PROJECT REPORT

. INTRODUCTION

1.1 Project Overview

The project titled *"Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis"* focuses on understanding global economic patterns through visual analytics. By using Tableau, the project explores relationships between economic freedom scores and various macroeconomic indicators such as GDP per capita, inflation, unemployment, and financial freedom. The goal is to present complex data in an intuitive, interactive, and accessible way through dashboards and storyboards. The project not only highlights high and low-performing countries but also provides insight into how economic freedom correlates with national prosperity.

1.2 Purpose

The purpose of this project is to provide researchers, students, and policymakers with a powerful visual tool to analyze and interpret economic freedom data. By transforming raw datasets into meaningful visualizations, the project aims to:

- Enhance understanding of how different economic factors are interlinked.
- Assist in identifying regional disparities in economic freedom.
- Support evidence-based policy formulation.
- Enable exploratory analysis for academic or strategic decision-making. Ultimately, this project demonstrates how data visualization can make economic concepts more accessible and actionable.

2.IDEATION PHASE

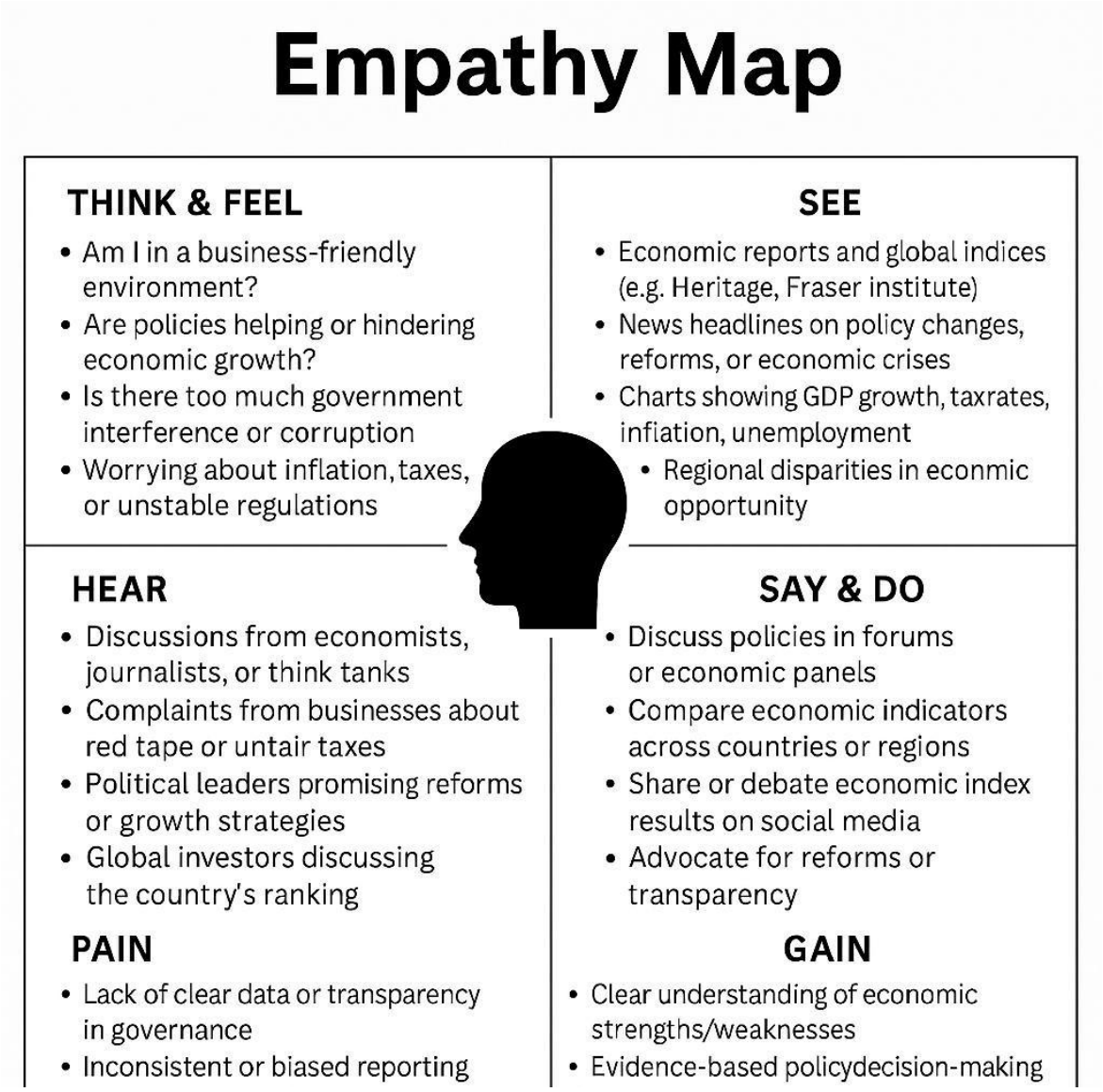
2.1 Problem Statement

Customer Problem Statement for Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis using Tableau:-

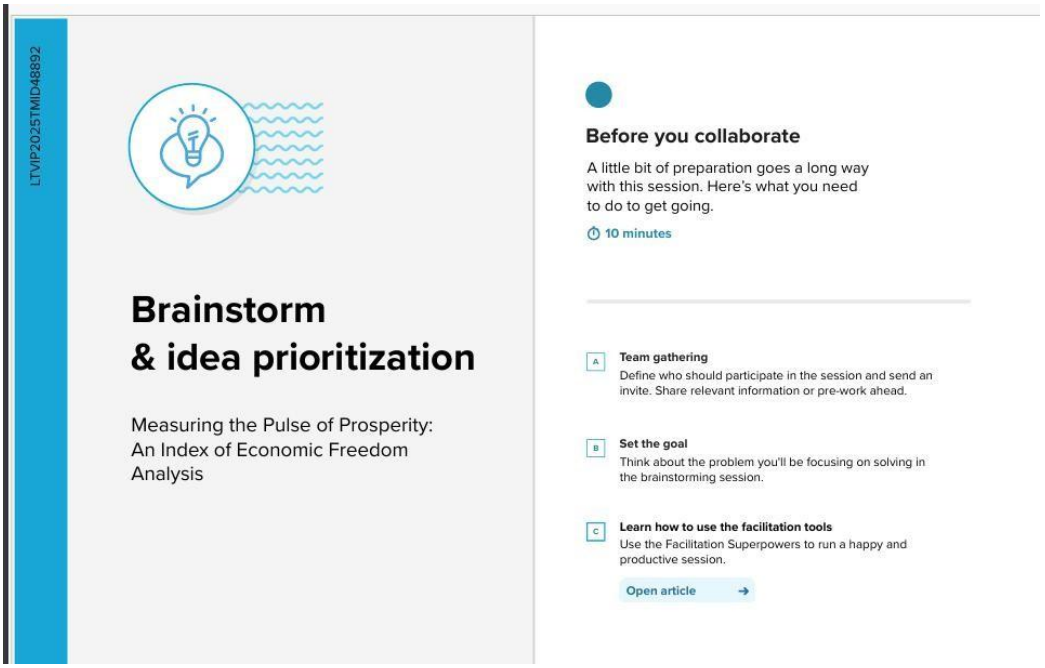
Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a policymaker or researcher	identify how different countries' economic freedom correlates with indicators like inflation, unemployment, and GDP	I can't easily compare countries or spot meaningful relationships	the data is large, complex, and not visually structured	overwhelmed and unsure about deriving actionable insights

