Application User Guide

For Shiny Application created by ISSS608 Team 7 (Year 20/21 Term 2)

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Application User Guide

Application Link

Layout

The application has 3 main sections:

1. Top Navigation Bar

2. Side Panel

3. Main Panel

Top Navigation Bar

The top navigation bar has 2 main sections with drop-down selections:

1. Exploratory Data Analysis

   - Choropleth Map

   - Radar Chart

   - Slope Graph

   - Bubble Plot

2. Statistical Analysis

   - Correlation Analysis
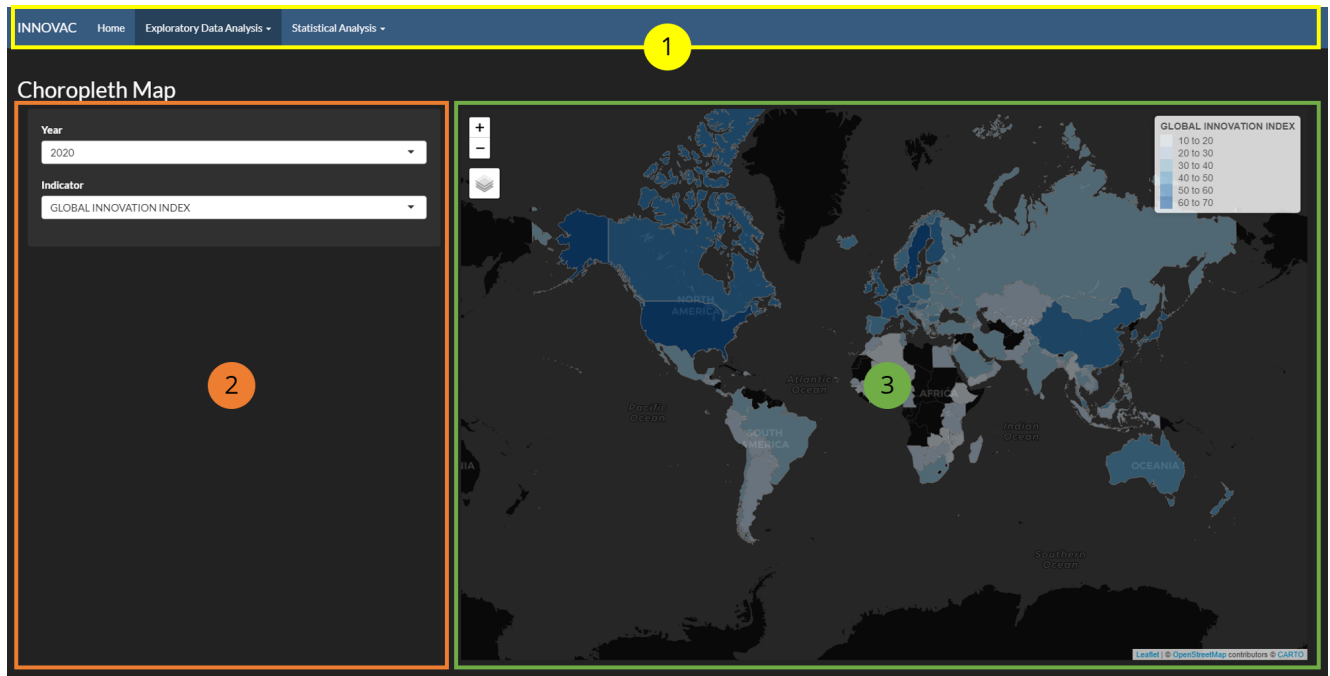
   - Statistical Plots

   - Hierarchical Clusting

Side Panel

The side panel provides the various toggling parameters for different visualisation within the application. Some might come with brief instructions on how to operation the application.

