

# **EV Market Segmentation Report (Income-Based)**

**Submitted by:**

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## **1. Conclusion**

Our income-based segmentation analysis revealed three distinct groups of potential EV buyers:

1. Cluster 0: Lower-middle income (₹8L–₹12L) — price-conscious and budget-driven.
2. Cluster 1: Upper-middle income (₹13L–₹18L) — likely to consider mid-range EVs that balance features and price.
3. Cluster 2: High income (₹20L–₹26L) — more inclined towards premium EVs with top-tier features.

Understanding these segments enables us to tailor EV models and marketing approaches to match each group's expectations and purchasing power.

## **2. Process**

We carried out the segmentation analysis using the following tools and techniques:

1. Platform: Google Colab (Jupyter Notebook in the cloud)
2. Language: Python
3. Libraries Used: pandas, matplotlib, seaborn, and scikit-learn

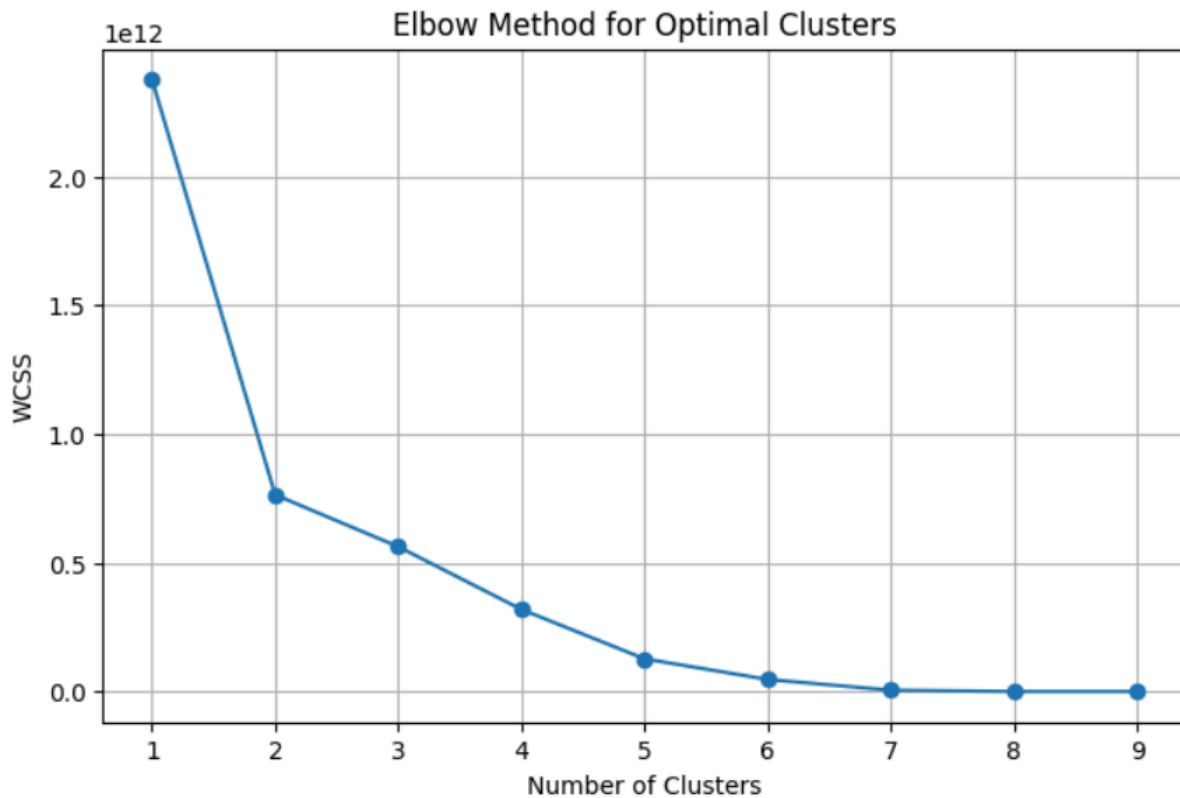
### **Key Steps:**

1. Loaded the dataset income.xlsx, which includes 13 attributes like age, profession, marital status, education, and total salary.
2. Focused on the Total Salary column to drive the segmentation.
3. Used the Elbow Method to determine the optimal number of clusters.
4. Applied KMeans clustering to group the data into three meaningful clusters.
5. Labeled the clusters and visualized them for easier interpretation.