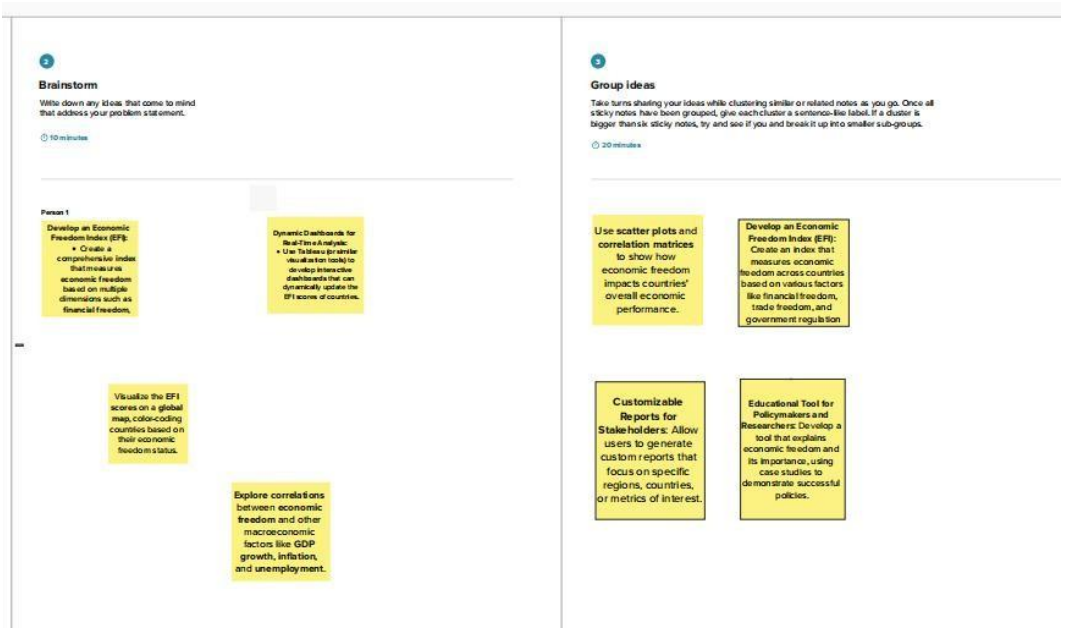
PS-2	a student or analyst	learn how financial freedom and economic indicators vary by region	I can't explore or interpret the data interactively	static data lacks engaging, comparative visual formats	disconnected and confused while learning or analyzing

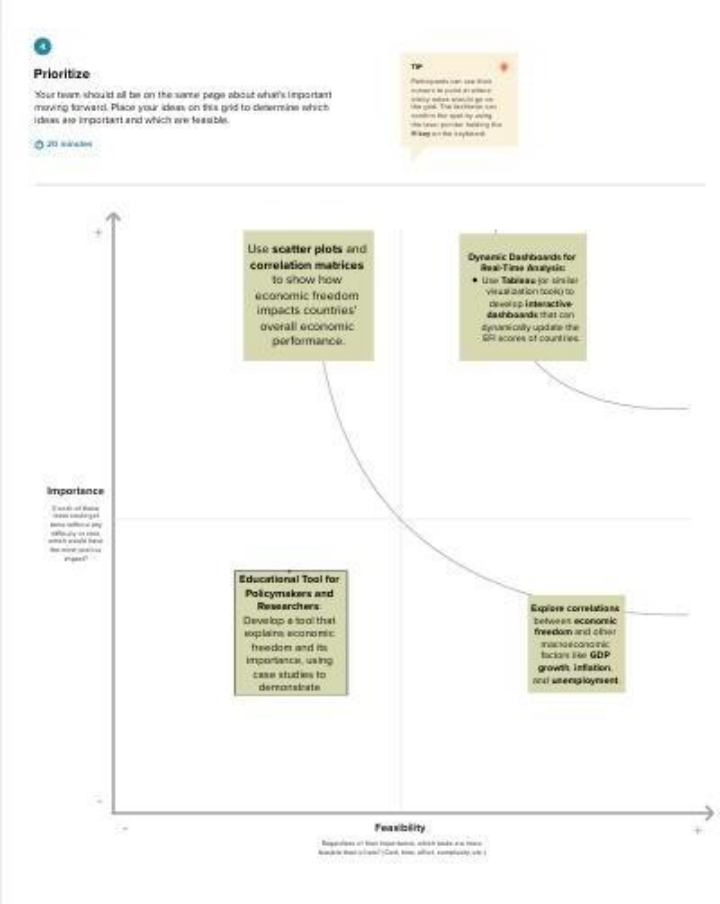
2.2 Empathy Map Canvas



2.3 Brainstorming







3 REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Steps / Elements	Discover	Explore	Analyze	Share	Reflect
What does the person typically experience?	Becomes aware of economic freedom datasets (Heritage, World Bank).	Explores economic indicators across countries.	Identifies trends or correlations in the data.	Prepares dashboards and reports.	Considers implications of insights for policy.
Interactions	Articles, academic discussions, social media posts.	Manual comparisons or with basic tools.	Uses visual/statistical tools.	Builds storyboards or reports.	Policy papers or forums.
Things (Touchpoints)	Websites, Tableau Public, journals.	Spreadsheets, Tableau dashboards.	Charts, scatterplots, correlation maps.	PowerPoint, Tableau story dashboards.	Discussion boards, benchmarking tools.

Places	Home, school, workplace.	Research lab, classroom.	Office, data labs.	Seminar rooms, online presentations.	Policy review panels.
People	Peers, professors, analysts.	Mentors, teachers, colleagues.	Students, team members.	Supervisors, stakeholders.	Experts, decision-makers.
Goals & motivations	Help me understand what economic freedom is.	Help me explore and compare data easily.	Help me derive insights from complex data.	Help me present findings clearly.	Help me grasp long-term value of economic freedom.
Positive moments	Excitement from discovery.	Engagement through interactivity.	Confidence in visual patterns.	Pride in presenting analysis.	Inspiration to influence change.

