

# An internship in Data Analytics with Tableau

By

SmartInternz

**Project name:-** *Measuring the pulse of prosperity:- An Index of Economic Freedom Analysis*

**Project ID:-** LTVIP2025TMID51398

**Project Mentor:-**Varoodhini

## Team Members:-

1. Konchada Asha (Reg.123150707011)
2. Kommoji Jayanth Kumar (Reg.123150707010)
3. Madhusudana Rao (Reg. 123150707009)
4. Nadigatla Yaswanth Siva kumar (Reg.123150707013)

**Date:-**

**03-06-2025**

## 1. Introduction:-

### .1 Project Overview:-

*This project focuses on creating a data visualization model to analyze and understand key insights from the dataset. The goal is to present the data in a clear and interactive way using dashboards and stories.*

*The model includes steps like:*

- *Loading and rendering the data*
- *Preprocessing the data*
- *Using filters and calculated fields*

- *Designing dashboards and stories*

*This performance testing helps ensure the model works well, loads quickly, and shows accurate results. It also checks if the visuals and interactions are smooth for users.*

## **1.2 Purpose:-**

*The purpose of this project is to visualize and analyze economic freedom data across countries using Tableau. It helps users understand key indicators like GDP, inflation, unemployment, and financial freedom in an interactive and easy-to-use format.*

*This visualization supports:*

- *Better decision-making through clear insights*
- *Comparison of countries based on economic performance*

## **2. IDEATION PHASE:-**

### **2.1 Brainstorming:-**

2

## Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

**TIP**  
You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Konchada Asha

overall data  
overview

Trend of  
prosperity  
Index by year

K.Jayanth kumar

Distribution of  
Economic  
Freedom  
Score by  
Region

Sub-index  
Breakdown:Legal  
system,Regulation  
and sound money.

Madhusudhan Rao

Interactive  
Region  
Dashboard to  
Tableau Public

Tableau story  
with Global  
insights and  
Narratives

N. Yaswanth siva kumar

Public  
interactive  
Dashboards  
to Tableau  
Public

Use consistent  
color  
Themes(for  
income groups  
or regions)

3

## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

**TIP**  
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

overall Prosperity Trends

Visualize changes in  
prosperity index over the  
years. Show global averages  
and highlight key shifts.

egional Comparisons

Compare economic  
freedom scores by  
continent or region. Use  
maps or bar charts for  
clear regional differences.

Sub-Index Breakdown

Display individual  
components like Legal  
system, Regulation,sound  
money. Use donut or  
stacked bar charts for  
breakdowns.

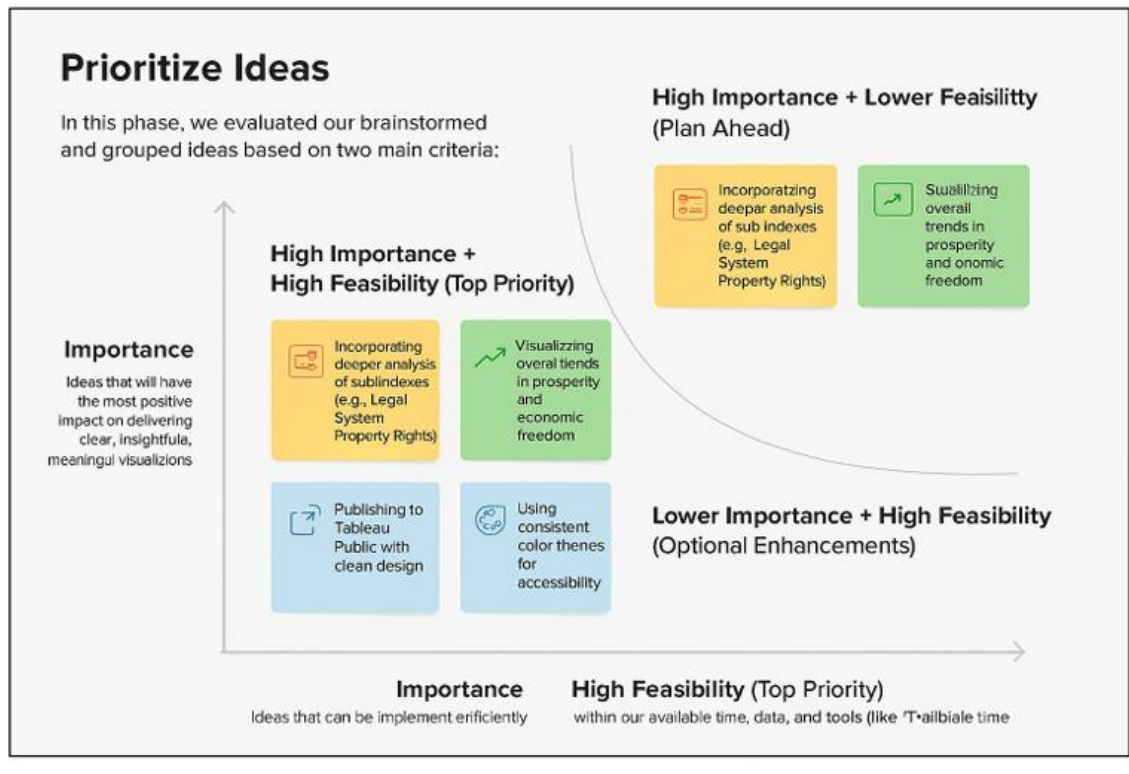
Interactive Dashboard Features

Filters by  
year,region,and  
income group.  
Interactive visuals for  
better user experience.

