Project Report Format

1. INTRODUCTION

1.1 Project Overview

The project "**Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis**" aims to explore the relationship between economic freedom and prosperity across nations. Using Tableau, we visualize, analyse , and derive insights from global economic freedom data to better understand how economic policies impact growth and development.

1.2 Purpose

The purpose of this project is to present a clear, interactive, and insightful dashboard that showcases the Index of Economic Freedom and its impact on GDP growth, business freedom, and other prosperity indicators. This analysis can guide policymakers, students, and stakeholders in making informed decisions.

2. IDEATION PHASE

2.1 Problem Statement

I am	Policy Maker / Economist / Investor / Citizen interested in Economic Development
I'm trying to	Understand the factors influencing economic freedom and prosperity in our country
But	Existing data is scattered, lacks clarity, and does not provide actionable insights
Because	There is no consolidated, easy-to-interpret analysis of the Index of Economic Freedom for informed decision-making
Which makes me feel	Uncertain about policy decisions, global competitiveness, and potential areas for improvement

2.2 Empathy Map Canvas

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviors and attitudes. It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with their goals and challenges.

SAYS	THINKS
• "We need to improve economic freedom." • "Data should drive policy decisions." • "Transparency is essential."	• "Is our economy competitive compared to others?" • "How can we use this Index to foster prosperity?" • "I hope this data reflects real-world conditions."
DOES	FEELS
• Analyzes the Economic Freedom Index data • Participates in policy discussions • Uses insights to draft recommendations	• Concerned about economic barriers and policies • Curious about how India compares globally • Motivated to enhance prosperity and growth

2.3 Brainstorming

Idea Listing:

• Collect reliable datasets on Economic Freedom Index from sources like Heritage Foundation or Fraser Institute.

• Clean and preprocess the dataset for consistency and accuracy.

• Use Tableau to create interactive visualizations showcasing global, regional, and country-wise trends.

• Compare Economic Freedom scores with other prosperity indicators like GDP per capita, Human Development Index (HDI), or Unemployment rates.

• Identify top-performing and low-performing countries and analyze key contributing factors.

• Highlight the relationship between Economic Freedom and standard of living.

• Suggest policy recommendations based on insights.

• Create dashboards that are intuitive and informative for policymakers and the general public.

Idea Grouping:

• Data Collection: Reliable data sources, additional prosperity indicators

• Data Processing: Cleaning, preparation for analysis

• Visualization: Interactive dashboards, comparative analysis

• Insights & Recommendations: Trends, correlation analysis, policy suggestions

3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

Step	Experience	Interactions	Things (Digital/ Physical)	Places (Where)	People (Who)	Positive Moments	Negative Moments	Areas of Opportunity	Goals & Motivations

Become aware of the project	Hearing about the Economic Freedom dashboard via seminars, social media, or academic circles.	Attending project launch, seeing social media posts, hearing about it in class.	Brochures, website links, social media posts.	Online platforms, educational events.	Teachers, peers, policy makers.	Curiosity sparked, realizing the relevance of economic freedom to development.	May not immediately understand the importance of Economic Freedom Index.	Use relatable examples to explain the real-world impact of economic freedom.	Help me understand why Economic Freedom matters.
Visit the dashboard	Accessing the Tableau dashboard for the first time.	Navigating the project website, clicking on dashboard link.	Project website, Tableau dashboard, mobile devices, computers.	Home, library, educational institutions.	Students, researchers, faculty.	Clean, intuitive interface; visual appeal of maps and charts.	Confusion if the interface feels complicated or data is overwhelming.	Include guided tour or introductory video.	Help me explore Economic Freedom data with ease.
Explore the data	Browsing the Index data by country, region, or economic indicator.	Clicking through filters, changing views, reading tooltips.	Interactive filters, maps, charts, summary panels.	On their device anywhere.	Self-guided, optional faculty support.	Discovering interesting trends; comparing regions.	Overwhelmed by too many metrics or complex terms.	Provide simple definitions, highlight key takeaways.	Help me interpret the data without needing technical expertise.
Analyze and Interpret	Looking for patterns, making inferen	Taking notes, discussing with classmates,	Downloadable reports, annotation tools, note-	Classrooms, home, research	Students, mentors, peers.	Feeling empowered by understanding comple	Misinterpreting data due to lack of econom	Embed short explainers or use case	Help me draw meaningful conclusi

