PROJECTREPORT

1. INTRODUCTION

1.1 ProjectOverview

Economic freedom plays a vital role in determining a country's prosperity, competitiveness, and the overall well-being of its citizens. Although there is no shortage of datasets and reports, there remains a gap in interactive and comparative tools that make this information easily accessible and actionable for diverse stakeholders.

This project aims to analyze and visualize the Index of Economic Freedom across multiple countries, providing insights into how economic policies relate to national prosperity. By leveraging statistical analysis, advanced data visualization, and real-time filtering, this platform empowers policymakers, researchers, investors, and the general public to intuitively explore and interpret key economic indicators in a meaningful way.

The solution integrates data ingestion, processing, and visualization within a modular framework. It offers features such as global freedom heatmaps, year-over-year trends, top/bottom country rankings, and correlation analyses with other socio-economic metrics like GDP and unemployment rates. This project bridges the gap between raw data and informed decision-making through a transparent, scalable, and user-focused approach.

1.2 Purpose

The purpose of this project is to develop an accessible, data-driven platform that enables the analysis and visualization of the Index of Economic Freedom across various countries and time periods. This initiative seeks to empower policymakers, researchers, and investors by equipping them with actionable insights into how economic freedom shapes prosperity, governance, and sustainable development

By transforming complex datasets into interactive dashboards and comparative tools, the project fosters informed decision-making, promotes transparency in economic policies, and supports academic and institutional research. Ultimately, the solution aspires to highlight global economic trends and guide strategic reforms that advance economic liberty and growth worldwide..

2. IDEATION PHASE

2.1 Problem Statement

Problem Statement (PS)	I am	I'm trying to	But	Because	Whichmakes me feel
PS-1	a policy maker	understand how economic freedom affects my country's growth	the data is complex and spread across many reports	there's no simple and interactive platform	confused about making policy decisions

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PS-2	astudent	study economic freedom trends in different countries	I can't compare trendsacross quarters and states	there's no visual tool to compare indicators	stressed and lost during research
PS-3	an investor	Find which countries have good economic conditions	current reports are hard to read and not interactive	there's no clear dashboard with insights	unsure where to invest wisely
PS-4	a researcher	link economic freedom to other factors like GDP or employment	I can't filter and see connections quickly	tools are static andnot interactive	sloweddown and stuck

2.2 Empathy Map Canvas

Yipoyinaka oka

2.3 Brainstorming

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**Brainstorm
& idea prioritization**

1

Problem Statement

How might we help policymakers explore global economic freedom data interactively to drive reform decisions?

PROBLEM

How might we help policymakers explore global economic freedom data interactively to drive reform decisions?

Key rules of brainstorming
To run an smooth and productive session

- Stay in topic.
- Encourage wild ideas
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

Need some inspiration?

See a finished version of this template to kickstart your work.

Open example →

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3. REQUIREMENT ANALYSIS 3.1 CustomerJourney map

Stage	Need	Action	Touchpoint	Pain Point	Opportunity
Discover	Wantsto understand economic trends	Searches reports and articles Team: k.priya,M.pavan venkata kumar,M.saranya Deepya,B.praveen	Government sites, PDF's	Data is scattered and outdated	Unified interactive dashboard
Explore	Needscountry wise &yearly comparision	Browsescharts manually	Spreadsheets, reports	Time-consuming & repetitive	Filter-enabled economic freedom platform
Engage	Wants to correlate economic freedom with GDP	Tries to merge datasets	Manual calculations	Lacks easy correlation tools	Pre-built correlatio n & trend visualizati ons

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Decide	Prepares reports for staakeholders	Screenshots graphs	Presentations, PDFs	Lacks storytelling & clarity	Use Tableau story points with captions

