Project Development Phase Model Performance Test

Date	21 June 2025
Team ID	LTVIP2025TMID47620
Project Name	Measuring the Pulse of Prosperity: An Index of
	Economic Freedom Analysis
Maximum Marks	

Model Performance Testing:

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

S.No.	Parameter	Screenshot / Values

1.	Data Rendered	The dataset used in this project is based on the Index of Economic Freedom, primarily sourced from the Heritage Foundation, supplemented with data on GDP, unemployment, inflation, FDI, and public debt. It contains 177 rows, each representing a country, and approximately 32 columns capturing various economic and governance indicators. Key attributes in the dataset include: Country Name and Region (e.g., Asia-Pacific, Europe, Sub-Saharan Africa) World Rank and Region Rank 2022 Economic Freedom Score – the main index measuring economic liberty on a scale of 0 to 100. Property Rights, Judicial Effectiveness, Government Integrity – used to assess the rule of law. Tax Burden, Government Spending, Fiscal Health – used to measure government size and financial discipline. Business Freedom, Labor Freedom, Monetary

Freedom – showing regulatory efficiency.

Freedom – assessing open markets.

Population (Millions)
 GDP (Billions USD)
 GDP Growth Rate (%)
 GDP per Capita (PPP)
 Unemployment Rate (%)

6. Inflation Rate (%)7. Public Debt (% of GDP)8. FDI Inflows (Millions USD)

Economic Indicators:

Trade Freedom, Investment Freedom, Financial



The dataset was thoroughly examined for missing, null, or zero values. Numerical fields such as GDP growth, inflation, and public debt were cleaned using mean or median imputation, while missing categorical fields were assigned neutral defaults such as "Unknown" or 0 where applicable. Completely unusable records were removed to maintain data quality.

2. Column Renaming and Standardization:

All column names were standardized for consistency and readability. For example, 2022 Score was renamed to freedom_score, and GDP (Billions) was converted to gdp_billion_usd. Inconsistent formats, such as percentage strings, were converted to numeric types.

3. Feature Engineering:

A new column called freedom_category was created to classify each country based on its economic freedom score. Using defined thresholds, countries were categorized as Free (\geq 80), Mostly Free (70–79.9), Moderately Free (60–69.9), or Mostly Unfree (< 60). Additional calculated fields were generated to support filtering and segmentation.

3.	Utilization of Filters	In the Index of Economic Freedom dashboard, multiple interactive filters were implemented to provide a dynamic, user-driven experience. These filters empower users such as policy makers, economists, and analysts to extract meaningful insights tailored to specific interests or regional contexts. 1. Region Filter
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• Type: Dropdown or checkbox filter

Field Used: Region

 Purpose: Allows users to focus on a specific geographical area, such as Asia-Pacific, Europe, Sub-Saharan Africa, Middle East, or Americas.

 Use Case: Helps compare economic freedom indicators within a region and spot regional policy patterns or anomalies.

2. GDP per Capita Filter

Type: Slider or grouped range (Low/Medium/High)

Field Used: GDP per Capita (PPP)

Purpose: Filters countries based on economic prosperity

levels.

Use Case: Study if higher GDP per capita correlates with higher freedom scores. **3. Unemployment Rate Filter**

• **Type**: Slider filter

Field Used: Unemployment (%)

 Purpose: Helps analyze which freedom categories or regions are facing higher or lower employment challenges.

• **Use Case**: Understand how economic freedom may impact job markets.

4. Inflation Rate Filter

• Type: Numeric range filter

• **Field Used**: Inflation (%)

• **Purpose**: Enables comparison of inflation control among countries with varying freedom scores.

• **Use Case**: Reveal monetary policy strength across regions or freedom categories.

5. GDP Growth Rate Filter

• Type: Numeric slider

• Field Used: GDP Growth Rate (%)

 Purpose: Allows users to focus on fast-growing or struggling economies.

• **Use Case**: Determine how freedom levels influence economic growth.

6. World/Region Rank Filter

Type: Numeric range

Fields Used: World Rank, Region Rank

 Purpose: Isolate top or bottom performers globally or regionally.

 Use Case: Benchmark high performers or identify countries needing policy reform.