3.2 Solution Requirement

Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Access & Authentication	Registration via Form, Gmail, LinkedIn
FR-2	User Verification	Confirmation via Email and OTP
FR-3	Data Visualization Dashboard	Interactive index graphs, country comparison, year-wise trends
FR-4	Data Upload & Management	Upload datasets (CSV/XLSX), edit indicators
FR-5	Index Calculation Engine	Normalize indicators,

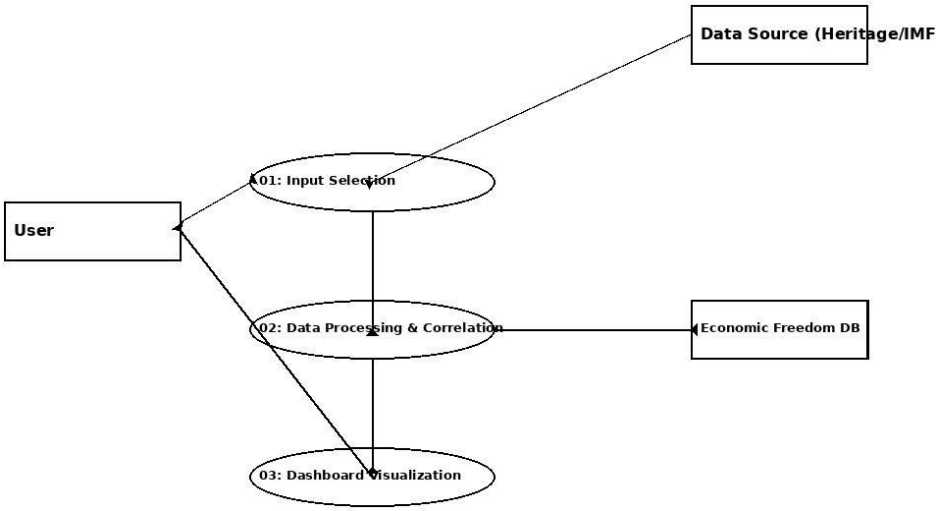
		compute composite scores
FR-6	Search & Filter Capability	Filter by country, region, year, or index category
FR-7	Report Generation	Export summary reports (PDF/Excel), customizable charts
FR-8	User Feedback & Insights	Comments, upvotes on data accuracy, suggest new indicators

Non-Functional Requirements:

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	Interface should be intuitive for users with basic economic knowledge
NFR-2	Security	Ensure user data and economic inputs are secure, HTTPS & auth layers

NFR-3	Reliability	System should recover smoothly from unexpected crashes or errors
NFR-4	Performance	Response time for dashboard updates and search should be under 2 seconds
NFR-5	Availability	99.9% uptime guarantee for users and researchers
NFR-6	Scalability	Should support 10K+ concurrent users and future indicator expansion

3.3 Data Flow Diagram



3.4 Technology Stack

PROJECT REPORT

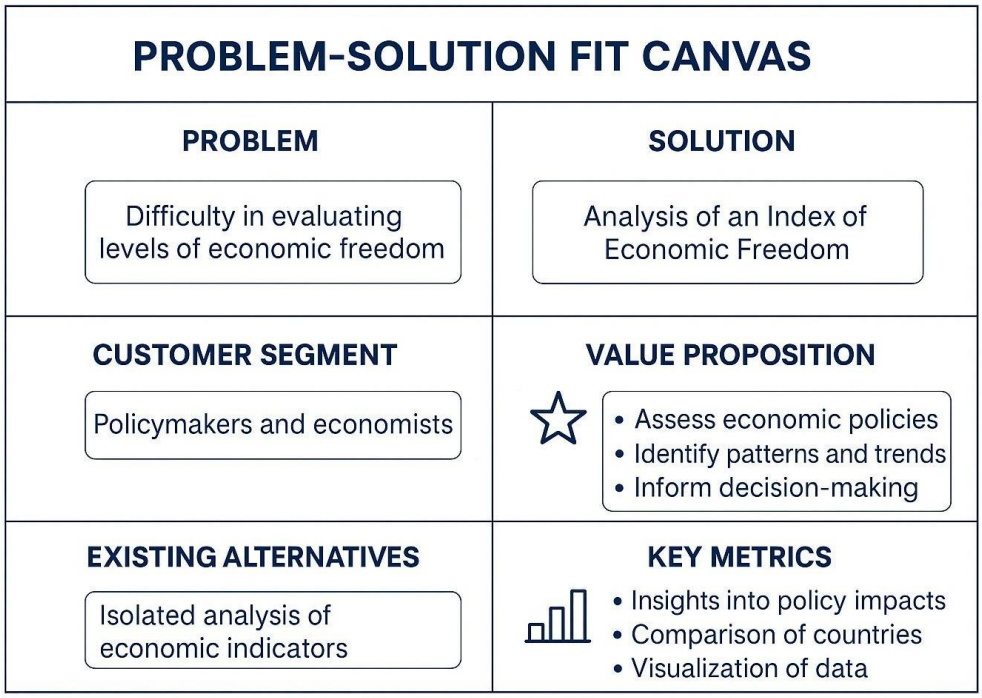
S.No	Component	Description	Technology
1	User Interface	How user interacts with application	Tableau Public
2.	Application Logic-1	Data preprocessing & normalization	Tableau filters and parameters
3.	Application Logic-2	Data visualization logic	Tableau dashboards & calculated fields
4.	Application Logic-3	Visualization integration	Tableau Public API
5.	Database	Housing dataset (CSV)	Excel / CSV
6.	Cloud Database	Hosted data files	Google Drive / Tableau Public
7.	File Storage	Upload economic reports & CSVs	Local system / Tableau
8.	External API-1	Fetch global economic index data	Tableau public
9.	External API-2	Country metadata & statistics	Tableau public
10.	Machine Learning Model	Not used	—
11.	Infrastructure (Server / Cloud)	Tableau hosted online	Tableau Public

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Uses Tableau Public (free) and data from Kaggle or open housing sources	Tableau Public, Excel
2.	Security Implementations	Tableau's built-in privacy and publishing settings	Tableau Privacy Settings
3.	Scalable Architecture	Can scale to visualize larger datasets or additional regions	Tableau filters, cloud storage
4.	Availability	Hosted 24/7 on Tableau Public	Tableau Public
5.	Performance	Optimized dashboard design, fast filters, small file size	Tableau filters, pre-aggregated data

4 PROJECT DESIGN

4.1 Problem Solution Fit

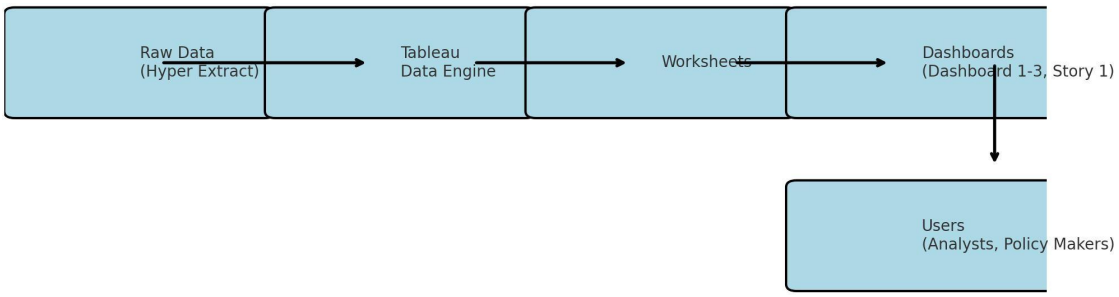


4.2 Proposed Solution

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Economic indicators like inflation, unemployment, and GDP are difficult to interpret from raw datasets. Users such as researchers, students, and policymakers face difficulty identifying trends and relationships between economic freedom and these macroeconomic variables.
2	Idea / Solution description	Build an interactive visualization using Tableau that leverages the Index of Economic Freedom dataset. The dashboard will provide clear, comparative visuals—such as scatter plots, treemaps, and rankings—to explore relationships across regions and indicators, and will be integrated into a web interface.

