**MARKET SEGMENTATION:**

**1.Dataset:** Ev Sales

**Source:** Kaggle

**Conclusion:**

**1. Trend Analysis**

* **Overall Growth**: EV sales in India have been on the rise, particularly after 2020. This indicates growing acceptance and enthusiasm for EVs among Indian consumers.
* **Impact of COVID-19**: Although there was a dip in sales at the start of the pandemic in 2020, the market bounced back quickly, showing resilience and adaptability.

**2. Segment-wise Analysis**

* **Pre-COVID (April 2017 - March 2020)**:
  + **Sales Growth**: Steady increase in sales month by month.
  + **Key Drivers**: 2-wheelers and 3-wheelers were the major contributors, reflecting strong demand from both consumers and commercial users.
* **COVID Period (April 2020 - March 2021)**:
  + **Sales Impact**: Sales initially dropped but soon recovered as the market adapted to the new normal.
  + **Key Drivers**: The recovery was mainly driven by 2-wheelers and 3-wheelers, showcasing their resilience.
* **Post-COVID (April 2021 - May 2023)**:
  + **Sales Growth**: Rapid growth with significant spikes, especially in the later months.
  + **Key Drivers**: All vehicle types saw growth, but 2-wheelers and 4-wheelers showed the highest increase, indicating wider acceptance.

**3. Vehicle Type Sales Trend**

* **2-Wheelers**: The most popular segment, driven by their affordability and efficiency for personal use.
* **3-Wheelers**: Steady sales growth, popular for commercial use in transporting goods and passengers.
* **4-Wheelers**: Significant growth after 2020, showing increasing interest in personal EVs.
* **Buses**: A smaller segment but with potential for growth, especially through government and institutional purchases.

**4. Market Strategy Recommendations**

* **2-Wheelers**:
  + **Target Audience**: Urban commuters and individual consumers.
  + **Strategy**: Highlight affordability, low maintenance costs, and mileage. Partner with cities to expand EV infrastructure like charging stations.
* **3-Wheelers**:
  + **Target Audience**: Commercial users and small businesses.
  + **Strategy**: Offer fleet purchase incentives, robust after-sales support, and emphasize cost-efficiency for delivery and passenger transport.
* **4-Wheelers**:
  + **Target Audience**: Urban middle class and ride-sharing platforms.
  + **Strategy**: Develop a range from budget to premium vehicles, emphasize safety and range. Partner with ride-sharing companies.
* **Buses**:
  + **Target Audience**: Government and public transportation services.
  + **Strategy**: Focus on government tenders, highlight long-term fuel and maintenance savings, and emphasize environmental benefits.

2.**Dataset**:India EV 2W sales data

**Source**: Kaggle

**Conclusion**

### **1. Market Leaders and Sales Performance**

* **Top Performers**: OLA ELECTRIC leads the market with the highest total sales over the observed period, followed by TVS and ATHER. This indicates that OLA ELECTRIC is the dominant player in the market, with significant sales compared to other makers.
* **Market Share**: The market share analysis shows that OLA ELECTRIC and TVS command a significant portion of the market, suggesting their strong brand presence and customer base.

### **2. Sales Trends**

* **Growth Trends**: OLA ELECTRIC shows a consistent upward trend in sales, with peaks in the later months, indicating growing popularity and market penetration. TVS also exhibits a strong upward trend, especially towards the end of the period.
* **Declines**: Makers like OKINAWA and HERO ELECTRIC experience fluctuations with notable declines in certain months, which could suggest seasonal variations or other market dynamics affecting their sales.

### **3. Clustering Insights**

* **Sales Patterns**: By clustering makers based on their sales patterns, distinct groups can be identified. For example, high-growth makers like OLA ELECTRIC might cluster together, while makers with more stable but lower sales might form a different cluster.
* **Cluster Characteristics**: Understanding the characteristics of each cluster can help in identifying common strategies and market behaviors within each group.

### **4. Forecasting Future Trends**

* **Future Sales Predictions**: Forecasting models suggest that if current trends continue, OLA ELECTRIC and TVS are likely to maintain or even increase their market dominance, while other makers may need to adapt their strategies to capture a larger market share.