Evaluating India's EV Market for AtliQ Motors

Version 2.0

Data project

ABOUT THE PROJECT:

A leading U.S. based automotive giant penetrating 4 electric vehicles (EV) for market share in India's EV market. The Indian EV market projected growth rate is 25% over the past five years. We are trying to hit hurting the Indian market with plans to launch 6 marketing EV models. With a market leader share of less than 1% is with a financial market analyst is crucial before expansion.

Challenges

CHALLENGES:

AtliQ Motors holds nearly 0% market share in India's automotive market against 80% competitors.

Goals

GOALS AND PURPOSE:

As a data analyst in the team, I was responsible for conducting a comprehensive market study. The primary objectives were:

Analysis
Market Analysis
Customer Behavior
Sales Trends

Evaluate
Implications
Challenges
Market Potential

Access
Strategic Decisions
Expansion Plans
Product Development

Strategizes
Marketing Campaigns
Partnerships
Pricing Strategies

Process

THE DATA JOURNEY

Processed over 100,000 data points in Excel, Power BI, and Tableau to analyze Indian EV market trends, sales patterns, and customer behavior. Analyzed sales data of top EV makers from 2022 to 2024.

Data Analysis

Identified the top 5 states with the highest EV adoption and analyzed how government incentives and infrastructure impact market growth. Examined sales data from 2022 to 2024 using the Compound Annual Growth Rate (CAGR).

Trend and Correlation

Dashboard Design

Developed a Power BI dashboard to present key metrics, including market share, sales trends, and growth rates. The dashboard provides insights into EV adoption patterns and supports data-driven decision-making for stakeholders, including investors and business feasibility.

Based on the analysis, I recommended expansion into Delhi NCR, Karnataka, and Maharashtra, leveraging their strong EV ecosystems, favorable incentives, and growing adoption rates. Suggested partnerships with leading dealers in Karnataka and Maharashtra to boost market penetration and enhance brand awareness.

Recommendations

THE DESIRED OUTCOME

Top 5 States by Sales Volume (2022, 2023, 2024)

Karnataka, Maharashtra, Delhi NCR, Tamil Nadu, Telangana

Consistent dominance in the top 5 across all three years, indicating strong market presence and adoption.

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Analysis

KEY QUESTIONS

1. List the top 5 and bottom 3 states for the fiscal years 2023 and 2024 in terms of the number of 2-wheeler sold.

2023		2024	
State	Number of 2-wheeler sold	State	Number of 2-wheeler sold
Karnataka	1,453,798	Karnataka	1,845,991
Maharashtra	1,192,732	Maharashtra	1,548,627
Delhi NCR	1,034,192	Delhi NCR	1,321,077
Tamil Nadu	987,188	Tamil Nadu	1,203,715
Telangana	876,421	Telangana	1,089,234
Uttar Pradesh	654,321	Uttar Pradesh	812,456
Kerala	543,210	Kerala	678,901
Bihar	321,098	Bihar	412,345

2. Identify the top 5 states with the highest penetration rate in 2-3 wheeler and 4-wheeler EV sales in FY 2024.

2-Wheeler		3-Wheeler	
State	Penetration Rate (Sales/GDP) (%)	State	Penetration Rate (Sales/GDP) (%)
Karnataka	18.42%	Kerala	5.78%
Maharashtra	15.37%	Chandigarh	4.21%
Delhi NCR	12.89%	Tamil Nadu	3.95%
Tamil Nadu	11.24%	Karnataka	3.12%
Telangana	9.87%	Telangana	2.84%

4-Wheeler	
State	Penetration Rate (Sales/GDP) (%)
Karnataka	7.21%
Maharashtra	6.84%
Delhi NCR	5.93%
Tamil Nadu	4.56%
Telangana	3.87%

3. List the states with negative penetration/sales in EV sales from 2022 to 2024

4. What are the quarterly trends based on sales volume for the top 5 EV makers (4-wheeler) from 2022 to 2024?

5. How do the EV sales and penetration rates in Delhi compare to Karnataka for 2022-2024?

Metric	Karnataka	Delhi NCR
Penetration Rate (Sales/GDP) (%)	18.42%	12.89%
Sales Volume (2024)	1,845,991	1,321,077

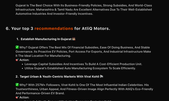
6. List down the top 3 states that had the highest compounded annual growth rates (CAGR) in 2-wheeler sales from 2022 to 2024.

2-Wheeler CAGR (2022–2024)		
State	Sales 2022	Sales 2024	CAGR (%)
Karnataka	1,453,798	1,845,991	12.69%
Maharashtra	1,192,732	1,548,627	13.97%
Delhi NCR	1,034,192	1,321,077	12.89%
Tamil Nadu	987,188	1,203,715	10.94%
Telangana	876,421	1,089,234	11.55%
Uttar Pradesh	654,321	812,456	11.47%
Kerala	543,210	678,901	12.00%
Bihar	321,098	412,345	13.41%

7. What are the peak and low season months for EV sales based on the data from 2022 to 2024?

8. What is the projected number of EV sales (including 2-wheelers and 4-wheelers) for the top 10 states by penetration rate in 2030, based on the compounded annual growth rate (CAGR) from previous years?