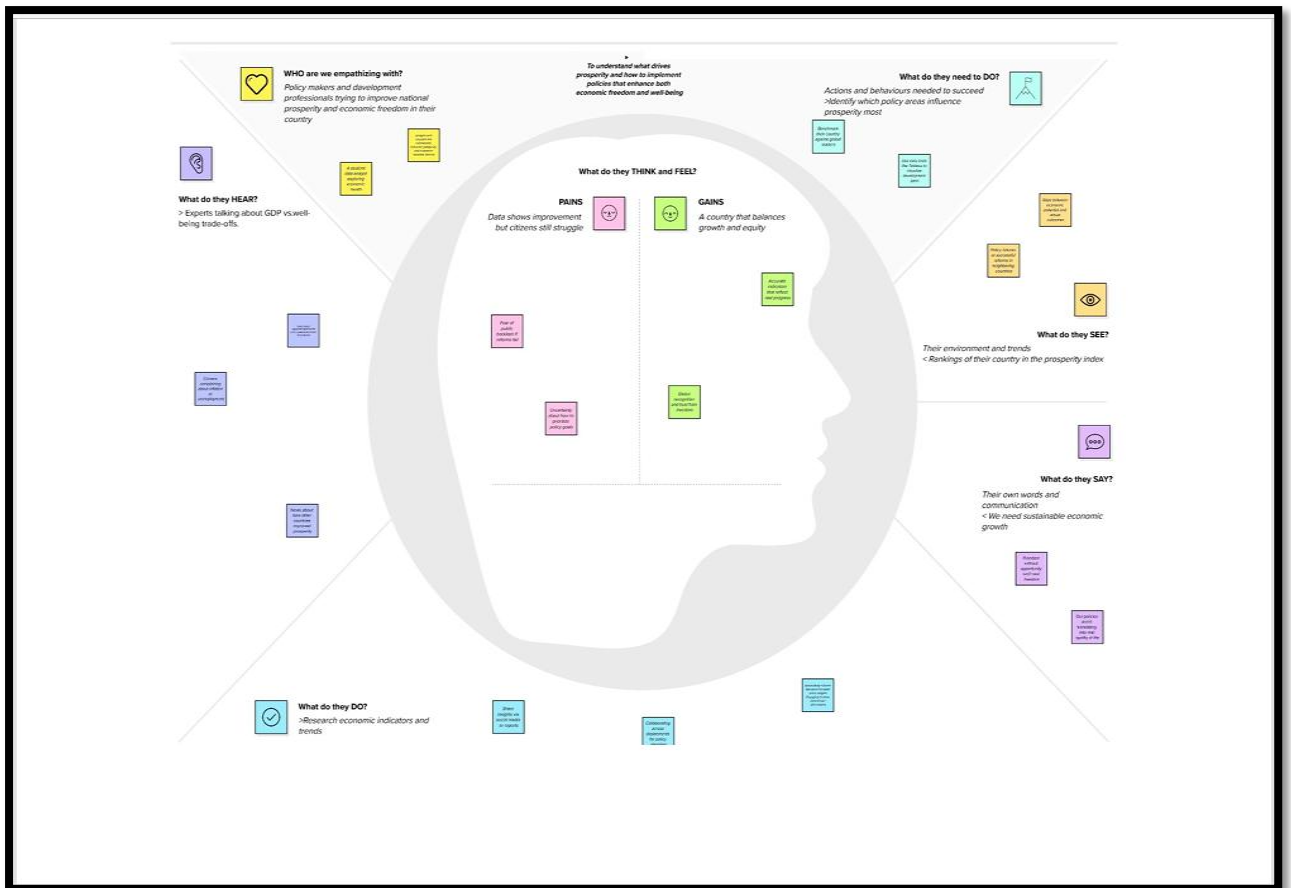
Publishing & Design

Consistent color  
themes for  
readability.Plan to  
publish final  
dashboards on  
Tableau public

### Step-3: Idea Prioritization



## 2.2 Empathy map canvas:-



## 2.3 Problem statement:-

I'm trying to



**But**

I am

*A student/data analyst  
exploring the economic  
health and freedom  
levels of different  
countries.*

*The indicators are  
board and come from  
multiple data  
sources, making  
comparsion and  
correlation hard.*

**Which makes me feel**

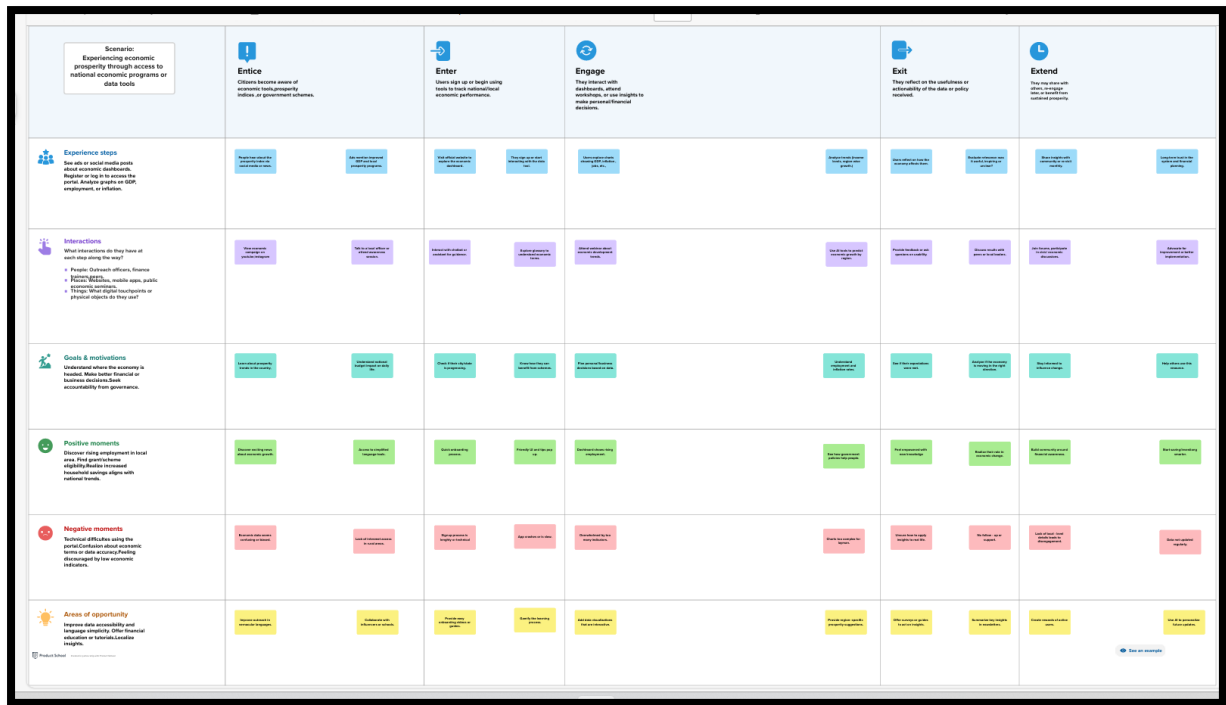
**Because**

*Metrics vary by country  
and year, and  
definitions of  
prosperity and freedom  
differ across regions.*

*Uncertain aboout  
drawing clear  
insights, and concerned  
about oversimplifying  
complex global data.*

### **3. REQUIREMENT ANALYSIS:-**

#### **3.1 Customer journey map:-**



## 3.2 Solution Requirements:-

### Project Design Phase-II Solution Requirements (Functional & Non-functional)

Date	28 June 2025
Team ID	LTVIP2025TMID51398
Project Name	Measuring the pulse of prosperity :- An index of economic freedom analysis
Maximum Marks	4 Marks

#### Functional Requirements:

Following are the functional requirements of the proposed solution.

