University College Cork

CS3205 Lab Report 1

HDI Trends and Multidimensional Projections

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1 Introduction

1.1 The Problem

the problem

1.2 The Datasets

the datasets

1.3 The Role of Visualisations

the role of visualisations

2 Data Description

2.1 hdr.xlsx

Description of data.

2.2 hdi.csv

Description of data.

3 Task 1

3.1 Free Exploration

In the free exploration section of the assignment I have created visualisations which give a broad overview of the general distribution of HDI across countries when looking at specific attributes of those countries.

Each of the following visualisations will include:

- A graphic

- A description of a pattern (or lack of)

- A hypothesis as to the cause of this pattern

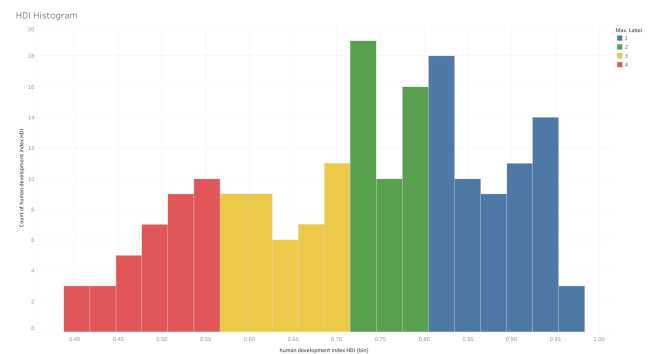- The dataset from which the data came

3.1.1 HDI Histogram

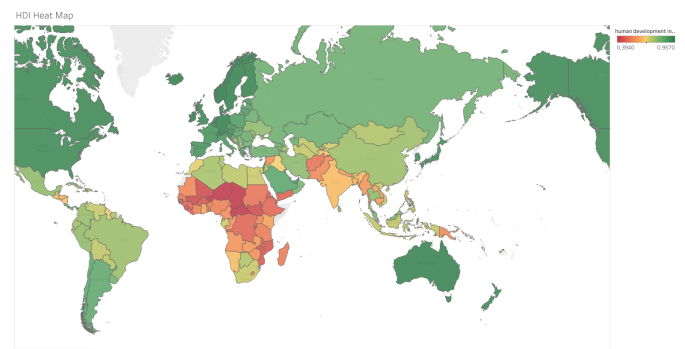Figure 1: my hdi caption

3.1.2 HDI Global Heatmap

Figure 2: what a pretty map

3.1.3   Average HDI Trend

Figure 3: no dips
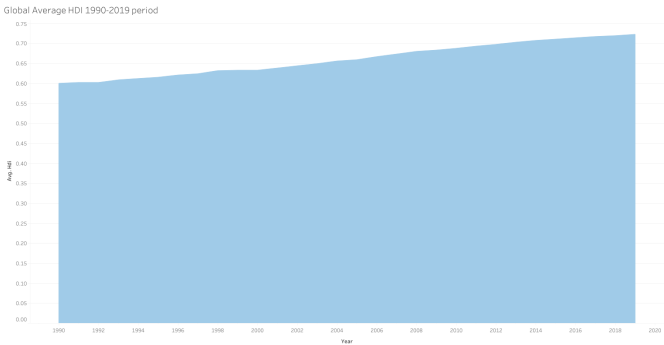
3.1.4   Min/Max HDI

Figure 4: going in circles

3.1.5   Male/Female Mean Years Education

Figure 5: girl power

3.2   Specific Observations

In the specific observations section of the assignment I have created visualisaions in line with the task list specifications.
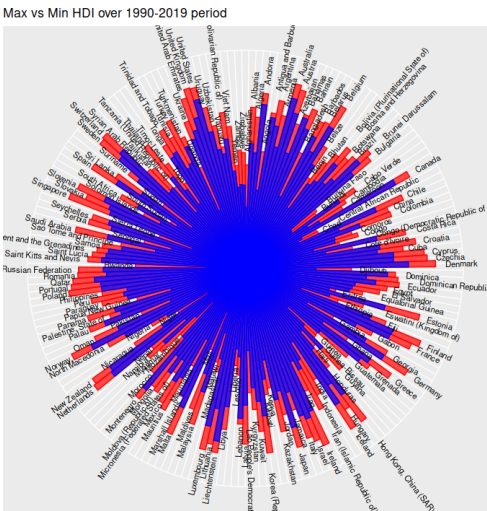
3.2.1   Spurious Values