3.2 SolutionRequirement

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Interactive KPIDashboard	Displays revenue, units sold, active users, and discount percentage filtered by year and region.
FR-2	Correlation & Comparative Analysis	Allows users to compare economic freedom with GDP, employment, and other socio-economic factors.
FR-3	Time-Series Visualization	Shows annual trends and changes in economic freedom using line and bar charts.
FR-4	Indicator Drill-Down Insights	Provides detailed views for sub-indices like trade freedom, tax burden, and regulatory efficiency.
FR-5	Geo-Map Representation	Visualizes regional economic freedom across countries or continents using heatmaps.
FR-6	Story-Based Dashboard Navigation	Sequential story view explaining economic freedom analysis with narrative captions.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.
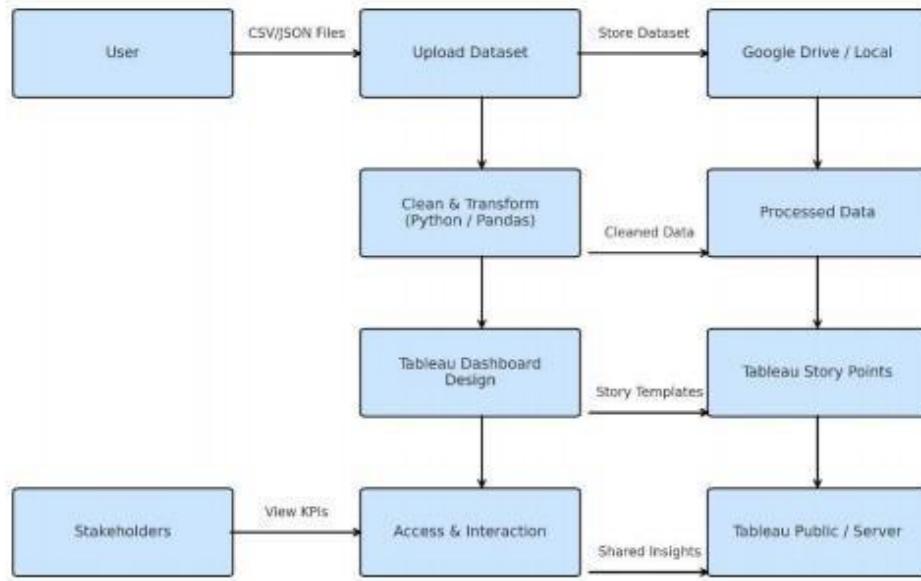
FR No.	Non-Functional Requirement	Description
NFR-1	Performance	Dashboards must load within 3–5 seconds even with filters applied.
NFR-2	Scalability	The framework should support future data addition (e.g., new models or regions).
NFR-3	Responsiveness	Dashboard layout should be usable on laptops and projectors during presentations.
NFR-4	Performance	The interface must be simple, readable, and require no technical background to explore.
NFR-5	Usability	Use a dark theme with eye-comfort colors and clear legends to reduce user fatigue.

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NFR-6	DataAccuracy	Ensurecalculations(KPIs, averages, comparisons)are correctly validated against source files.

3.3 Data Flow Diagram

3.4 TechnologyStack

Component	Tool/Technology	Purpose
Data Source	CSV, JSON files	Raw smartphone sales and specs data
Visualization	TableauDesktop	Creatinginteractive dashboards and stories
Storage	Google Drive / Local	Storing raw and processed datasets
Collaboration	Google Docs, Slack	Team communication and report writing
Deployment	TableauPublic / Server	Dashboard sharing and stakeholder access

4. PROJECTDESIGN

4.1 Problem Solution Fit

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Policymakers, researchers, investors, and students struggle to access and interpret economic freedom data because it is scattered across multiple reports, lacks interactivity, and is not easily comparable across countries or time periods. This makes it difficult to understand how economic freedom influences prosperity, governance, and growth.

Solution:

The proposed solution provides an interactive, user-friendly dashboard that consolidates global economic freedom data into one accessible platform. It offers dynamic visualizations, time-series trends, correlation tools, and geo-maps that help diverse stakeholders explore, compare, and analyze key indicators easily. By transforming complex datasets into clear, actionable insights, the solution bridges the gap between raw data and informed decision-making — empowering evidence-based policy, research, and investment.