3	Novelty / Uniqueness	The use of Tableau Story with interactive dashboards, combined with a region-wise breakdown and index scoring, offers a comprehensive yet intuitive way to explore large-scale economic datasets—something traditional spreadsheets or reports lack.
4	Social Impact / Customer Satisfaction	Enables better decision-making for researchers, students, and policymakers. Helps improve economic literacy and awareness of key macroeconomic issues and indicators, especially in underrepresented regions like Sub-Saharan Africa.

4.3 Solution Architecture



5 PROJECT PLANNING & SCHEDULING

5.1 Project planning

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 can load data into the processing environment	1	High	Pamireddy Suneetha
Sprint-1	Data Preprocessing	USN-2	As a user, I can recognize the values which can Be used	2	Medium	Mb Mahendra
Sprint-2	Data Processing	USN-3	As a user, I am able to make the data efficient to use	2	Medium	P Ram Prasad
Sprint-3	Creating Visualizations	USN-4	As a user, I can build the models based on the processed data	5	High	Mohammed Abdul Vakil
Sprint-4	Dashboards & Stories	USN-5	As a user, I can create the user friendly Dashboards and Stories	2	High	Mohammed Abdul vakil
Sprint-5	Report & Documentations	USN-6	As a user, I can create the report as documentation process	3	Medium	Pamireddy suneeta,Mohammed

PROJECT REPORT

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	1 Days	22 June 2025	22 June 2025	20	22 June 2025
Sprint-2	20	1 Days	23 June 2025	23 June 2025	20	23 June 2025
Sprint-3	20	1 Days	24 June 2025	24 June 2025	20	24 June 2025
Sprint-4	20	1 Days	25 June 2025	25 June 2025	20	25 June 2025
Sprint-5	20	1 Day	26 June 2025	26 June 2025	20	26 June 2025

6 FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

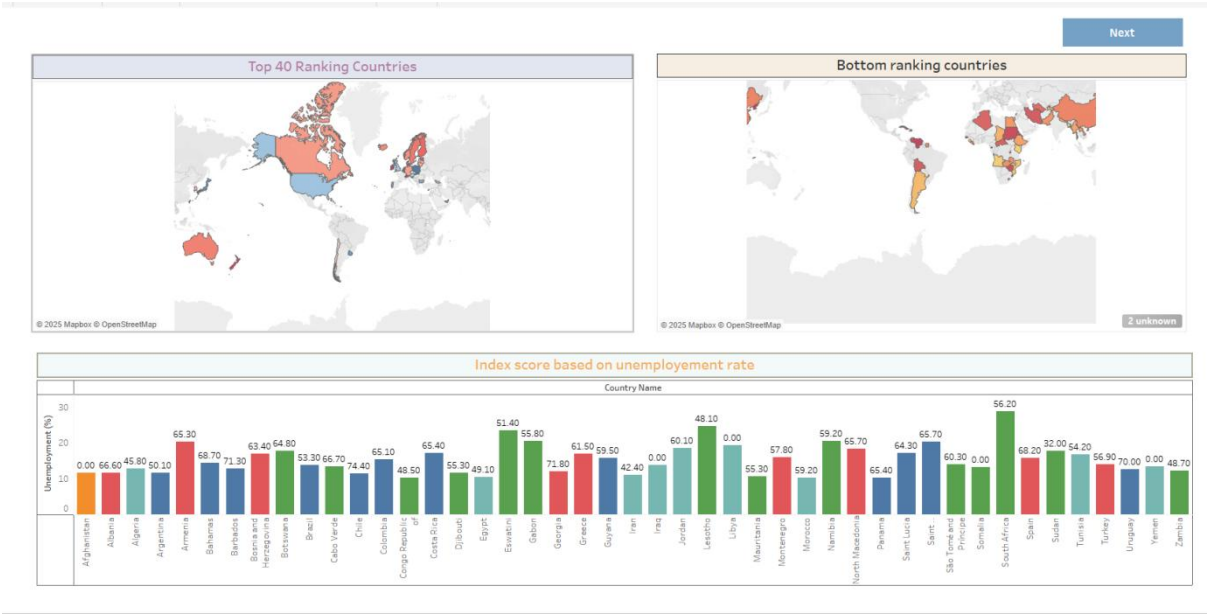
S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Rendered the data from cleaned csv file with world rank,investment freedom , monetary freedom etc loaded nearly 190 rows
2.	Data Preprocessing	Cleaned column names (e.g., "Judical" corrected to "Judicial")- Verified data types for compatibility- Removed/handled missing values if any
3.	Utilization of Filters	Applied Tableau filters for world rank,country name, GDP Growth Rate(%)
4.	Calculation fields Used	-
5.	Dashboard design	No of Visualizations / Graphs – 3 Dashboards with 8 Visualizations
6	Story Design	No of Visualizations / Graphs – 1story with 11 visualizations

