EV Adoption and Oil Consumption Analysis

Presented by : Esha Sharma, Marwen Boughanmi, Jason Clibanoff

Project Overview

Our Objective is to understand how the growth of Electric Vehicles (EVs) impacts oil demand, with a focus on the top and bottom countries by EV adoption rates.

How **Artificial Intelligence** helps in our research?

1. Time-Series Forecasting
2. Data Analysis Automation
3. Predictive modeling

Our Motivation

Discover how the rise of EVs is shaping the future of energy demand, specifically focusing on:

1. Does the rise in **EV adoption** align with a global drop in **oil consumption**?
2. How much might global percentages of **EVs** increase in the next few years?
3. How much might global **oil consumption** decrease in the next few years?

Data Collection

% of Electric Vehicles (EVs) in each country over time

Oil Consumption (TWh) in various countries over time

Global Population over time

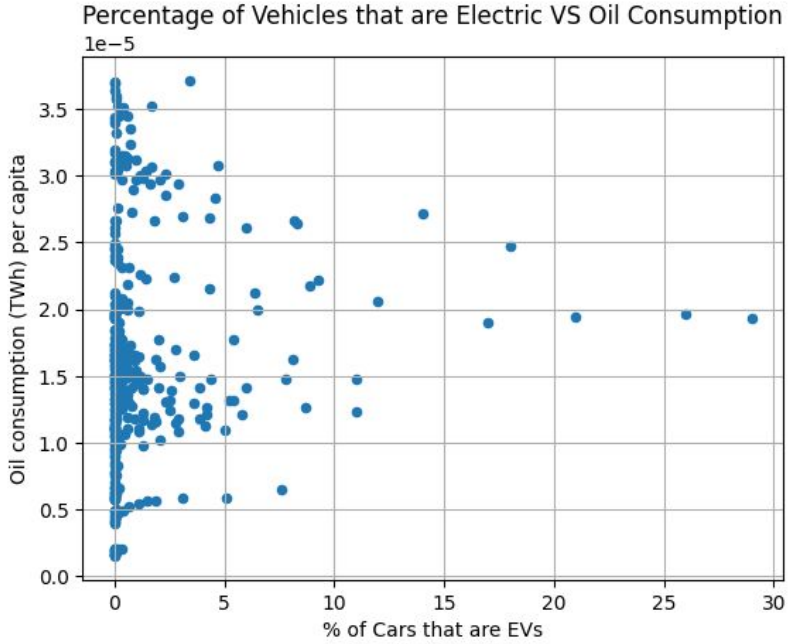
Our Approach

- Simplified the datasets to filter out the top and bottom five countries in EV deployment
- Combined the three datasets to compare oil consumption & EV deployment in the specified countries
- Graphed the results to demonstrate correlations
- Completed a predictive analysis to forecast the next five years of EV deployment and oil consumption

Encountered Challenges

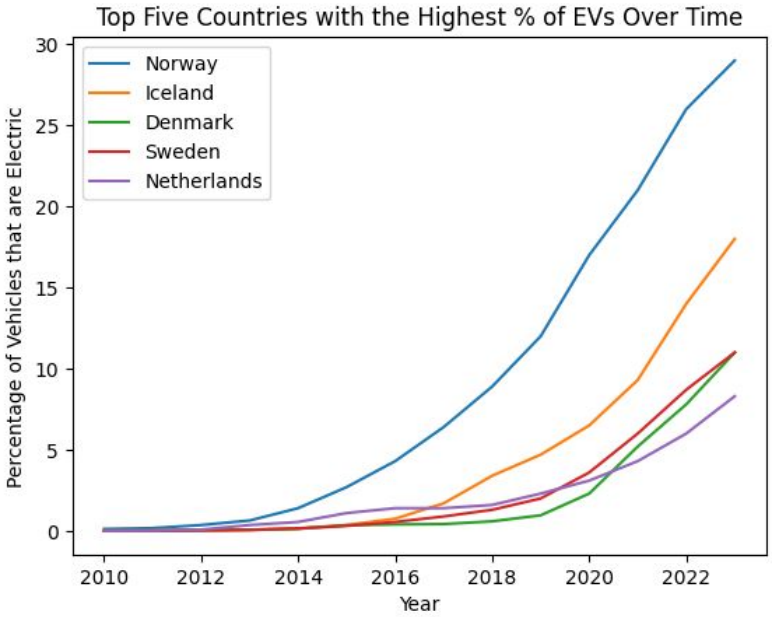
- Finding the right data for the oil consumption and EV production to make the both data compatible
- Calculating the proper units of the oil consumption dataframe to ensure correct analysis
- Choosing the a series of graphical representations to correctly relay the results

