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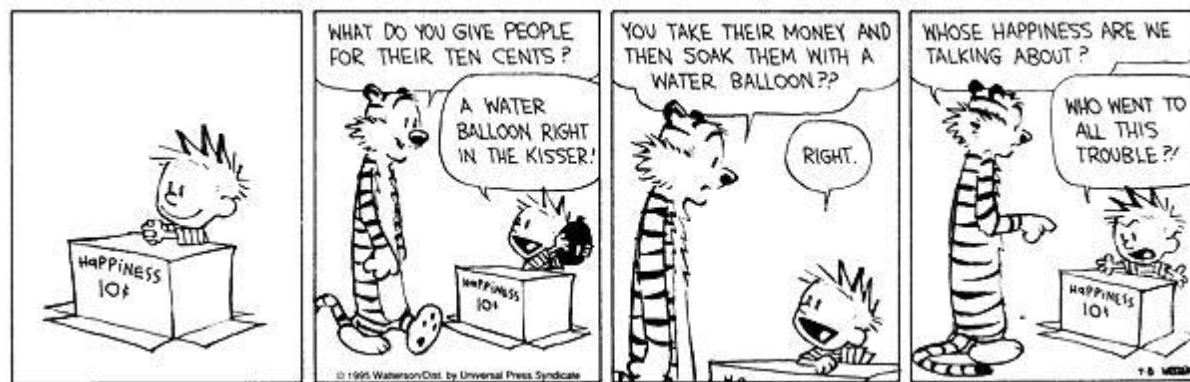
(19th July 2017)

Pursuit of Happiness

by

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https://srangan3.shinyapps.io/Happiness_Project/



1 Overview & Prior Research

2 App Layout

3 Data Visualization & Statistics

4 Conclusions & Future Work

1 Overview & Prior Research

- **Happiness** is a state of **well-being** and **contentment** (Merriam-Webster)
- Philosophers and researchers have made several attempts in the past to **quantify** happiness^{1,2,3}
- One such significant study was compiled in the **World Happiness Report**⁴ and the data was made available on Kaggle for the years 2015, 2016 and 2017.
- As per this study, **six key variables** play a role in determining the overall happiness score of a nation—

¹Kalmijn, Wim, and Ruut Veenhoven. “Measuring inequality of happiness in nations: In search for proper statistics.” *Journal of Happiness Studies* 6.4 (2005): 357-396.

²Frijters, Paul. “Measuring happiness, The Economics of Well-Being.” *Journal of Economic Psychology* 53 (2016): 180-183.

³<http://research.un.org/en/happiness>

⁴<http://worldhappiness.report/ed/2017/>

1 Overview & Prior Research

1. **GDP per Capita in terms of PPP**—Data from World Bank
 2. **Family or Social Support**— “If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?”
 3. **Life Expectancy**— Data from World Health Organization
 4. **Freedom**— “Are you satisfied or dissatisfied with your freedom to choose what you do with your life?”
 5. **Generosity**— “Have you donated money to a charity in the past month?”
 6. **Government Corruption**— “Is corruption widespread throughout the government or not?”
- The **purpose** of this shiny app is to **provide life to the raw data with visual graphics** and to use **statistics** to assess the importance of these variables on happiness score.

2 App Layout

- For its simplicity, **CERULEAN** theme was used to design this app. For details, visit—

<https://rstudio.github.io/shinythemes/>

Pursuit of Happiness

Background:

As per the [Merriam-Webster dictionary](#) happiness is defined as a state of well-being and contentment. Over the years, several attempts have been made to quantify happiness in order to assess the overall happiness of the world. One such significant survey was conducted by [Gallup World Poll](#) and the data from this study was compiled in the [World Happiness Report](#) is available on [Kaggle](#) for the years 2015, 2016 and 2017. As per this study, six key variables play a role in determining the overall happiness of a nation. These are--GDP per Capita, Family, Life Expectancy, Freedom, Generosity and Government Corruption. The purpose of this application is to provide life to the available raw data with visual graphics and to use a bit of statistics to assess the importance of these variables on the happiness score.

Select a variable

Happiness_Score

Select a year

2017

Note: In order to view the motion charts, please change your browser settings to run flash unconditionally.