7 RESULTS

7.1 Output Screenshots

DASHBOARDS

PROJECT REPORT



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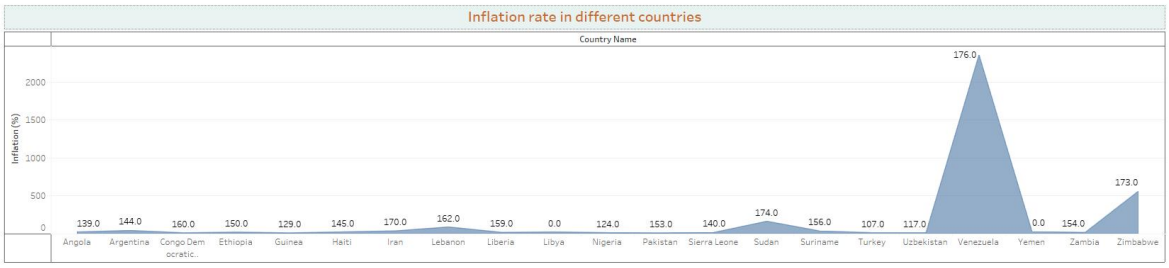
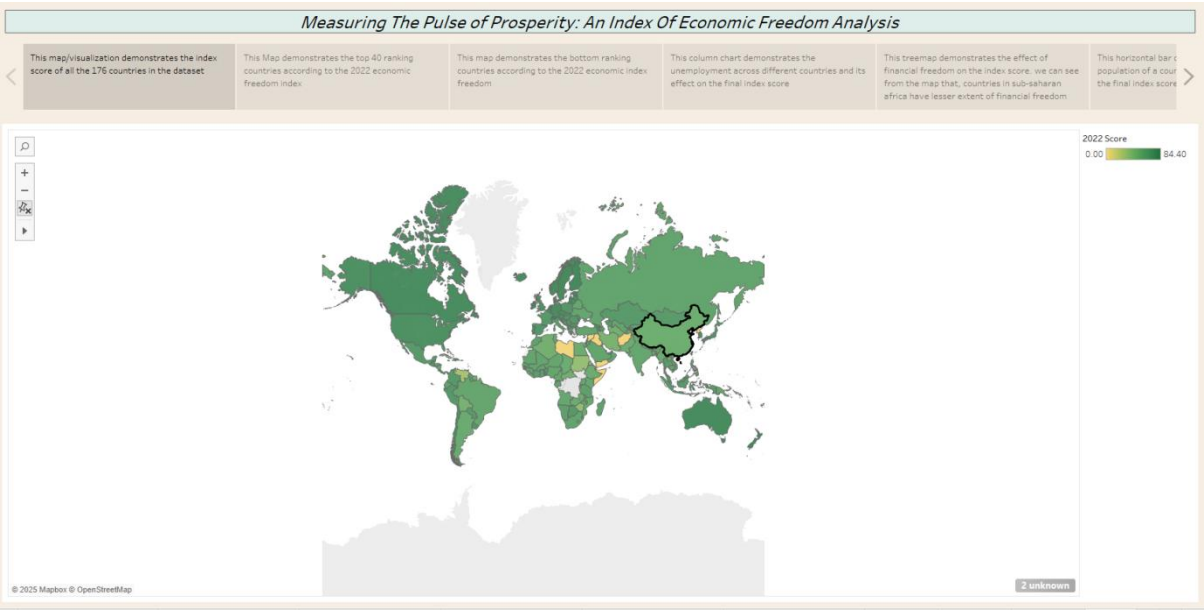


STORY OUTPUTS:



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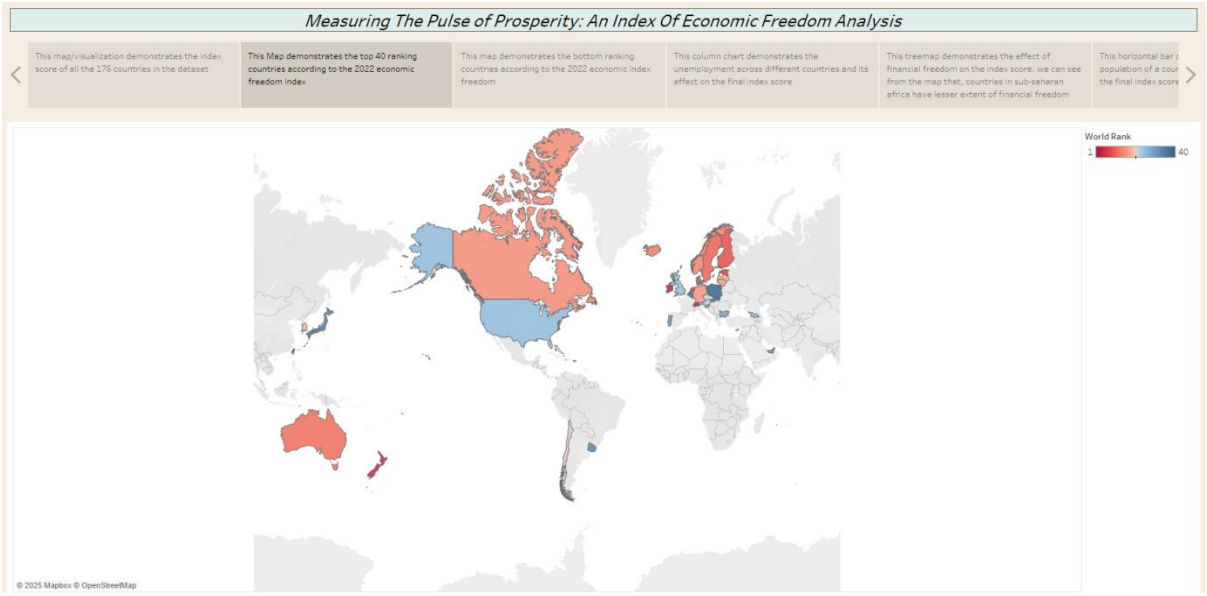

