

WORLD DEVELOPMENT STATISTICS

AN ANALYSIS OF THE HUMAN DEVELOPMENT INDEX

NAVEEN PARTHASARATHY

INTRODUCTION

WHAT IS THE HUMAN DEVELOPMENT INDEX?

The HDI is a summary measure of average achievement in key dimensions of human development: **a long and healthy life**, **being knowledgeable** and **having a decent standard of living**.

From this definition, we can see that the HDI is a summary measure of achievement in three dimensions: **life expectancy**, **education**, and **income**.

The purpose of this project is to **analyze the life expectancy (LE)** and **Gross National Income (GNI) per capita** of countries in the world to determine if they contribute to a high **HDI**.



DATA EXPLORATION & CLEANING

STEPS TAKEN TO PREPARE THE DATA

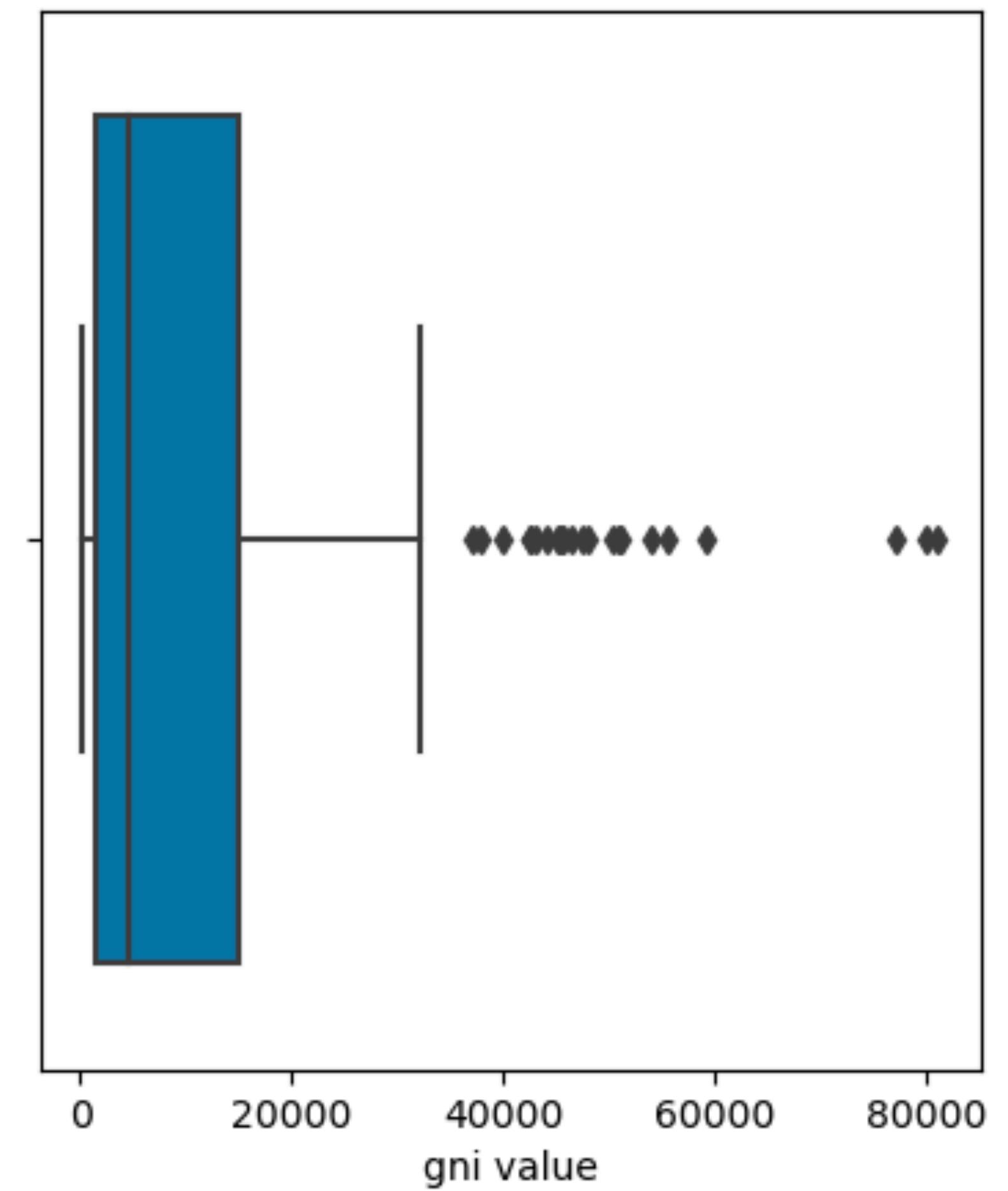
- 1. Shape and missing-ness of each dataset was identified.**
- 2. Column datatypes were identified.**
- 3. Column values were converted.**
- 4. Certain countries were renamed.**
- 5. Datasets were truncated to ensure consistency**
- 6. Datasets were merged.**

