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**Electric Vehicle Analysis Dashboard**

**1. Introduction:**

The Electric Vehicle Analysis Dashboard project provides an interactive and comprehensive exploration of electric vehicle (EV) sales in India from 2022 to 2024. This Power BI dashboard is designed to uncover key insights, including total vehicle sales, penetration rates, state-wise performance, and cost comparisons between electric and conventional vehicles. By leveraging data visualization, the project enables stakeholders to understand the dynamics of the EV market and identify trends in adoption.

**2.Objectives**

* Analyze total vehicle sales and electric vehicle penetration rates across different states.
* Highlight key metrics such as total EV sales, growth rates, and market trends.
* Present a comparative analysis of running costs between electric vehicles and conventional fuel vehicles.
* Offer an intuitive dashboard for quick insights and data-driven decision-making.

**Methodology**

**1.Data Collection:**

* The dataset was sourced from governmental reports and automotive industry publications, providing detailed statistics on vehicle sales in India.

**2.Data Preparation:**

* The dataset was cleaned and preprocessed using Excel to ensure consistency and accuracy for Power BI visualization.

**3.Dashboard Creation:**

* Designed an interactive Power BI dashboard featuring:
* Bar charts for total EV sales by state.
* Line graphs showing monthly sales trends.
* Tables comparing running costs of electric vehicles versus petrol and diesel vehicles.

**4.Analysis:**

* Analyzed key performance metrics such as penetration rates, growth rates (CAGR), and cost savings associated with electric vehicles.

**Key Findings**

**Total Vehicles Sold:**

* Total vehicle sales in India reached 57 million, with electric vehicles accounting for 2 million, resulting in a penetration rate of 3.61%.

**Growth Rate:**

* The Compound Annual Growth Rate (CAGR) for electric vehicle sales is projected at 93.9% from 2022 to 2024.

**Cost Comparison:**

For Cars:

* Annual running cost for EVs: ₹29,200
* Petrol vehicles: ₹120,906.25
* Diesel vehicles: ₹112,953.13
* For Two-Wheelers:
* Annual running cost for EVs: ₹19,211
* Petrol two-wheelers: ₹31,937.50

**Top States for EV Adoption:**

* Delhi leads with a penetration rate supported by extensive charging infrastructure.
* Maharashtra follows closely with significant investments in charging stations.
* Tamil Nadu shows a strong correlation between expanded infrastructure and rising EV sales.

**Software and Hardware Requirements**

**Software:**

* Operating System: Windows/Linux/MacOS
* Tools: Power BI, Microsoft Excel

**Hardware:**

* Processor: Intel i5 or equivalent
* RAM: 8 GB or higher
* Storage: Minimum 1 GB free disk space

**Implications**

* Analysts can utilize the dashboard to evaluate market trends and consumer behavior regarding electric vehicle adoption.
* Journalists can leverage insights for informed reporting on the EV sector.
* Automotive companies can identify strengths and weaknesses in their strategies to enhance performance in future market scenarios.

**Conclusion**

The Electric Vehicle Analysis Dashboard exemplifies the importance of data visualization in understanding complex datasets within the automotive industry. By providing an interactive interface and actionable insights, this project highlights the role of analytics in promoting electric vehicle adoption and improving overall market strategies.