4.2 Proposed Solution
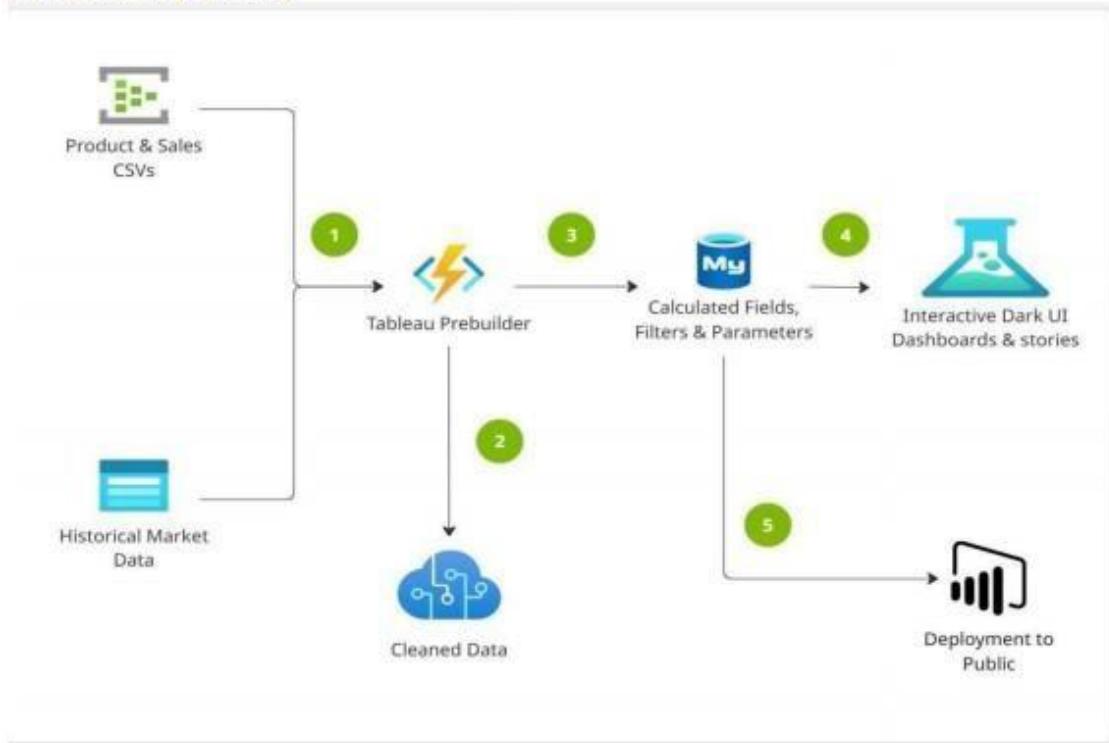
S.No.	Parameter	Description
1.	Problem Statement (Problemto be solved)	Policymakers, researchers, investors, and students lack a centralized, interactive way to explore and compare economic freedom data across countries and time periods. Data is scattered and often static, making it hard to draw meaningful, timely insights for informed decisions.
0.	Idea / Solution description	Development of an intuitive, interactive economic freedom dashboard with easy-to-use filters for country, year, and subindices. Clean, accessible visualizations and a clear layout make insights understandable for technical and non-technical users alike. Includes modern color schemes and export features for reports.
0.	Novelty / Uniqueness	Unlike traditional static reports, this solution uses dynamic dashboards with real-time filtering, comparison, and correlation analysis. Users can explore relationships between economic freedom and other indicators like GDP or unemployment, which are difficult to see in static data.
0.	Social Impact / Customer Satisfaction	Supports evidence-based decision-making, encourages transparency in economic governance, and empowers researchers and students to better understand prosperity trends. Reduces time spent searching for scattered data, improving productivity and data literacy.
0.	Business Model (RevenueModel)	Can be offered as a subscription-based research tool for think tanks, universities, or government bodies. Consultancy services can help customize the dashboard for specific regions or additional indicators.

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0.	Scalability of the Solution	The dashboard framework is scalable for additional countries, regions, and related economic indices. Only new datasets need to be added — the interactive visualizations and logic remain reusable across contexts and research domains.

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-2	As a user, I can loaddata into the processing environment	1	High	ALL

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Sprint-2	Data Preprocessing	USN-3	As a user, I can handle missing values in the dataset	3	Medium	ALL
Sprint-2	Data Preprocessing	USN-4	As a user, I can encodeor map categorical variables appropriately	2	Medium	ALL
Sprint-3	Making Graphs/Visualizations	USN-5	As a user, I can build the initial modelbased on processed data	5	High	ALL
SPRINT - 4	Dashboard & STORIES	USN - 6	Darkui with eye feasted color palette	6	HIGH	ALL
SPRINT - 5	Report & documentation	USN - 7	Thestep-by-step guide documentation	7	MEDIUM	ALL

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Rendered from cleaned CSV files with country-wise economic freedom scores, GDP, employment rates, and other socioeconomic indicators. Loaded ~1,000+ rows covering multiple countries and years.
0.	Data Preprocessing	Handled missing values; mapped features for sub-indices like trade freedom, tax burden, and regulatory efficiency; categorized regions and time periods for consistency.
3.	Utilizationof Filters	Applied filters for Country, Region, Year, Economic Sub-Index, GDP, and Unemployment Rate. Dashboard remains responsive under 3 seconds for smooth user interaction.