Expected Population Growth

Figure 6: sexy visual spurious values
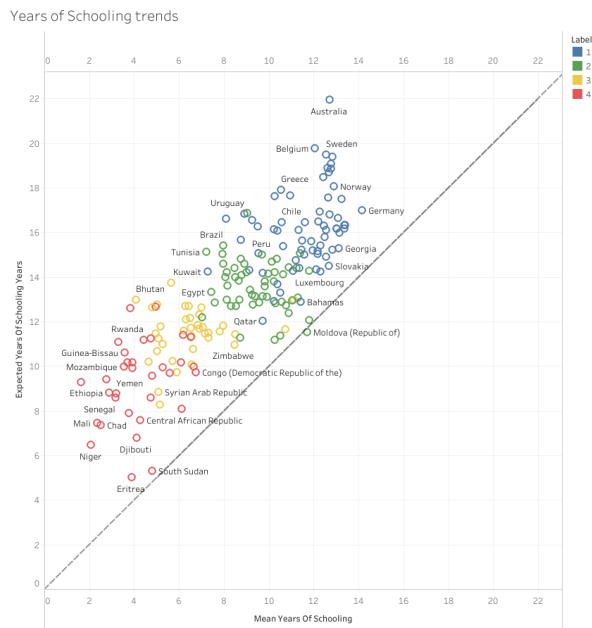
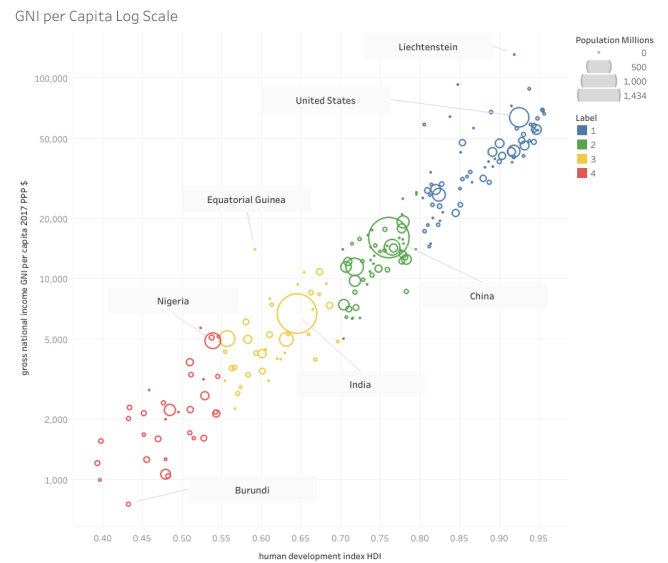**Mean vs Expected Years Schooling**

Figure 7: spurious value 2

Figure 9: GNI accounts almost totally for HDI

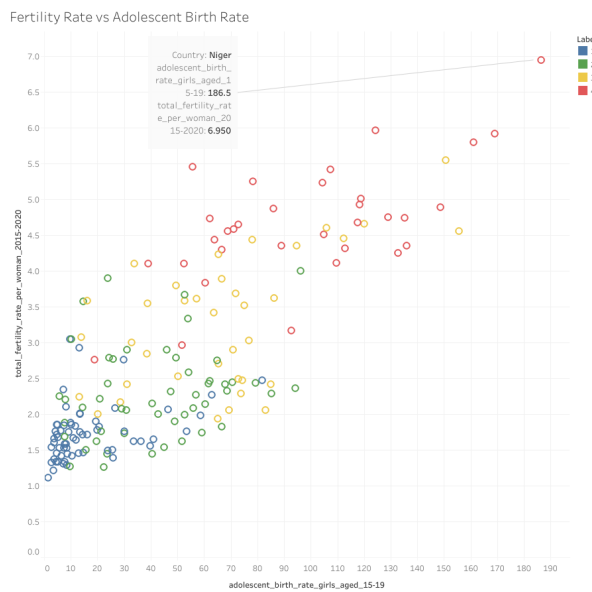### 3.2.2 Correlated Attributes

Fertility Rate vs Adolescent Birth Rate

3.2.3 Uncorrelated Attributes

Women Share of Seats in Government vs Average Years Education

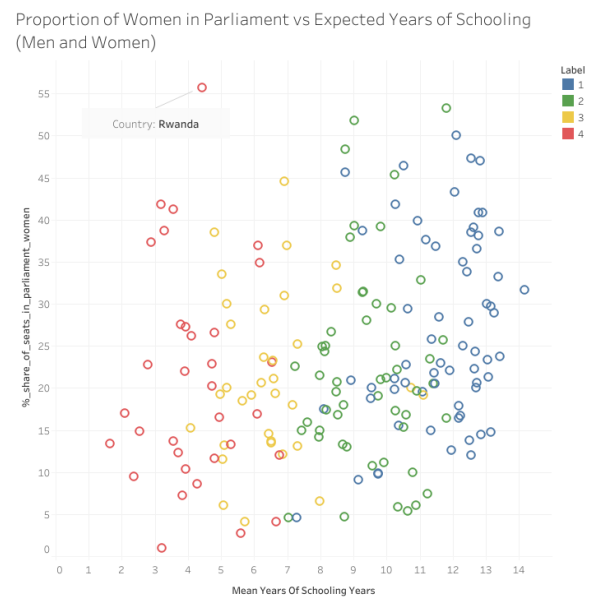Figure 8: Early have children more children you have