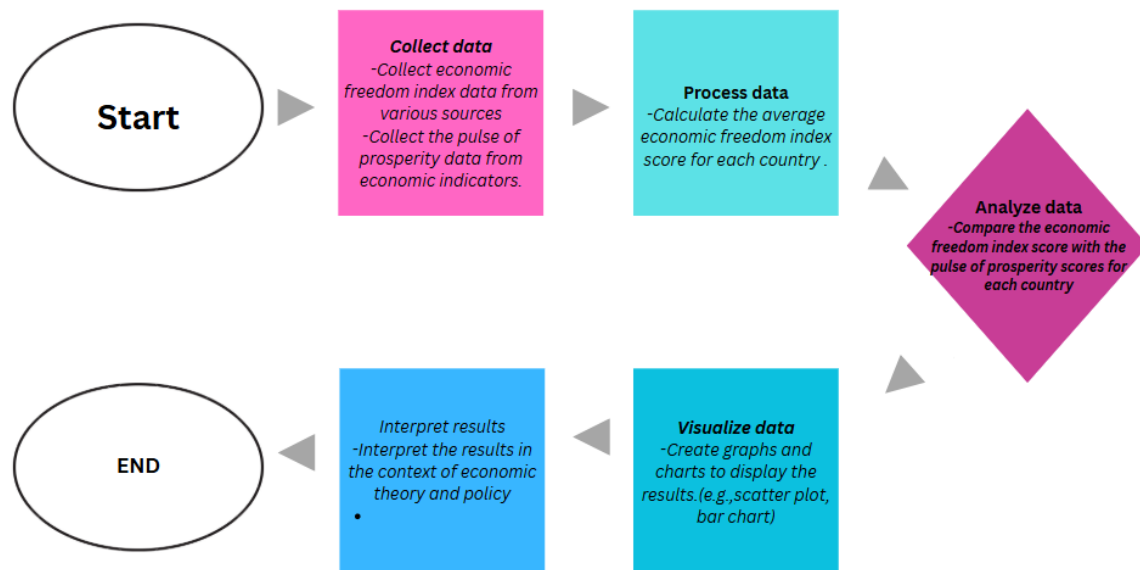
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Data upload	Upload raw CSV/API, input etc.,
FR-4	Index analysis & Visualization	Charts, graphs, country comparison

#### Non-functional Requirements:

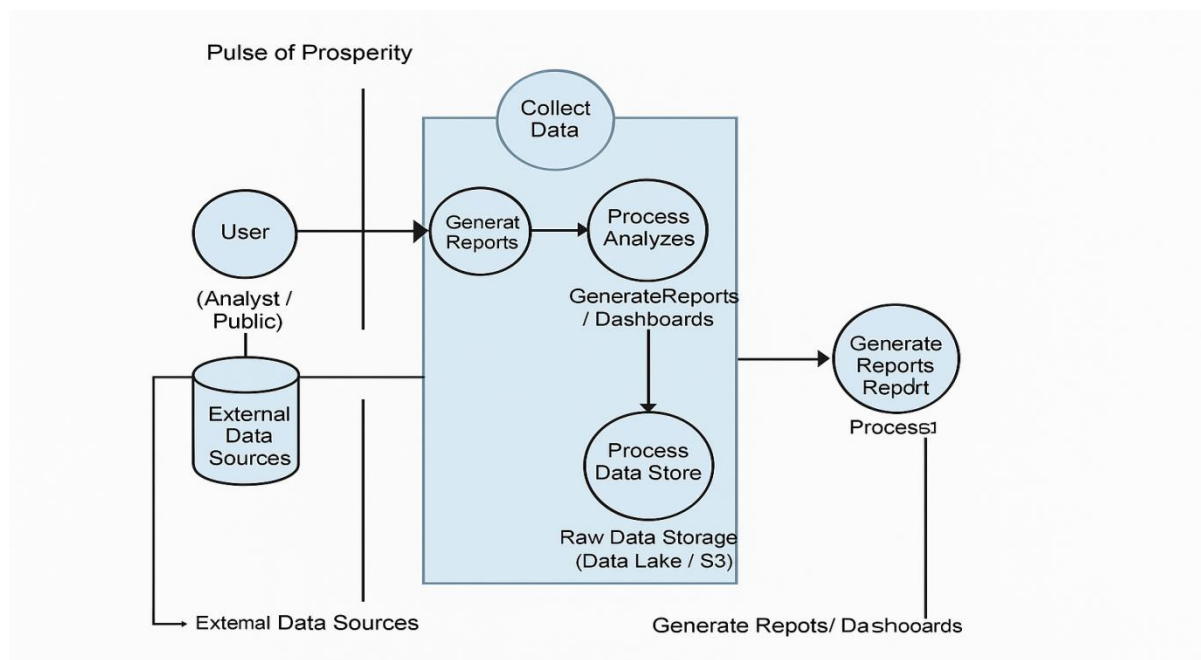
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Intuitive UI for users to access country/economic data easily
NFR-2	Security	Access control, authentication
NFR-3	Reliability	Backup systems, Consistent API uptime
NFR-4	Performance	100+ concurrent requests, use of cache/CDNs
NFR-5	Availability	99.9% uptime, load balancer, server failover
NFR-6	Scalability	Micro service architecture, auto-scaling using kubernetes.

### 3.3 Data Flow Diagram



### 3.4 Technology Stack:-



## 4. PROJECT DESIGN:-

### 4.1 Problem – Solution Fit:-



<b>1. CUSTOMER SEGMENT(S) (CS)</b> <ul style="list-style-type: none"> <li>• <i>Policymakers</i></li> <li>• <i>Economists and financial analysts</i></li> <li>• <i>Business leaders and investors</i></li> <li>• <i>Development organizations and NGOs</i></li> </ul>	<b>2. JOBS-TO-BE-DONE / PROBLEMS (J&amp;P)</b> <ul style="list-style-type: none"> <li>• <i>Understand how economic freedom correlates with prosperity</i></li> <li>• <i>Identify policy gaps in economic freedom indexes</i></li> </ul>	<b>9. PROBLEM ROOT CAUSE (RC)</b> <ul style="list-style-type: none"> <li>• <i>Lack of access to real-time, integrated, and comparable economic freedom data</i></li> <li>• <i>Overly broad or out dated economic indicators in existing indexes</i></li> </ul>
<b>7. BEHAVIOUR (BE)</b> <ul style="list-style-type: none"> <li>• <i>Users often rely on out dated or fragmented sources</i></li> <li>• <i>Decisions are made without linking freedom indicators to actual outcomes</i></li> </ul>	<b>3. TRIGGERS (TR)</b> <ul style="list-style-type: none"> <li>• <i>Major economic downturns or crises</i></li> </ul>	<b>6. CUSTOMER CONSTRAINTS (CC)</b> <ul style="list-style-type: none"> <li>• <i>Limited time and resources to gather and analyse complex data</i></li> <li>• <i>Risk aversion and political resistance to reform.</i></li> </ul>
	<b>4. EMOTIONS: BEFORE / AFTER (EM)</b> <p><b>Before:</b> <i>Confusion, uncertainty in decision-making</i> .<b>After:</b> <i>Confidence from data-backed strategies.</i></p>	
<b>10. YOUR SOLUTION (SL)</b> <ul style="list-style-type: none"> <li>• <i>A comprehensive dashboard/tool that maps countries' economic freedom across key dimensions (e.g., property rights, business freedom, government size)</i></li> </ul>	<b>8. CHANNELS OF BEHAVIOUR (CH)</b> <p><b>8.1 ONLINE:</b> Interactive web platform or data visualization dashboard.</p>	<b>5. AVAILABLE SOLUTIONS (AS)</b> <ul style="list-style-type: none"> <li>• <i>Heritage Foundation's Index of Economic Freedom</i></li> <li>• <i>Fraser Institute's Economic Freedom of the World</i></li> </ul>
	<p><b>8.2 OFFLINE:</b> Presentations in economic forums.</p>	