Geo Map

Motion Chart (all countries)

Motion Chart (summary)

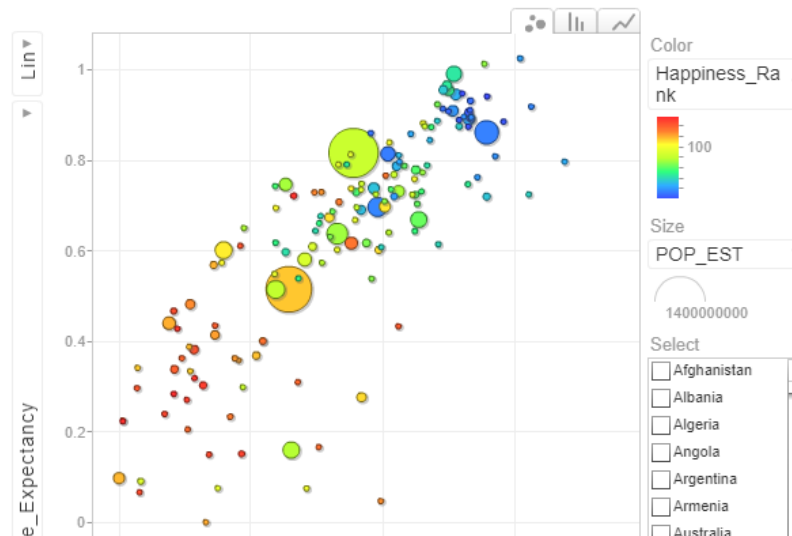
Box and Density

Correlation

Tree Map

Data in Action

The motion charts in this tab have been generated using [googleVis](#) and the inspiration is from Hans Rosling's [TED talk](#) as well as the [Bubble Charts](#) popularized by Professor Mike Ashby in the field of materials science. Click on the x and y axis to create a bubble chart of interest and play the video to view the data in action!