Figure 10: Surprising

HDI vs Gross National Income

Labour Force Participation vs GDP

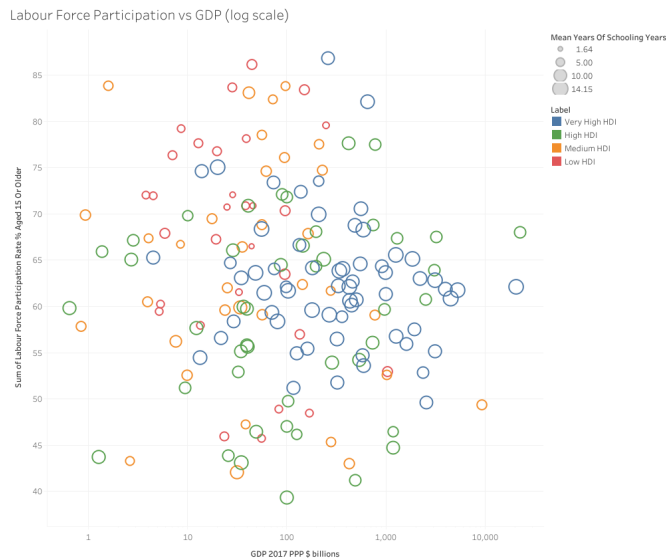Figure 11: Surprising

3.2.4 Hypotheses for Previous Patterns
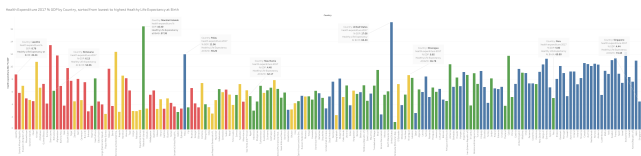
Health Expenditure ordered by Life Expectancy

Figure 12: think of caption

3.2.5 Usefulness of All Visualisations

3.2.6 Alternative Visualisations

Min/Max HDI Alternative

Figure 13: too long for computer screen, can do horizontal line comparisons
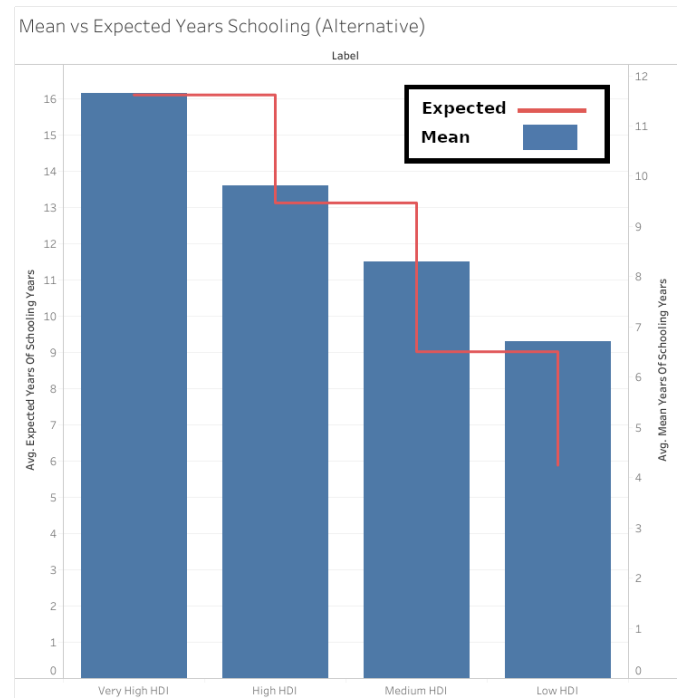
Mean vs Expected Years Schooling

Figure 14: Lose individual countries

4 Task 2

Results for task 2.