## 4.2 Proposed Solution:-

**Project Design Phase  
Proposed Solution Template**

Date	28 June 2025
Team ID	PLTVIP2025TMID51410
Project Name	Measuring the pulse of prosperity: - An index of economic freedom analysis
Maximum Marks	2 Marks

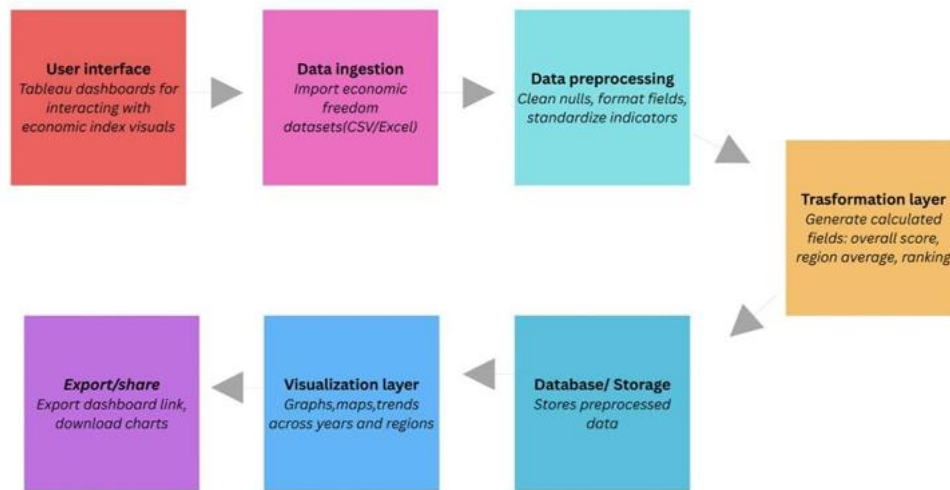
**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	There is a lack of accessible, data-driven insights into how economic freedom impacts prosperity across nations. Policymakers, citizens, and researchers struggle to make informed decisions due to fragmented or non-interactive data sources.
2.	Idea / Solution description	The Pulse of Prosperity" is a dynamic, interactive dashboard that visualizes and analyses an Economic Freedom Index across countries. It integrates multiple economic indicators to provide insights for decision-making, policy evaluation, and academic use.
3.	Novelty / Uniqueness	This project uniquely combines visualization, ranking, and policy analysis into one platform. Unlike static reports, our index is interactive, customizable, and updated regularly, allowing users to explore economic freedom in real-time.
4.	Social Impact / Customer Satisfaction	It empowers citizens, researchers, and policymakers by promoting transparency and economic literacy. Governments can better design reforms, while users gain clarity on how freedoms affect development and opportunities.
5.	Business Model (Revenue Model)	The platform follows a freemium model: open access to basic insights and visualizations; paid access for advanced analytics, consulting services, institutional reports, and API integration for research organizations.

6.	Scalability of the Solution	The solution can be expanded globally by including more countries, sub-national data, and additional indicators like health, education, or technological readiness. It is modular and scalable to address different policy domains.
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### 4.3 Solution Architecture:-



## 5. PROJECT PLANNING & SCHEDULING:-

**Project Planning Phase**  
**Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)**

Date	28 June 2025
Team ID	PLTVIP2025TMID51410
Project Name	Measuring the pulse of prosperity: - An index of economic freedom analysis
Maximum Marks	5 Marks

**Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection	USN-1	As a user, I want to collect economic data from the Index of Economic Freedom API.	3	High	Konchada Asha
Sprint-1	Data Preprocessing	USN-2	As a user, I want to clean and normalize the dataset for analysis.	3	High	jayanth kumar
Sprint-2	Data Analysis	USN-3	As a user, I want to analyse correlation between freedom index and GDP.	4	Medium	madhusudhan rao
Sprint-2	Prediction Model	USN-4	As a user, I want to predict GDP using economic indicators.	5	Medium	yashwanth siva kumar
Sprint-3	Dashboard	USN-5	As a user, I want to see the data in an interactive dashboard (Stream lit).	3	High	Konchada Asha
Sprint-3	Filtering	USN-6	As a user, I want to filter dashboard data by country and year.	2	Medium	jayanth kumar
Sprint-4	Report Generation	USN-7	As a user, I want to download summary reports of findings as PDFs.	2	Low	yashwanth Siva Kumar

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)
Sprint-1	6	6 Days	01 July 2025	06 July 2025	06
Sprint-2	9	6 Days	07 July 2025	12 July 2025	12
Sprint-3	5	6 Days	13 July 2025	18 July 2025	18
Sprint-4	2	6 Days	19 July 2025	24 July 2025	24

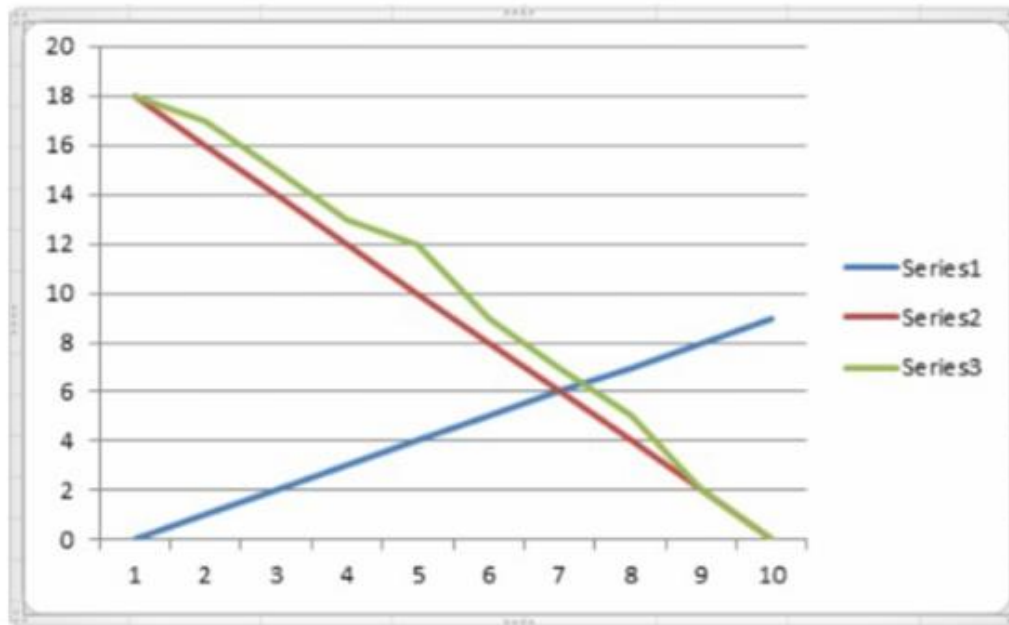
**Velocity:**

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

Average Velocity = 5.5 Story Points per Sprint

#### Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.