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| 4.	Calculationfields Used	- Average Economic Freedom Score by Region - Year-on-Year Change Percentage - GDP vs. Freedom Correlation Metric - Unemployment Rate Trends - Index Rankings & Score Bands
5.	Dashboarddesign	No of Visualizations / Graphs - 4 Dashboards
6	Story Design	No of Visualizations / Graphs - 1 Stories with 2 story points each

7. RESULTS

7.1 OutputScreenshots DASHBOARDS:
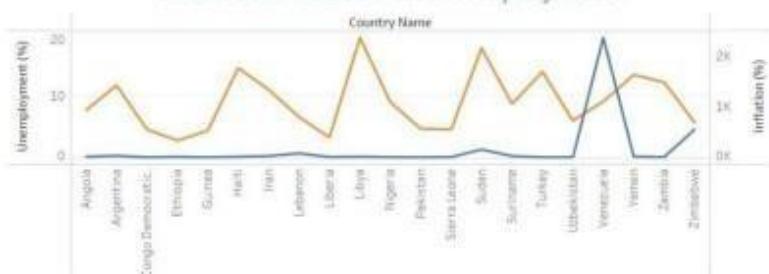
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Bottom Ranking countries in the Index

World Rank
150 ▭ 177

Measure Names
■ Inflation (%)
■ Unemployment (...

© 2025 Mapbox © OpenStreetMap   2 unknown
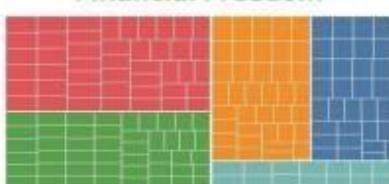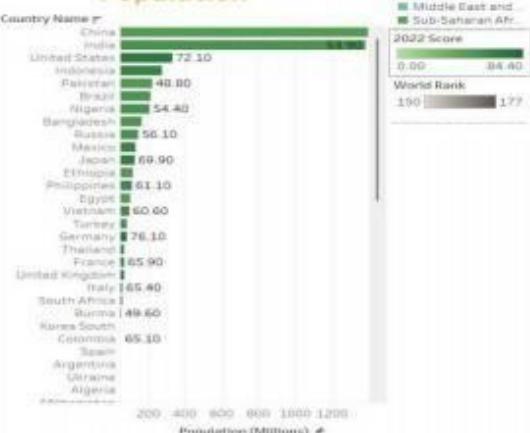
Index score based on Unemployment

Index score based on Financial Freedom

Bottom Ranking countries in the Index

© 2025 Mapbox © OpenStreetMap   2 unknown

Index score based on Population
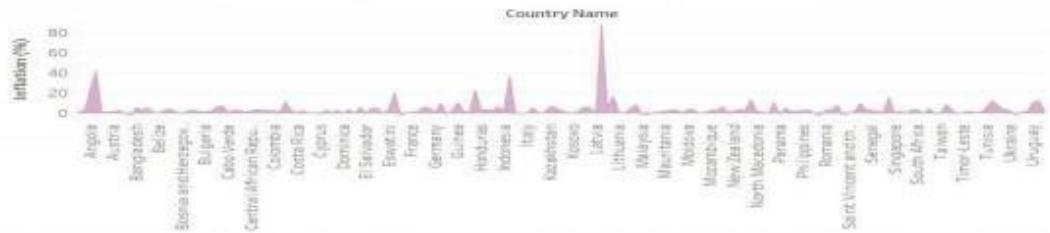
Region
■ Americas
■ Asia-Pacific
■ Europe
■ Middle East and ...
■ Sub-Saharan Afr...

