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**MAJOR RESEARCH PROJECT**

**On**

**A Comparative Study of Customer Preference towards Electric Vehicles (EVs) and Petrol Vehicles**

***Submitted to***

**Devi Ahilya University, Indore**

**For partial fulfillment of the requirement for the Degree of**

**Master of Business Administration (FT)**

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 1. Introduction  
  
The global automobile industry is undergoing a major transformation with the shift towards sustainable mobility solutions. Growing environmental concerns, fluctuating crude oil prices, and advancements in green technology have driven governments, businesses, and consumers to explore alternatives to conventional petrol vehicles. Electric vehicles (EVs) have emerged as a strong contender, offering advantages such as lower running costs, reduced emissions, and government incentives.  
  
In India, the automobile sector is one of the largest contributors to GDP and employment, with petrol-based vehicles historically dominating the market. However, with the Government of India’s push for e-mobility through schemes like FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles), coupled with rising consumer awareness, EVs are increasingly being seen as a viable option. Despite this, adoption remains uneven due to infrastructure challenges, high initial costs, and consumer hesitancy.  
  
From a marketing perspective, understanding customer preferences between EVs and petrol vehicles is crucial. Automakers must identify the key factors that drive purchase decisions and align their strategies with evolving consumer expectations. This study aims to provide insights into the comparative preference patterns, highlighting the role of marketing, perception, and behavioral aspects influencing customers.

The automobile industry is experiencing a paradigm shift driven by the growing concern for sustainability, environmental protection, and energy efficiency. Electric vehicles (EVs) have emerged as an alternative to conventional petrol-powered vehicles, offering potential benefits such as reduced emissions, lower running costs, and alignment with global sustainability goals. However, consumer preferences play a critical role in determining the pace at which EV adoption will replace petrol vehicles. This study seeks to compare customer preferences towards EVs and petrol vehicles by analyzing factors such as cost, performance, environmental concerns, charging/refueling infrastructure, and brand trust.

2. Background  
  
The Indian automobile industry is characterized by its diversity, ranging from two-wheelers and compact cars to SUVs and luxury vehicles. Petrol vehicles have historically dominated the landscape due to affordability, accessibility of fuel infrastructure, and perceived reliability.  
  
However, recent years have seen growing awareness regarding the environmental impact of petrol and diesel vehicles. With increasing pollution levels in metropolitan areas and global pressure to reduce carbon emissions, EVs are gaining traction. Furthermore, the rising cost of fuel and the availability of government subsidies on EVs are reshaping consumer attitudes.  
  
From a marketing standpoint, companies are repositioning their offerings. Petrol vehicles are marketed around performance, affordability, and wide service networks, whereas EVs are promoted using green marketing, cost-efficiency, and advanced technology narratives. This study compares these approaches while examining the actual consumer response.  
  
 3. History  
  
Petrol-powered vehicles have been the backbone of the global automobile industry since the early 20th century. India, after its independence, saw rapid expansion in petrol vehicles with brands like Hindustan Motors, Maruti Suzuki, and Tata Motors leading the sector. Over the decades, petrol vehicles became synonymous with convenience and affordability.  
  
The concept of EVs, however, is not new. Early prototypes existed in the 19th century, but their development was overshadowed by the success of internal combustion engines. In India, the EV movement gained momentum only in the last decade, with companies like Mahindra Electric, Tata Motors, Ola Electric, and Ather Energy entering the market. Global leaders such as Tesla also inspired Indian consumers to view EVs as futuristic and premium.  
  
Government milestones, such as the National Electric Mobility Mission Plan (NEMMP) and FAME schemes, have further encouraged adoption. Despite these initiatives, the penetration of EVs remains limited to urban centers, reflecting a gap between policy intentions and consumer adoption.  
  
 4. Review of Literature  
  
Previous studies have examined customer preferences in the automobile sector from both functional and psychological perspectives.  
  
Price Sensitivity: Research indicates that cost remains a major determinant in vehicle purchase. Petrol vehicles are often seen as more affordable upfront, whereas EVs are perceived as expensive despite lower long-term costs. (Kumar & Bansal, 2021).

