



**World Happiness Report**

# **COMP3125 - Individual Project: World Happiness Report 2011 - 2024**

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*11 / 30 / 2025*

# Introduction

The goal of this project is to answer four key research questions using python based data analysis. The hope is to more fully understand the factors that go into happiness on a country by country basis so that we as people can focus on things that more readily improve the lives of those around us and in our nations.

The questions I will be answering for this assignment are as follows (Adjusted from topic document to better fit the available data):

- A) What impact does GDP have on happiness?**
- B) What impact does life expectancy have on happiness?**
- C) What impact does freedom to make life choices have on happiness?**
- D) What is the impact of perceived corruption on happiness?**

## Dataset

The dataset I will use for my analysis is the World Happiness Reports findings from 2011-2024. This dataset is very well put together and required no major cleaning other than converting it into a .CSV file for easy manipulation.

The organization the compiles the WHR describes themselves as follows:

“The World Happiness Report is published by the Wellbeing Research Centre at the University of Oxford, in partnership with Gallup, the UN Sustainable Development Solutions Network and an independent editorial board.” (<https://www.worldhappiness.report/about/>)




## Methodology

My methodology includes the use of Python alongside the Matplotlib, pandas, & numpy libraries for dataset manipulation and visualization.

I will be using a **Linear Regression** model as it is most suitable for this kind of point based linear data. And for this reason I will also be using scatter plots to best represent the data.