SOME STATISTICS

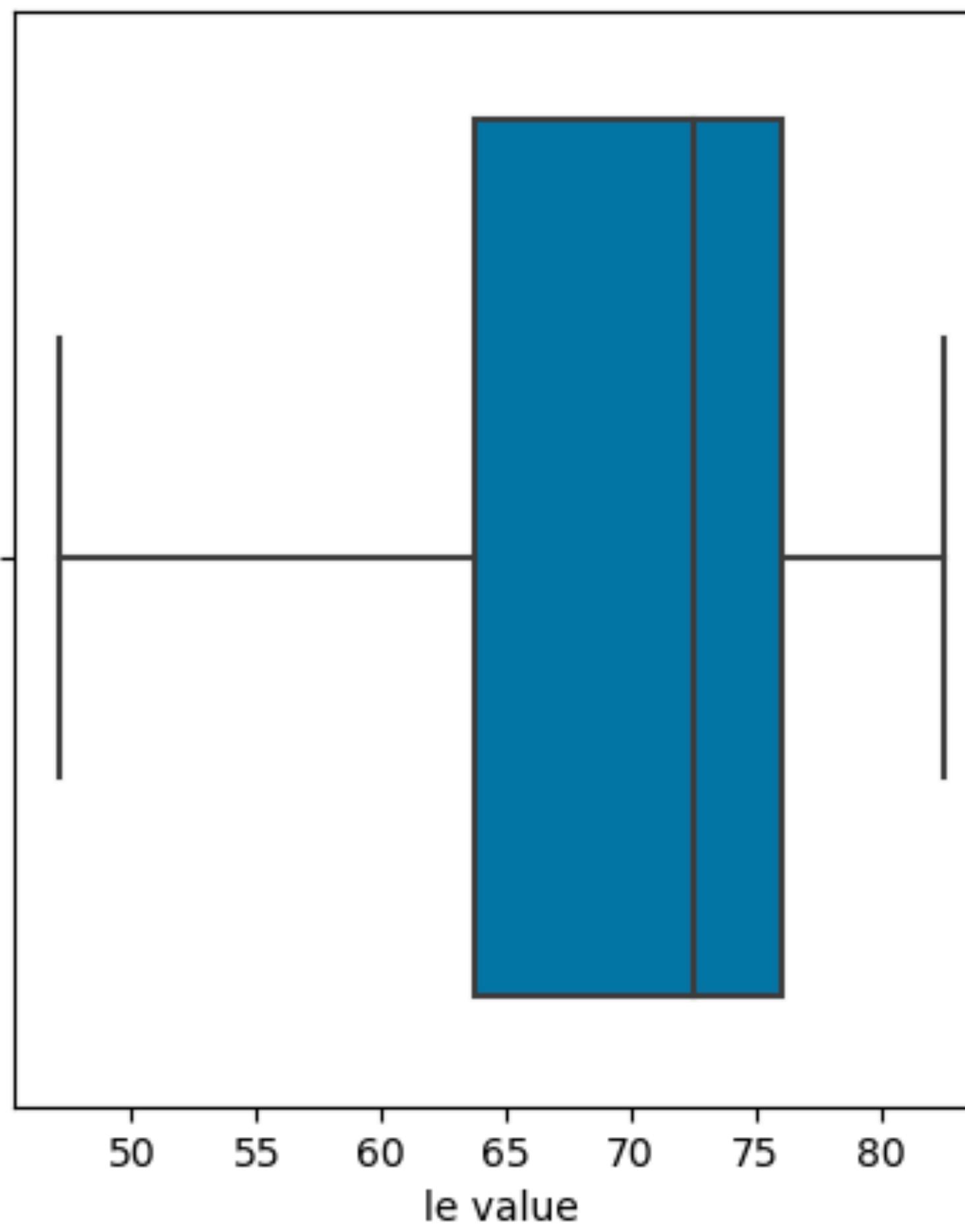
OBSERVATIONS FROM THE DATA

1. **2019 was a great year - High average GNI, LE and HDI worldwide.**
2. **European countries have large GNI, with many African countries on the other end.**
3. **Asian and European countries have high LE levels, but African countries have low levels.**
