Emissions Projection Case- Rubric

DS 4002 – Spring 2023 - Professor Alonzi
Due: December 2023
Submission format: Github repository link and slides .pdf

Individual Assignment

General Description: Submit to canvas a link to your case study repository and a copy of your presentation in .pdf format.

Preparatory Assignments – Class sessions regarding helpful strategies for completing coherent, data-driven projects to answer a research question.

Why am I doing this? In the subject of data science, whether in classes or a career, it is vitally important to understand how to approach a question to obtain communicable results. This progression from a research question to a quantitative answer relies on intermediate steps of data acquisition, preparation, analysis planning, analysis execution, and preparing results for presentation. Although this case provides you with a question, data to use to answer the question, and a loose analysis plan, you will still run into obstacles along the way. Discovering how to overcome these obstacles to present coherent findings to your peers while considering a time deadline will build your skills as a data scientist.

- Course Learning Objective: researching context surrounding data to be used
- Course Learning Objective: prepare data for analysis
- Course Learning Objective: conduct a meaningful analysis of data to answer a question
- Course Learning Objective: prepare findings for presentation to your peers

What am I going to do? To assist in your completion of this case study, you will be provided with a hook document containing a research question with background as to why it is important, a dataset to use to answer the question, and suggestions for strategies to analyze the data and arrive at your conclusion. You will also receive materials about the subject matter of the data, as well as resources to help you navigate the coding aspect of your analysis. With this framework, you will create an annotated markdown document in which you prepare and use the data to arrive at a conclusion. You will then use your findings to create a presentation, in which your process and results will be shared with your peers.

Tips for success:
- Be organized. Have a plan as to what you need to do to reach your goals.
- Be flexible. Do not be afraid to deviate from your plan if your analysis leads you in a different direction.
- Persevere. Aspects of the project may not come easy, but do not let that slow you down.

- Utilize resources. The materials given to you will help you understand and execute the project, so do not neglect to read them carefully.

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

Spec Category	Spec Details
Formatting	- Github Repository containing anything you produce - Any new sources should be included - Presentation - Consisting of 6-9 slides in .pdf format
Repository	- Readme.md file - Your Readme should display upon opening the repository, and it will contain: - Research Question - A description of your data - since it was provided to you in the case, no need to include it - A description of your data after you clean and prepare it - Code – a description of your coding approach used to obtain results - Include packages used - Include one or two key code chunks that you wrote - Your major findings - Any figures you produced - License.md file - Use MIT license option that Github gives you - Data Folder - Include your cleaned dataset - Code Folder - This is where you will put the annotated markdown file that contains all of your work - Figures Folder - Include all of the figures you produce - References - Include any outside sources you used (not counting the ones provided to you)
Presentation	- Context - Describe the motivation behind this project and why it is important - Research Question/Hypothesis

| | o Outline the question being asked and the conclusion that you predict Data Description o Include your final data dictionary and a description of what the data represents ▪ 1-2 slides Analysis o Describe your analysis strategy o 1-2 slides Results/conclusions o Compare your results to your hypothesis and make a conclusion regarding your question o 1-2 slides References o Include all sources used, even the ones provided to you |