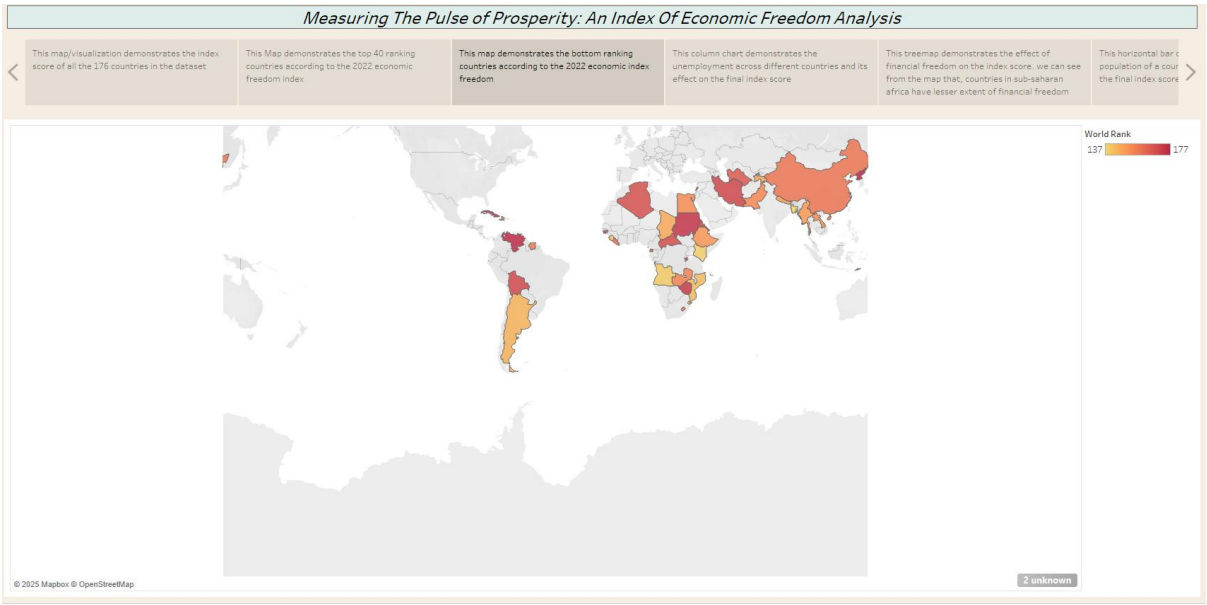

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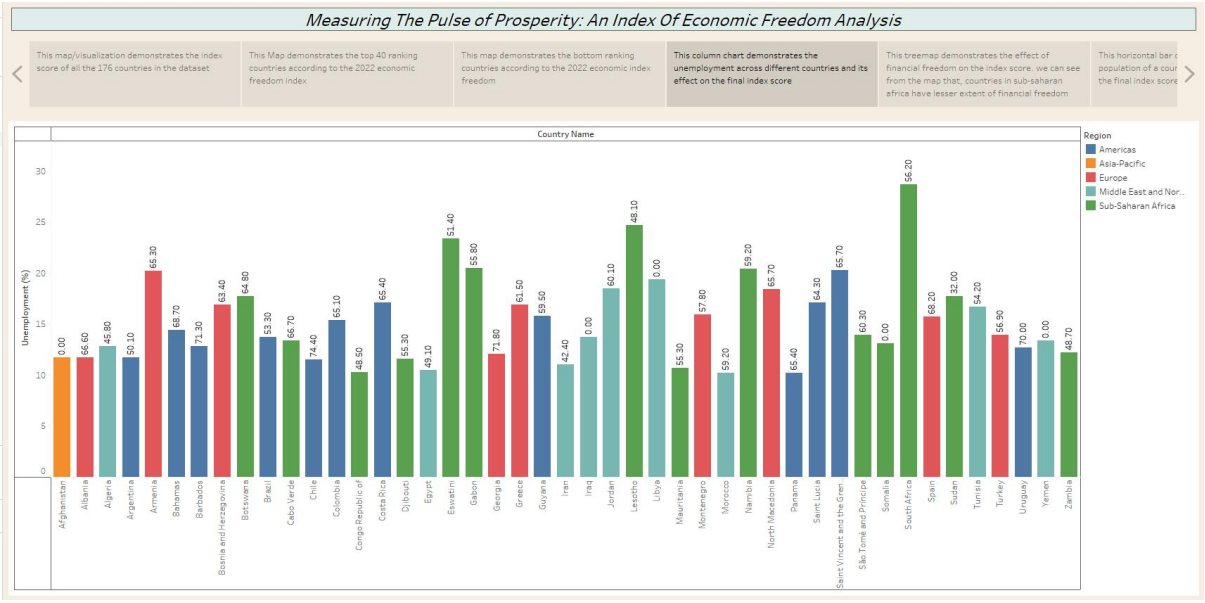

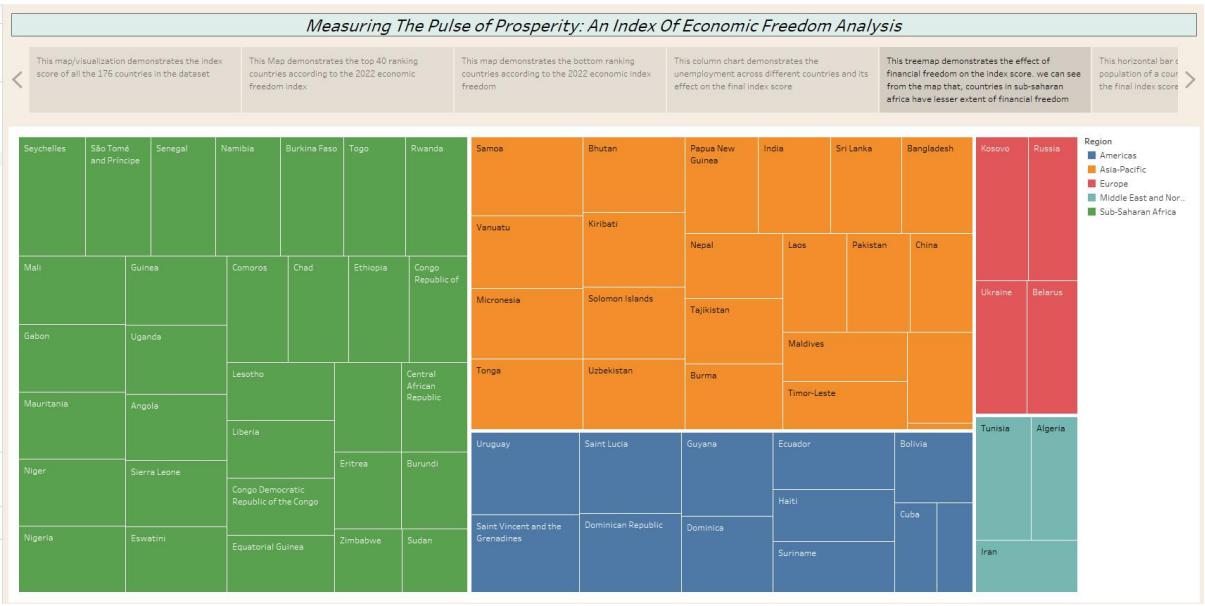

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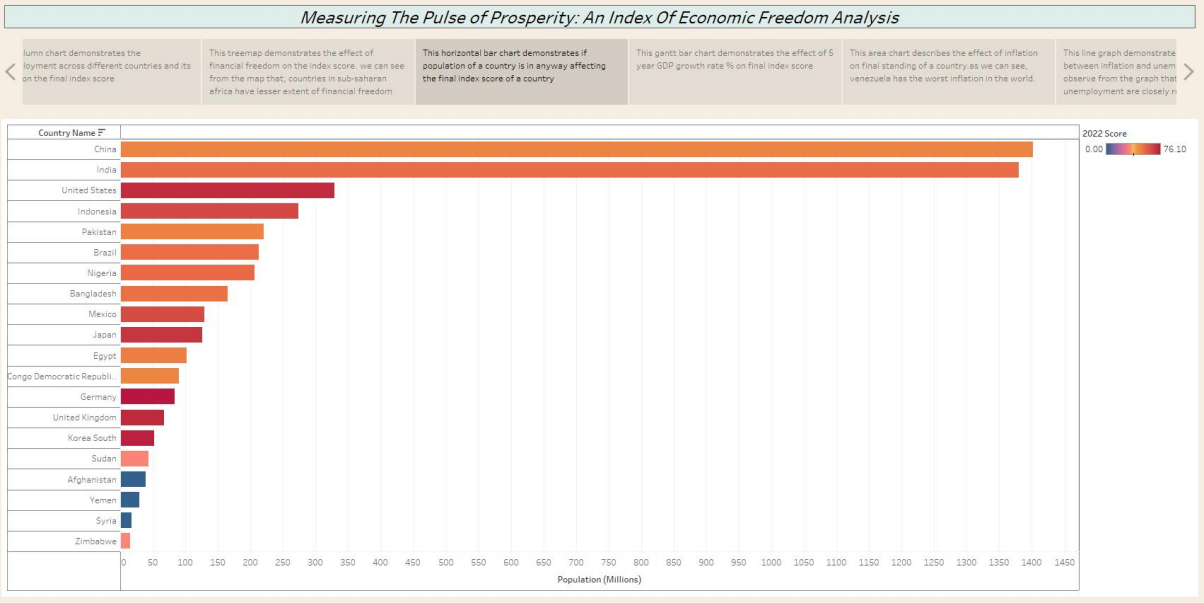