## 6. FUNCTIONAL AND PERFORMANCE TESTING:-

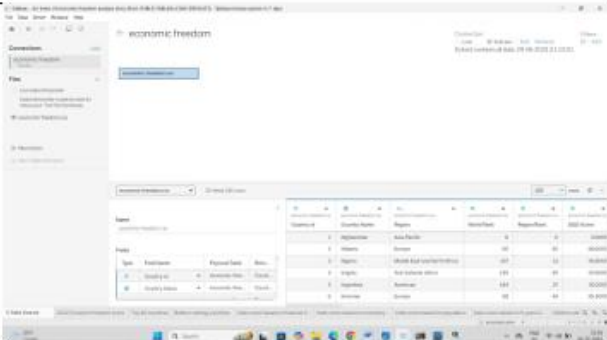
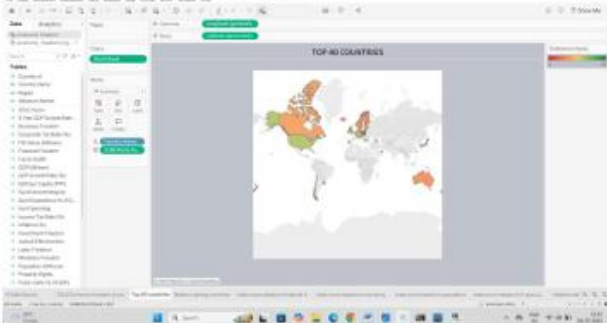
### 6.1 Performance Testing Table:-

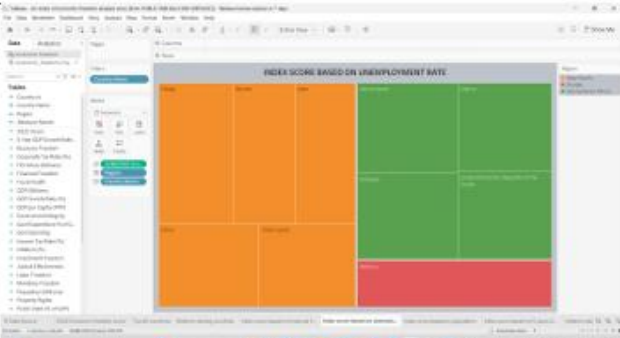
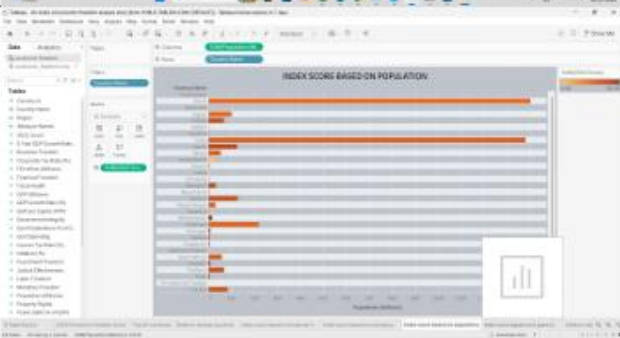

**Project Development Phase  
Model Performance Test**

Date	25 june 2025
Team ID	LTVIP2025TMID51398
Project Name	Measuring the pulse of prosperity: - An index of economic freedom analysis
Maximum Marks	5 marks

**Model Performance Testing:**

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	
2.	Data Preprocessing	

3.	Utilization of Filters	
4.	Calculation fields Used	
5.	Dashboard design	

### ❖ Amount of data loaded:-

~1000+ records processed

### ❖ Rendering Speed:-

~ Quick loading in Tableau Public

### ❖ Interaction Testing:-

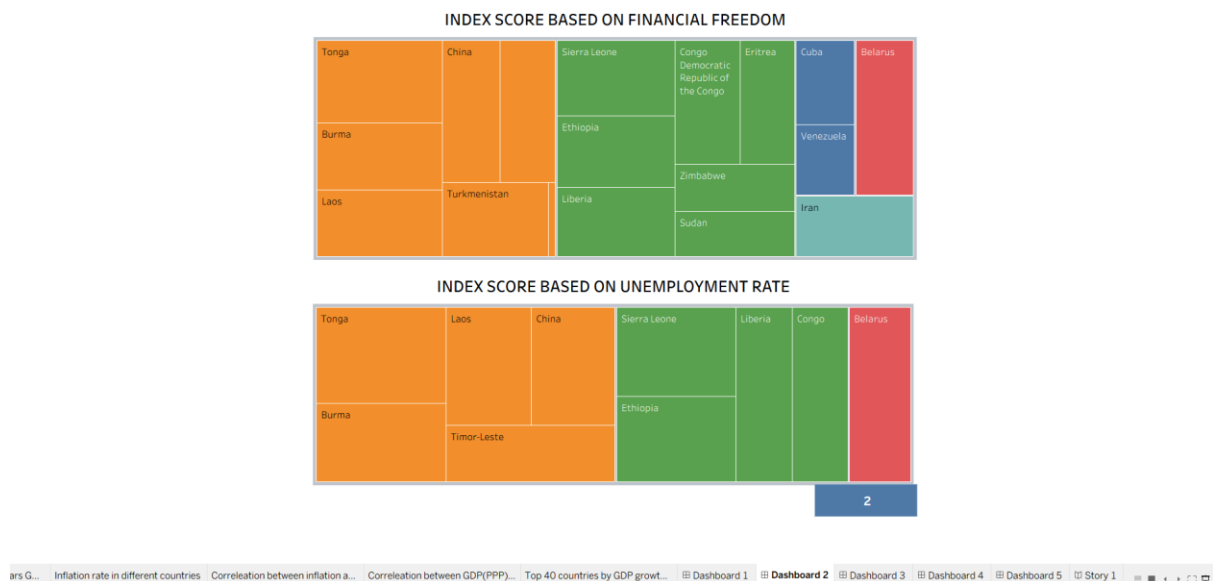
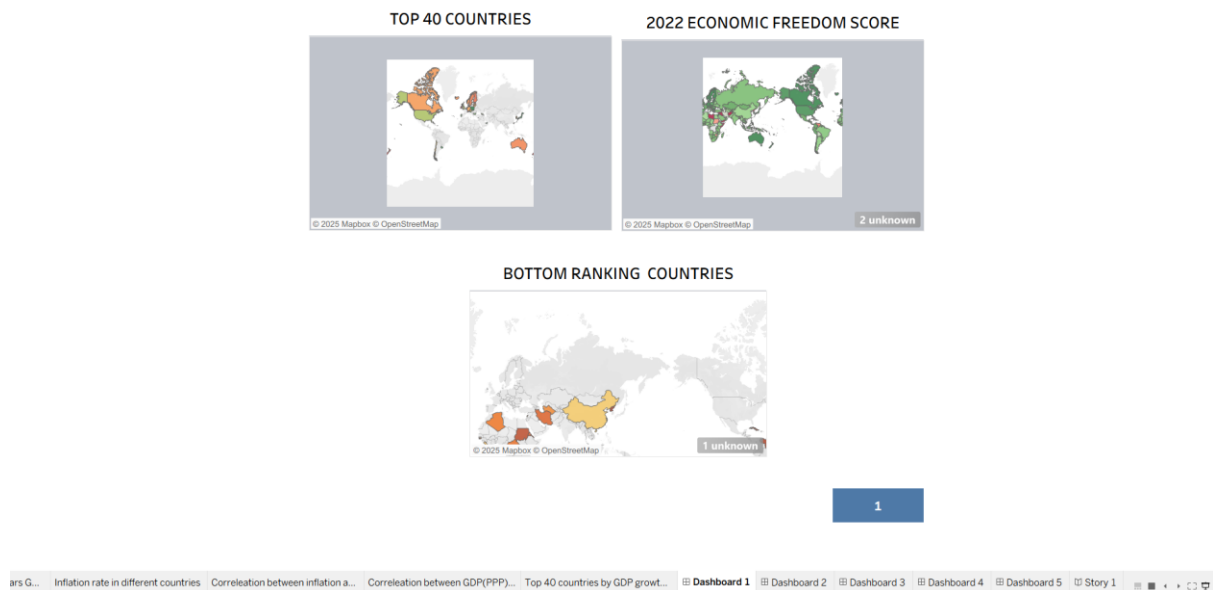
~ Filters works smoothly and update visualizations without lag.