4. **High HDI dominated by European countries, African countries have the lowest levels.**

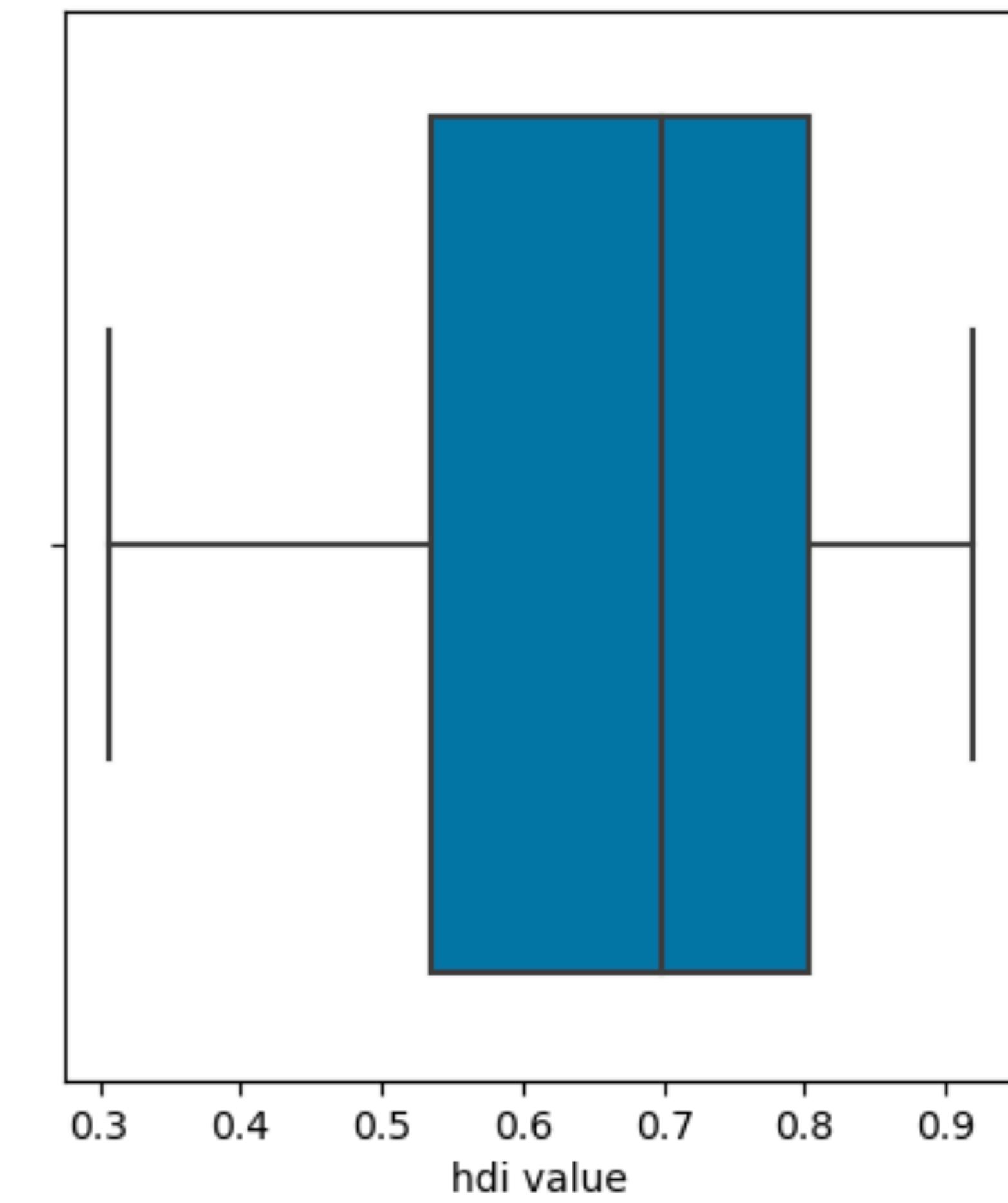
Boxplots of Average Life Expectancy, Gross National Income and Human Development Index



No Outliers!
JK, there are
Outliers!