Results 1: Correlation between EVs and Oil Consumption



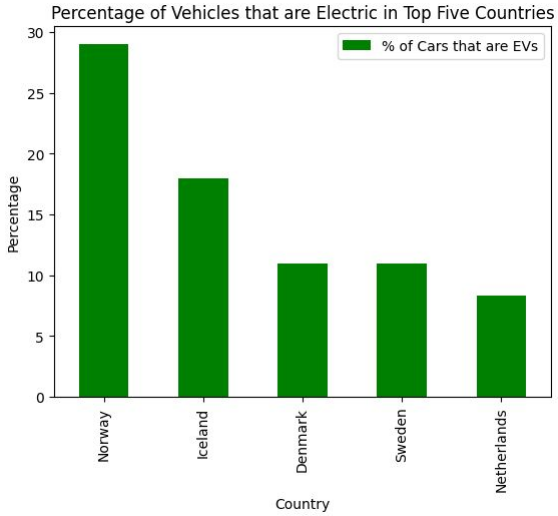
Demonstrates a correlation of -0.0725 between the percentage of EVs and global oil consumption, indicating little to no consistent trend.

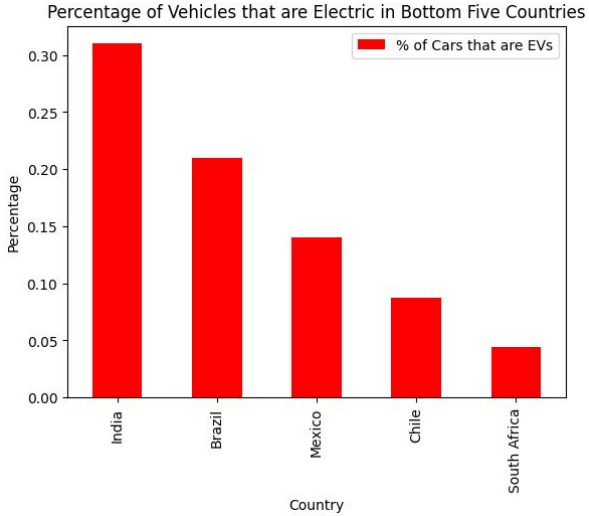
Results 1: Correlation between EVs and Oil Consumption



Norway is found to be the leading country with has the largest percent of EVs overtime

Results 1: Correlation between EVs and Oil Consumption





The Nordic countries are seen to be the leading countries in the deployment

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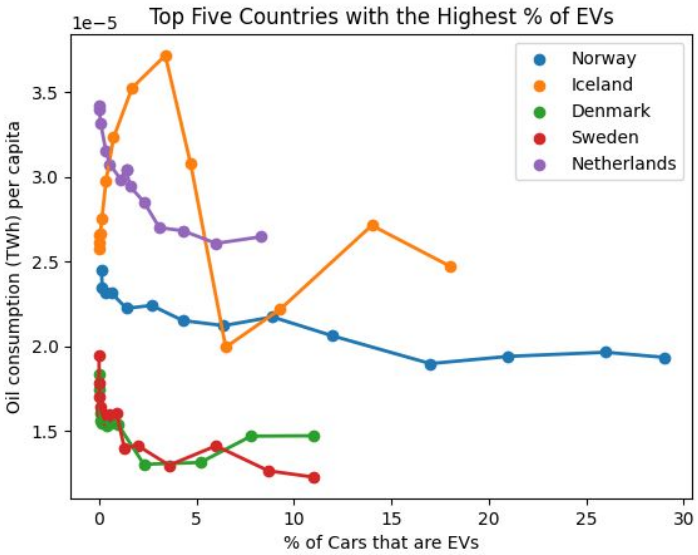
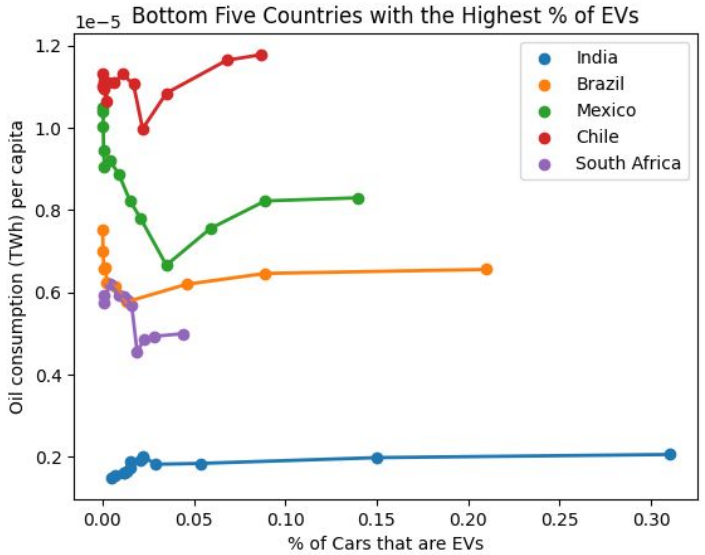
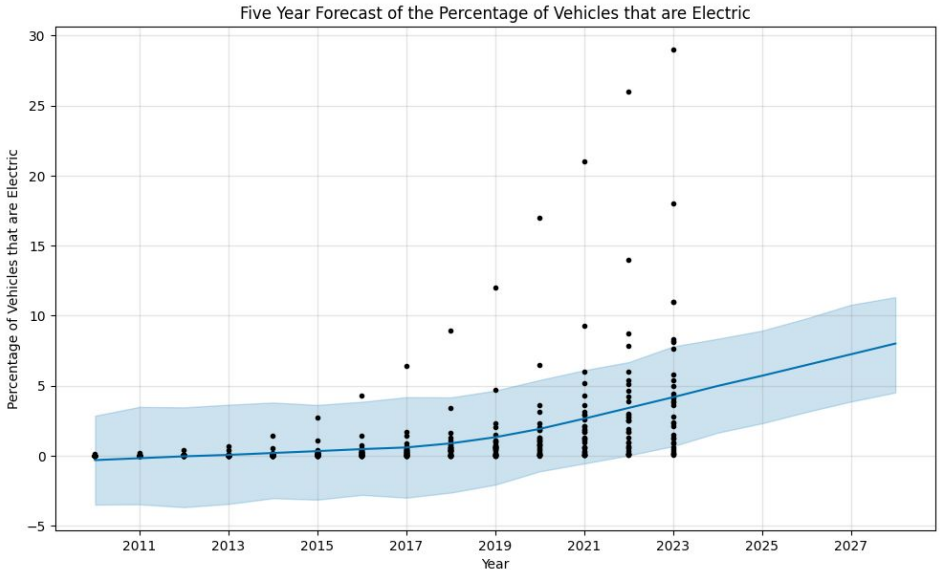