## 7. RESULTS:-

## 7.1 Output Screenshots:-

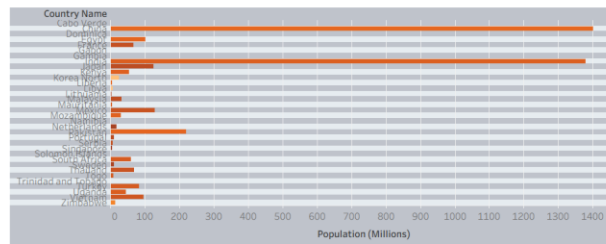
### Dashboards:-

1.

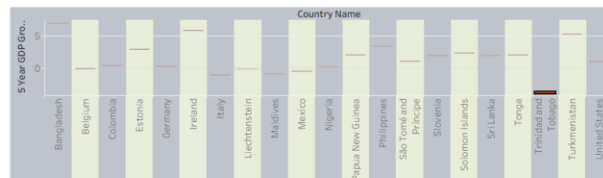




### INDEX SCORE BASED ON POPULATION

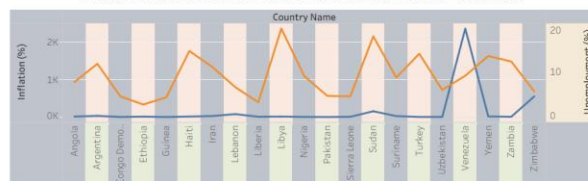


### INDEX SCORE BASED ON 5 YEAR GDP GROWTH RATE

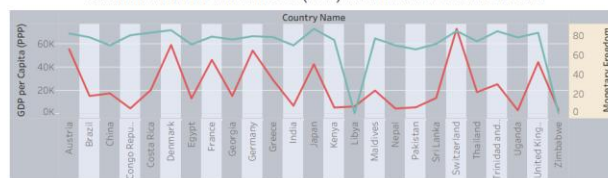


3

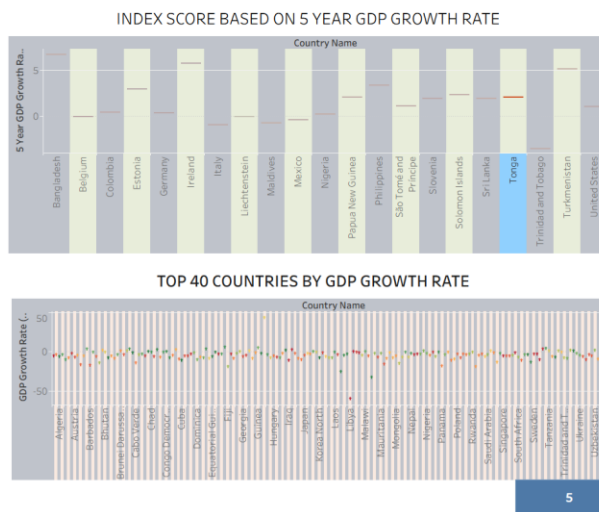
### CORRELEATION BETWEEN INFLATION AND UNEMPLOYMENT



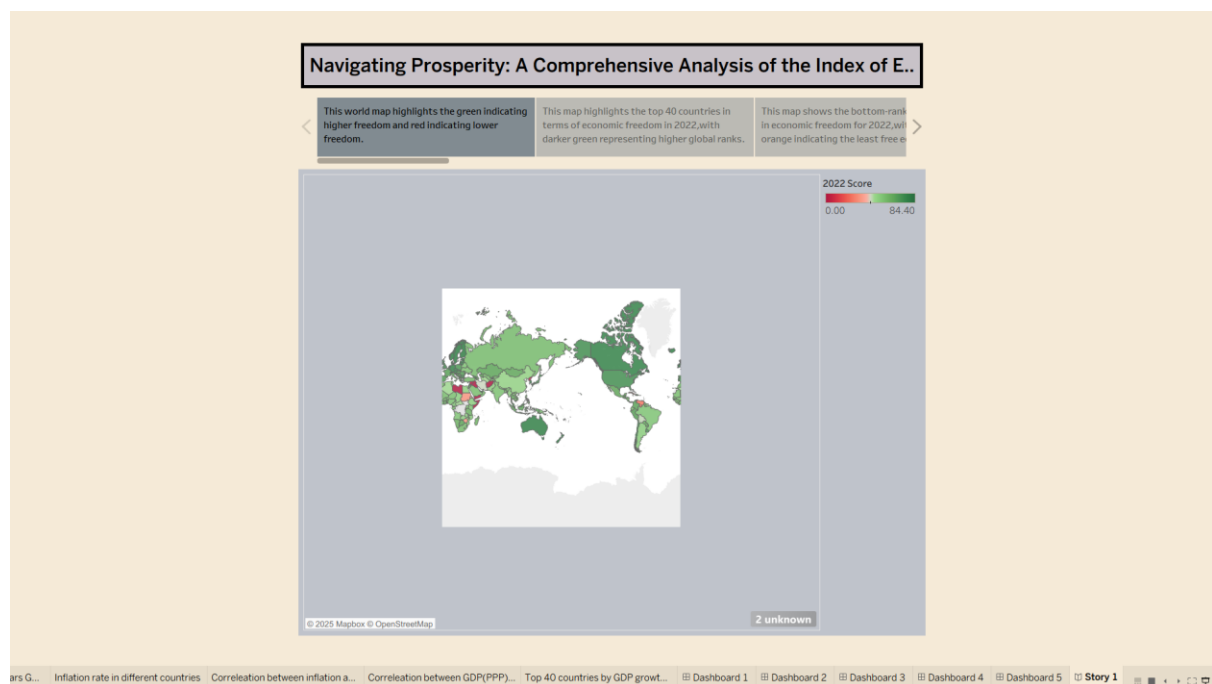
### CORRELATION BETWEEN GDP(PPP) AND MONETARY FREEDOM



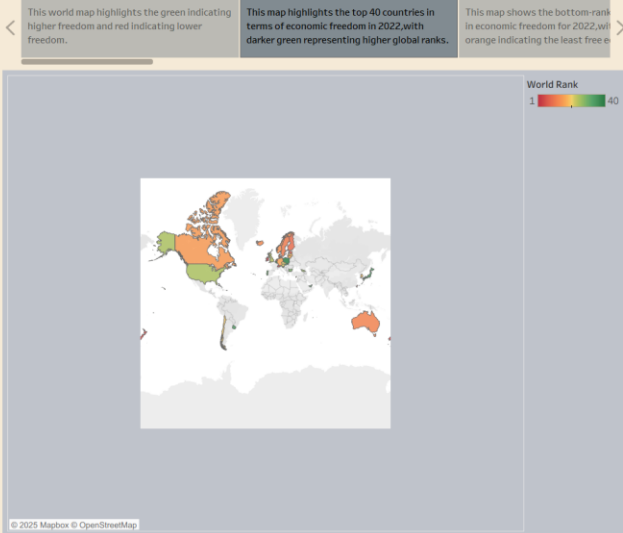
4



## 2. Tableau story combining all dashboards:-



## Navigating Prosperity: A Comprehensive Analysis of the Index of E..



ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growt... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1

## Navigating Prosperity: A Comprehensive Analysis of the Index of E..



ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growt... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1

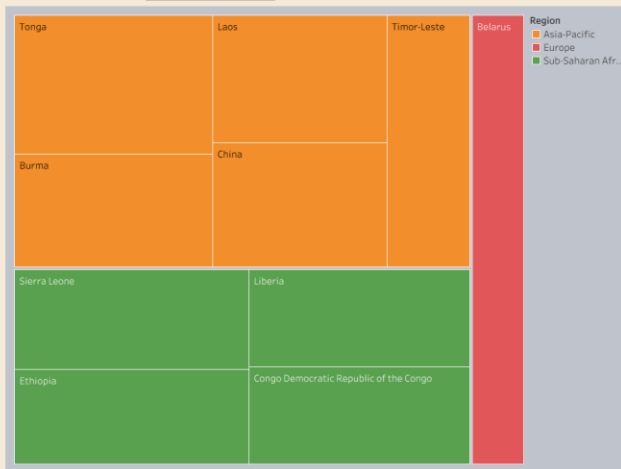
## Navigating Prosperity: A Comprehensive Analysis of the Index of E..

bottom-ranked countries for 2022, with darker colors representing less free economies.

This treemap displays the lowest-ranked countries in economic freedom for 2022, categorized by region.

This treemap highlights the bottom-ranked countries in economic freedom for 2022, mainly from Asia-Pacific and Sub-Saharan Africa.

