Final Writeup Business Project

Abstract

Now, more than ever, humans are waking up to the importance of caring for our planet and its climate. Trends in sustainability are growing across the board as we all realize that our actions have potentially dire consequences to our only home. While it important - noble even - for individuals to try and make more sustainable choices such as lowering usage of single-use plastics, or separating recycling appropriately, it is arguably more important for people at the corporate level. That is why we hope to show Ford why switching their production from gas vehicles to electric vehicles is so important. Using data obtained from the U.S. Department of Energy's Alternative Fuels Data Center, we will illustrate the growing trends in electric car purchases. Couple this with the data showing depletion rates of our fossil fuels will give a finite timetable this conversion has to happen by.

Climate change and depleting fuels are no secret. The real value we strive to bring is in the optimization of this inevitable change. By building a classification model with proprietary data, we can identify which customers are most likely to switch to electric cars after being targeted with ads. This will allow Ford to maintain profits, while cultivating a positive company image.

The goal of this project is to identify markets where a classification model can help Ford Motors drive profits while becoming a more sustainable force in the economy.

Design

The purpose of this project was to highlight a business impact, and create a Data Science solution to address said impact.

Opportunity - Capitalize on growing public trends for sustainable options.
Impact - Maintain profits which switching from a decaying fuel source to a more sustainable option
Data Science Solution - Build a classification model to highlight customers that would be open to alternative fueled cars.
Impact Hypothesis - By building a classification model, we can identify and highlight customers that are most likely to switch to electric vehicles. This will allow Ford to transition from gas to electric vehicles while simultaneously maintaining profits, and bolstering company image.

Data

Car sales data was pulled from https://www.goodcarbadcar.net/2020-us-vehicle-sales-figures-by-model which showed total sales by make and model for all of 2020.
Electric vehicle information was pulled from https://afdc.energy.gov/data which had several useful aggregations of information

Algorithms/Tools

Data for car sales was pulled directly into Google Sheets using its “importhtml” functionality.
Additional data was downloaded directly as either a CSV or XLSX file.
All data was cleaned and aggregated in Google Sheets
Tableau was used for visualizations - https://public.tableau.com/profile/michael.harnett#!/