The correlation between variables for the top 5 countries excluding Iceland demonstrates there is a gradual decline in oil consumption per capita as there are higher percentages of EVs

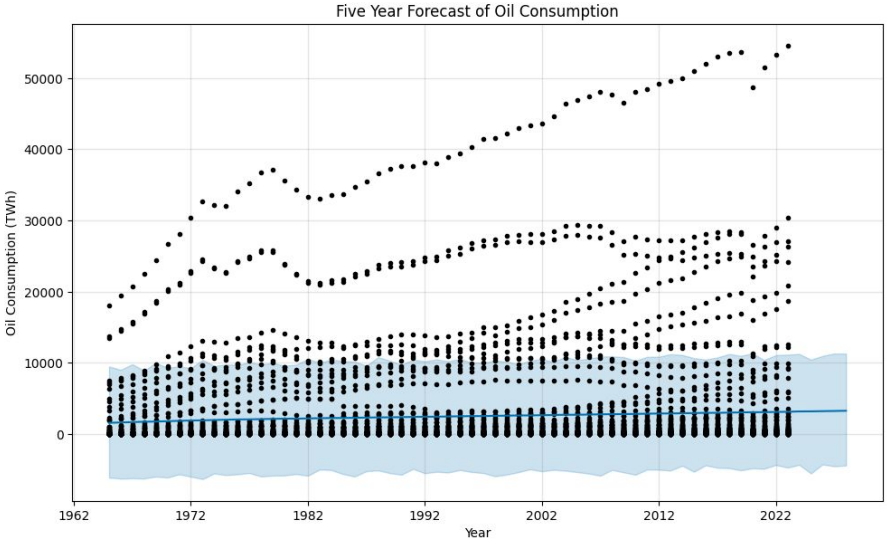
Results 2: Forecasting the Percentage of EVs Globally

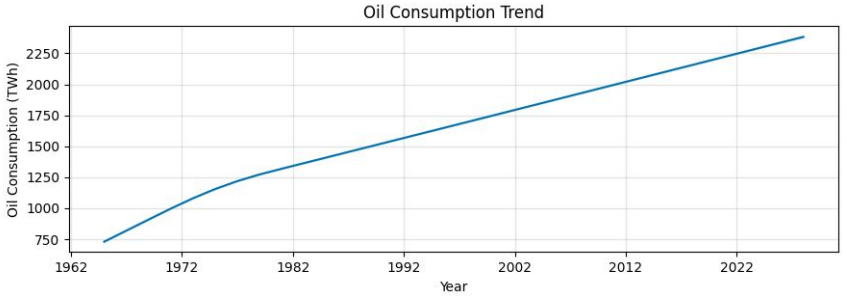


Best Case 5 Year Forecast	11.3%
Most Likely Case 5 Year Forecast	8.0%
Worst Case 5 Year Forecast	4.0%

The percentage of vehicles that are electric per country is likely to continue increasing in the next five years.

Results 3: Forecasting Oil Consumption Globally





Despite the predicted rise in adoption of EV's, the average oil consumption per country is not forecasted to change very much in the next five years.

Our Next Steps

Other Impacts of EV's

Look into other potential global impacts of the rise in EV's over time

A Deeper Dive into the Nordic Countries

This region has the most EV's, more analysis on this specific region could be done to see the impact of EV's

Demo Time!