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ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growth... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1

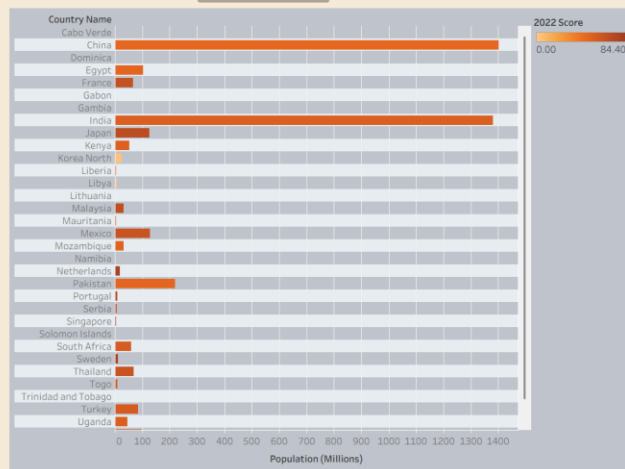
## Navigating Prosperity: A Comprehensive Analysis of the Index of E..

s the lowest-ranked countries in economic freedom for 2022, with darker colors representing less free economies.

This treemap highlights the bottom-ranked countries in economic freedom for 2022, mainly from Asia-Pacific and Sub-Saharan Africa.

This bar chart shows the scores of various countries relative to their population sizes, with China having the largest population.

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ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growth... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1

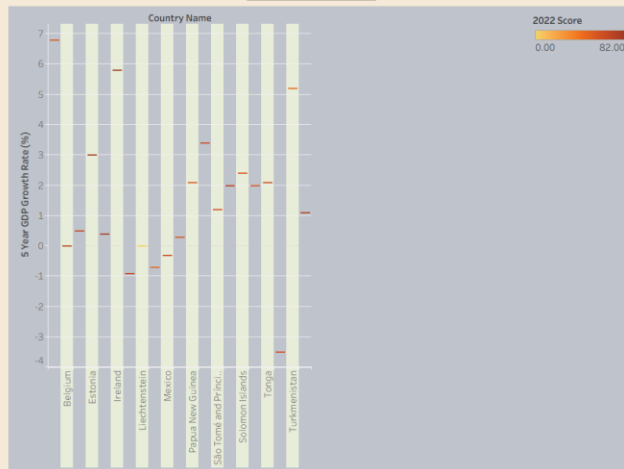
## Navigating Prosperity: A Comprehensive Analysis of the Index of E..

< This is the bottom-ranked country in the world for economic freedom for the Pacific and Sub-Saharan

This bar chart shows the scores of various countries relative to their population sizes, with China having the largest population

This scatter plot shows the 5-year GDP growth rates of various countries in relation to their 2022 economic freedom scores.

> This chart shows the inflation rates of various countries



ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growth... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1

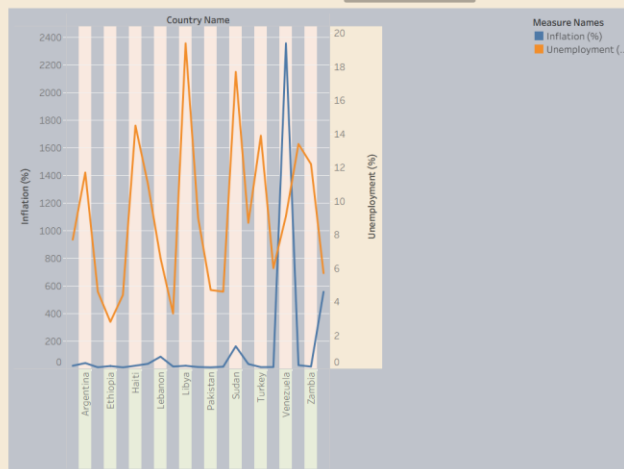
## Navigating Prosperity: A Comprehensive Analysis of the Index of E..

