	1.383
Montenegro	5.523	1.051	0.871	1.361
Croatia	5.432	1.155	0.914	1.266
Hong Kong	5.430	1.438	1.122	1.277
Dominican Republic	5.425	1.015	0.779	1.401

Relationship between Happiness Score vs GDP by countries

Findings

The countries with high happiness score vs GDP are mostly from Europe and only New Zealand is a non-Europe country.

Happiness Score vs GDP Per Capita by Country
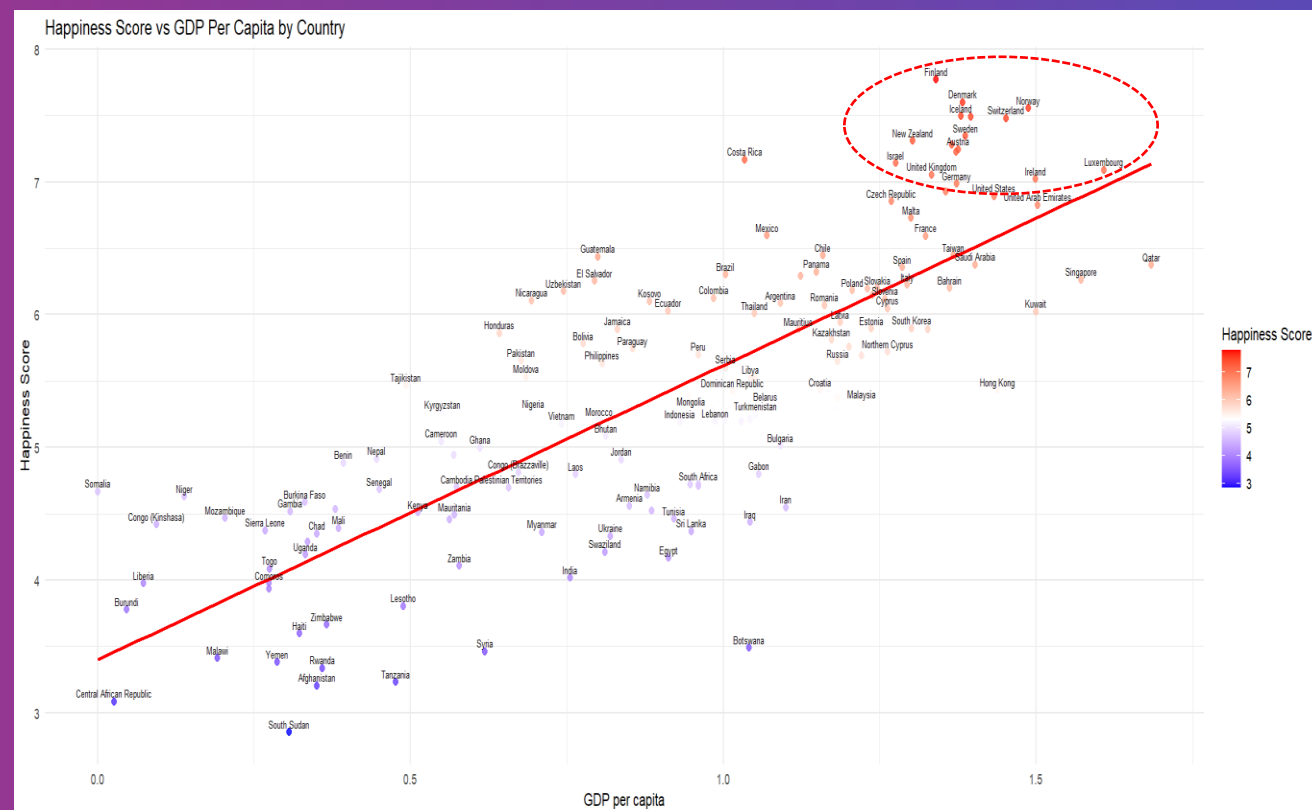
Relationship between Happiness Score vs Social Support by countries

Findings

For Happiness Score vs Social Support, there are a number of countries from Europe and a few non-Europe countries which are New Zealand. Australia, Canada and Costa Rica are having high scores.