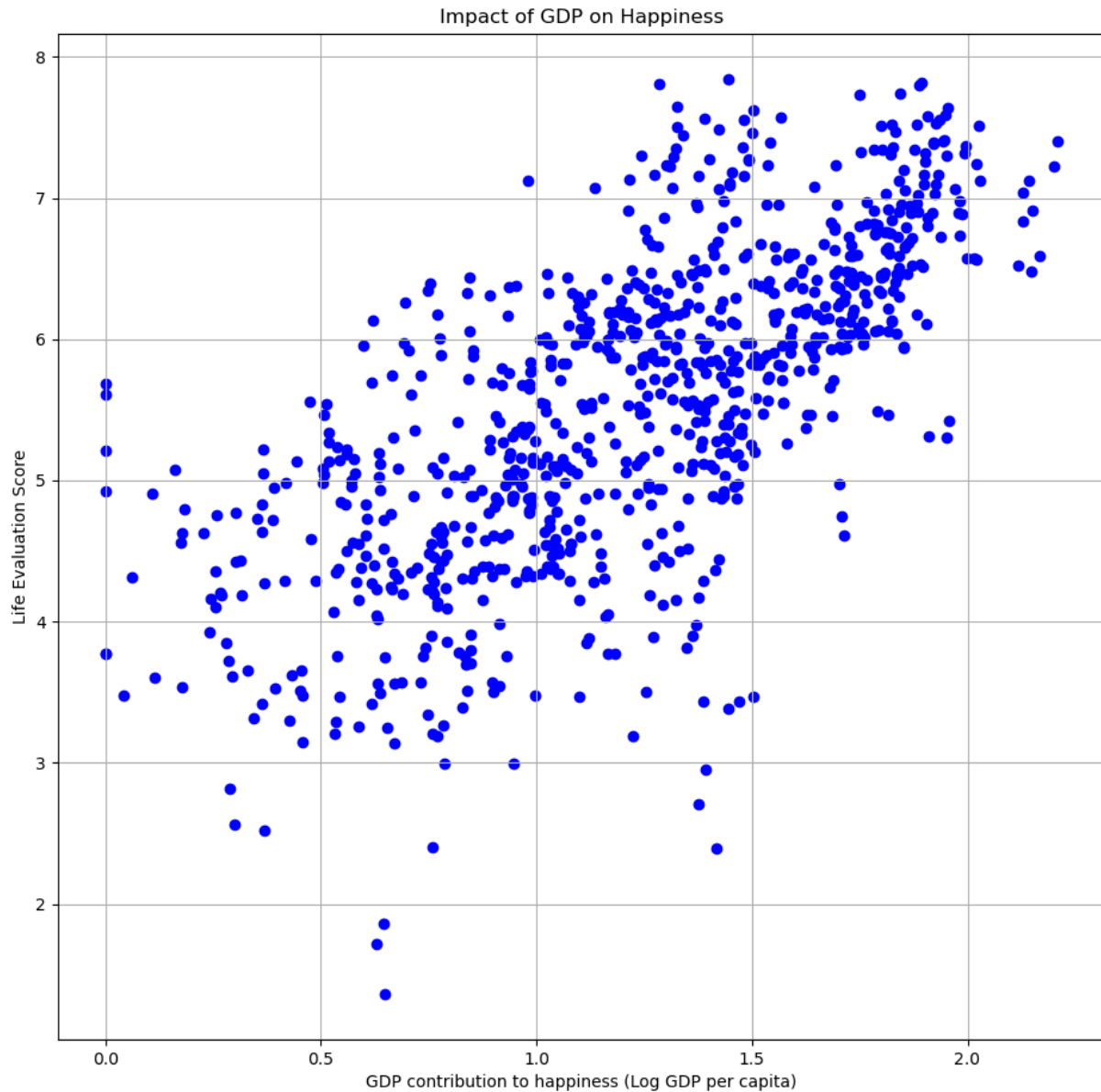
## 4. Results

Firstly it is important to display the rankings of the most happy to least happy countries. There are 147 countries on the list, including some nations such as the Republic of China (Taiwan) and Kosovo who do not have universal recognition.

COUNTRY	WORLD HAPPINESS SCORE 2024 (0-10) ↓
 Finland	7.74
 Denmark	7.58
 Iceland	7.53
 Sweden	7.34
 Israel	7.34
 Netherlands	7.32
 Norway	7.3
 Luxembourg	7.12
 Australia	7.06
 Switzerland	7.06
 New Zealand	7.03
 Costa Rica	6.96
 Kuwait	6.95
 Austria	6.91
 Canada	6.9
 Belgium	6.89
 Ireland	6.84