2022 Score
0.00 ▭ 84.40

World Rank
190 ▭ 177

Index score based on 5 year GDP growth rate

2022 Score
0.00 ▭ 84.20

World Rank
1 ▭ 175
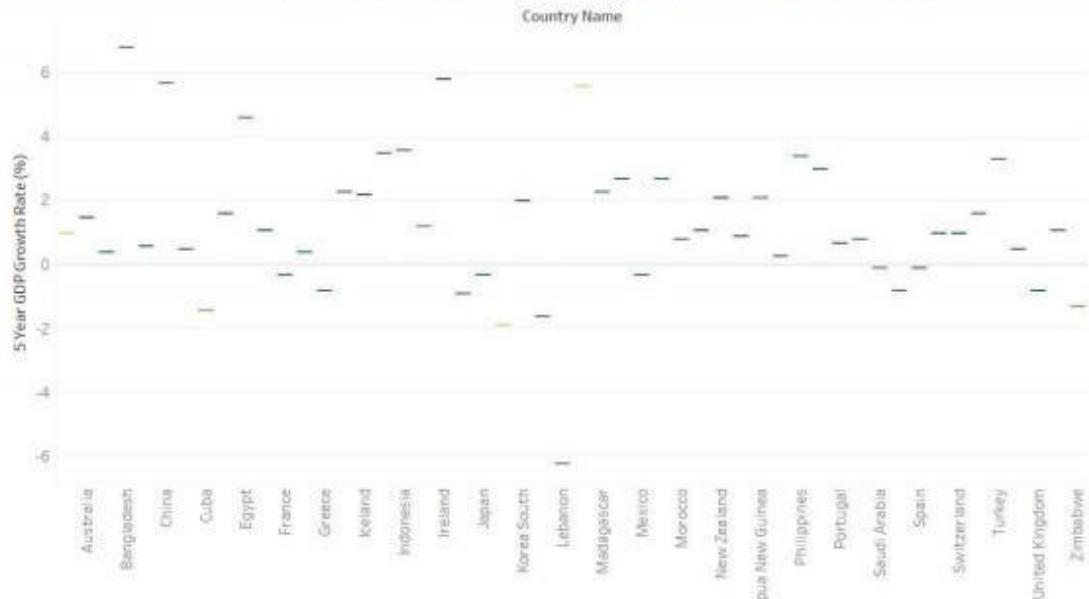
Inflation rate in different countries

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STORY1 OUTPUTS:

Index score based on 5 year GDP growth rate

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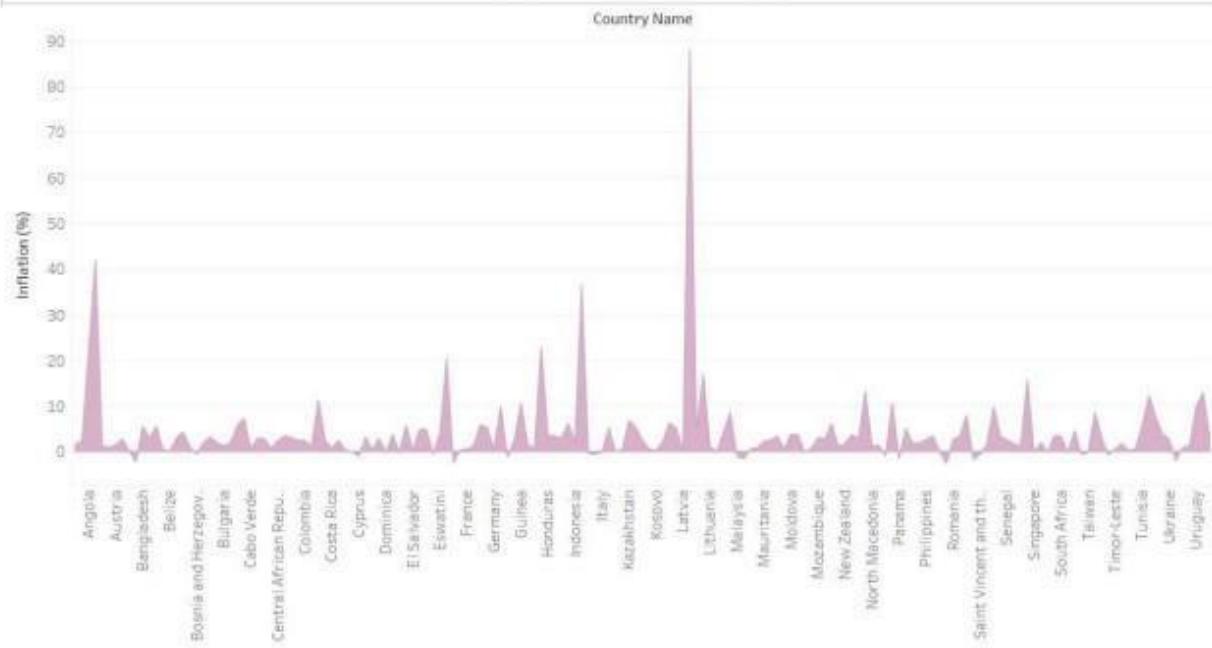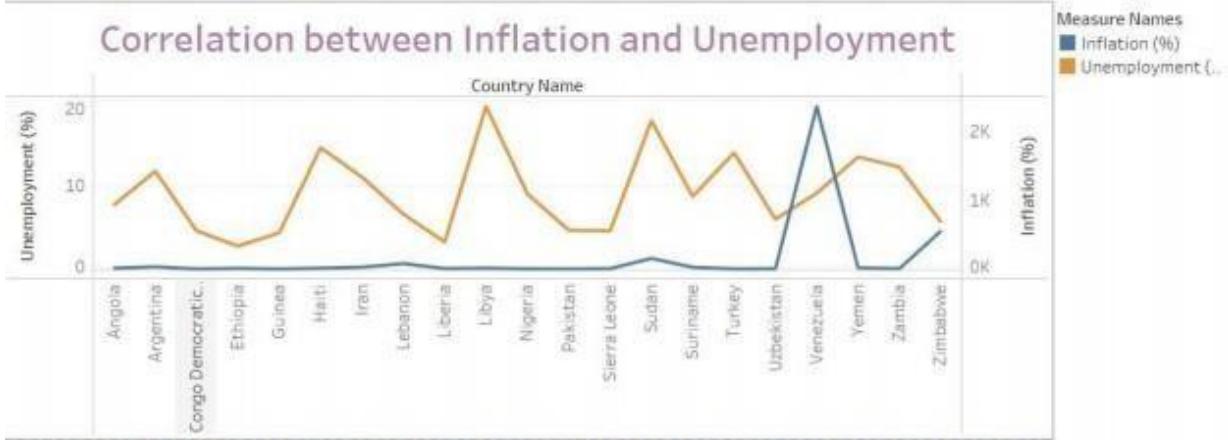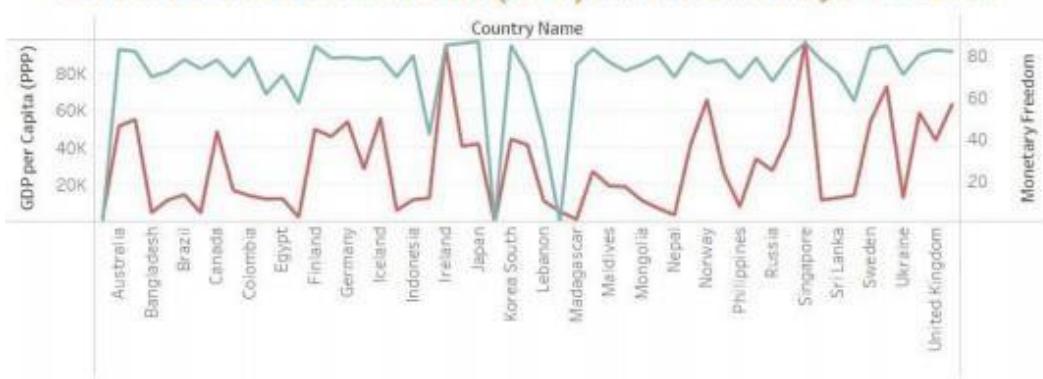
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Inflation rate in different countries