Happiness Score vs Social Support by Country
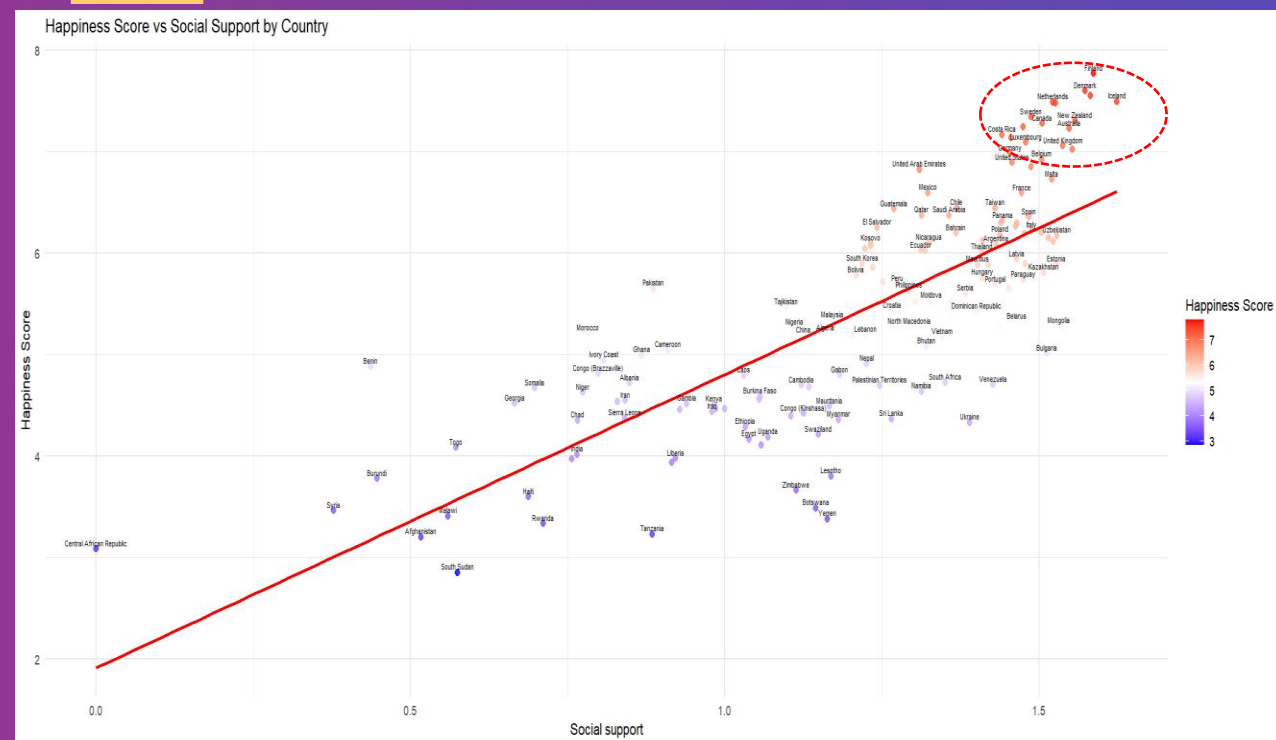
Relationship between Happiness Score vs Healthy Life Expectancy by countries

Findings

For Happiness Score vs Healthy Life Expectancy, there are a number of countries from Europe and a few non-Europe countries which are Canada and Costa Rica are having high scores.