	ces about economic freedom and prosperity.	exporting charts.	taking apps.	spaces.		x global data.	ic background.	examples alongside charts.	ons from the data.
Apply Insights	Using insights for academic work, presentations, or policy suggestions.	Preparing presentations, writing reports, discussing with faculty or policymakers.	PPT templates, report formats, downloadable datasets.	Academic institutions, policy forums.	Students, faculty, policy makers.	Contributing to discussions with data-driven points.	Technical barriers in accessing raw data or exporting visuals.	Provide easy-to-use export and report generation tools.	Help me present this data effectively to different audiences.
Share and Reflect	Sharing experience with others, giving feedback on the dashboard.	Leaving feedback, participating in surveys, discussing improvements.	Feedback forms, user surveys, email, project social media.	Online, during project events.	Project team, peers.	Feeling part of a meaningful, data-driven initiative.	Feedback process may feel tedious or impact unclear.	Show how feedback has shaped updates; celebrate contributors.	Help me feel like my feedback shapes future improvements.

3.2 Solution Requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Access to Dashboard	Access through Web Application Responsive Interface for Mobile & Tablet Devices
FR-2	Data Exploration	Apply Filters by Region, Country, Indicator, and Year View Interactive Charts & Graphs

FR-3	Insight Generation	Display Summary Insights below visualizations Show Global and Regional Comparisons
FR-4	Data Export	Export Data as PDF/Excel Export Visualizations as Image/PDF
FR-5	Administrative Access	Data Upload & Update in Backend Manage User Feedback and Suggestions

Non-functional Requirements

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Simple, intuitive UI to ensure easy access and data interpretation.
NFR-2	Security	User authentication, role-based access control, and protection of user data.
NFR-3	Reliability	System ensures consistent availability and accurate data presentation.
NFR-4	Performance	Dashboard loads within acceptable time, even with large datasets.
NFR-5	Availability	System available 24/7 with minimal downtime.
NFR-6	Scalability	Supports increasing number of users and additional datasets in the future.

3.3 Data Flow Diagram

DFD- Level 0 (Context Diagram)

[User] -----> [Economic Freedom Analysis System] <-----> [Data Source (Economic Freedom Index, World Bank, etc.)]

DFD- Level 1 (Simplified Breakdown)

[User]
|
|---> View Dashboard ---> [Visualization Module] ---> Displays Interactive Charts
|
|---> Apply Filters ---> [Filter Module] ---> Shows Filtered Data
|
|---> Export Data ---> [Export Module] ---> Generates Report

3.4 Technology Stack

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Web-based dashboard interface	Tableau Public, HTML, CSS, JavaScript
2	Application Logic - 1	Data processing and visualization logic	Tableau Visualization Logic, Python (for backend tasks)
3	Application Logic - 2	Data preprocessing and cleaning	Python (Pandas, NumPy)
4	Application Logic - 3	Data sourcing and updates	Python Scripts / Tableau Data Extracts
5	Database	Storage of raw and processed data	Google Sheets, CSV Files, or Local Database (SQLite)
6	Cloud Database	Cloud storage for datasets (optional)	Google Drive / Tableau Cloud
7	File Storage	Storage for reports and exported files	Local Filesystem, Google Drive
8	External API - 1	Global Economic Data APIs	World Bank API, IMF Data API
9	External API - 2	Country Information APIs	REST Countries API
10	Machine Learning Model	Trend prediction or pattern detection (future scope)	Regression Models in Python (Optional - future)
11	Infrastructure (Server/Cloud)	Hosting environment for Tableau dashboard or reports	Tableau Public, Optional Cloud Hosting (AWS, Azure)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Data processing and API interaction	Python (Pandas, Requests), JavaScript
2	Security Implementations	Restricted access to data upload and backend management	Password protection, Google Drive access controls
3	Scalable Architecture	Dashboard supports increasing data and user base	Tableau Public allows scalability for visualizations
4	Availability	Dashboard hosted on Tableau Public ensures 24/7 global availability	Tableau Public, Cloud storage redundancy
5	Performance	Optimized data extracts, caching where applicable	Tableau Extracts, Optimized visualizations

