

ELECTRIC VEHICLE MARKET SEGMENTATION ANALYSIS

Submitted by

Abdul Salam

Abstract

This project presents a comprehensive analysis of India's electric vehicle market, focusing on segmentation derived from sales data, customer reviews, and technical specifications. The study highlights the robust growth trajectory of India's two-wheeler market, establishing it as a primary revenue source.

The recommended specifications, seamlessly integrating with the demands of customers. Moreover, the price range aligns closely with the median values, ensuring affordability and competitiveness.

The EV market in India is still in its early stages, but it is growing rapidly. The two-wheeler segment is the largest segment of the EV market in India, followed by the three-wheeler segment. The passenger car segment is also growing rapidly, and is expected to become the largest segment of the market by 2030.

The growth of the EV market in India is creating new opportunities for businesses. There is a growing demand for EV components, such as batteries, motors, and chargers. There is also a growing demand for EV services, such as charging infrastructure and fleet management. The government has set a target to achieve 30 percent electrification of the country's vehicle fleet by 2030.

Introduction

India is experiencing a significant shift in its transportation landscape, driven by the widespread adoption of Electric Vehicles (EVs). The nation's rapid urbanization, growing population, and increased income levels have fueled the embrace of EVs as an eco-friendly alternative. Among these, electric two-wheelers have emerged as pioneers due to their affordability and wide consumer acceptance. These vehicles are reshaping India's mobility narrative, offering a sustainable solution to the challenges of pollution and greenhouse gas emissions.

Problem Statement

An EV startup is developing electric vehicles (EVs) and are trying to decide which vehicle/customer space to target. The Indian EV market is growing rapidly, but it is still in its early stages. There are number of different segments in the market, each with its own unique characteristics. We need to analyse the market and identify the segments that are most likely to adopt EVs. We also need to develop a feasible strategy to enter the market and compete in these segments. The Indian EV market can be segmented based on the following criteria:

- **Vehicle type:** The EV market can be segmented into two-wheelers, three-wheelers, passenger cars, and commercial vehicles. Two-wheelers are the most popular type of EV in India, followed by three-wheelers. Passenger cars and commercial vehicles are still in the early stages of development.
- **Customer:** The EV market can also be segmented by customer type. Customer behavioural data can be used to perform market segmentation.

Process

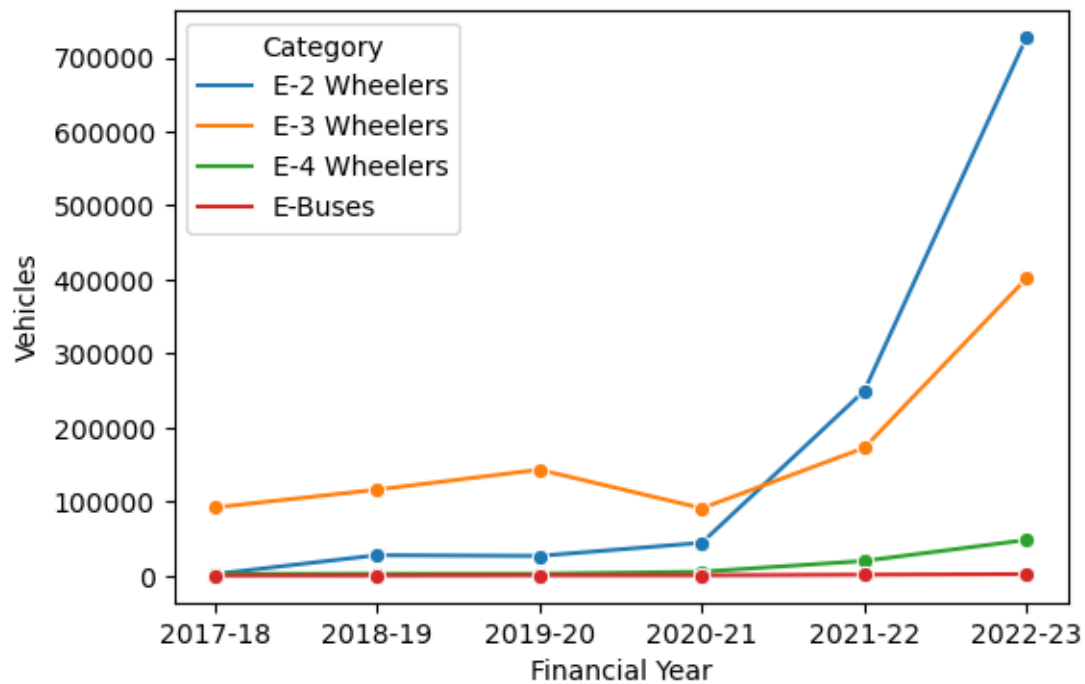
Data Sources and Collection.

For this project, data was gathered from three distinct sources. The primary dataset, obtained from the Society of Manufacturers of Electric Vehicles, spanning 2017 to 2023, catalogues sales figures of electric two-wheelers, three-wheelers, four-wheelers, and buses¹. This dataset provides a comprehensive view of market trends and customer preferences over time.