Correlation between Inflation and Unemployment

Correlation between GDP(PPP) and Monetary Freedom
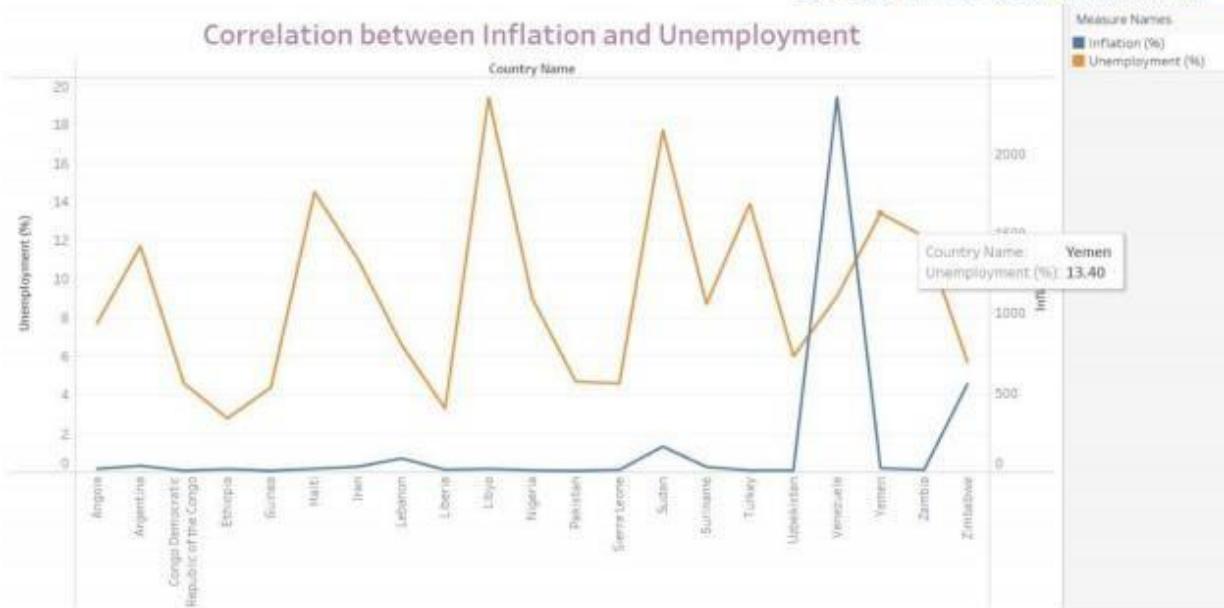
STORY 2:
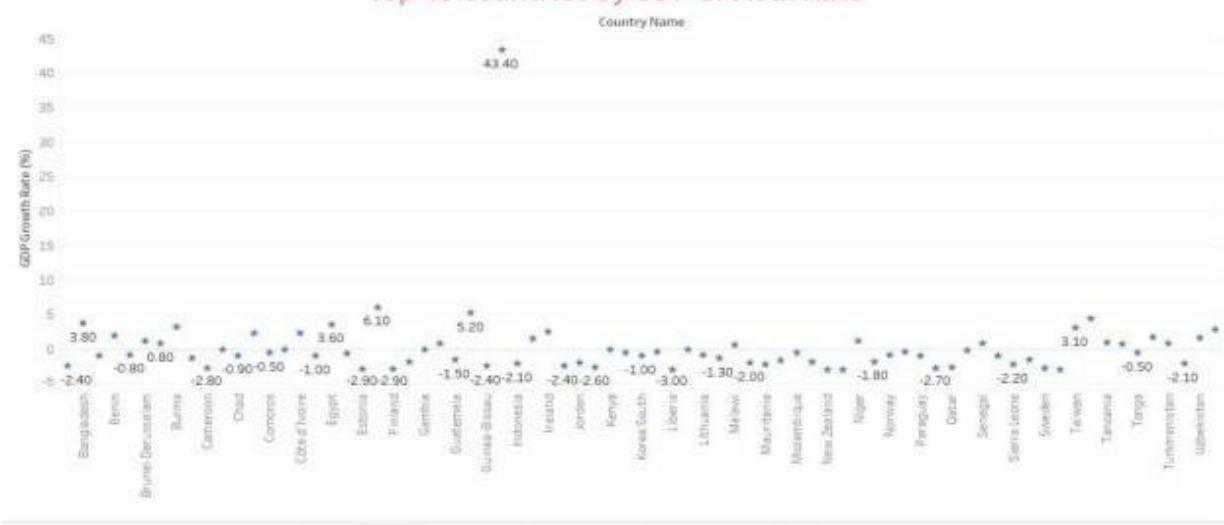
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Correlation between Inflation and Unemployment
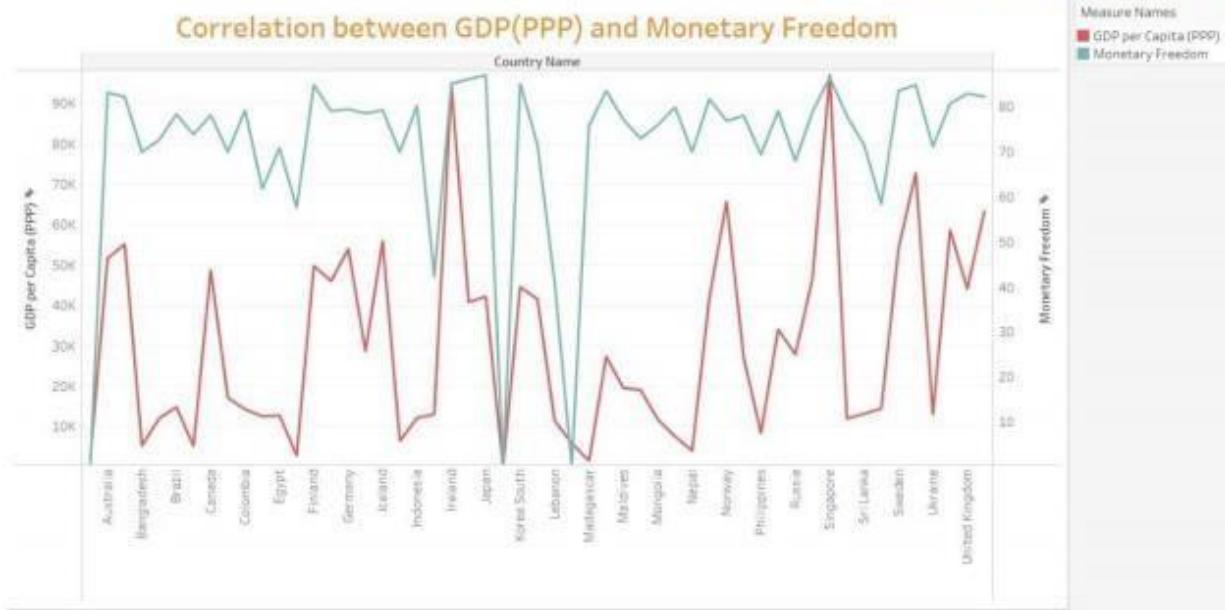
Top 40 Countries by GDP Growth Rate