Performance & Reliability: Traditional vehicles are trusted for performance and service availability. Studies suggest that EVs face skepticism regarding driving range and battery life (Mehta, 2020).  
  
Green Marketing & Environmental Concern: A growing body of literature highlights environmental awareness as a motivator for EV adoption, especially among urban youth (Sharma, 2019).  
  
Infrastructure Challenges: Lack of charging infrastructure has been consistently cited as a barrier to EV adoption (Singh, 2020).  
  
Brand Image & Innovation: EVs are associated with modernity and social status, while petrol vehicles are associated with trust and familiarity.  
  
  
A gap identified in the literature is the lack of comparative studies focusing on Indian Tier-II and Tier-III cities, where customer decision-making may be influenced more by cost and infrastructure constraints than by environmental concerns.

(There has to be at least 12 reviews)  
  
 5. Rationale of the Study  
  
This study is relevant due to the increasing debate between EVs and petrol vehicles in the Indian market. While EVs are projected to dominate future mobility, petrol vehicles still hold strong appeal due to their established ecosystem.  
  
From a marketing perspective, the rationale lies in understanding:  
  
How customers perceive brand communication strategies of EV vs petrol manufacturers.  
  
Whether green marketing significantly influences consumer choices.  
  
The role of after-sales service and trust in shaping preferences.  
  
  
This research will provide valuable insights for marketers, policymakers, and automobile companies, helping them frame strategies that align with consumer behavior.  
  
 6. Objectives of the Study  
  
1. To analyze consumer preferences between electric vehicles and petrol vehicles.

2. To identify the key factors influencing purchase decisions.  
3. To study the role of marketing strategies in shaping consumer perception.  
4. To compare the advantages and disadvantages perceived by consumers regarding EVs and petrol vehicles.  
5. To provide recommendations for marketers and policymakers.  
  
 7. Hypothesis  
  
H1: Customers prefer EVs primarily due to lower running costs and government incentives compared to petrol vehicles.

H2: Petrol vehicles are still perceived as more reliable and convenient due to fuel infrastructure and service availability.  
H3: Marketing strategies emphasizing green and sustainable attributes positively influence EV adoption.  
  
 8. Methodology  
  
This research will adopt a descriptive and comparative research design. Both primary and secondary data will be utilized.  
Primary Data: Collected through structured questionnaires and interviews with customers across different age groups, income levels, and geographies.  
Secondary Data: Drawn from journals, research papers, government reports, and company publications.  
The study will focus on consumer attitudes, perceptions, and preferences, analyzed using statistical tools.  
  
 9. Research Design  
  
The study will follow a cross-sectional survey design, capturing responses at one point in time. It will compare customer attitudes towards EVs and petrol vehicles based on parameters such as cost, reliability, environmental concern, and marketing influence.  
  
 10. Variables to be Used  
Independent Variables: Price, fuel cost, infrastructure availability, environmental concern, brand image, marketing campaigns.  
Dependent Variable: Customer preference (EV vs petrol vehicle).  
  
 11. Sample Design  
  
Sampling Technique: Stratified random sampling.  
Sample Size: Approximately 150–200 respondents.  
Population: Vehicle users and potential buyers in urban and semi-urban regions.  
Respondent Profile: Categorized by age (18–60 years), income levels, and occupation.  
  
 12. Tools for Data Collection  
  
Structured questionnaire (online & offline).  
Likert scale to measure attitudes.  
Demographic details for segmentation.

13. Tools for Data Analysis  
  
Microsoft Excel/SPSS for data coding and tabulation.  
Descriptive statistics (mean, percentage).

Inferential tests: Chi-square test, t-test, regression analysis.  
  
 14. Hypothesis Testing  
  
The hypotheses will be tested using statistical methods such as Chi-square and regression analysis to identify significant relationships between customer perceptions and vehicle preference. Results will help in validating whether factors like cost savings, infrastructure, or green marketing significantly influence EV adoption.  
  
 15. References  
  
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