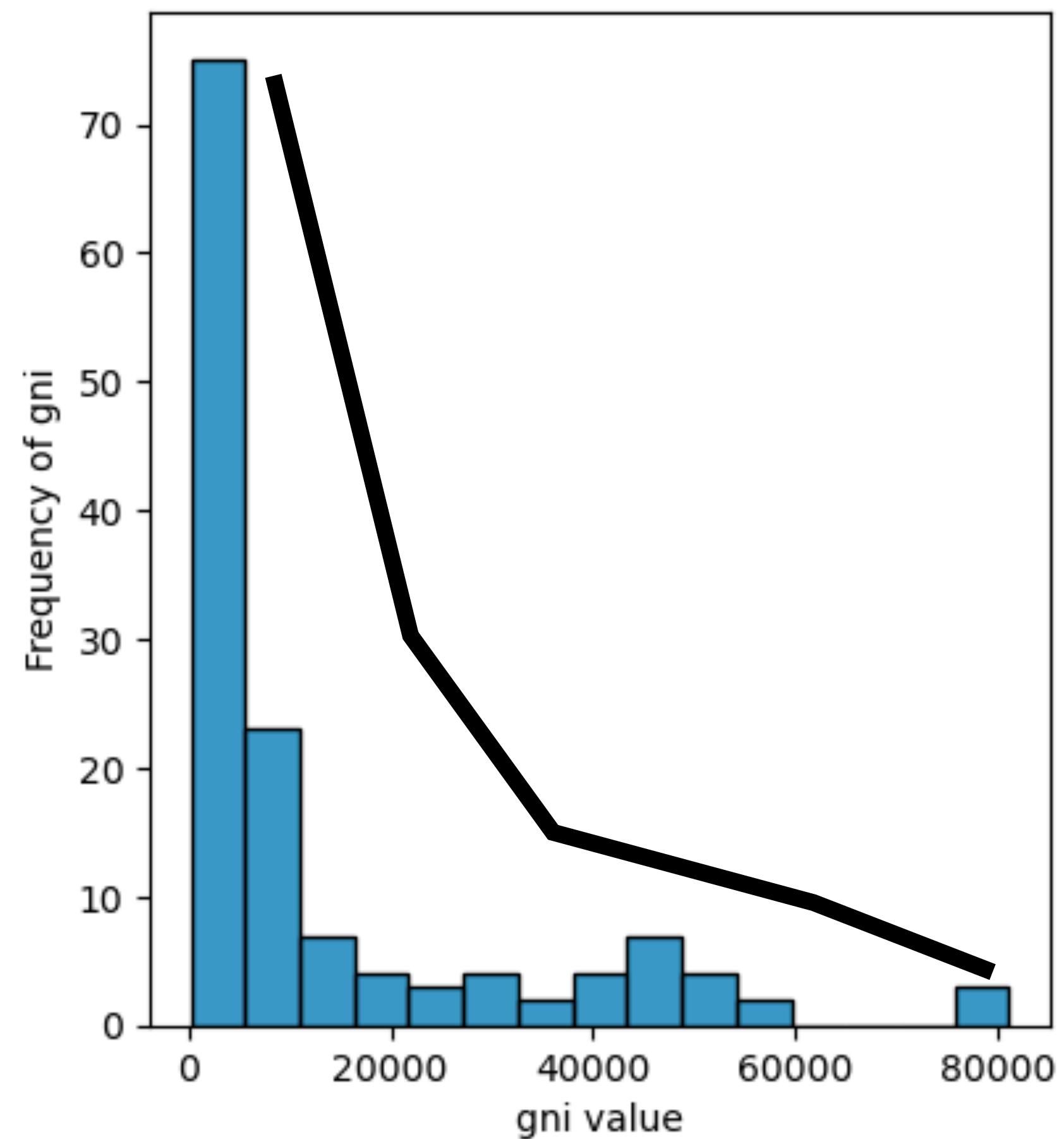


No Outliers!