Main Panel

The main panel is where the visualisation will be shown.
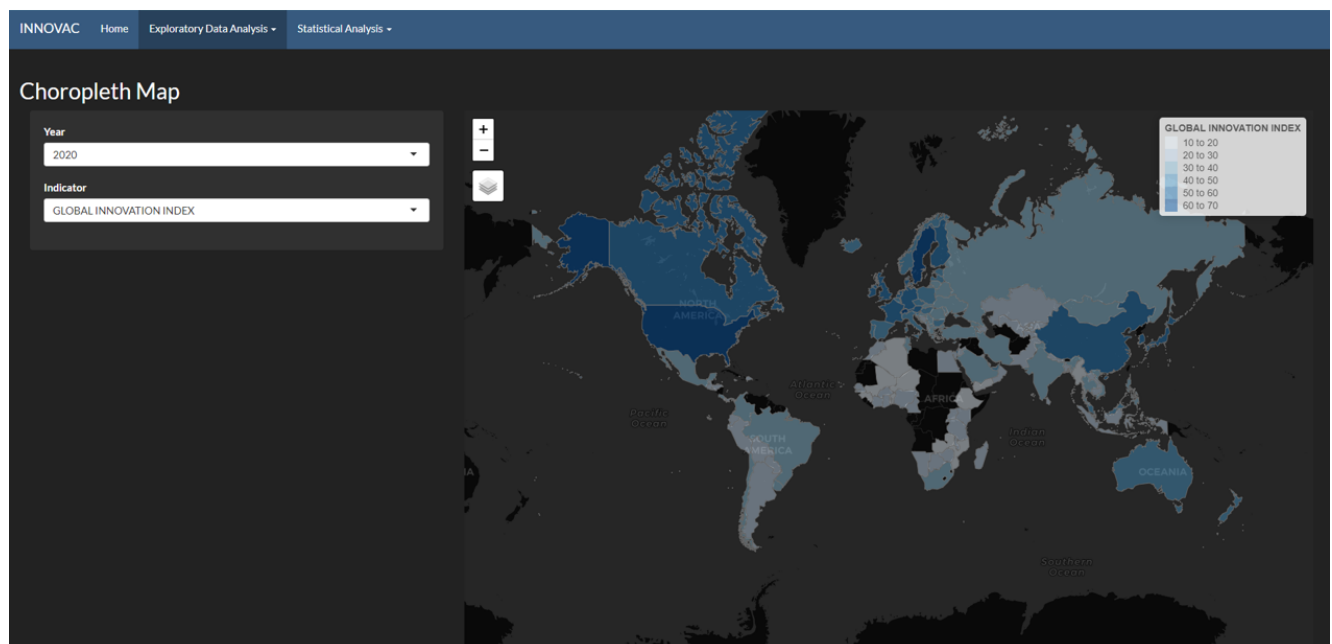
Home - Landing Page of the Application

The landing page introduces the motivation of the projects and outline the contributors.

Exploratory Data Analysis

The **Exploratory Data Analysis** module provides users with various tools to comb through the data and to obtain insights.

Choropleth Map

The choropleth map provides a board overview and the spread of different indicators across the geospatial dimension. User can select the **Year** and **Indicator** on the side panel to display on the world map.

The map is also interactive, hence, you will be able to zoom into the country that you are looking for.

Radar Chart

The radar chart provides a comparison between different selected countries based on the selected set of indicators. User can select from the side panel the **Year** of the data, the set of **Indicators** to compare, and the different **Countries** to compare among each other.
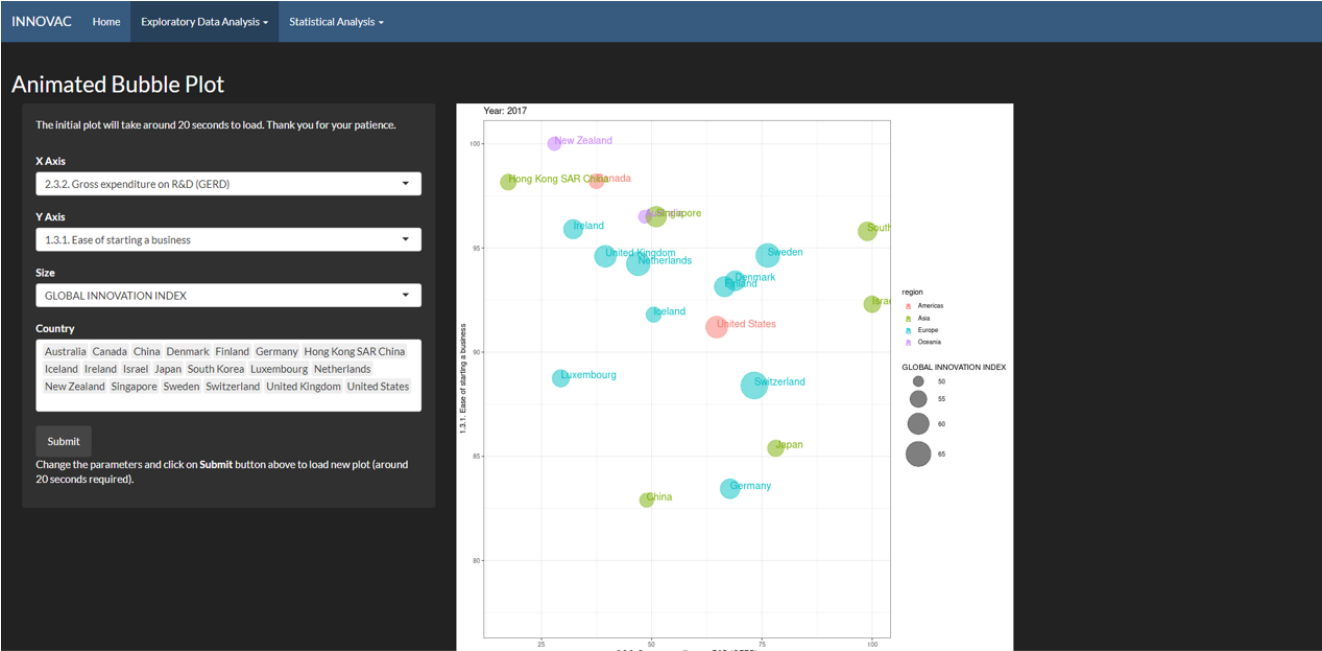
An overlay will be added for each country.