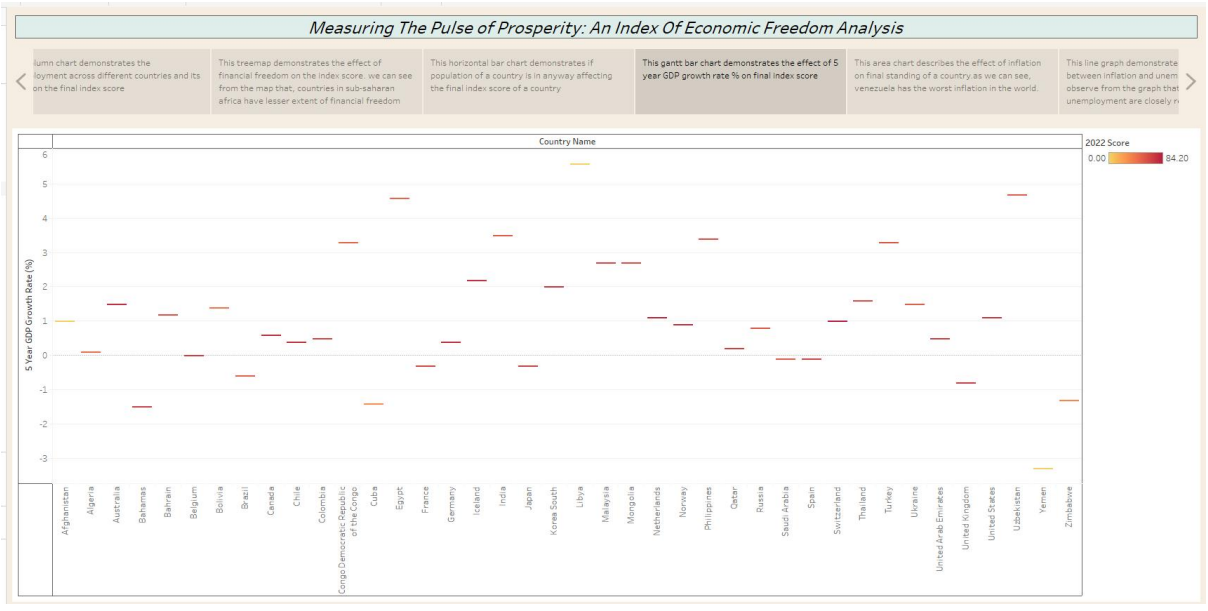

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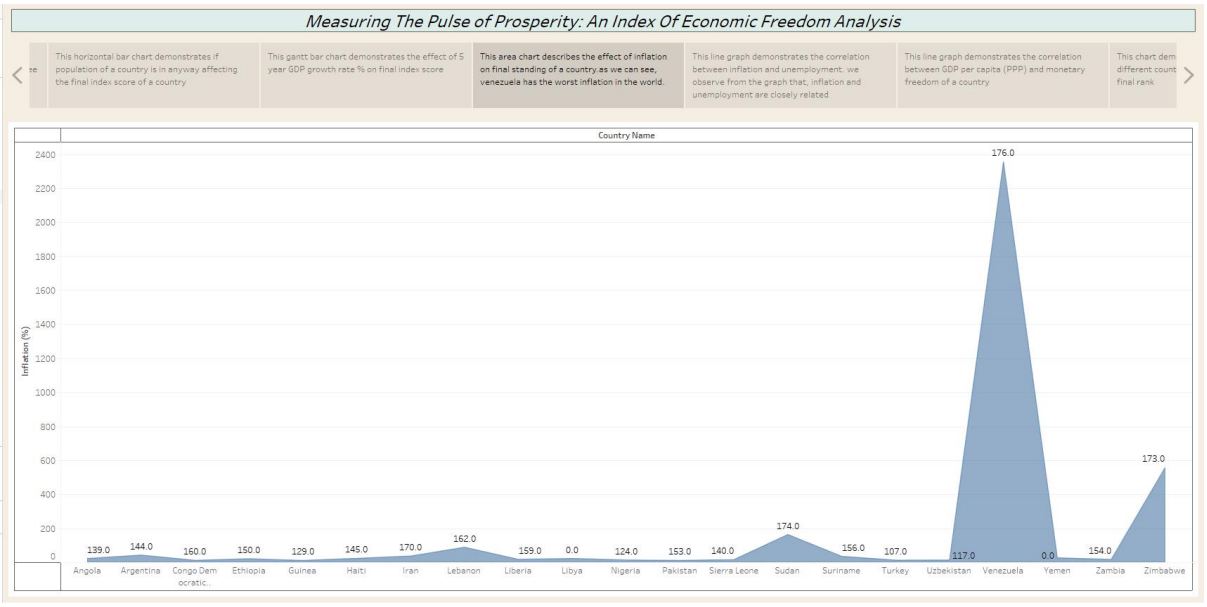

