

Requirements Document: Domestic Coffee Consumption Analysis

Objective

Design and implement an interactive analytical solution that clearly and visually presents the results of an advanced exploratory analysis, in order to identify trends, patterns, and business opportunities related to domestic coffee consumption.

Context

The organization has a historical dataset on domestic coffee consumption covering the period 1990-2020, including multiple countries, coffee types, and world regions.

The innovation department aims to leverage this data asset to gain a competitive market advantage by identifying trends, consumption ranges, and other key information that can provide strategic value.

Key Questions

- Are there differences in coffee consumption between regions or continents?
- What historical trends can be observed in total domestic consumption and by coffee type?
- Is it possible to predict future consumption based on past patterns?
- Which countries or regions show sustained growth and could be prioritized for commercial strategies?
- What insights from the analysis can guide strategic decision-making?

Data

Data Source:

Data provided by the organization, modified to preserve confidentiality. Consumption figures were adjusted with a multiplier factor, and labels replaced the real values for some variables.

Data Dictionary:

- Country: Country corresponding to the record
- Coffee type: Type of coffee
- Total_domestic_consumption: Total annual domestic consumption
- Year: Year of record
- Consumption: Consumption adjusted with scale factor
- Continent: Continent to which the country belongs

Data Profile:

- Period: 1990-2020
- Coverage: Multiple continents and countries
- Types of variables: Numerical and categorical
- Includes temporal and geographic components

Analysis Criteria

- Exploratory analysis with visualizations (time series plots, comparisons, correlations, and distributions).
- Geospatial analysis by continent and country.
- Predictive consumption models using Machine Learning techniques.
- Country segmentation using clustering algorithms.

Requirements Document: Domestic Coffee Consumption Analysis

Solution Requirements

- Data analysis: Cleaning, exploration, and visualization of data.
- Business problem-solving: Development of analytical models to answer key questions.
- Implementation and evaluation: Validation of results and performance metrics of the models.
- Presentation of results: Executive reports and interactive visualizations.

Dashboard Requirements

The dashboard must:

- Be designed with a defined use case, answering the key questions of the project.
- Be interactive, allowing the user to filter and explore the data by country, coffee type, year, and continent.
- Display relevant results from the initial exploratory analysis.
- Explain how the findings from the exploratory analysis guided the research questions and hypotheses.
- Present results derived from advanced analytical techniques (e.g., regression analysis, clustering, time-series analysis).