Case Study Rubric – Analyzing the Impact of the 2008 Financial Crisis on Global Alcohol Consumption

DS 4002 - Fall 2024 - Instructors: Alex Gates and Luz Melo

Submission format: Github Repository

Individual Assignment

General Description: In this case study, you will analyze global alcohol consumption trends before and after the 2008 financial crisis using data provided by the World Health Organization (WHO). You will investigate if the crisis led to significant changes in consumption patterns, explore regional differences, and identify which types of alcohol were most impacted.

Preparatory Assignments: None

Why am I doing this? This project will allow you to:

- Develop skills in time-series data analysis.
- Work with real-world public health data to uncover trends.
- Practice creating clear visualizations and models to support data-driven conclusions.

What am I going to do? You will analyze global alcohol consumption data from before and after the 2008 financial crisis. Specifically, you will:

- Clean and process the WHO dataset.
- Create visualizations to explore alcohol consumption trends over time.
- Build a time-series model to analyze and predict trends in consumption.
- Compare and interpret the results to determine if significant shifts occurred following the financial crisis

How will I know I have Succeeded? You will meet expectations on this case study when you follow the criteria in the rubric below.

Category	Spec Details
Formatting	- Submit one Github repository - Adhere to all parts of the TIER Protocol 4.0 - Repository must include:

	○ README.md file ○ LICENSE.md file (MIT) ○ SCRIPTS folder ○ DATA folder ○ OUTPUT folder
README	● <u>Goal</u>: Provide an accessible starting point for users to understand the project, its purpose, and how to replicate the results. ● Clearly explain the purpose of the project and provide repository contents using markdown headers. ● Include step-by-step instructions to reproduce your results in plain, concise English. ● Briefly summarize the methodology and tools used (libraries, models).

SCRIPTS	● <u>Goal</u>: Ensure that the source code is clear, organized, and executable
	● Include two scripts:
	    ○ Data Cleaning Script: Processes the raw WHO dataset into a clean, structured CSV.
	    ○ Analysis Script: Generates visualizations, runs time-series models, and compares alcohol consumption trends before and after the financial crisis.
	● Scripts must contain header comments and inline comments to explain functionality and purpose.

DATA	● <u>Goal</u>: Provide all necessary data exploratory analysis ● Provide a cleaned, processed dataset as a CSV file. ● Include the original WHO dataset source link or reference. ● Include a Data Appendix PDF with descriptive statistics, tables, and figures summarizing the dataset.

OUTPUT	● <u>Goal</u>: Present findings in a clear, meaningful way through visualizations and summaries
	● Include all outputs generated from your analysis:
	    ○ Visualizations (line graphs, bar charts) showing alcohol consumption trends.
	    ○ Tables summarizing findings and model outputs.
	● Use clear, descriptive file names.

REFERENCES	● <u>Goal</u>: Attribute credit to sources that were used ● List all sources and references used (WHO data, external libraries). ● Use IEEE Documentation Style for all citations.