DNSC 6303_11 – Programming for Analytics II
Final Project Statement – Team 2
Maneesh Tekwani, Sai Nityamani Sahith Matsa, Manuel Jonathan Chavez Caprio, Patrick Zelazko

Title: Electric Vehicle Adoption Trends in Washington State (2017-2023)

Topic: Team 2 analyzed adoption trends in the electric car market to derive information on the major players in the industry and their successful car model and makes as observed through recent adoption trends in Washington State (WA State Gov Data) in the backdrop of broader trends across the broader US (DoE Data).

This analysis provides insights for stakeholders entering or expanding in the EV market, and can be combined with research on topics surrounding state tax exemptions and incentives as the ones WA government offers play in EV adoption. Holistically, we will paint a picture of the market of EV cars and understand how the landscape has evolved since 2017 in relation to broader social, economic, and technological trends in WA and the Seattle area.

We aim to build this report to generate insights useful for car manufacturing companies who are either looking to expand in the EV space or planning to explore it as new entrants.

Problem Statement: "How can established car manufacturing companies, seeking to enter or expand market share in the electric vehicle (EV) sector effectively strategize and navigate the dynamic EV market in the State of WA to increase competitive advantage and long-term sustainability?"

Course Topics Covered in Analysis

- Variables
- Data Frames
- Lists (arrays) and Dictionaries
- Pandas as pd (To read Excel File)
- NumPy as np (For Numerical Arrays)
- MatPlotLib and Seaborns (For Numerical Representations, Graphs etc.)
- Simple Linear Regression
- Muliple Linear Regression
- Webscraping (Using Webscraping to Provide more infromation
- Simple Optimization and Optimization using command lines (pip)
- Clustering Data Techniques (K Means)

Citations

data_m2.csv, cars_us_22.csv, ccarprice.com 2022/2023 new cars. validated web scrape by Tymoteusz Urban, WUT, Warsaw, Poland. https://www.kaggle.com/datasets/sidharth178/car-prices-dataset. Open Data Commons Open Database License.

Electric Vehicle Population Data. Washington State Department of Licensing, Research and Analysis Office (Updated September 14, 2023), https://data.wa.gov/Transportation/Electric-Vehicle-Population-Data/f6w7-q2d2. Open Data Commons Open Database License.