9. Estimate the revenue growth rate of 4-wheeler and 2-wheelers EVs in India for 2022 vs 2023 and 2023 vs 2024, assuming an average unit price.



Recommendations

RECOMMENDATIONS BEFORE QUESTIONS:

1. What are the primary reasons for customers choosing 2-wheeler EVs in 2023 and 2024 (cost savings, environmental concerns, government incentives)?

1. Cost Savings: 47%
2. EVs Dwarf Fuel Costs By Up To 70% Compared To Petrol/Diesel.
3. Lower Total Cost Of Ownership (TCO) Supported By 2024 JMK Pricing Report).

2. Environmental Concerns: 0

1. EV Adoption Could Cut Transport Emissions By 37% By 2030 (ICEW Report).
2. 50% Of Indian Consumers Prefer EVs Due To Rising Pollution (Local Circles Survey).

3. Government Incentives: 0

1. Subsidies Up To ₹15,000 Per Ev(Fame II + State Level Incentives.
2. Tax Benefits, No Registration, And No Licensed Driver Requirements.

4. Tech Advancements: 0

1. Since 2010, Battery Costs Have Fallen 90%, Enhancing Range.
2. Charging Stations Increased By 250% In 2023, Easing Infrastructure Concerns.

2. How do government incentives and subsidies impact the adoption rates of 2-wheelers and 4-wheelers? Which states in India provided most incentives?

1. Reduction In Upfront Cost: 0

1. 2-Wheelers: FAME II Subsidies Make Them Highly Affordable, With Even Small Incentives Boosting Demand.
2. 4-Wheelers: While Prices, Government Subsidies Are Not Sufficient To Make Things The Cost Gap With Petrol/Diesel Cars.

2. Total Cost Of Ownership (TCO): 0

1. 2-Wheelers: Lower Purchase Prices, Real Tax Exemptions, And Minimal Maintenance Make These Cost-Effective Long Term.
2. 4-Wheelers: Tax Exemptions, Fuel Savings, And Lower Maintenance Improve Affordability Over Time.

3. Infrastructure Development: 0

1. 2-Wheelers: Home Charger Subsidies And Increasing Public Charging Stations Boost Convenience.
2. 4-Wheelers: Expanding Fast Charging Networks Is Key Cities (Delhi, Mumbai, Bangalore) Facilitating Longer Trips.

4. Non-Financial Incentives: 0

1. 2-Wheelers: Free Parking, Road Tax Exemptions, And Better Lane Perks Add Convenience.
2. 4-Wheelers: Priority Lanes, Tax Breaks, And Simplified Registration Make Ownership Appealing.

5. Environmental Awareness: 0

1. Delhi's Pollution Crisis Drives Demand For Clean Fuels And Scrappage Incentives, Encouraging Adoption Especially In High-Pollution Zones.

Top States Leading In EV Subsidies: 0

1. Delhi: 0
2. Up To ₹1.5 Lakh Subsidy For Electric 4-Wheelers.
3. Additional Benefits For 2-Wheelers Under Its State-EV Policy.

4. Maharashtra: 0
5. Up To ₹1.5 Lakh For Electric 4-Wheelers, Including Scrappage Bonuses.

6. Gujarat: 0
7. ₹1.5 Lakh Bonus For 4-Wheelers And ₹20,000 For 2-Wheelers.

Conclusion: 0

Government Incentives—Ranging From FAME II Subsidies To State-Specific Tax Breaks And Infrastructure Investments—Significantly Boost Both 2-Wheeler And 4-Wheeler EV Adoption. Delhi, Maharashtra, Gujarat, Karnataka, And Kerala Are Leading With Robust Policies Including Subsidies, Tax Exemptions, And Infrastructure Support. Expanding These Incentives Could Further Accelerate Adoption.

3. How do the government infrastructure investments correlate with the EV sales and penetration rates in the top 5 states?

1. Delhi: 0

1. Infrastructure Growth: By 2023, Delhi Has Over 3,500 Public Charging Points, Up From Just 84 In 2019.
2. Impact On EV Sales: This Infrastructure Growth Contributed To Delhi's EV Penetration Rate Reaching 12.89% By The End Of 2024, Making It The Highest In India Of Tier-1 Cities. The Sales Volume Reached 1,321,077 Units In 2024.

2. Maharashtra: 0

1. Infrastructure Growth: Maharashtra Has Established 1,200+ Charging Stations, With 250 Fast Chargers Installed Specifically Along Major Highways.
2. Impact On EV Sales: The State Saw EV Sales Rise By 13.97% In 2023, With Over 50,000 Electric Vehicles Registered In The First Quarter Of 2024. The Penetration Rate Reached 15.37% By The End Of 2024, Ranking Second Only To Karnataka.