4. PROJECT DESIGN

4.1 Problem Solution Fit

Problem:

In today's data-driven world, policymakers, businesses, and citizens struggle to access clear, actionable insights into the economic environment of their regions. Existing reports on economic freedom are often scattered, complex, and difficult to interpret for decision-making. This lack of accessible, visual, and region-specific economic freedom data creates gaps in understanding how factors like regulatory efficiency, market openness, and government integrity influence prosperity and growth.

Solution:

Our project provides an intuitive, interactive Tableau dashboard that visualizes the Index of Economic Freedom for different regions. By transforming raw economic data into easy-to-understand visual insights, the project bridges the gap between complex datasets and informed decision-making. Users can explore, compare, and analyze economic freedom indicators, empowering policymakers, businesses, students, and the public to make better economic decisions.

4.2 Proposed Solution

Proposed Solution

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Policymakers, businesses, and the general public lack easy access to clear, visual, and actionable insights regarding the economic freedom of different regions. Existing reports are complex, scattered, and difficult to interpret, making it hard to understand how economic freedom impacts prosperity.
2	Idea / Solution Description	The project provides an interactive Tableau dashboard that visualizes the Index of Economic Freedom across regions. It transforms complex economic data into simple, intuitive visuals, enabling users to explore, compare, and analyze key indicators like regulatory efficiency, market openness, and government integrity.
3	Novelty / Uniqueness	The project stands out by offering a real-time, interactive, and user-friendly platform that combines complex economic data with accessible visual analytics. Unlike traditional static reports, this solution empowers users to explore region-specific data dynamically, fostering deeper understanding and better decision-making.
4	Social Impact / Customer Satisfaction	By making economic freedom data transparent and accessible, the project promotes informed policy-making, business growth, and public awareness. It helps drive positive changes in governance and economic environments, ultimately enhancing prosperity and satisfaction among citizens and stakeholders.
5	Business Model (Revenue Model)	While this project is primarily designed for academic and social benefit under APSCHE, it has potential future revenue models such as subscription-based

		access for advanced analytics, partnerships with research institutions, or consulting services for policy-makers and organizations.
6	Scalability of the Solution	The solution is highly scalable. Additional datasets (such as global economic indicators or sector-specific data) can be integrated, and the dashboard can be expanded to cover more regions, countries, or time periods. Its platform-independent nature ensures it can reach a broad audience with minimal technical barriers.

4.3 Solution Architecture

Solution Architecture Description:

The project utilizes a data visualization platform (Tableau) integrated with reliable economic data sources to deliver interactive, real-time dashboards. The architecture ensures that raw economic data is collected, processed, and visualized for easy interpretation by end users, including policymakers, businesses, and students.

Key Components:

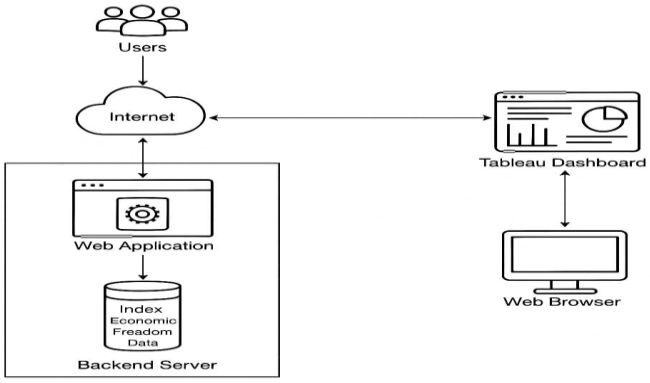
1. Data Sources:
   Economic Freedom Index Datasets
   GDP Growth and Economic Indicators
   Open Government or Institutional Data
2. Data Processing Layer:

Data Preprocessing (Cleaning, Formatting)

o Integration and Transformation

o Calculation Fields (e.g., GDP Growth Rate, Composite Scores)

3. Visualization & Analytics Layer:
   o Tableau Desktop & Tableau Public/Server o Interactive Dashboards
   o Filters, Comparison Tools, Graphs & Maps
4. End Users:
   o Policymakers
   o Businesses & Investors



Solution Architecture

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

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

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Dashboard Setup	USN-1	As a user, I can view the main dashboard showing key indicators of Economic Freedom	3	High	Self
Sprint-1	Data Import & Preprocessing	USN-2	As a user, I can import and preprocess datasets for Economic Freedom and related indicators	2	High	Self
Sprint-1	Data Filtering Functionality	USN-3	As a user, I can apply filters to view data based on country, region, or year	2	Medium	Self
Sprint-2	Index Calculation	USN-4	As a user, I can compute the Index of Economic Freedom using calculated fields	3	High	Self
Sprint-2	GDP Growth Integration	USN-5	As a user, I can integrate GDP growth as a	2	Medium	Self

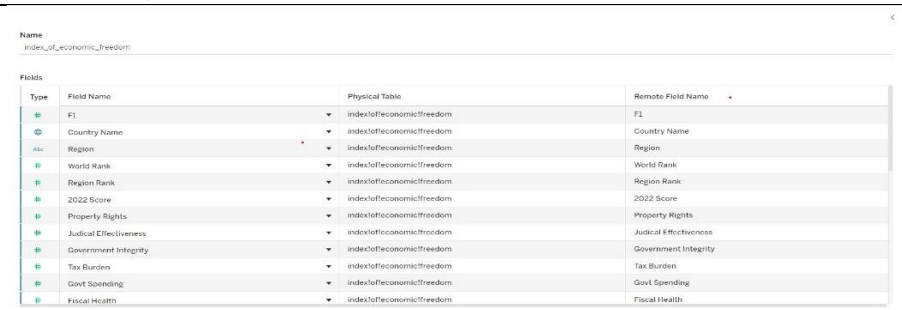
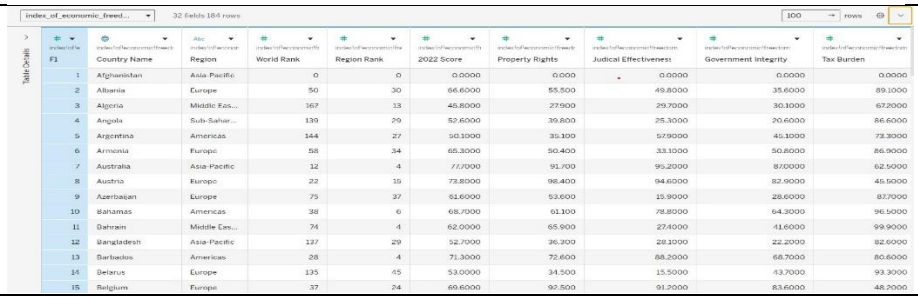
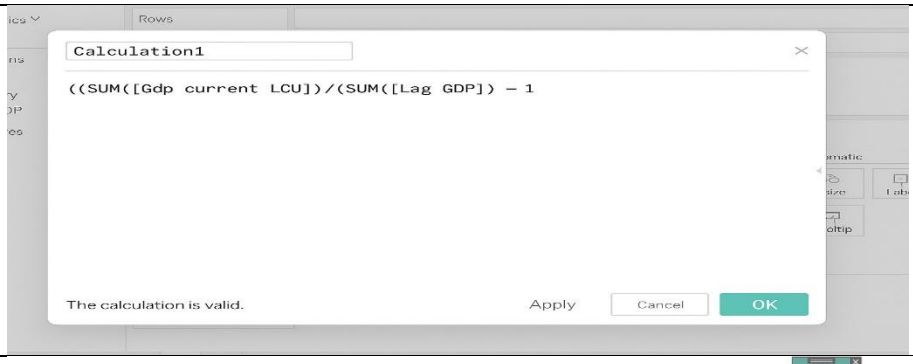
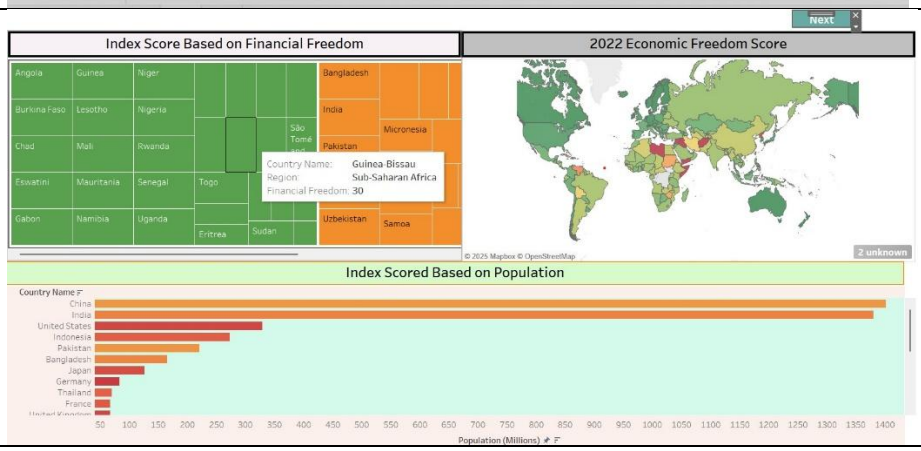
			comparative indicator on the dashboard			
Sprint-2	Visualizations Development	USN-6	As a user, I can view bar charts, maps, and trend graphs representing the Index and related metrics	4	High	Self
Sprint-3	User Interaction Enhancement	USN-7	As a user, I can interact with visualizations using hover tooltips and drill-downs	3	Medium	Self
Sprint-3	Report Export Feature	USN-8	As a user, I can export visualizations or insights as PDF or image files	2	Low	Self

