



A Study on Financial Impact of Electric Vehicle Segment on Automobile Companies

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Abstract – This research focuses on analysing how the electric vehicle (EV) segment influences the financial performance of automobile companies. With growing concern for the environment, increasing fuel prices, and supportive government initiatives, the adoption of EVs has gained momentum in India. The study examines the impact of EV- related investments on both short-term profitability and long-term financial growth. Data has been collected from 100 respondents through a structured questionnaire and analysed using statistical techniques such as percentage analysis, correlation, and Chi-square tests. The results suggest that although EV investments involve high initial costs and may reduce profitability in the early stages, they have strong potential to generate higher returns over time. Government support and rising market demand are key factors driving this transition. Overall, the study highlights that the EV segment plays an important role in shaping the future financial performance of automobile companies. It is likely to drive future growth in the industry.

Keywords: - Electric Vehicles, Automobile Industry, Financial Impact, EV Investment, Profitability, Revenue Growth, Government Incentives, Sustainable Transportation

I. INTRODUCTION

The automobile sector is experiencing a significant shift with the increasing adoption of electric vehicles (EVs). Factors such as environmental issues, rising fuel prices, and government support have encouraged both consumers and manufacturers to move towards electric mobility.

Automobile companies are investing heavily in EV-related technologies, including battery systems, charging infrastructure, and research activities. These investments require large amounts of capital, which can influence the financial position of companies, particularly in the initial stages. Despite these challenges, the EV market presents strong future opportunities. Growing awareness, advancements in technology, and policy support are expected to increase demand for electric vehicles. This may result in improved revenue and long-term financial growth. This study attempts to evaluate how the EV segment affects the financial performance of automobile companies by analysing investment patterns, profitability, and future growth potential.

II. REVIEW OF LITERATURE

Existing research indicates that the growth of the electric vehicle (EV) market is mainly driven by environmental concerns, rising fuel costs, and supportive government policies. Many studies suggest that companies investing in EV technology face high initial expenses but can benefit financially in the long term.

Research also shows that factors such as government incentives, technological innovation, and consumer demand play an important role in EV adoption. While initial investment may reduce short-term profitability, it is expected to improve revenue and overall performance in the future.

At the same time, certain challenges such as high battery costs, limited infrastructure, and technological limitations may slow down the adoption process and affect financial outcomes.

Objectives of the Study

- To study the growth of the EV segment in India.
- To analyse financial investment in EV technology.
- To examine short-term impact on company profitability.
- To evaluate long-term revenue growth.
- To understand overall financial impact on automobile companies.

III. RESEARCH METHODOLOGY

Research Design

This study uses a descriptive research design to understand the financial impact of the electric vehicle (EV) segment on automobile companies. A quantitative approach is followed, where data is collected through a structured questionnaire and analysed in numerical form to obtain clear and accurate results.

Source of Data

Primary Data – Primary data was collected through a structured questionnaire covering awareness of EVs, market growth, investment levels, profitability, and financial impact on automobile companies.

Secondary Data – Secondary data was collected from research papers, journals, government reports (such as NITI Aayog), industry reports, books, and online sources related to electric vehicles and the automobile industry.

Sampling Method

The study uses convenience sampling, where respondents are selected based on their availability and willingness to



participate. This method is simple, time- saving, and suitable for collecting data quickly from individuals aware of EVs in the Pune region.

Sample Size

The sample size of the study consists of 100 respondents from the Pune region. These respondents include students, working professionals, business owners, and general consumers.

Data Analysis Tools & Techniques

The collected data is analysed using:

- Percentage Analysis – To show distribution of responses
- Statistical Analysis (Mean) – To understand overall opinion
- Correlation Analysis – To study relationships between variables
- Chi-Square Test – To test hypotheses

Tables, bar charts, and pie charts are used for clear and effective presentation of data.

Scope of the Study

This study focuses on understanding the financial impact of the EV segment on automobile companies. It analyses factors such as investment levels, profitability, government support, and future revenue growth based on the perception of respondents from the Pune region.