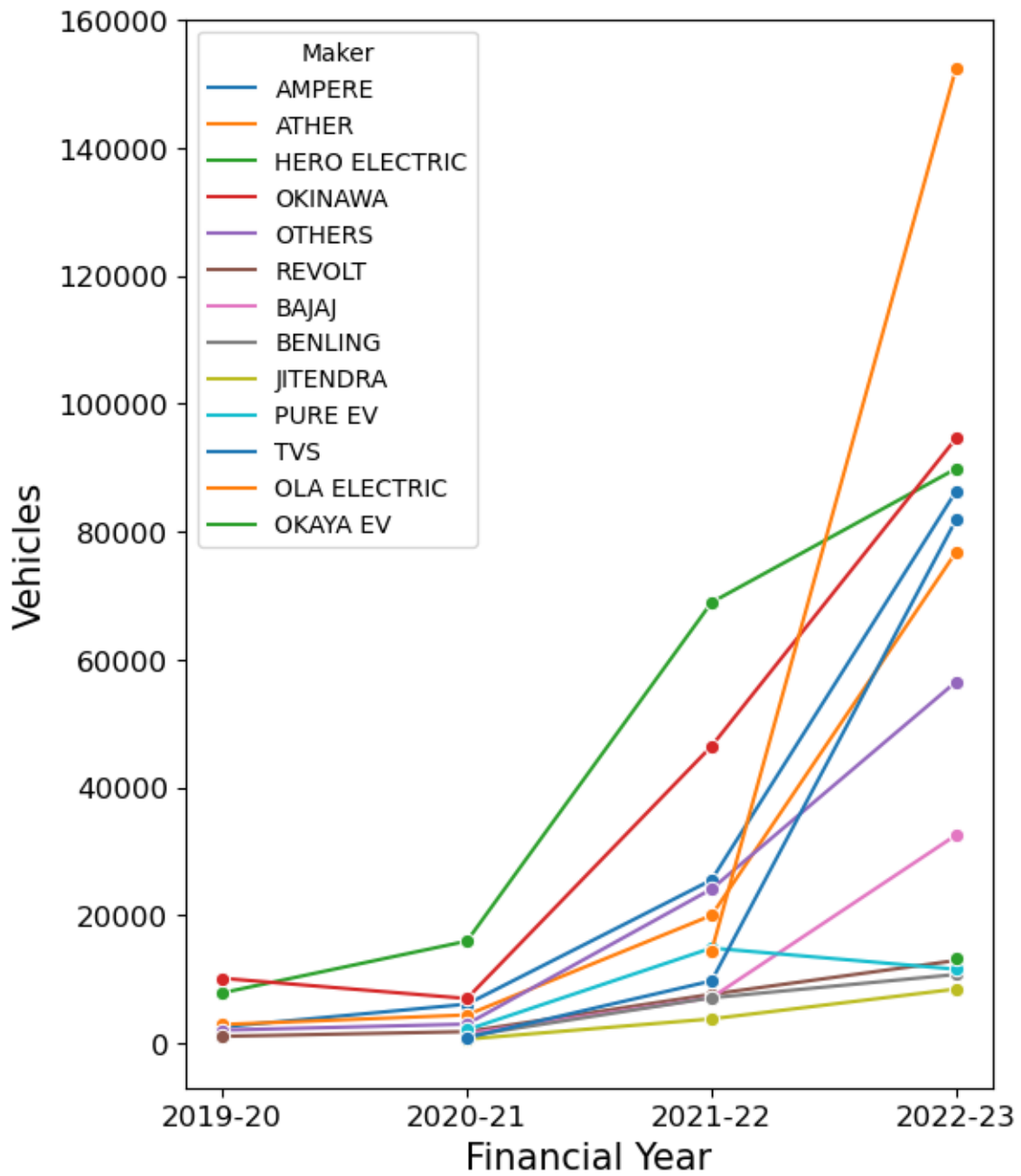
Data Pre-processing.

The data pre-processing phase of this project involved a systematic approach facilitated by Python libraries including numpy, pandas, matplotlib, seaborn.

Graph Explanation.



Above figure showcased the remarkable growth trajectory of India's two-wheeler market in 2023, underscoring its leading position within the industry.



The above figure shows that the different companies which is working and their growth with time.

Conclusion-1:

this analysis represents a substantial market opportunity. By tailoring our electric two-wheeler specifications to meet the preferences of this segment, we ensure our products align seamlessly with the demands of a large customer base. This strategic decision is grounded in a thorough understanding of market segmentation, consumer behaviour, and technical specifications. These insights provide a clear direction for our market entry, emphasizing precision and relevance in both product development and marketing strategies. Moving forward, this approach equips us with a solid foundation, ensuring our offerings resonate effectively within India's evolving electric vehicle market.

Conclusion-2:

The electric vehicle (EV) market seen significant growth in recent years, with battery electric vehicles (BEVs) accounting for the majority of EVs sold. The number of EVs made in India has increased exponentially over the past few years, with BEVs leading the way. PHEVs have also seen growth, but not as drastic as BEVs. More EVs are eligible for clean alternative fuel (CAF) incentives.

These observations suggest that the EV market in India is growing rapidly, with BEVs leading the way. A significant number of EVs are eligible for CAF incentives. However, there is still a lack of data on the electric range of many EVs.