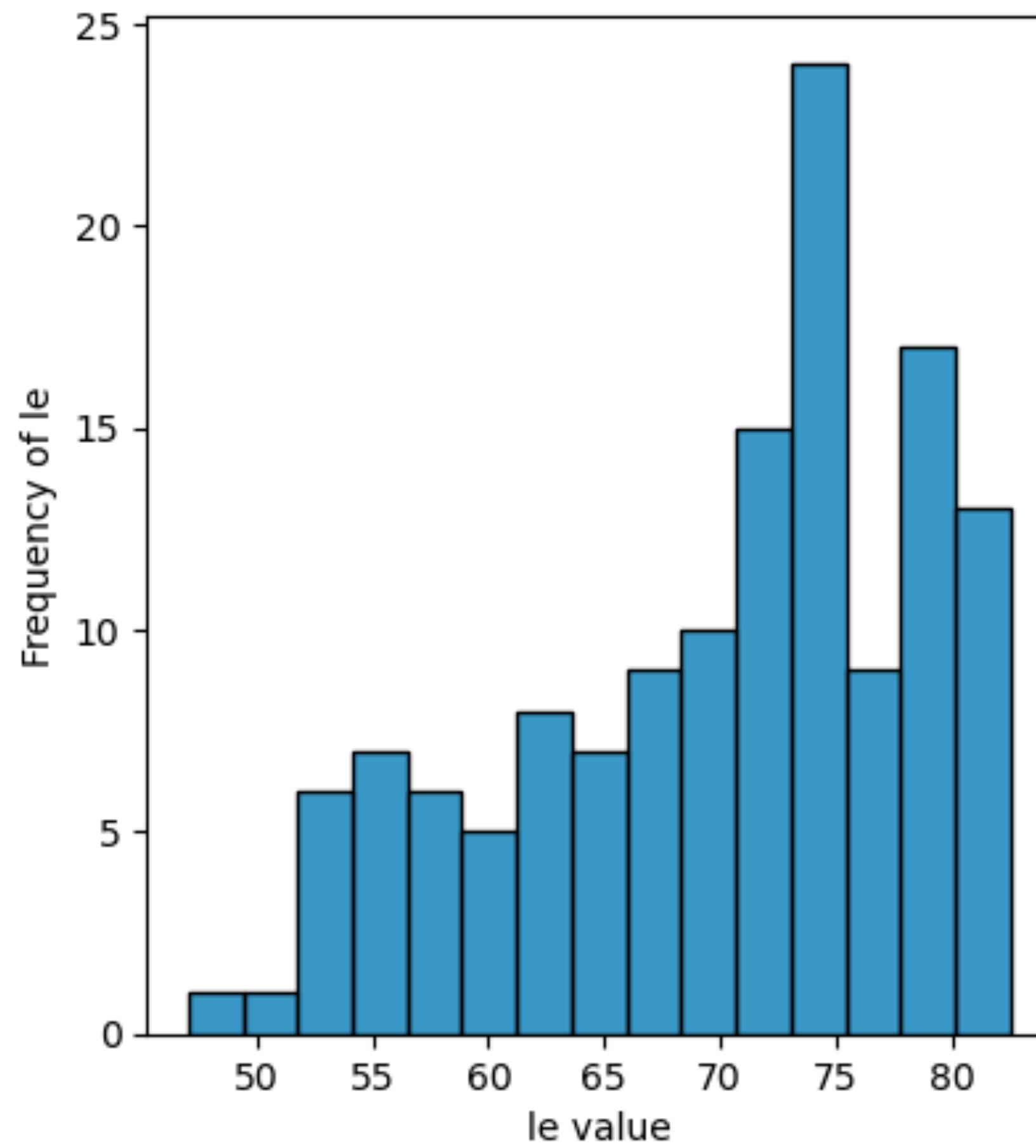


No Outliers!