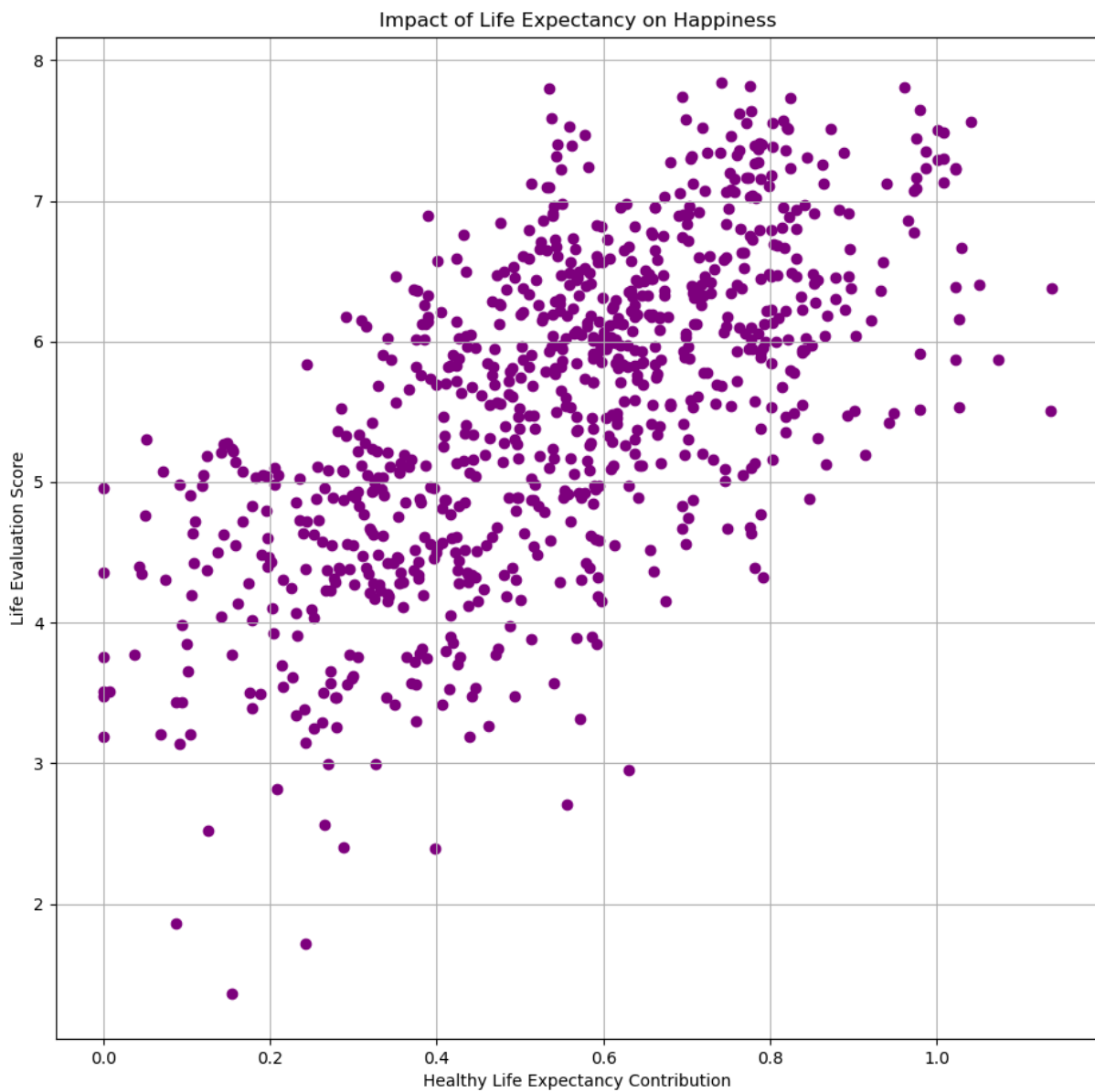
This shows the top ranking countries in terms of happiness for the year 2024 on a 0-10 scale. This gives an idea of the types of countries that reach these scores reporting the most happiness.