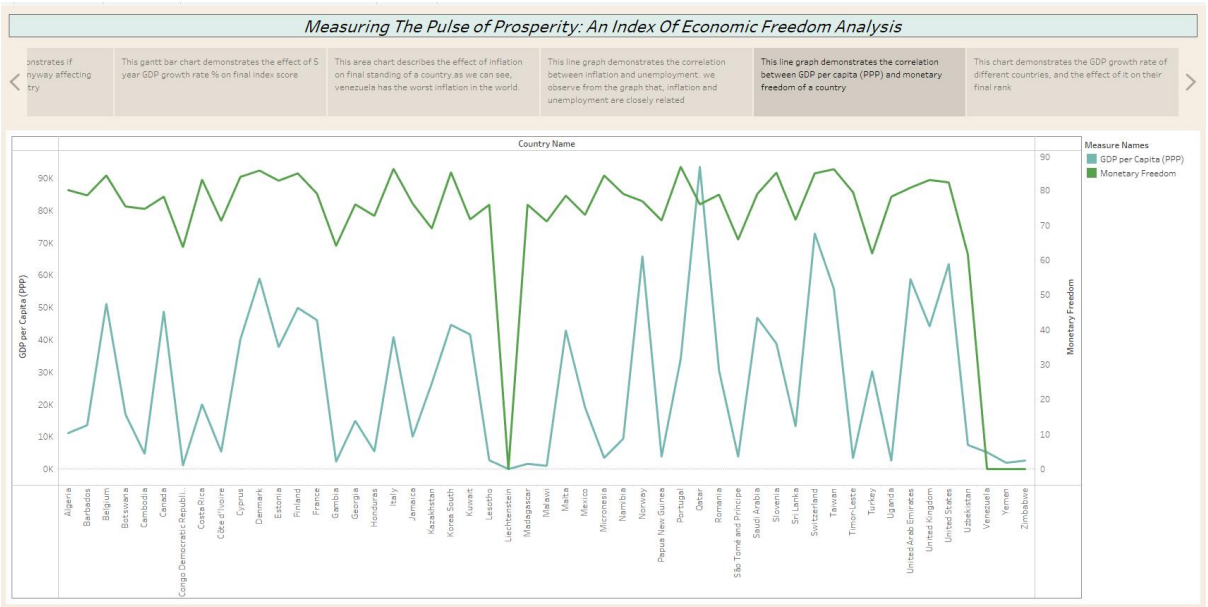

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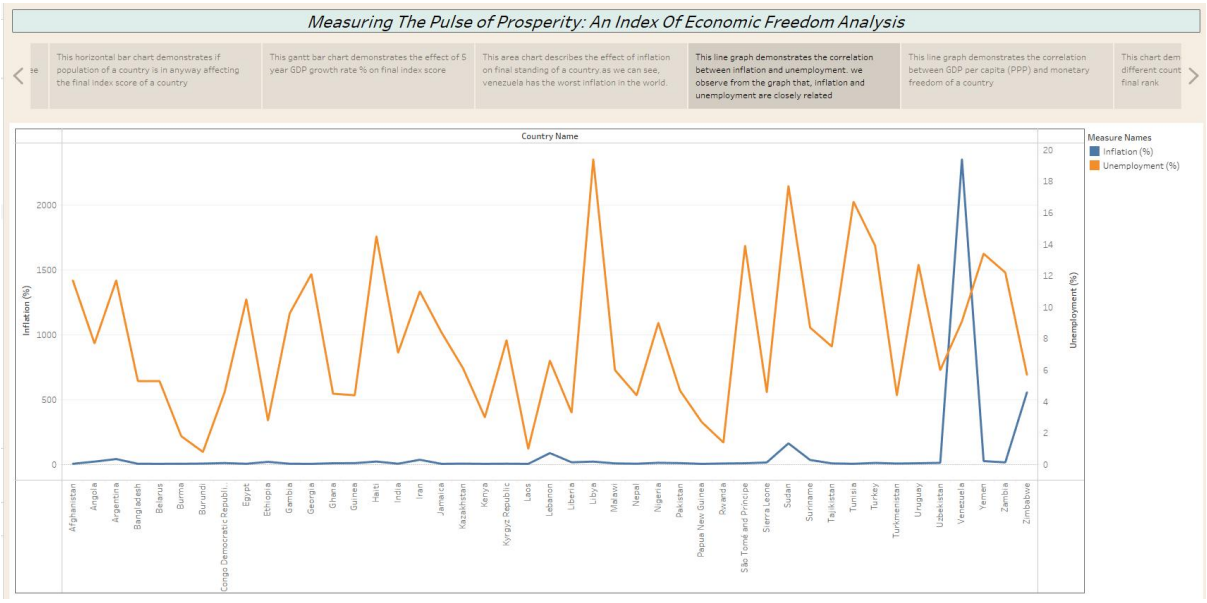

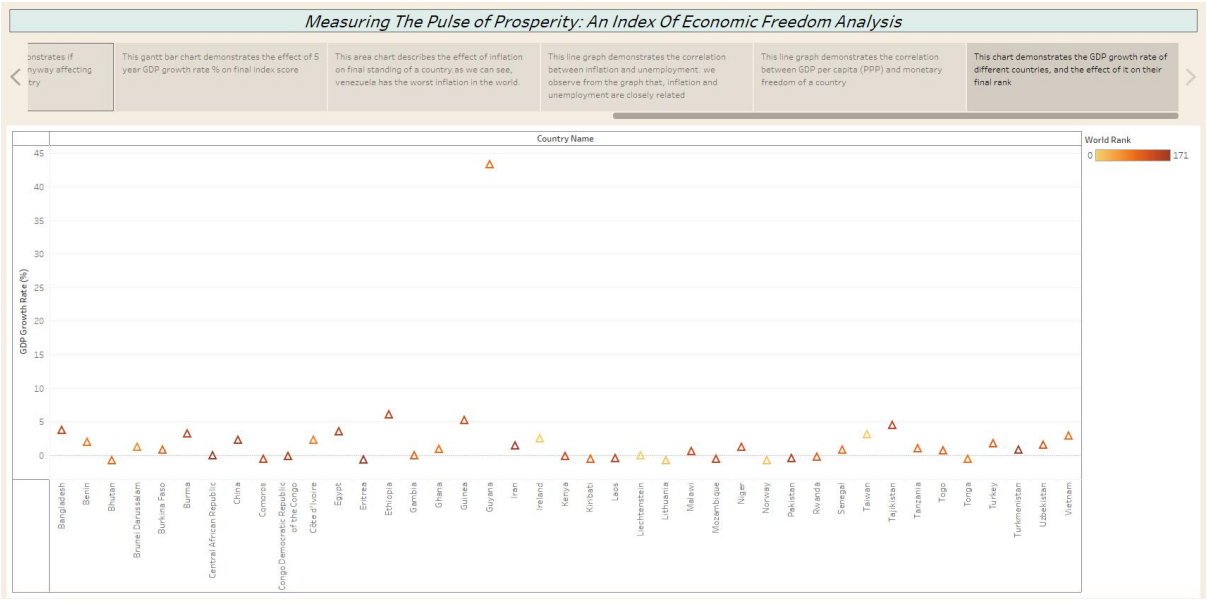

8. ADVANTAGES AND DISADVANTAGES

Advantages

- Provides intuitive and interactive data interpretation.
- Enables cross-country and regional comparison of economic indicators.
- Supports policy analysis and decision-making with visual evidence.
- Saves time in identifying trends and relationships in large datasets.
- Enhances accessibility and presentation of data through a web interface.

Disadvantages

- Requires basic familiarity with Tableau for editing or updating.
- Static data limits real-time monitoring unless updated regularly.
- Interpretation of visualizations may vary without proper context.
- Limited insight if relevant economic factors are not included in the dataset.

9. CONCLUSION

The project successfully demonstrates how visual analytics can be used to uncover meaningful insights from complex economic data. It bridges the gap between quantitative data and qualitative understanding, enabling better decision-making and knowledge dissemination. The visualizations offer clarity on economic freedom and its correlation with prosperity, making this project a valuable educational and analytical resource.

10. FUTURE SCOPE

1. **Time-Series Analysis**
   Incorporate economic data across multiple years to identify long-term trends and policy impacts.
2. **Additional Economic Indices**
   Integrate datasets like the Human Development Index (HDI) or Global Competitiveness Index for multi-dimensional analysis.
3. **Custom User Filters**
   Allow users to interact with dashboards using dynamic filters for deeper, personalized exploration.
4. **Real-Time Data Integration**
   Connect dashboards to live data sources for up-to-date visualizations and insights.
5. **Multilingual Dashboard Access**
   Provide translated versions of the visualizations to increase accessibility for global users.

PROJECT REPORT

11. APPENDIX

Dataset link

https://drive.google.com/file/d/1EBIa1LtM3Ni2Uh3nekLB6wt3263Q3NeX/view?usp=share_link

Github link:

https://github.com/MOHAMMEDABDULVAKIL/Measuring-the-Pulse-of-Prosperity-An-Index-of-Economic-Freedom-Analysis

Project Demo Link

https://drive.google.com/file/d/11HkQvH3rI2xFNOQJa6vwq9YD5fYrH7I8/view?usp=sharing