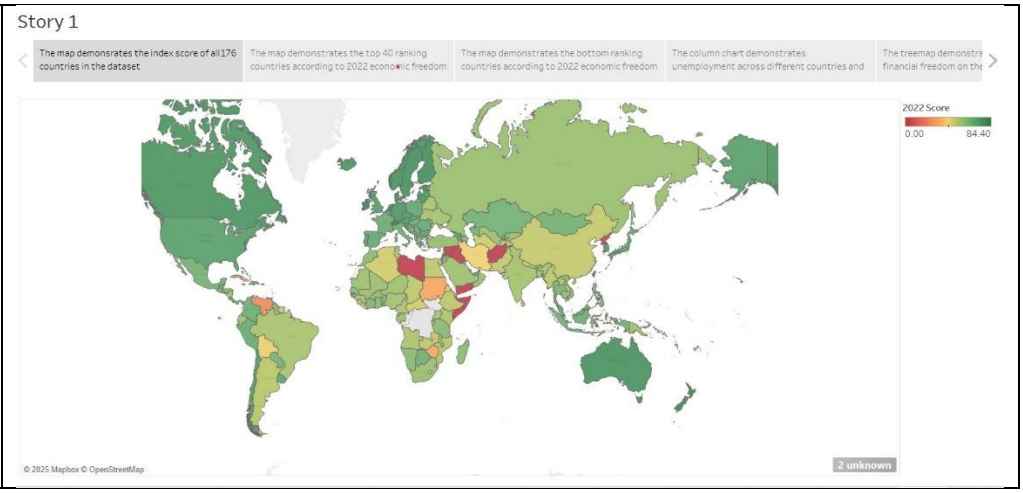
Project Tracker, Velocity & Burndown Chart (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date	Story Points Completed	Sprint Release Date
Sprint-1	7	5 Days	14 June 2025	18 June 2025	7	18 June 2025
Sprint-2	9	5 Days	19 June 2025	23 June 2025	9	23 June 2025
Sprint-3	5	5 Days	24 June 2025	28 June 2025	5	28 June 2025