3 Data Visualization & Statistics



Utopia



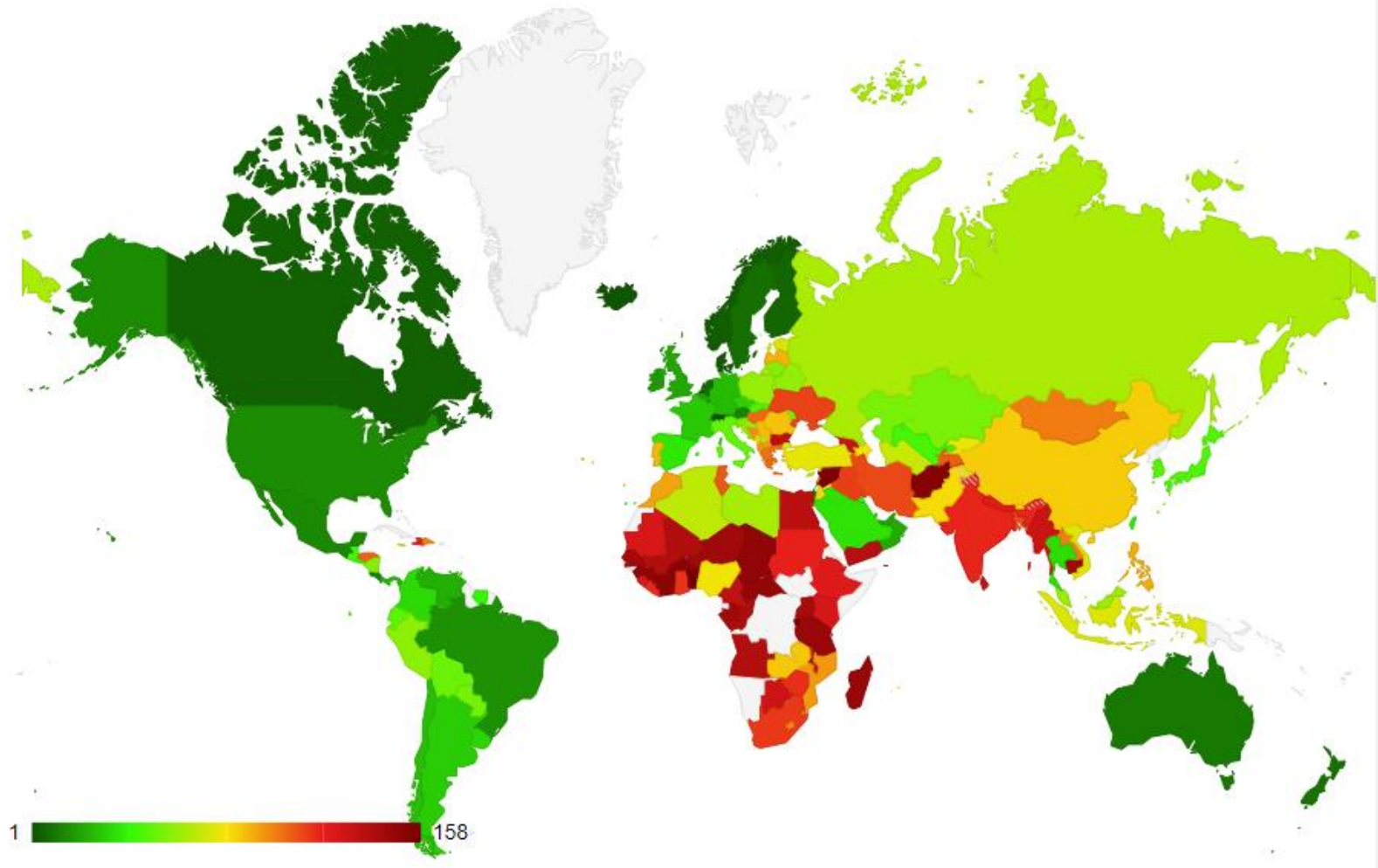
Dystopia

- Dystopia is an imaginary country that has the world's least-happy people (opposite of Utopia).