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Correlation between GDP(PPP) and Monetary Freedom

8. ADVANTAGES & DISADVANTAGES

- **ADVANTAGES:**

    o User-FriendlyDashboards: Intuitive interface with dark-themed visuals that reduce eye strain and enhance readability.

    o Interactive Insights: Real-time filtering and data slicing allow users to extract exactly what they need without manual intervention.

    o Reusable Framework: The dashboard model can be reused for other smartphone brands or markets by simply updating the dataset. o Data-Driven Decision Making: Helps strategists, marketers, and executives make smarter, evidence-based decisions.

    o Time-Saving: Reduces the manual workload for analysts by providing ready-to-explore visualizations.

- **DISADVANTAGES:**

    o Platform Limitation: Tableau Public may limit some functionality such as real-time backend connection and publishing privacy.

    o Dependence on Data Accuracy: Insights are only as good as the quality of input data; inaccurate or outdated datasets could mislead.

    o Static Structure in Story: While dashboards are interactive, Tableau stories have limited flexibility in dynamic narration.

9. CONCLUSION

The project *"Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis"* demonstrates how data analytics and visualization can turn complex economic data into clear,

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actionable insights. By using open-source tools and interactive dashboards, it bridges the gap between raw data and user-friendly interpretatio

.

This solution helps policymakers, researchers, and investors understand global economic trends, spot policy gaps, and make informed decisions. Features like filtering, correlation analysis, and exportable visuals make the system adaptable and practical for diverse needs.

Overall, this initiative builds a strong foundation for exploring how economic freedom impacts prosperity—supporting better governance, smarter investments, and a deeper understanding of the global economic landscape.

10. FUTURE SCOPE

1. Integration with Additional Indicators:
Expand the platform to include more socio-economic metrics like income inequality, education levels, health indices, and environmental sustainability.

2. Real-Time Data Feeds:
Implement real-time or more frequent data updates by integrating APIs from trusted global economic databases.

3. Predictive Analytics:
Add forecasting models to predict future economic freedom trends and their impact on prosperity.

4. Custom Reports & Alerts:
Enable users to set up automated reports and notifications for significant changes in economic freedom indices.

11. APPENDIX

DatasetLink

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

GitHub & Project Demo Link

https://drive.google.com/file/d/1PZOtpeTq_qFR2kWouP9-GgvB3vqhhyq3/view

https://github.com/Priya-2004-1289/Economic_Freedom_Analysis/

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