Slope Graph

The slope graph provides a time-series analysis and comparison of the selected indicator for select set of countries.

Users can select a range of **Year**, the **Indicator** to trend, and the set of **Countries** to compare among each other via the side panel.

Bubble Plot

Note: the bubble plot is animated and therefore, the initial plot and subsequent plot (via Submit button) takes around 20 seconds to load

The bubble plot provides the relationship between the 3 selected indicators for each of the country. An animation is also added to look at the changes for the 3 selected indicators across the years (from 2015 to 2020).

Users can choose an indicator for the 3 different parameters: **X-Axis**, **Y-Axis**, and **Size** of the bubble, and also choose the set of **Countries** to compare among each other.

Statistical Analysis

The **Statistical Analysis** module provides users with various statistical techniques to deep dive into the dataset and uncovering hidden patterns and trends.
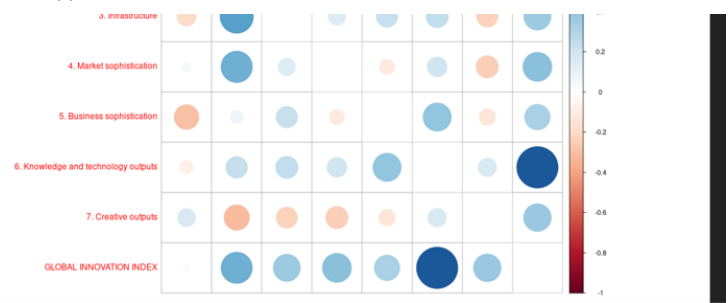
Correlation Analysis
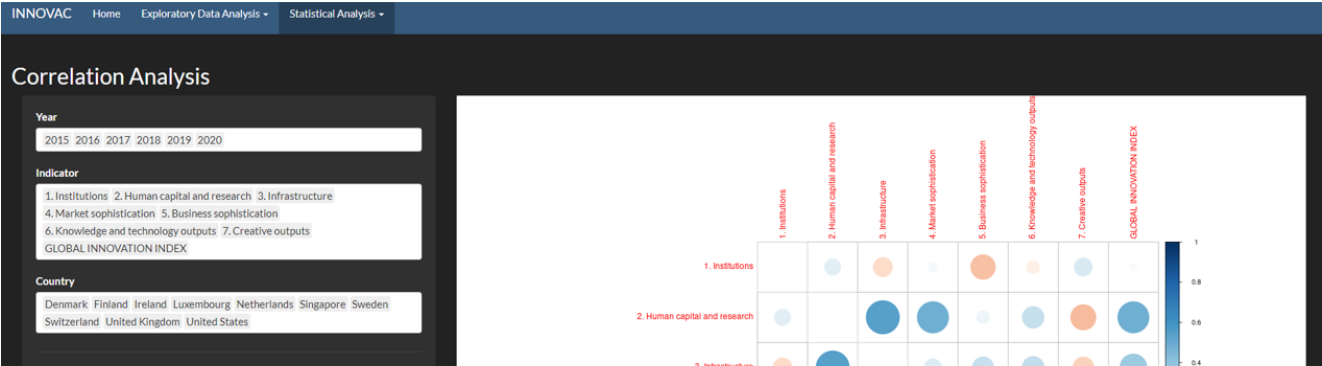
The correlation plot provides users a measurement of the strength of association between the selected set of indicators.