### A) what impact does GDP have on happiness levels?



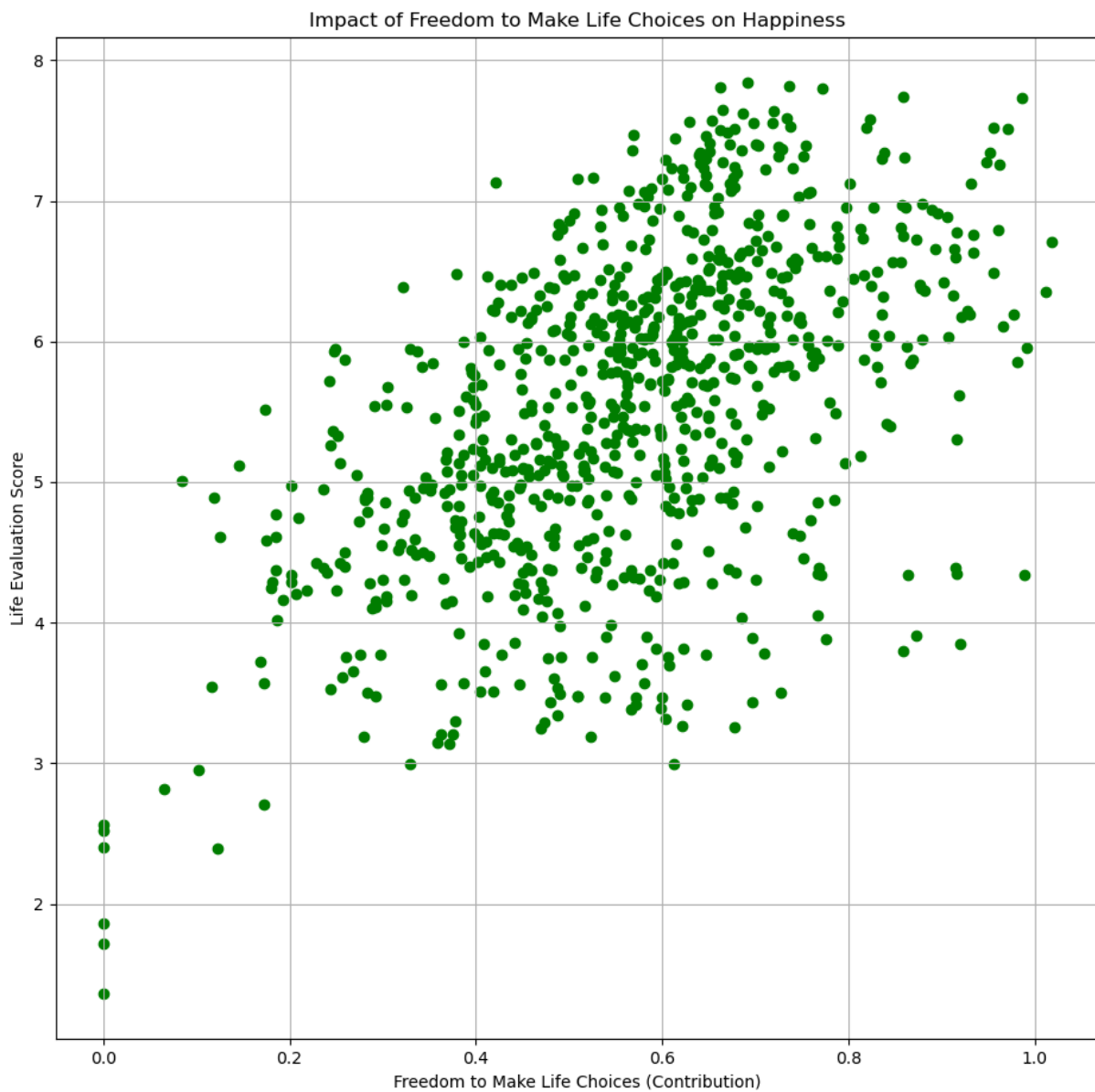
This plot shows what would be expected, a general trend showing that countries with higher GDP are more likely to report happiness and are likely to report is a s large contributing factor as shown here.