3 Data Visualization & Statistics

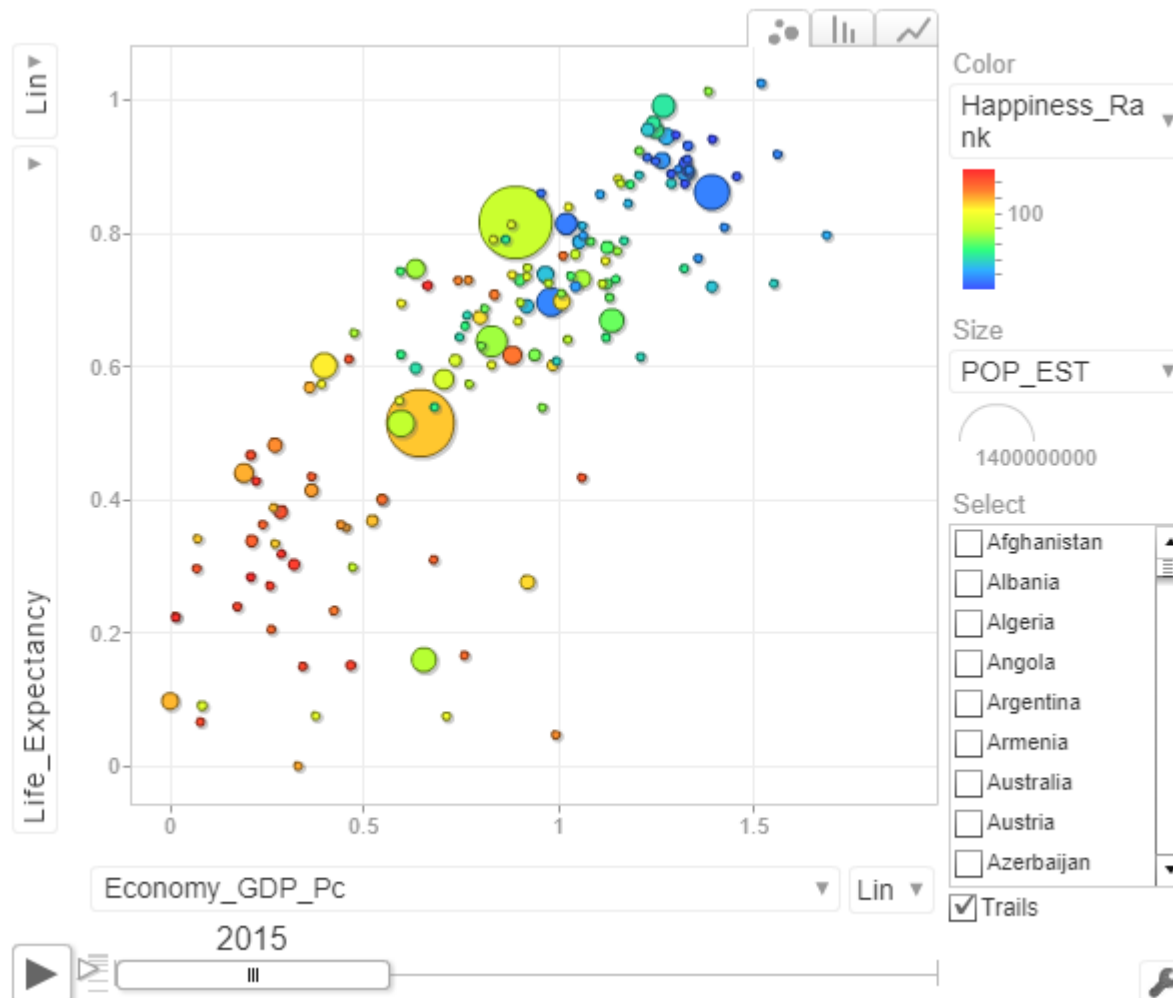
- Geo Map: Visualizing Happiness Rank

Select a variable and a year from the sidebar panel and click on any country to read additional information. The coloring scheme is from Green (most satisfactory) to Red (least satisfactory).