Users are able to select the **Year**, the set of **Indicators** to correlate, filter the **Countries**, change the **Correlation Method**, the way NA is handles via **NA Actions**, the **Plot Method** and how the correlation is orders via **Reorder Correlation**.
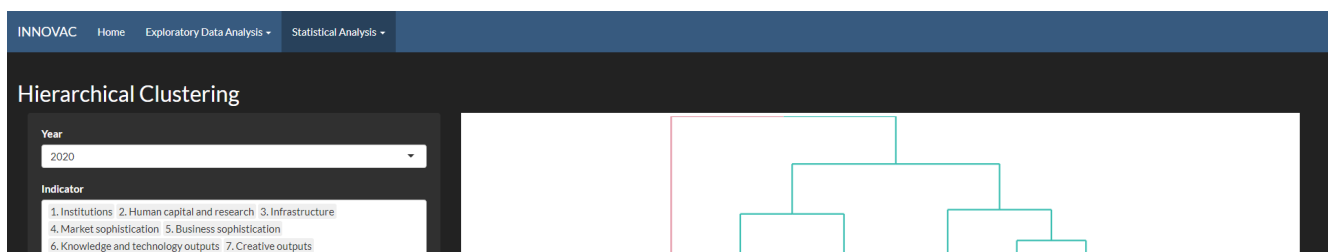
Statistical Plots
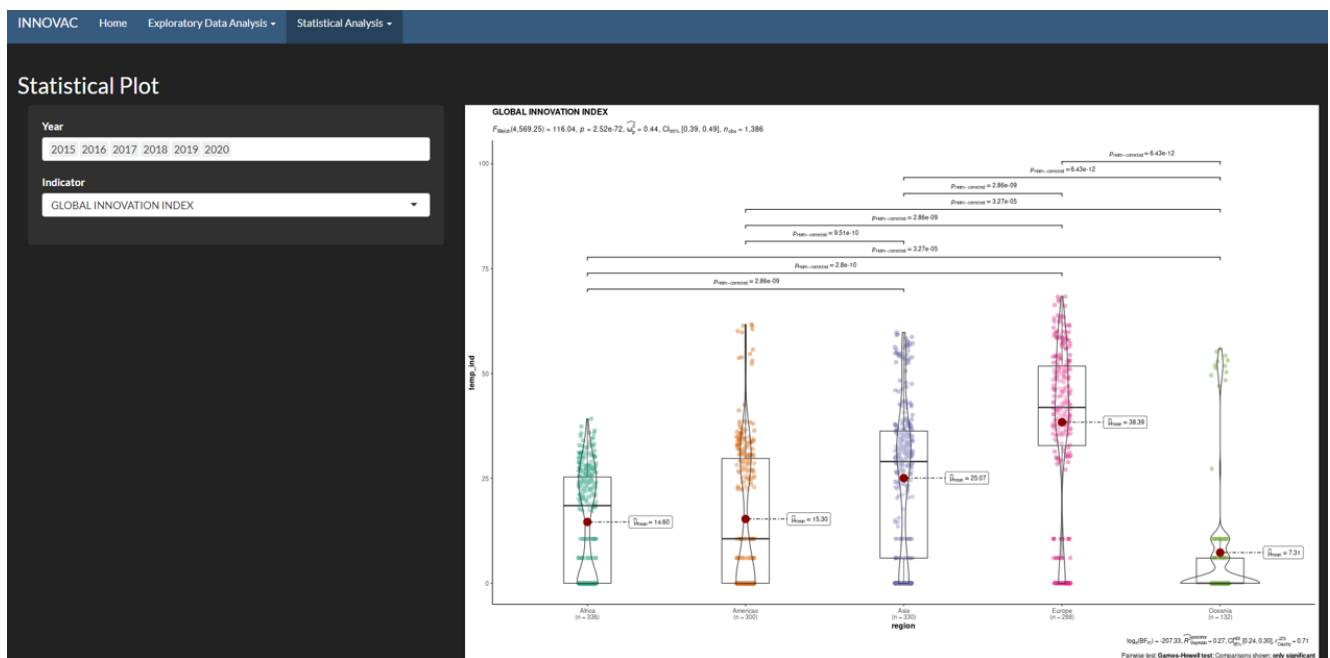
The statistical plots provides users with relevant statistical details via a combination of a scatter plot, box plot, and a violin plot. The plot is also *publication-ready* courtesy of the *ggstatsplot* library.

