



Bharatiya Vidya Bhavan's

## Sardar Patel Institute of Technology

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| <b>Class</b> | <b>BE Comps A - Batch E</b> |
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### AIM:

Create advanced charts using Tableau / Power BI / R / Python / Plotly or Chart or D3.js to be performed on the dataset - Socio economic data

- Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter, Line, Area, Waterfall, Donut, Treemap, Funnel
- Write observations from each chart

### DESCRIPTION:

<https://www.kaggle.com/datasets/iamsouravbanerjee/gross-national-income-per-capita>

This dataset contains historical data covering a range of indicators pertaining to educational inequality on a global scale. The dataset's prominent components include: ISO3, Country, Continent, Hemisphere, Human Development Groups, UNDP Developing Regions, HDI Rank (2021), and Gross National Income Per Capita from 1990 to 2021.

Dataset Glossary (Column-wise):

ISO3 - ISO3 for the Country/Territory

Country - Name of the Country/Territory

Continent - Name of the Continent

Hemisphere - Name of the Hemisphere

Human Development Groups - Human Development Groups

UNDP Developing Regions - UNDP Developing Regions

HDI Rank (2021) - Human Development Index Rank for 2021

## Gross National Income Per Capita from 1990 - 2021 - Gross National Income Per Capita from year 1990 to 2021

Data Dictionary:

UNDP Developing Regions:

SSA - Sub-Saharan Africa

LAC - Latin America and the Caribbean

EAP - East Asia and the Pacific

AS - Arab States

ECA - Europe and Central Asia

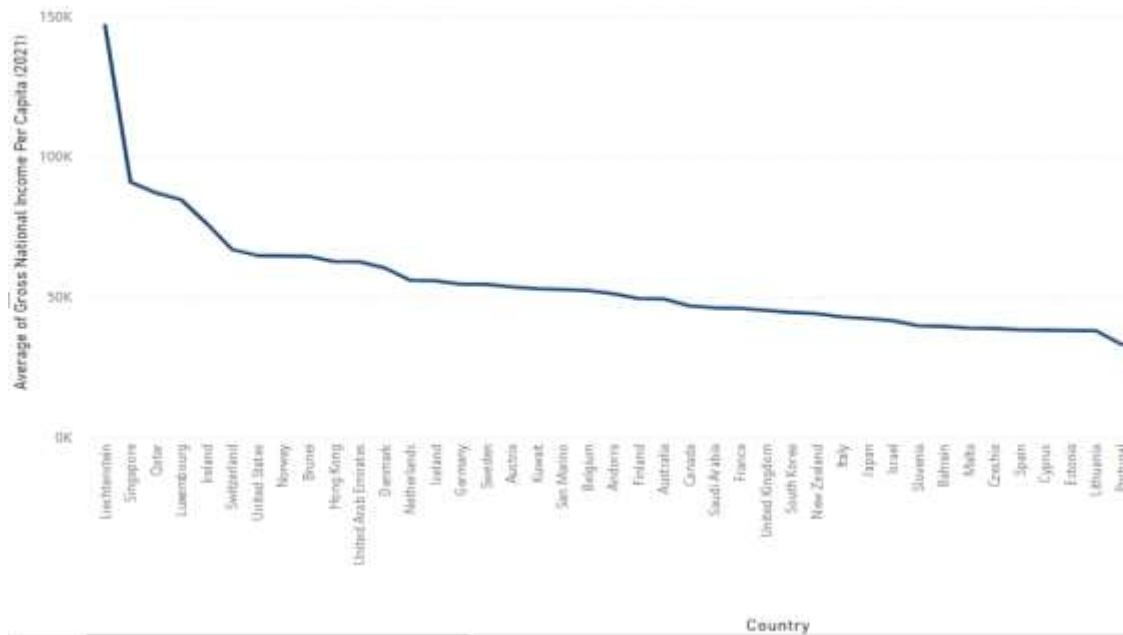
SA - South Asia

### PROCEDURE DESCRIPTION:

#### Step 1:

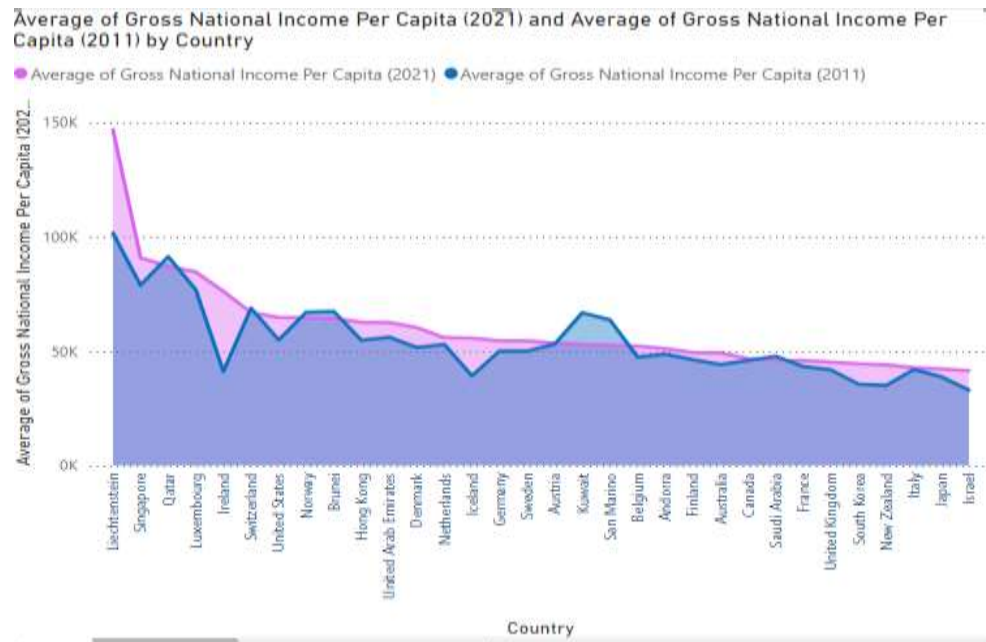
#### Line Chart

Average of Gross National Income Per Capita (2021) by Country



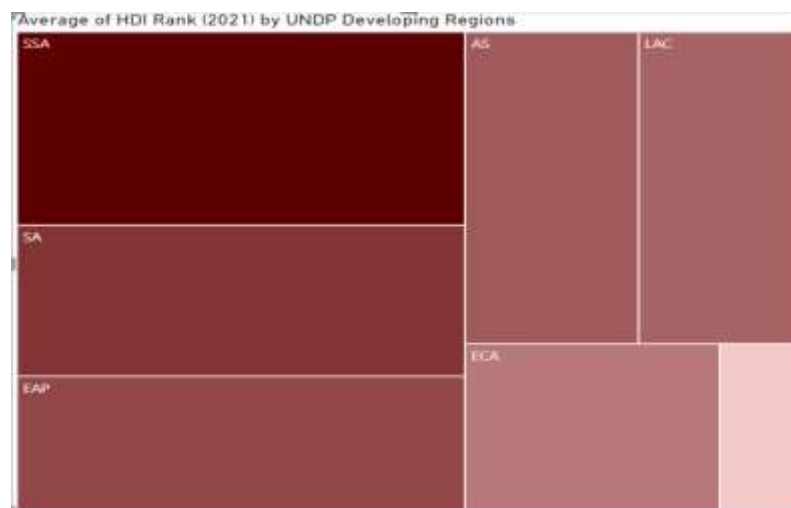
In the chart, I can see that Liechtenstein has had the highest rise in Gross National Income Per Capita (GNI) which significantly declines up until Italy. GNI is moderate with slight increase and decrease from Italy onwards.

## 2. Area Chart



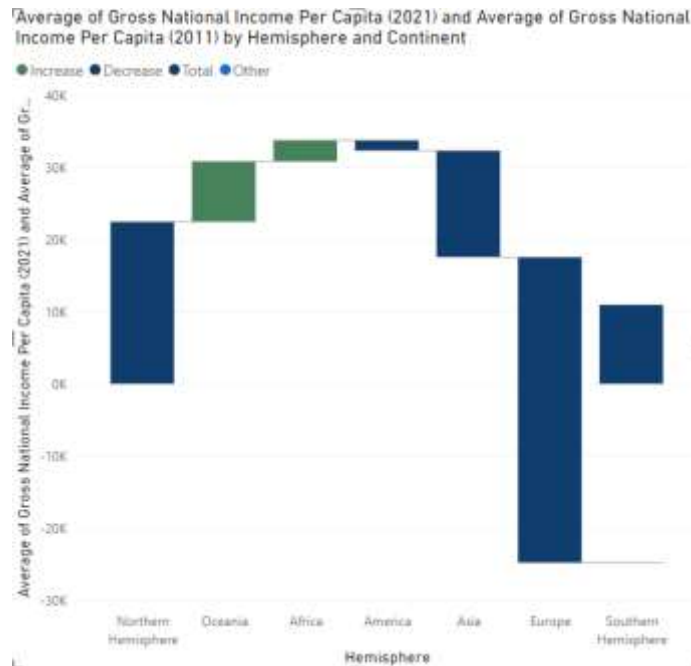
The chart highlights the growing economic divergence between countries. Liechtenstein experienced the most significant decrease in Gross National Income Per Capita (GNI) from 2011 to 2021. Kuwait and Qatar experienced the largest increases in GNI during this period. European countries have generally maintained their economic stability, with moderate growth.

