CHANGING PREFERENCE OF CAR BUYERS FROM FUEL TO ELECTRIC VEHICLES

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Abstract—**This study examines the changing preference of consumers from fuel-based vehicles to electric vehicles (EVs). The automobile industry is undergoing rapid transformation due to increasing fuel prices, environmental concerns, technological development, and government support for sustainable transportation. Consumers are now considering EVs as cost-effective, energy-efficient, and eco-friendly alternatives to traditional petrol and diesel vehicles.**

The research focuses on factors such as technological features, maintenance cost, charging infrastructure, social influence, and environmental awareness that affect consumer buying decisions. Data were collected from respondents through structured questionnaires and analysed using statistical tools. The findings indicate that customers are increasingly attracted towards electric vehicles because of lower running costs, advanced safety features, and government incentives. The study concludes that the future automobile market will experience significant growth in electric vehicle adoption.

I. Introduction

Electric vehicles have emerged as one of the most important innovations in the automobile industry. Traditional fuel vehicles contribute heavily to environmental pollution and rising fuel expenses. As a result, consumers are gradually shifting towards electric vehicles which provide sustainable transportation solutions. EVs use electricity stored in batteries instead of fossil fuels, reducing carbon emissions and dependence on petrol and diesel.

The Indian automobile market is also witnessing rapid growth in EV adoption due to supportive government policies and improved charging infrastructure. Automobile companies are introducing advanced electric cars with modern technology, infotainment systems, and improved battery performance. Consumers are becoming more aware of environmental sustainability and long-term cost savings associated with EVs.

This study analyses the changing preference of car buyers towards electric vehicles and identifies the factors influencing their purchasing decisions. It also evaluates the role of technology, social influence, fuel prices, and infrastructure in accelerating EV adoption.

II. OBJECTIVES OF THE STUDY

1. To analyse consumer preference towards electric vehicles.
2. To identify factors influencing the shift from fuel vehicles to battery-operated vehicles.
3. To examine the effect of increasing fuel prices on consumer decisions.
4. To study the importance of charging infrastructure in EV adoption.
5. To understand the role of technology and environmental awareness in buying behaviour.
6. To provide suggestions for improving electric vehicle adoption in India.

III. REVIEW OF LITERATURE

Several researchers have studied consumer behaviour towards electric vehicles. Previous studies revealed that environmental concern, government incentives, social influence, and technological advancement strongly influence EV adoption. Consumers are attracted to EVs because of low maintenance costs, reduced fuel dependency, and eco-friendly features.

Research also highlighted that awareness regarding battery technology and charging infrastructure plays an important role in consumer decision-making. Some studies identified barriers such as limited charging stations, battery performance issues, and high initial costs. However, continuous technological development and policy support are reducing these challenges.

Literature also indicates that urban consumers are more willing to adopt EVs due to increasing environmental awareness and improved infrastructure. The findings from earlier studies support the idea that electric mobility is becoming a preferred choice among modern consumers.

IV. RESEARCH METHODOLOGY

The study adopted a quantitative research design to analyse consumer preference towards electric vehicles. Primary data were collected from respondents using a structured questionnaire. The questionnaire included demographic details and questions related to EV adoption, technology, fuel price, and charging infrastructure.

A simple random sampling technique was used for selecting respondents. The sample size for the study consisted of 120 respondents. Secondary data were collected from journals, websites, research articles, and company reports.

Statistical tools such as percentage analysis, chi-square test, correlation, and ANOVA were used for analysing the collected data. The study aimed to provide reliable and meaningful insights into consumer buying behaviour regarding electric vehicles.

V. DATA ANALYSIS AND INTERPRETATION

The study revealed that a majority of respondents belong to the younger age group below 35 years. Most respondents agreed that increasing fuel prices encourage them to shift towards electric vehicles. Consumers also strongly agreed that advanced technological features such as infotainment systems, safety features, and connectivity improve their preference for EVs.

The findings further indicated that respondents are attracted towards lower maintenance and running costs associated with battery-operated vehicles. Many consumers expressed satisfaction with the availability of charging infrastructure in urban areas. Social influence and advertising campaigns also played an important role in shaping consumer perception towards electric vehicles.

Overall, the analysis indicates a positive consumer attitude towards EV adoption due to economic, technological, and environmental benefits.