Users are able to select the different **Years** and the **Indicator** to compare among the different regions.

Hierarchical Clustering
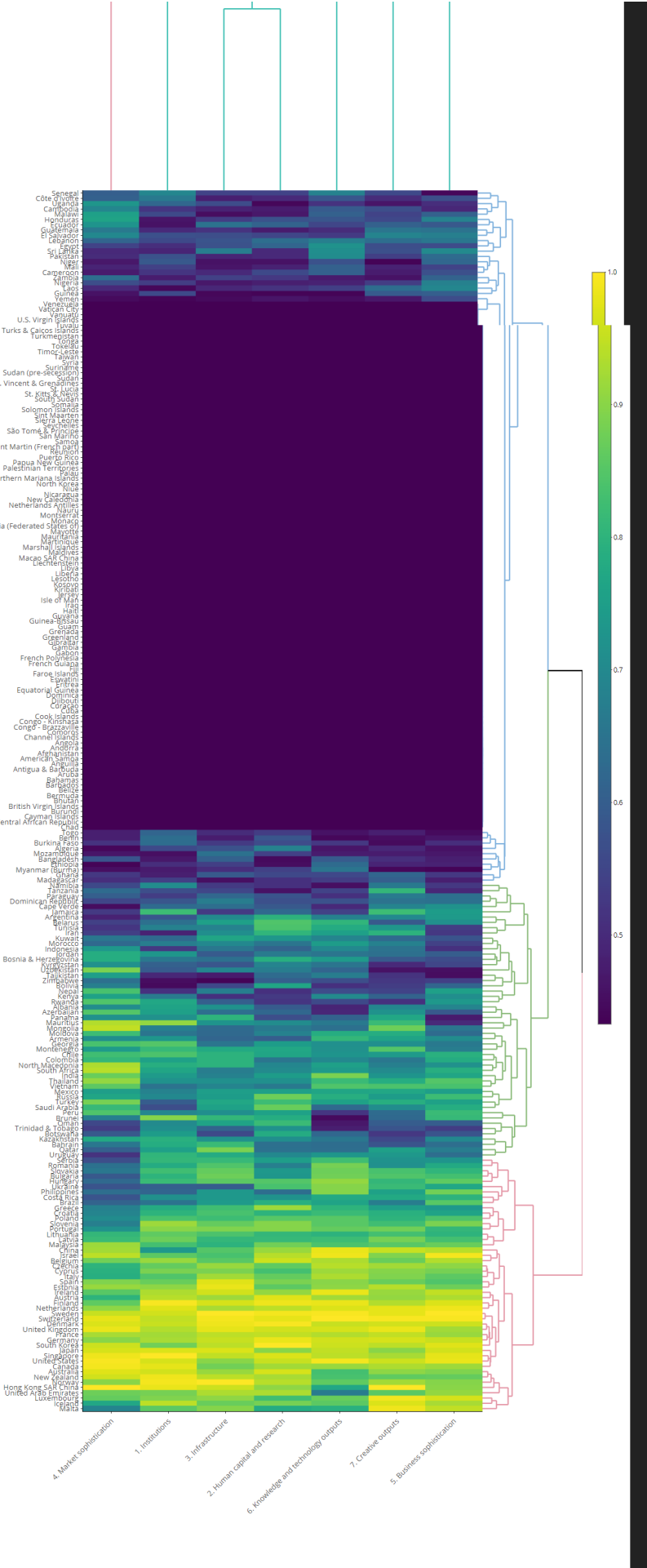
Distance Method

euclidean

H Clustering Method

complete

K Rows

3

K Columns

2

Hierarchical Clustering allows users to cluster similar countries together via the selected indicator in the

Hierarchical Clustering allows users to cluster similar countries together via the selected indicator in the selected year.

Users are able to select the **Year** of interest, the set of **Indicators** for clustering, the **Distance Method** used, the **Hierarchical Clustering Method**, the number of **Clusters** for the countries and indicators.