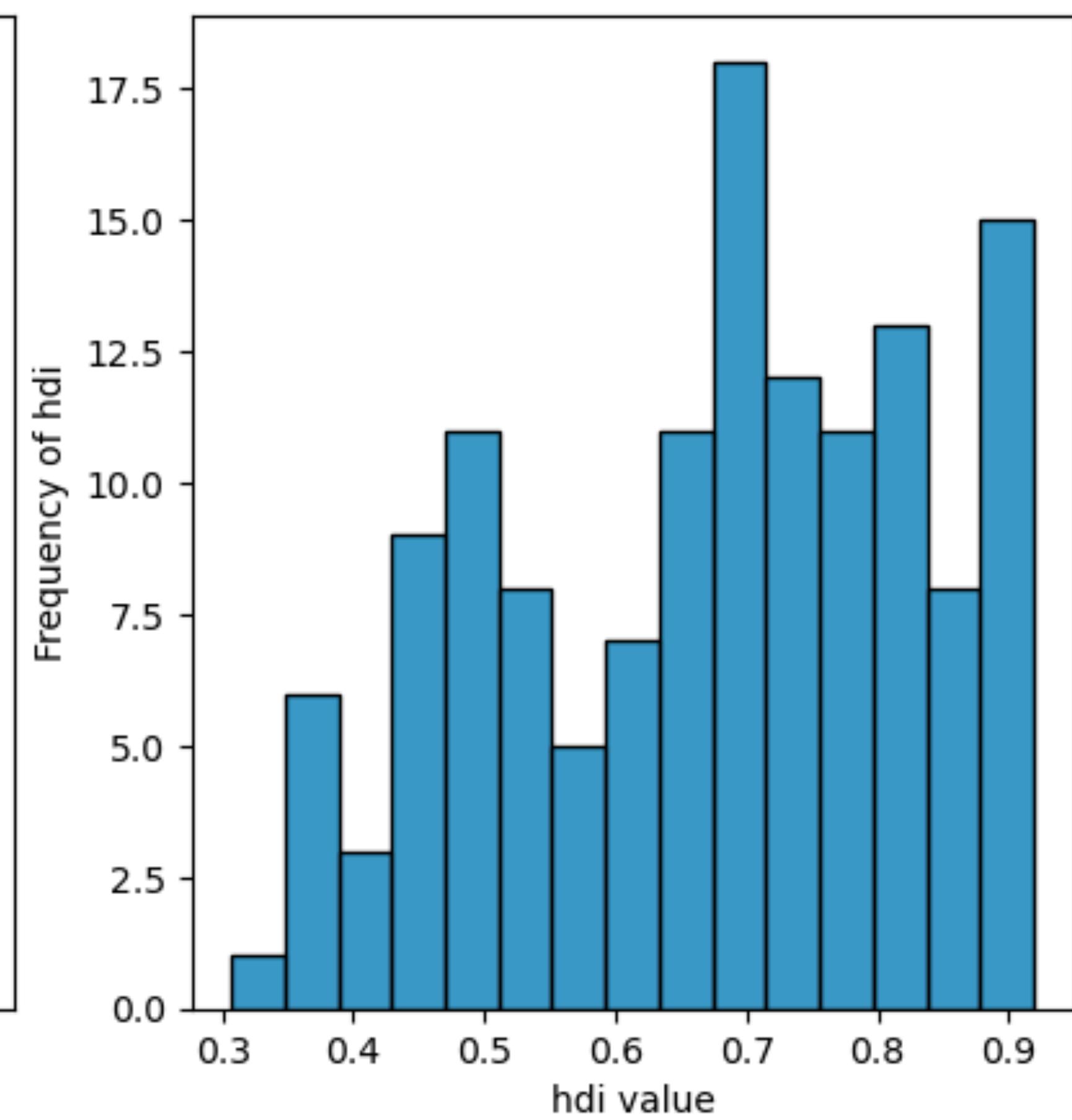
Histograms of Average Life Expectancy, Gross National Income and Human Development Index