4.1 Corel Projections Comparison
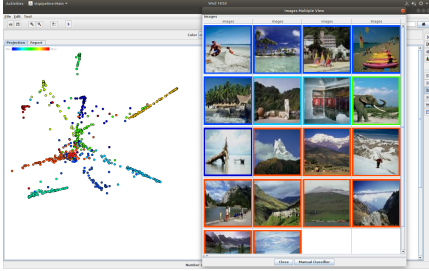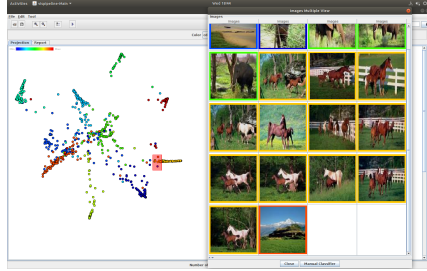
4.1.1 LSP
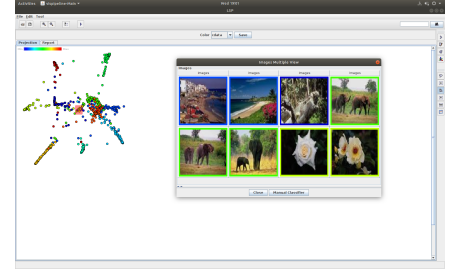

Figure 15: first projection

Figure 16: second projection

Figure 17: third projection

4.1.2 t-SNE
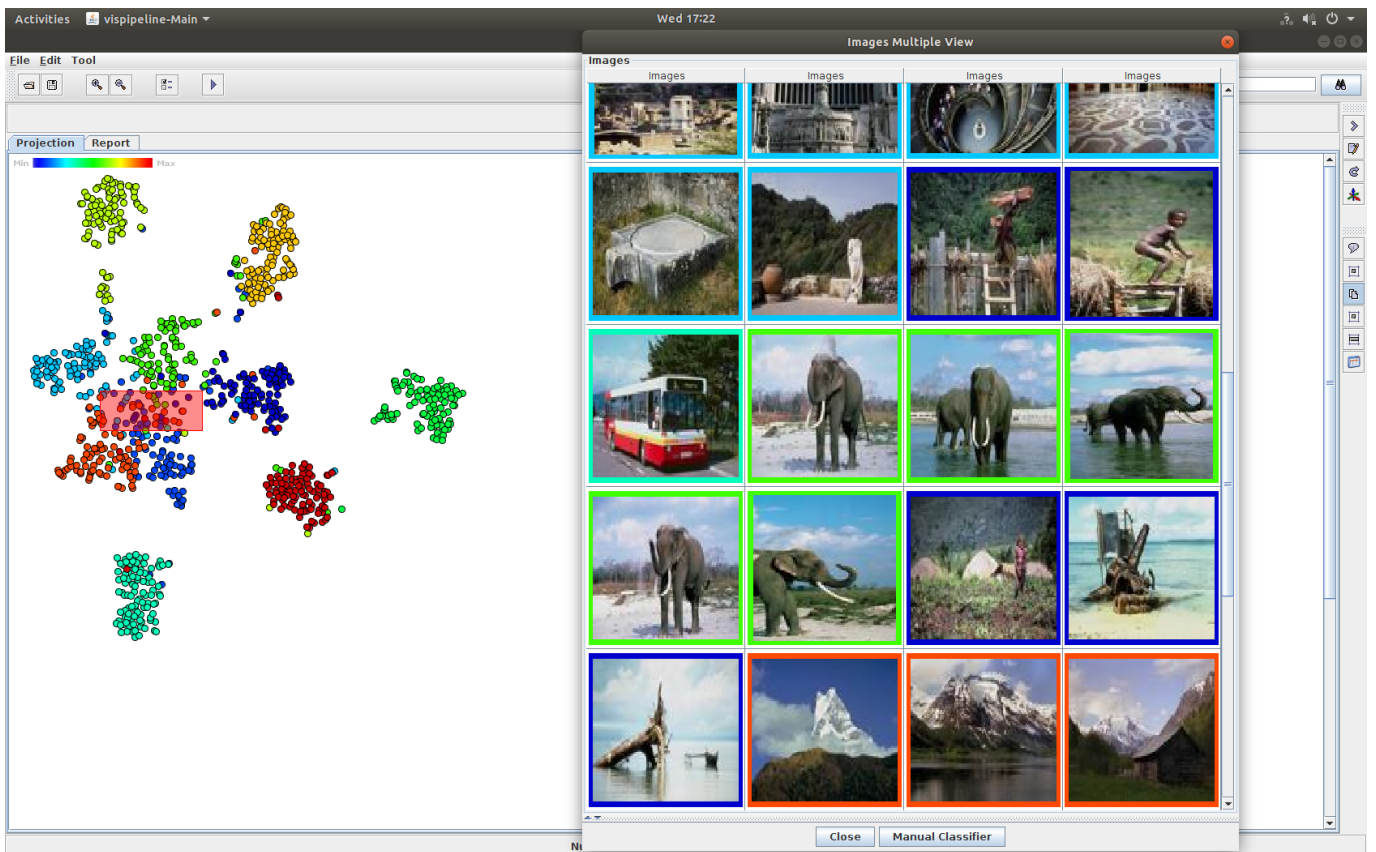
Figure 18: first projection

5   Conclusions

Conclusions from overall assignment, emphasis on data sets, exercises and using visualisations.

6   References

References?