< This chart shows the 5-year GDP growth rates of various countries in relation to their 2022 economic freedom scores.

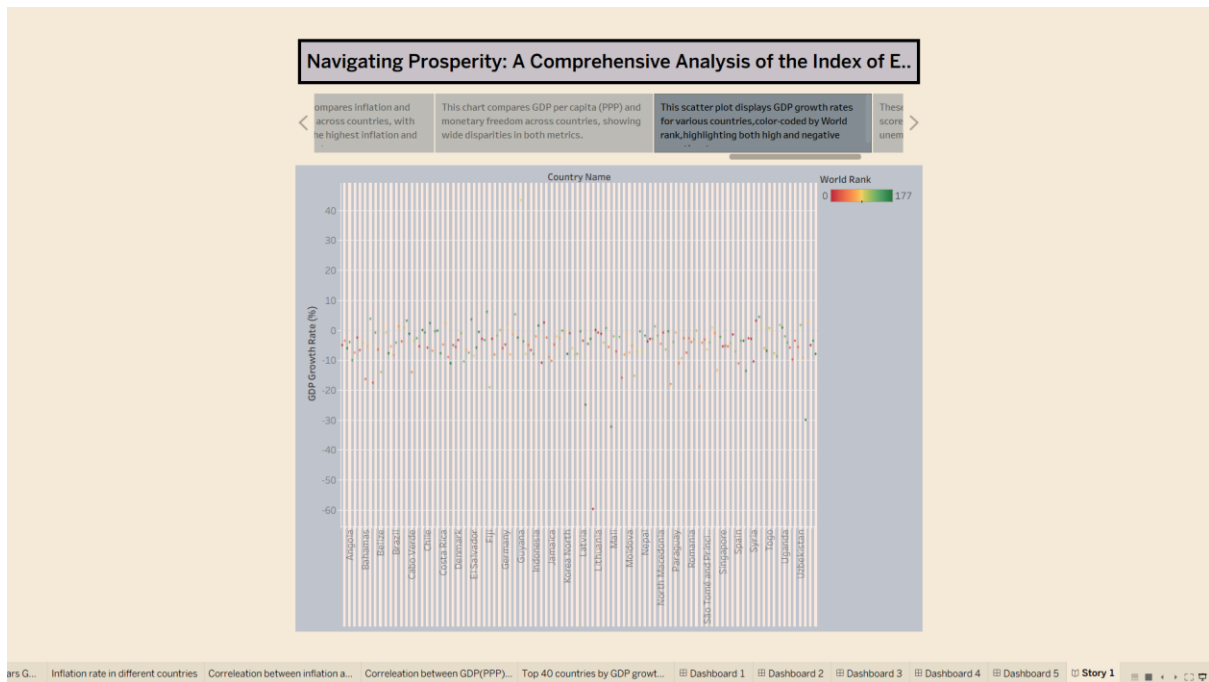
This bar chart displays the inflation rates of various countries, highlighting extremely high inflation in Venezuela, Sudan, and Zimbabwe.

This dual-axis chart compares inflation and unemployment rates across countries, with Venezuela showing the highest inflation and

> This chart shows the inflation rates of various countries



ars G... Inflation rate in different countries Correlation between inflation a... Correlation between GDP(PPP)... Top 40 countries by GDP growth... Dashboard 1 Dashboard 2 Dashboard 3 Dashboard 4 Dashboard 5 Story 1



**Tableau public link:-**

[https://public.tableau.com/shared/95T6YDC5W?:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/shared/95T6YDC5W?:display_count=n&:origin=viz_share_link)

[https://public.tableau.com/views/Anindexofeconomicfreedomanalysisstory\\_17512627620890/Story1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Anindexofeconomicfreedomanalysisstory_17512627620890/Story1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link)

## 8. ADVANTAGES & DISADVANTAGES:-

### Advantages:-

- ❓ *Interactive Visualizations:* Users can explore data through filters, maps, and dashboards.
- ❓ *Clear Comparison:* Makes it easy to compare countries on different economic indicators.

🔍 *Quick Insights: Saves time by summarizing complex data into visuals.*

## **Disadvantages:-**

🔍 *Dependent on Data Quality: Errors in source data can affect the results.*

🔍 *Performance Issues with Large Data: Tableau can be slow with very large datasets.*

🔍 *Limited Custom Logic: Complex logic or forecasting may require external tools.*

🔍 *Requires Internet (for Cloud Access): Some dashboards need internet to fetch live data.*

## **9. CONCLUSION:-**

*The project "The Pulse of Prosperity: An Index of Economic Freedom Analysis" successfully uses Tableau to visualize key economic indicators across countries. It helps users understand how different nations perform in terms of....*

## **10. FUTURE SCOPE:-**

📊 *Add Real-Time Data: Connect live economic data sources (like World Bank or IMF APIs) for real-time updates.*

🌐 *Include More Countries and Years: Expand the dataset to include more regions and historical data for deeper analysis.*

🔍 *Advanced Analysis: Use predictive models and machine learning for forecasting economic trends.*

📱 *Mobile-Friendly Dashboards: Optimize dashboards for use on mobile and tablets.*

💬 *User Feedback Integration: Add features for user comments or suggestions to improve insights.*

*Integration with Other Tools: Combine Tableau with Python or R for deeper statistical insights.*

## **11. APPENDIX:-**



### **Dataset link:-**

[https://drive.google.com/file/d/1EBIa1LtM3Ni2Uh3nekLB6wt3263Q3NeX/view?usp=share\\_link](https://drive.google.com/file/d/1EBIa1LtM3Ni2Uh3nekLB6wt3263Q3NeX/view?usp=share_link)



### **Tableau public Demo link:-**

[https://public.tableau.com/shared/95T6YDC5W?:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/shared/95T6YDC5W?:display_count=n&:origin=viz_share_link)

[https://public.tableau.com/views/Anindexofeconomicfreedomanalysisstory\\_17512627620890/Story1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Anindexofeconomicfreedomanalysisstory_17512627620890/Story1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link)



### **Video Demo Link:-**

*Measuring the pulse of prosperity: An Index of economic freedom analysis*

[https://drive.google.com/file/d/1EBIa1LtM3Ni2Uh3nekLB6wt3263Q3NeX/view?usp=share\\_link](https://drive.google.com/file/d/1EBIa1LtM3Ni2Uh3nekLB6wt3263Q3NeX/view?usp=share_link)