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

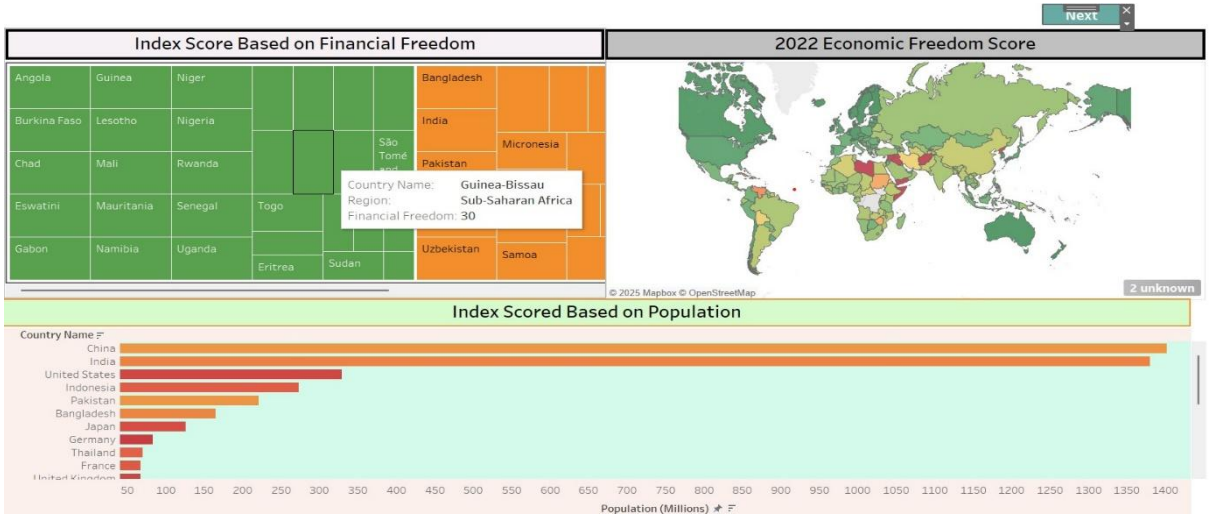
S.No.	Parameter	Screenshot / Values
1.	Data Rendered	
2.	Data Preprocessing	
3.	Utilization of Filters	Year filter, Region filter, World Rank filter, Country filter applied in Tableau dashboard.
4.	Calculation fields Used	
5.	Dashboard design	