### 3. Graphs and Visualizations

1. Elbow Method Plot:

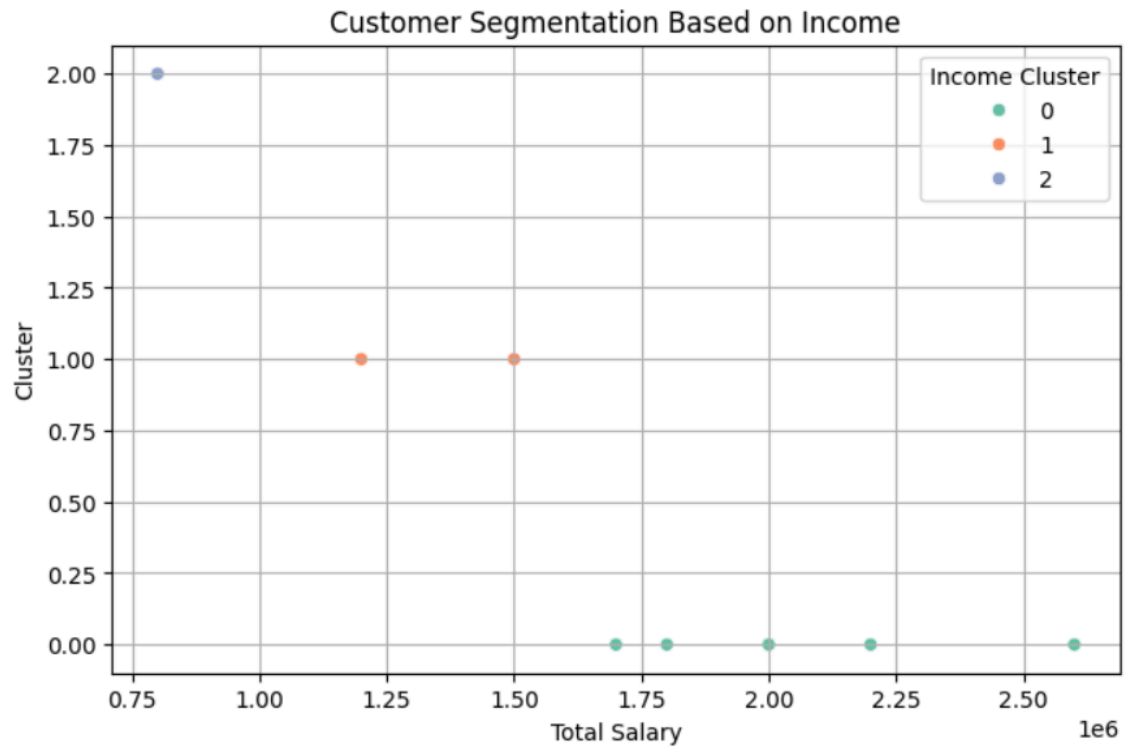
Helped us identify that 3 clusters were ideal, as the curve showed a clear elbow at  $k=3$ .



2. Cluster Scatter Plot:

Displayed three distinct income groups using total salary on the X-axis and cluster

indices on the Y-axis. This confirmed the segmentation visually.



#### 4. Business Recommendation

Based on the segmentation, here's a tailored strategy for the EV company:

1. Cluster 0 (₹8L–₹12L):  
Target with entry-level EVs that are affordable. Emphasize flexible financing options like EMI plans.
2. Cluster 1 (₹13L–₹18L):  
Focus on mid-range EVs that offer a good balance of price, range, and modern features. Value-for-money messaging will work well here.
3. Cluster 2 (₹20L–₹26L):  
Cater to this group with premium EVs. Highlight performance, technology, luxury, and sustainability. They are more brand-conscious and less sensitive to price.

Aligning product development and marketing strategies with these segments can significantly improve customer engagement and EV adoption rates.

## **5. GitHub Repository**

[github](#)