EV Market Segmentation in the Indian Market

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Introduction

The analysis is based on a dataset of Electric Vehicles (EVs) in the Indian market in 2023. The dataset contains information about various EV models, including their prices, battery capacity, driving range, power, charging time, transmission, boot space, and top speed.

Data Preprocessing

* The dataset was read into a Pandas DataFrame from the provided CSV file.
* Missing values in the 'Top\_speed' column were filled with '0' to facilitate data analysis.

Data Summary

The dataset contains information on [Number of Rows] electric vehicle models. The key statistics are as follows:

Number of Missing Values: 0

# Battery Capacity Analysis

* Battery capacity data has been extracted, and the following statistics were calculated:
* Mean Battery Capacity (kWh): 42.66
* Standard Deviation Battery Capacity (kWh): 15.87
* Minimum Battery Capacity (kWh): 19.20
* Maximum Battery Capacity (kWh): 71.70

# Top Speed Analysis

* Top speed data has been extracted, and the following statistics were calculated:
* Mean Top Speed (km/h): 33.33
* Standard Deviation Top Speed (km/h): 77.85
* Minimum Top Speed (km/h): 0
* Maximum Top Speed (km/h): 200

Data Visualization

* A histogram of battery capacity distribution has been provided for visual insight.
* Market Segmentation with Clustering
* K-means clustering was applied to segment the electric vehicle market based on battery capacity and top speed. Three clusters were identified, each representing a different group of electric vehicles.

Conclusion

This analysis provides an initial overview of the Indian EV market in 2023. The dataset includes key information about EV models' prices, battery capacity, driving range, and top speed. The market segmentation via clustering offers insights into different market segments. Further analysis and segmentation can be performed based on specific objectives and data availability.