Happiness Score vs Healthy Life Expectancy by Country
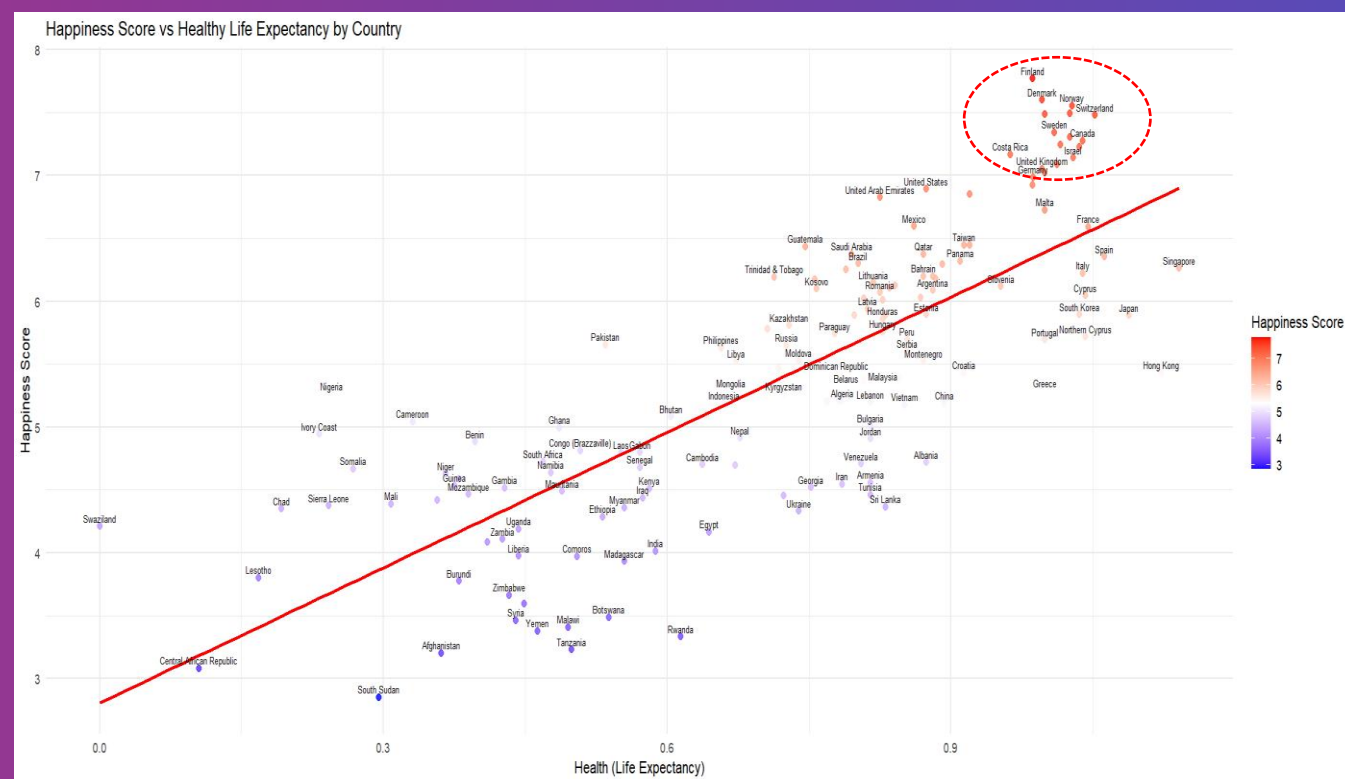
Conclusion

Conclusion:

- The analysis provides valuable insights into the multifaceted nature of happiness and well-being. It emphasizes the interconnectedness of economic, social, and health factors in determining happiness.

- Policymakers or researchers can use these insights to target areas for improvement and enhance overall happiness.

Recommendations:

- Policies aimed at increasing GDP per capita can have a significant positive impact on happiness.

- Strengthening social networks and support systems is crucial for improving happiness.

- Ensuring access to quality healthcare and promoting healthy lifestyles can boost life expectancy and overall happiness.

THANK YOU!

Smile and be happy!