## 3. Treemap



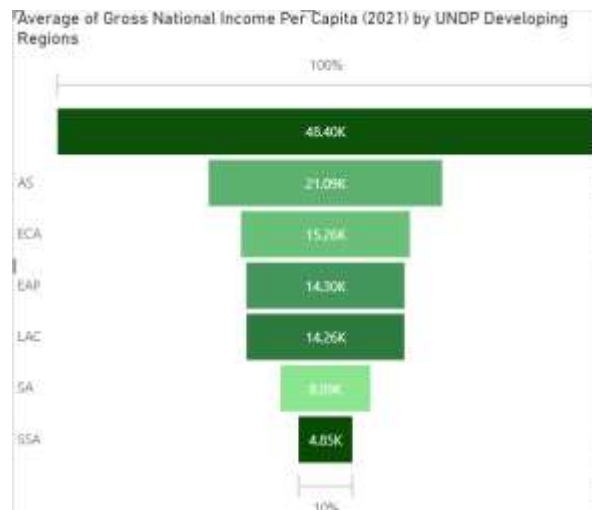
From the above chart, the Sub-Saharan Africa (SSA) has the highest average Human Development Index (HDI) rank among the regions represented. East Asia and Pacific (EAP) has the lowest average HDI rank

#### 4. Waterfall Chart



From the above graph, I see that Asia has experienced the most significant increase in Gross National Income Per Capita (GNI) from 2011 to 2021. The Southern Hemisphere has seen the largest decrease in GNI during this period. The chart highlights the growing inequality between regions, particularly between the Northern and Southern Hemispheres.

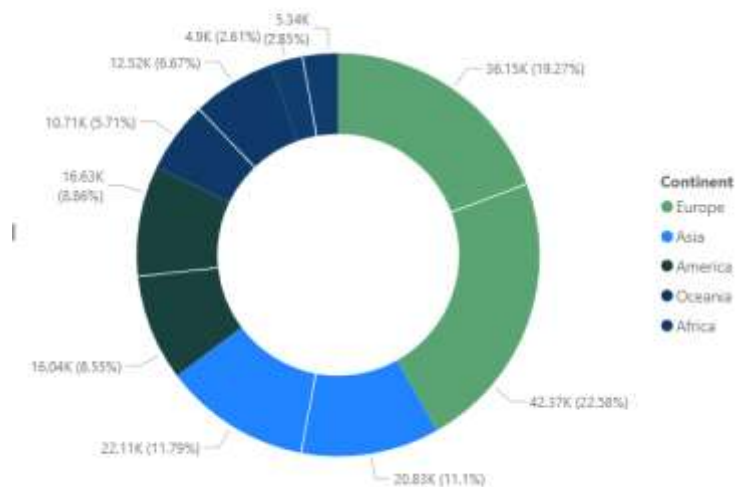
#### 5. Funnel Chart



The chart highlights significant disparities in GNI between the developing regions. Arab States(AS) has the highest average Gross National Income Per Capita (GNI) in 2021 among the regions represented. Sub-Saharan Africa (SSA) has the lowest average GNI. The shape of the funnel can also suggest income inequality within each region. A wider funnel generally indicates a more equitable distribution.

## 6. Donut Chart

Average of Gross National Income Per Capita (2011) and Average of Gross National Income Per Capita (2021) by Continent



The chart highlights significant disparities in GNI between continents. Europe has the highest average Gross National Income Per Capita (GNI) in 2021. This region has the largest share of the chart, indicating a significantly higher average GNI compared to other continents. Africa has the lowest average GNI. Europe and Asia appear to be more economically developed regions, while Africa faces significant challenges in terms of economic growth.

**CONCLUSION:** From this experiment I learnt about the various uses of different charts in visualising a socio economic dataset. I have made use of the Gross National Income Per Capita Across the Globe dataset and understood it well.