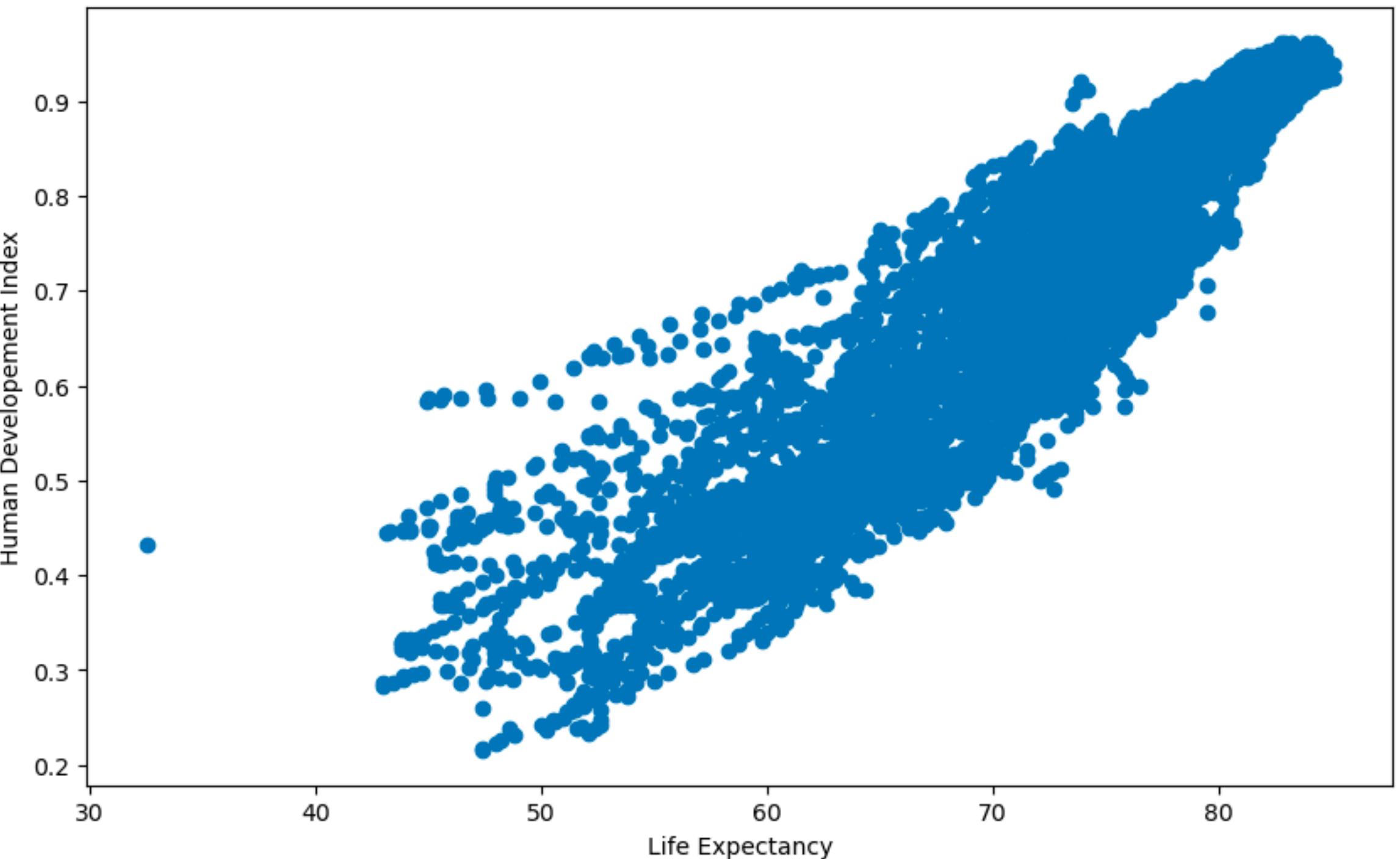
Right-skewed



Similar Distributions



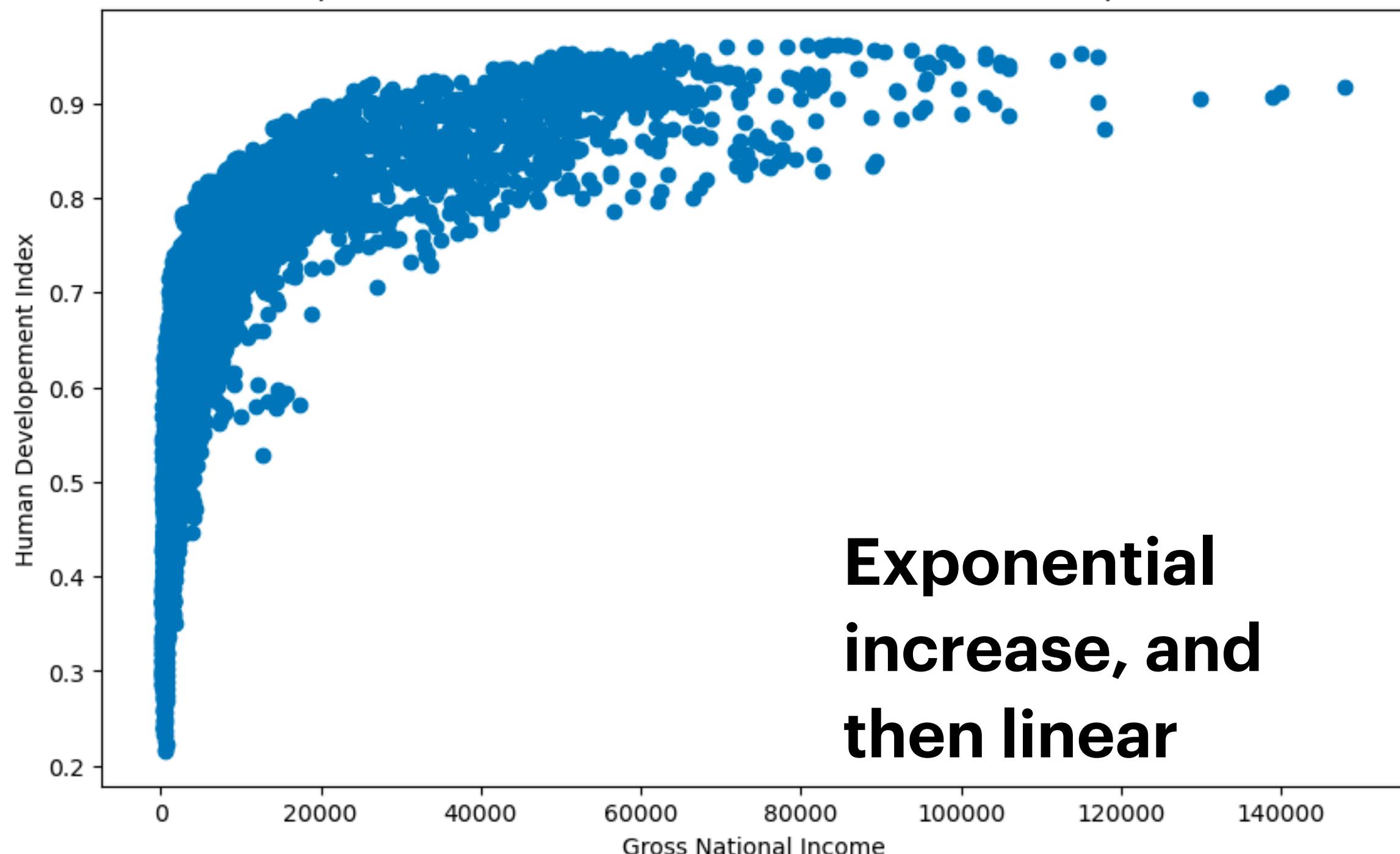
Scatter plot between Life Expectancy and Human Development Index



Positive relationships



Scatter plot between Gross National Income and Human Development Index



**Exponential
increase, and
then linear**

As Life Expectancy and Gross National Income increases, there is an increase in HDI.

CONCLUSION

WHAT DID WE LEARN?

- 1. There is a positive correlation between Gross National Income and Human Development Index.**
- 2. There is a positive correlation between Life Expectancy and Human Development Index.**
- 3. Island countries like Fiji and Barbados did not have a wide range of life expectancy.**
- 4. Many African countries have a low Human Development Index, supported by low levels of Life Expectancy and Gross National Income.**

RECOMMENDATIONS

WHAT NEXT?

- 1. Focus on improving the HDI of African countries by positively influencing their Gross National Income and Life Expectancy.**
- 2. Include datasets that support the HDI apart from GNI and LE such as Population, Education, and Health.**

A vibrant tropical sunset or sunrise over a beach. The sky is a gradient of warm orange, red, and yellow hues near the horizon, transitioning to a cooler blue and purple at the top. Several palm trees are silhouetted against the bright sky, their fronds visible. In the foreground, the tops of other tropical plants, like pampas grass, are visible.

THANK YOU