Limitations

This study is limited to the Pune region, so the findings may not be applicable to other areas. The sample size is limited to 100 respondents. The study mainly includes students and working individuals and may not cover all groups of society. Additionally, the results are based on perceptions during a specific time period and may change in the future due to technological advancements, policy changes, and market conditions.

IV. DATA ANALYSIS AND INTERPRETATION

#Analysis 1: Are you aware of Electric Vehicles (EVs)?

Options	Frequency	Percentage
Yes	92	92%
No	8	8%
Total	100	100%

Interpretation

A large majority of respondents (92%) are aware of electric vehicles, while only 8% are not aware. This indicates a high level of awareness about EVs among people. It shows that electric vehicles are becoming well-known and recognized in society.

#Analysis 2: According to you, the EV market in India is growing

Options	Frequency	Percentage
Slowly	35	35%
Moderately	52	52%
Rapidly	13	13%
Total	100	100%

Interpretation

Most respondents (52%) believe that the EV market is growing moderately. Around 35% feel that growth is slow, while only 13% believe it is growing rapidly. This shows that people recognize steady growth in the EV sector, but rapid expansion is still developing.

#Analysis 3: What is the main reason for EV growth?

Options	Frequency	Percentage
Government policies	52	52%
Fuel price increase	31	31%
Environmental concern	14	14%
Technology advancement	3	3%
Total	100	100%

More than half of the respondents (52%) believe that government policies are the main reason for EV growth. Fuel price increase (31%) is also a major factor. Environmental concern and technology advancement have comparatively lower influence. This shows that policy support plays a key role in EV adoption.

#Analysis 4: Do you think EV demand will increase in future?

Options	Frequency	Percentage
Yes	50	50%
No	36	36%
Not Sure	14	14%
Total	100	100%

Interpretation

Half of the respondents (50%) believe that EV demand will increase in the future, while 36% do not agree and 14% are unsure. This indicates a generally positive outlook towards future EV demand, though some uncertainty still exists.

#Analysis 5: Do you think automobile companies are investing heavily in EVs?

Options	Frequency	Percentage
Yes	74	74%
No	19	19%
Not Sure	7	7%
Total	100	100%



Interpretation

A strong majority (74%) believe that automobile companies are investing heavily in EVs. Only a small percentage disagree or are unsure. This shows that people clearly recognize the increasing investment trend in the EV sector.

Findings

High Awareness of Electric Vehicles: The study shows that most respondents are aware of electric vehicles, indicating that EVs have become a well-known concept among the public.

Government Policies Drive EV Growth: Government incentives and policies are the main factors encouraging the growth of the EV segment. They play a key role in motivating both companies and consumers.

Heavy Investment by Automobile Companies: Most respondents believe that automobile companies are investing heavily in EV technology, infrastructure, and innovation to capture future market opportunities.

Negative Impact on Short-Term Profitability: Investments affect short-term profits due to high initial costs, low sales volume, and expensive technology requirements.

Positive Impact on Long-Term Revenue: A majority of respondents believe that EVs will increase company revenue in the long term, showing strong future growth potential.

Profitability Takes Time: Most respondents feel that the EV segment will become profitable within 3–5 years, indicating a moderate time frame for returns.

Overall Positive Financial Impact: Despite short-term challenges, EVs are perceived to have a positive overall impact on automobile companies' financial performance.

V. CONCLUSION

The study concludes that the electric vehicle (EV) segment has a significant impact on the financial performance of automobile companies. The growing awareness, government support, and increasing demand for sustainable transportation have accelerated the adoption of EVs in the market.

The findings show that automobile companies are making large investments in EV technology, which creates financial pressure in the short term due to high initial costs and infrastructure requirements. However, these investments are expected to generate positive returns in the long run by increasing revenue and improving profitability.

Although challenges such as high costs, limited infrastructure, and technological barriers exist, the overall

perception towards EVs remains positive. Most respondents believe that the EV segment will play an important role in the future growth of the automobile industry.

In conclusion, while EV investments may reduce short-term profits, they offer strong long-term financial benefits, making them a crucial part of the future strategy for automobile companies.

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