## B) What impact does life expectancy have on happiness?



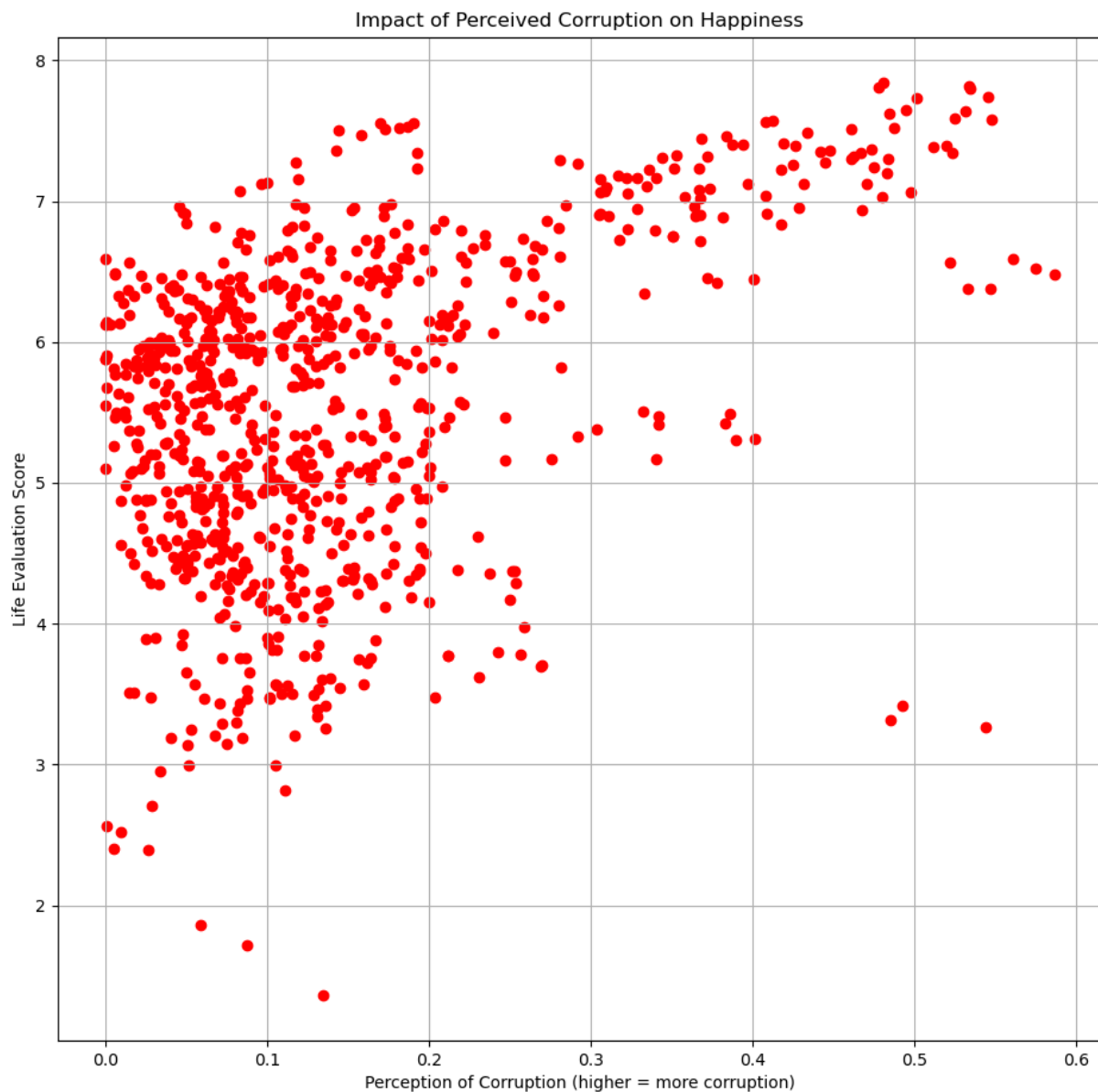
This plot also shows what we would expect to see although with noticeably less clumping around the middle band. That being that a higher and healthier life expectancy increases the chance that people will report happiness and they also report it as a large factor in their happiness. Although it is on average slightly less of a factor than GDP appears to be on average.

### C) What impact does freedom to make life choices have on happiness?



This plot again shows an understandable trend, however with slightly more spread out clumps than the previous graph. It is shown in the graph that a higher reported freedom to make life choices is correlated with a higher reported happiness. However this is less of a determiner than GDP and life expectancy.

#### D) What is the impact of perceived government corruption on happiness?



This plot deviates from expectations and from the other graphs in this document, whereas we would expect a higher perceived corruption from the reporter to correlate with a decrease in happiness; it appears to have very little bearing on the reporter's happiness. Along with this there is a band of high happiness reporting countries in the top right that are simultaneously among the happiest countries and yet report the highest levels of corruption. This could be due to many factors such as vagueness of question asking (people may be reporting feelings on national corruption that is less impactful to everyday life rather than local corruption that may be far less than these reports would suggest).

## 5. Conclusion

This project explored how different factors relate to national happiness using data from the World Happiness Report and Python-based analysis. By looking at GDP, life expectancy, freedom to make choices, and corruption levels, I was able to see which conditions appear most connected to how people rate their own well-being.

The results showed clear trends for the first three factors. Higher GDP, longer healthy life expectancy, and greater freedom of choice were all linked with higher happiness scores. These findings match common expectations, since financial stability, good health, and personal autonomy all play important roles in people's lives.

Corruption, however, did not show a strong or consistent relationship with happiness. Some of the happiest countries still reported high levels of perceived corruption, suggesting that this factor may not affect people's daily sense of well-being as directly as the others. Overall, the analysis shows that economic strength, health, and personal freedom appear to matter most when explaining differences in happiness across countries.