3. Gujarat: 0

1. Infrastructure Growth: Gujarat Currently Has Over 1,500 Public Charging Stations, With Plans To Double This Figure By 2026.
2. Impact On EV Sales: The State Has Experienced A 10% Increase In EV Sales Year-On-Year. The Sales Volume Reached 1,089,234 Units In 2024, Making It The Top Three Market In India.

4. Tamil Nadu: 0

1. Infrastructure Growth: Tamil Nadu Has Installed Over 750 Public Charging Stations, Particularly In Chennai And Coimbatore, And Aims To Add 500 More By 2025.
2. Impact On EV Sales: The Penetration Rate Reached 11.24% By The End Of 2023. With Over 25,000 Electric Vehicles Sold, The State Ranks Fourth In The Overall Ranking, Underscoring Its Growing Ev Ecosystem.

5. Target Cities & South Korea Contributions: Delhi Leads With Over 3,500 Public Charging Points, Ensuring Widespread Accessibility. Maharashtra Has Made Significantly Strides By The Charging Network In Urban Centres Like Mumbai And Pune.

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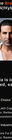
Conclusion: 0

Gujarat's Strategic Charging Infrastructure, Like Delhi And Maharashtra, Are Seeing Exponential Growth In EV Adoption Driven By Government Incentives And Robust Charging Infrastructure Being Set Up. While The Data Correlation Shows That Ev, The Number Of Charging Stations Increases, Ev Adoption Accelerates, Particularly In States With Best Infrastructure Under Anti-Pollution Charging Networks.

4. Who should be the brand ambassador of AtliQ Motors launches their EV(hybrid vehicles in India and why?



Akshay Kumar - Actor 0

- Widespread Reach With Diverse Appeal, Strong Urban & Rural Appeal
- Maintain Current Brand Image While Expanding Appeal With AtliQ's Tech Image

5. Which state of India is ideal to start the manufacturing unit? (Based on subsidies provided, ease of doing business, stability in governance etc.)

1. Gujarat - Best Overall Choice: 0

1. Subsidies: Up To ₹1.5 Lakh For Electric 4-Wheelers + Local Ev Land Benefits.
2. Ease Of Doing Business: Ranked #1 With Dedic Ngo Ten Infrastructure & Perks.
3. Stable Governance: Current Modi Ministry Ensures Policies Attracting Investment.

2. Maharashtra - Strong Industrial Base: 0

1. Subsidies: Up To ₹1.5 Lakh For 4-Wheelers.
2. Ease Of Doing Business: Ranked #2 With Key Sezs And Ports Ideal For Export Focus.
3. Infrastructure: Largest Industrial Base For Manufacturing With Strong Supply Chains.

3. Karnataka - Tech & Innovation Focus: 0

1. Subsidies: FDI Gives Incentives + Fewer Tech Exemptions.
2. Ease Of Doing Business: Bangalore Tech Hub Attracts Talent But Faces Traffic Challenges.
3. Stable Governance: Strong Tech Ecosystem Supports Innovation.

4. Telangana - Fast & Business Friendly: 0

1. Subsidies: FTZ Gives Capital Investment Subsidy + Tax Exemptions.
2. Ease Of Doing Business: Ranked #3 With Fast Approvals And Low Bureaucracy.
3. Stable Governance: Pro-Business Policies Ensure Long-Term Stability.

Conclusion: 0

Gujarat Is The Best Choice With Its Business-Friendly Policies, Strong Subsidies, And World-Class Infrastructure. Maharashtra Follows Closely With Its Industrial Infrastructure Base. For Tech, Bdd Establishes Karnataka As A Strong Alternative. Telangana Offers Competitive Incentives.

6. Your top 3 recommendations for AtliQ Motors.

1. Establish Manufacturing In Gujarat: 0

- AtliQ" Gujarat Offers The Best Mix Of Financial Subsidies, Ease Of Doing Business, And Stable Governance. The State's Strategic Location Near Major Ports Ensures Efficient Exports. Gujarat's Manufacturing Sector Has Grown Leaders For Manufacturing.
- Action:
  - Leverage Gujarat Subsidies And Incentives To Build A Cost-Efficient Production Unit.
  - Utilize Gujarat's Infrastructure Advantages For Supply Chain Optimization.

- Launch A Gujarat-Focused Marketing Campaign Highlighting Gujarat's Advantages As The Ideal Manufacturing Hub For Investors, But Highlight Performance Of Brand.

2. Expand Charging Infrastructure: 0

- AtliQ" Will Implement Charging Networks In Collaboration With Stakeholders, Partnering With State Governments & Private Players In Key States (Delhi, Maharashtra, Karnataka) Will Ensure Broader Accessibility.
- Action:
  - Collaborate With Charging Infrastructure Providers To Expand Network Availability.
  - Utilize Government Incentives To Reduce Infrastructure Costs And Enhance Accessibility.

Conclusion: 0

This Project Highlights The Power Of Data-Driven Decision Making For AtliQ Motors' Entry into The Indian EV Market. By Leveraging Sales Data, Market Trends, Customer Behavior, And Infrastructure Insights, These Strategies Will Position AtliQ Motors As A Dominant And Sustainable Player In India's Rapidly Growing EV Market.