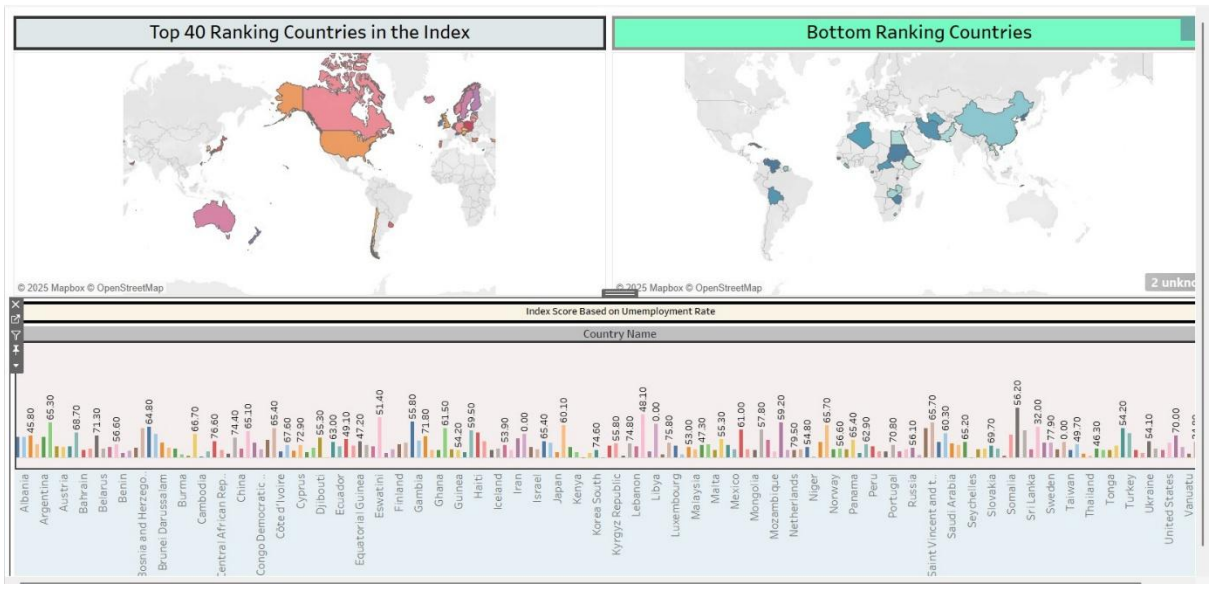
6.	Story Design	

7. RESULTS

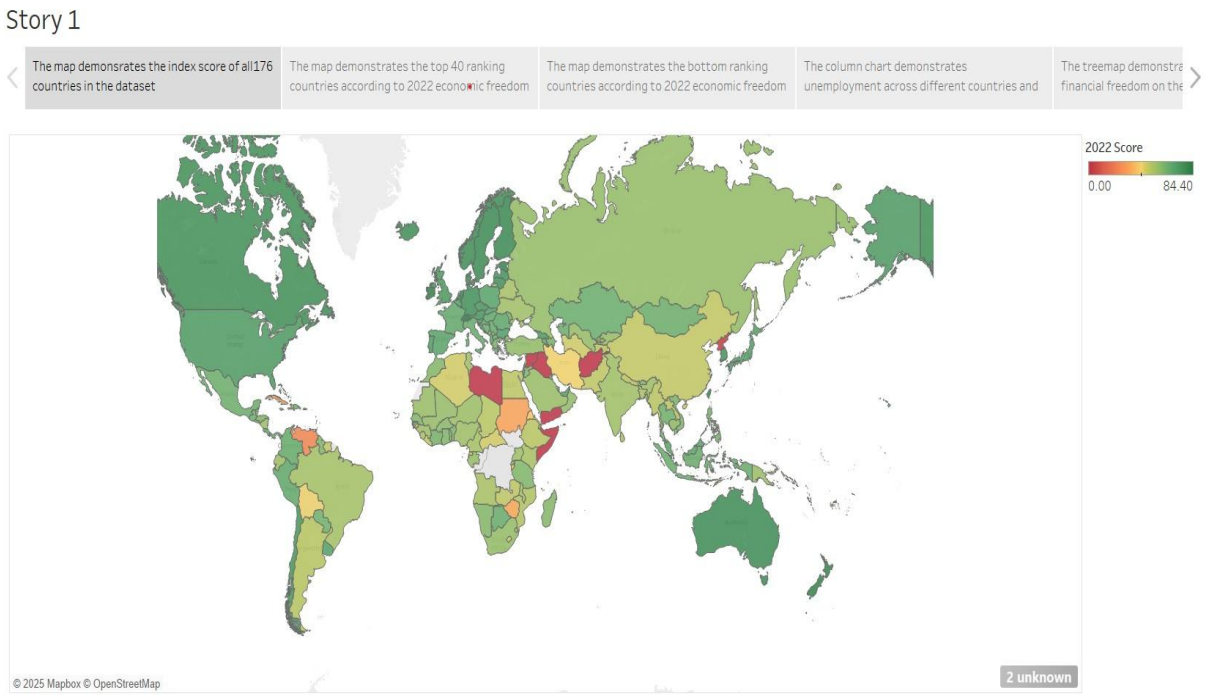
7.1 Output Screenshots

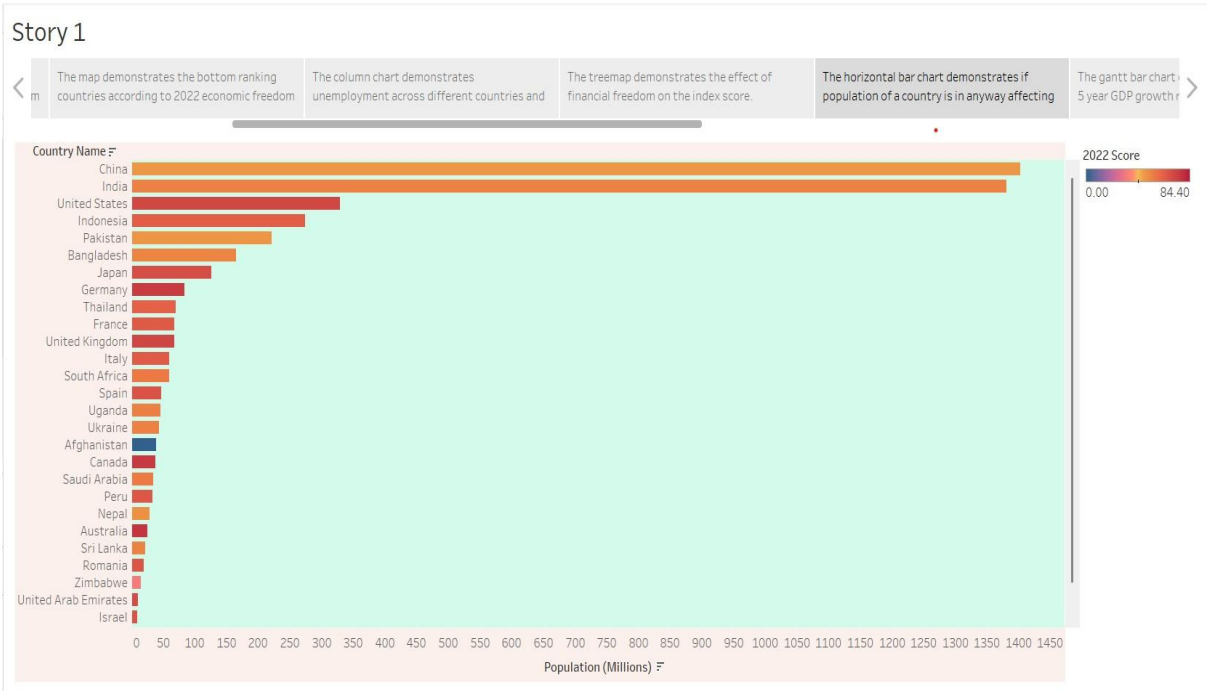
Dashboard





Story





8. ADVANTAGES & DISADVANTAGES

Advantages

- User-friendly, interactive visuals.
- Facilitates data-driven insights.
- Accessible to non-technical users.

Disadvantages:

- Limited to available dataset accuracy.
- Tableau Public may have feature limitations.

9. CONCLUSION

The project successfully demonstrates how data visualization can simplify complex economic datasets and help users understand the impact of economic freedom on prosperity.

10. FUTURE SCOPE

- Include more economic indicators (e.g., Inflation, FDI).
- Real-time data updates.
- Predictive analytics integration.

11. APPENDIX

Dataset Link :**link**

Project demo link: https://drive.google.com/file/d/13ZUEx_pXO_77tLxYIeQykSjFWoFnIDYQ/view

Github link:https://github.com/shamanth-25/Measuring-the-Pulse-of-Prosperity-An-Index-of-Economic-Freedom-Analysis