VI. FINDINGS

1. Young consumers are more interested in purchasing electric vehicles.
2. Rising fuel prices significantly influence customer preference towards EVs.
3. Consumers believe EVs provide lower running and maintenance costs.
4. Advanced technology and safety features positively impact buying decisions.
5. Environmental awareness encourages consumers to adopt electric mobility.
6. Availability of charging infrastructure increases consumer confidence.
7. Government support and subsidies motivate EV adoption.
8. Marketing campaigns and social influence affect consumer preference.

VII. SUGGESTIONS

1. The government should expand charging infrastructure across cities and highways.
2. Automobile companies should reduce the cost of electric vehicles.
3. More awareness programs should be conducted regarding EV benefits.
4. Battery performance and charging speed should be improved.
5. Attractive financing options and subsidies should be provided to customers.
6. Companies should strengthen after-sales service and maintenance networks.
7. Educational campaigns should highlight the environmental benefits of EVs.

VIII. CONCLUSION

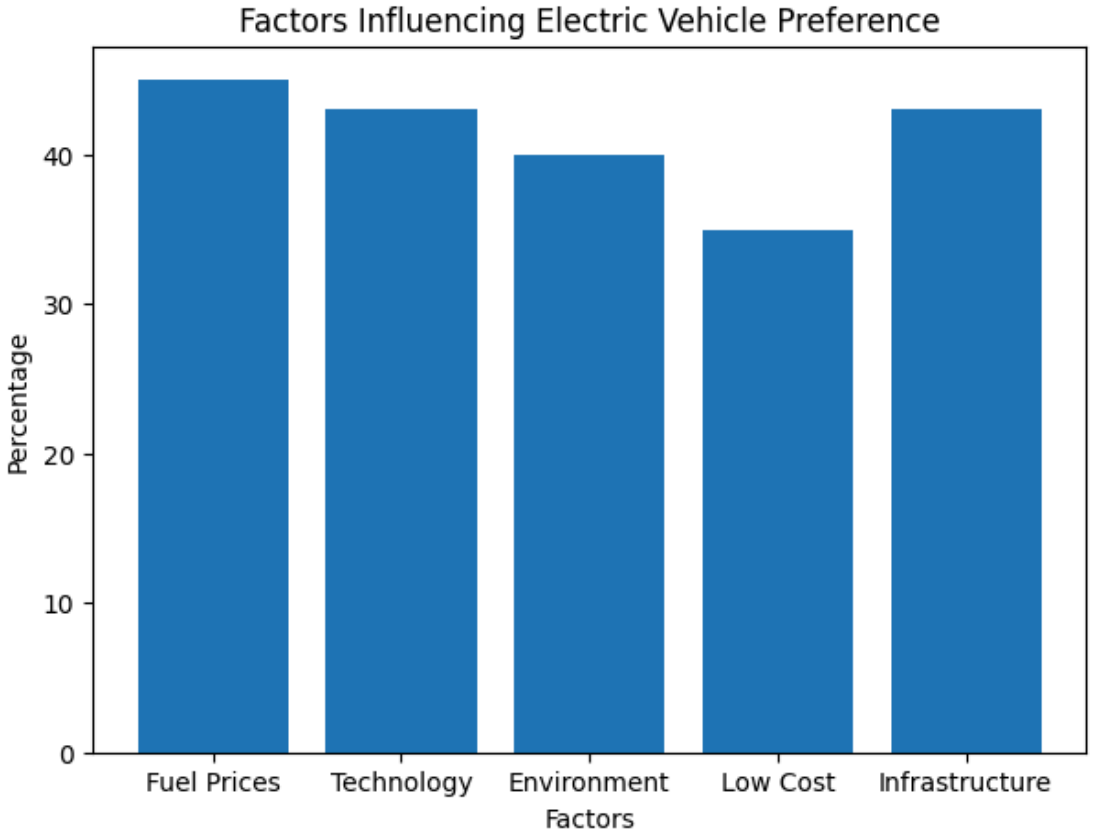
The study concludes that consumer preference is gradually shifting from fuel-based vehicles to electric vehicles because of environmental awareness, economic benefits, and technological advancement. Rising fuel prices and growing concern for sustainability are encouraging consumers to adopt EVs.

Electric vehicles offer lower maintenance costs, reduced pollution, and advanced technological features, making them attractive to modern consumers. Although challenges such as charging infrastructure and battery cost still exist, continuous development and government support are expected to accelerate EV adoption in the future.

The automobile industry is expected to witness significant transformation as consumers increasingly prefer electric mobility. Companies focusing on innovation, affordability, and customer satisfaction will gain a competitive advantage in the evolving market.

IX. CHART ANALYSIS

The chart below represents the major factors influencing consumer preference towards electric vehicles.



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