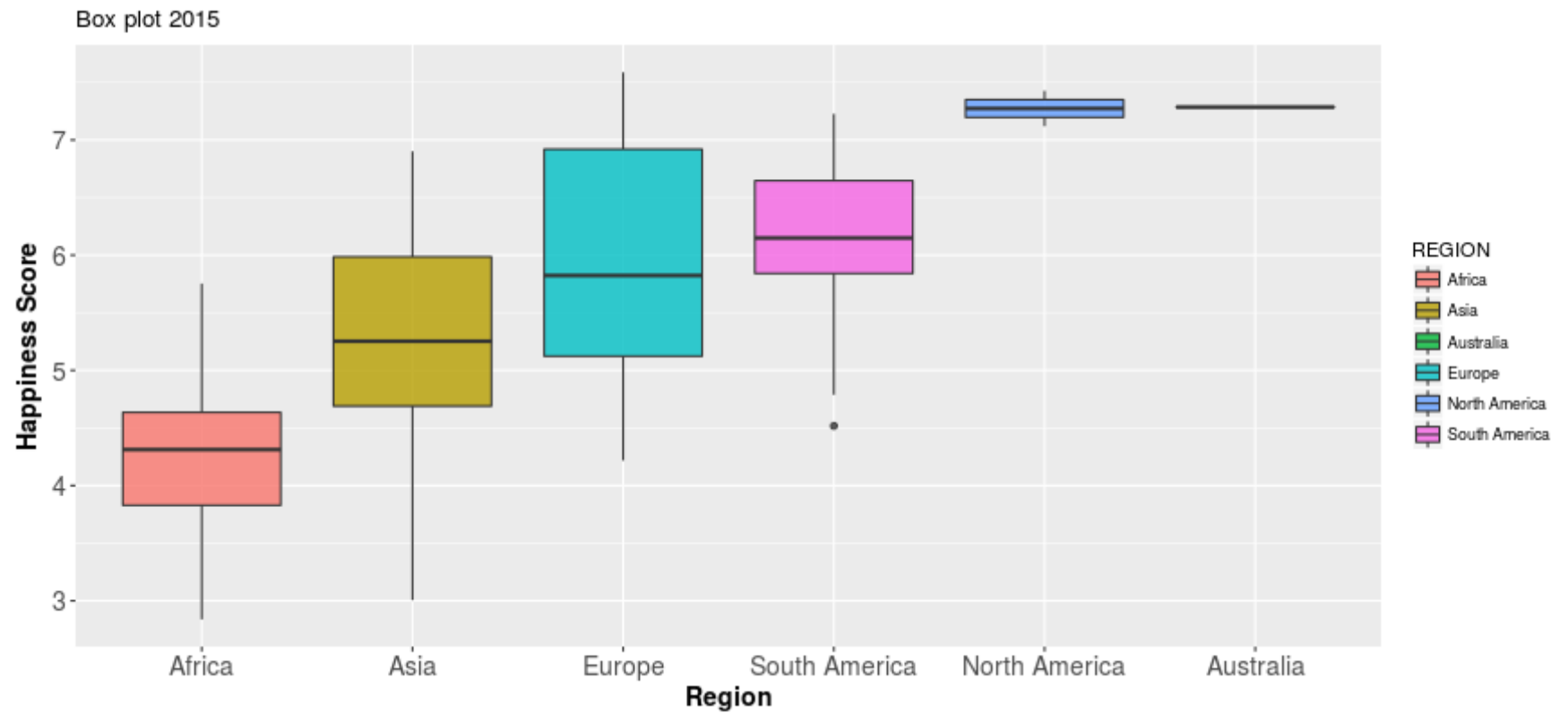
3 Data Visualization & Statistics

- Motion Chart: Data in Action



3 Data Visualization & Statistics

- Box Plot



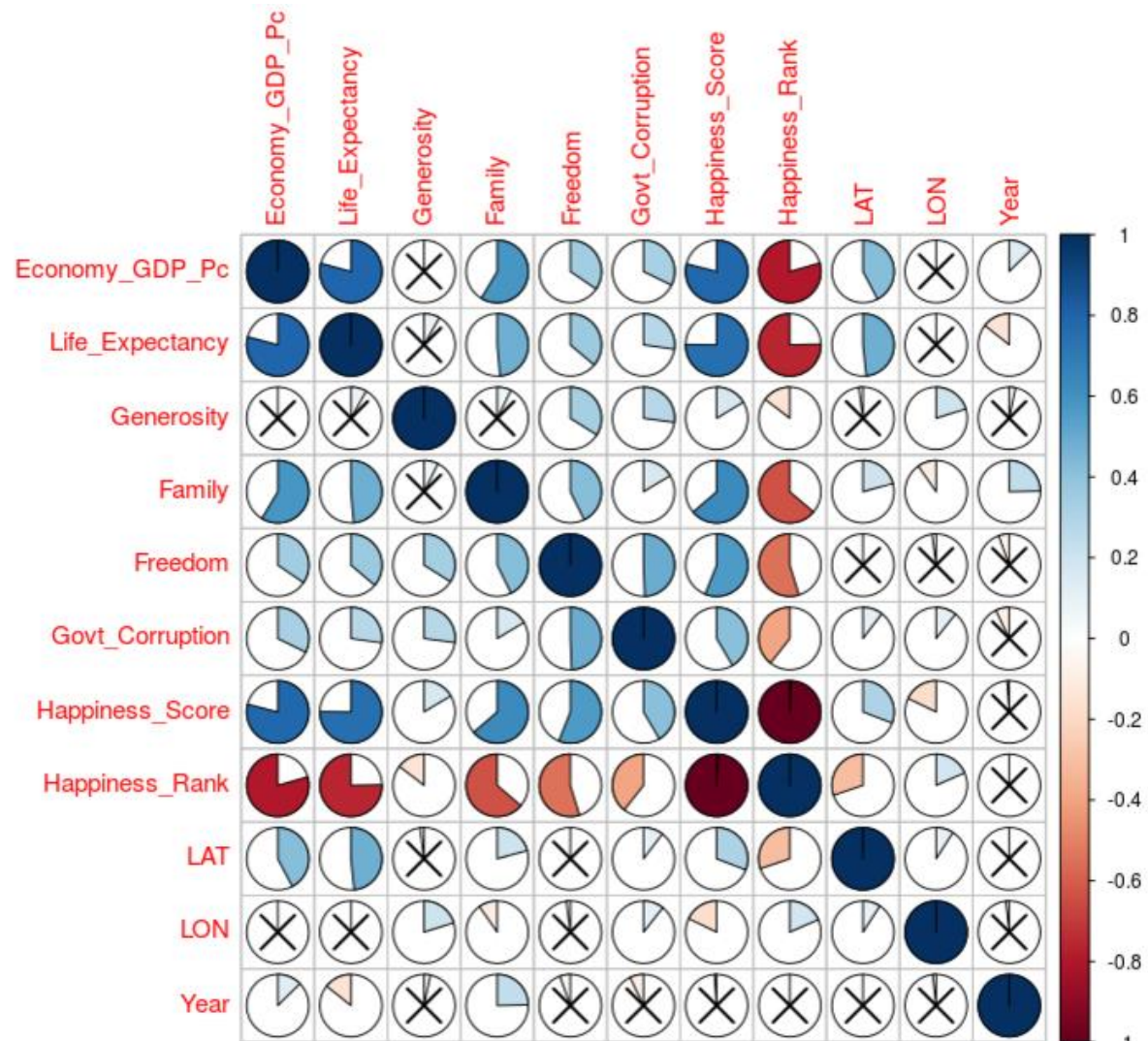
3 Data Visualization & Statistics

- Density Plot



3 Data Visualization & Statistics

- Correlation Plot



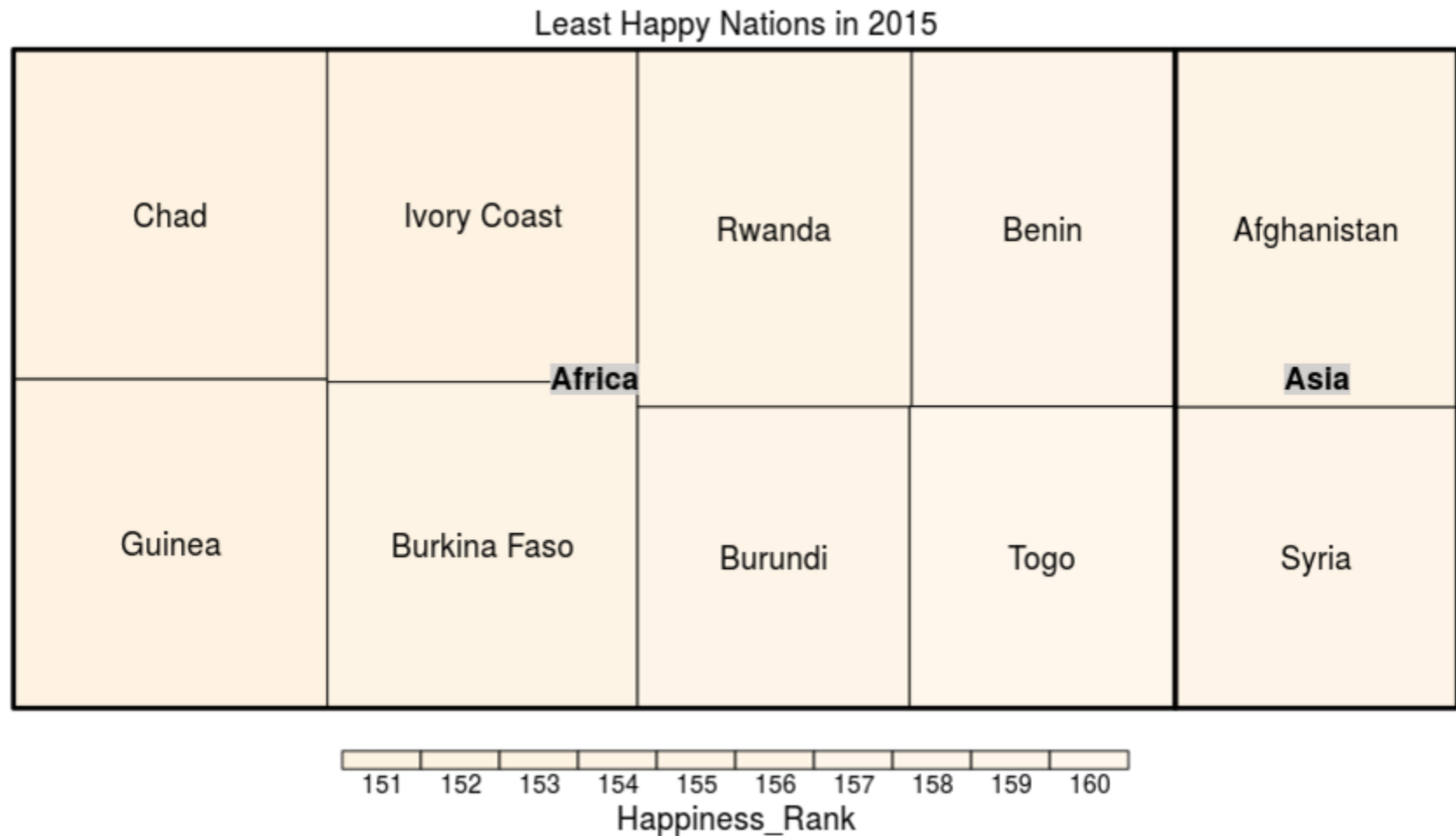
3 Data Visualization & Statistics

- Tree Map



3 Data Visualization & Statistics

- Tree Map



5 Conclusions and Future Outlook

- As an overall trend, Motion Charts reveal that world **GDP has increased** from 2015 to 2017 while the **Life Expectancy has slightly lowered** during this period
- **Nordic countries** are among the happiest countries in the world (closer to Utopia), while several countries in **Africa (low GDP)** and **Asian countries like Afghanistan, Syria and Yemen (civil war)** rank very low in the happiness score (closer to Dystopia)
- **Myanmar** is the most **generous** nation and the data reveals that **Syria is more generous** than countries like **United States and Germany**
- **Correlation plot** reveal a **strong dependence** between GDP, Life Expectancy and Happiness score
- On a lighter note, the latitude of a nation shows some positive correlation with GDP and Life Expectancy, whereas the dependence on Longitude is insignificant

THANK YOU