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Marketing and Electric Vehicle (EV) Adoption in Pune City: Understanding Consumer Behaviour and Trends in Sustainable Mobility

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***Abstract*-- The transition towards sustainable mobility has become one of the most important transitions in the global automotive sector. Electric vehicles (EV) are an environmentally responsible alternative to the traditional internal combustion engine automobile and are becoming more widely promoted due to strategic marketing efforts. In India, few urban centres like Pune have shown huge potential in EV adoption because of increasing environmental awareness, technological literacy, and changing consumer lifestyles. Marketing communication plays a decisive role in the structuring of the perception of consumers, the reduction of uncertainty and the purchase decision in connection with electric mobility.**

The present study focuses on the role of marketing strategies in determining the consumer behaviour towards electric vehicles in Pune city. The research uses an empirical survey-based approach to gain an understanding of the role of advertising, digital marketing, sustainability messaging, promotional offers, and experiential marketing on consumer awareness and decision making. Primary data were obtained from 57 respondents by using a structured questionnaire based on 5-point Likert scale. Statistical analysis based on a one-sample t-test was used to assess the significance of marketing activities on consumer attitude to EV adoption.

The results show that marketing communication is an effective method to improve the awareness, interest and intention of consumers toward electric vehicles. Digital marketing channels, environmental branding, social influence and experiential promotions were found to be strong drivers of positive perceptions. However, concerns over charging infrastructure, technological uncertainty, and perceived cost continue to be factors affecting the final purchase decision. The study concludes that integrated and education-oriented marketing strategies can accelerate the adoption of EVs in the Pune city by building trust and decreasing the resistance of consumers. The paper adds to the literature in the field of marketing and consumer behaviour because it offers empirical insights into the sustainable adoption of mobility in an urban Indian context.

I. INTRODUCTION

The automotive industry around the globe is experiencing an unprecedented shift in the form of technological innovation, environmental sustainability, and changes in consumer expectations. Among the most visible results of this transformation is the explosion of electric vehicles (EVs), which are widely seen as a sustainable alternative to the traditional fuel-powered automobiles. Governments, corporations, and consumers are collectively trending towards cleaner mobility solutions as environmental concerns such as pollution, climate change, and carbon emissions are gaining global attention. In this changing scenario, marketing plays a key role in shaping public awareness and promoting the consumer acceptance of new technologies.

India has realised on the importance of electric mobility through policy initiatives, incentives and infrastructural development geared towards promoting EV adoption. Urban cities like Pune are of special importance because they have a good automobile ecosystem, educational environment, and technology-oriented population. Pune is often referred to as one of the emerging smart cities of India, having a large young population, a growing environmental awareness and demand for innovation driven transport. These characteristics make Pune an ideal setting for analysing the consumer behaviour with regard to electric vehicles adoption.

Consumer behaviour towards electric cars is very different from the traditional car purchase as EVs are a relatively new technology. Consumers are often uncertain about battery life, charging infrastructure, maintenance costs, resale value, and technology reliability. In such scenarios, marketing becomes an important tool to minimise the perceived risk and influence favourable attitudes.

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Marketing communication helps to translate the benefits of the technology into meaningful value to consumers through emphasizing the cost-saving, environmental responsibility, and long-term economic benefits.

Modern marketing strategies for electric vehicles are heavily dependent on digital platforms, social media communications, influencer marketing, and experiential marketing campaigns such as test drives and interactive demonstrations. Sustainability branding has become one of the major approaches, in which marketers are positioning EVs not as a vehicle but as lifestyle choices that contribute to environmental protection. Emotional appeals, environmental awareness and technological innovation are increasingly used in EV marketing campaigns to appeal to an environmentally conscious consumer.

From the theoretical point of view, consumer behaviour models indicate that purchase decisions are affected by psychological, social, cultural and situational factors. Marketing strategies try to match with these factors with persuasion and awareness. The Theory of Planned Behavior, Diffusion of Innovation Theory, and Green Marketing frameworks offer useful frameworks through which EV adoption behaviour can be examined. Consumers progress through the stages of awareness, interest, evaluation, trial, and adoption, and the intervention of marketing influences each of these stages.

Despite increasing promotional efforts of automobile companies, the lack of consumer hesitation remains a challenge. Issues such as charging infrastructure availability, perceived high initial cost and a lack of technical understanding all continue to play a role in decision making. Therefore, it is necessary to understand the marketing communication effectiveness to find out how consumer perceptions are created and what strategies can be used to further improve the adoption.

The present study tries to fill this gap by empirically analysing the impact of marketing strategies on consumer behaviour towards electric vehicles in Pune city. Collecting and analysing perception-based data from the respondents, the study is aimed at offering practical insights to marketers, policy makers and automotive organisations looking to fast-track sustainable mobility adoption in the urban Indian context.

II. Objectives Of The Study

To look at the influence of marketing strategies on the consumer behaviour towards EV adoption in the Pune city.
To analyse consumer perceptions with respect to digital marketing, sustainability branding and promotional strategies related to EV.

To assess whether marketing communication has significant impact on consumer awareness and consumer purchase intention towards electric vehicles.

Hypotheses

H0 (Null Hypothesis): Marketing strategies are not significantly related to the consumers behaviour towards adopting electric vehicles in Pune city.

H1 (Alternative Hypothesis): Marketing strategies do have an effect on consumer behaviour towards the choice of adoption of electric vehicles in Pune city.

III. Research Methodology

The study adopts a quantitative and empirical research design to evaluate the influence of marketing strategies on consumer behaviour toward electric vehicles. A descriptive research approach was employed because the primary objective was to understand perceptions, attitudes, and behavioural responses related to marketing communication.

The target population included residents of Pune city who were either automobile users or potential buyers aware of electric vehicles. A total of 57 respondents were selected using convenience sampling, as participants were easily accessible and represented diverse demographic and occupational backgrounds. Although convenience sampling limits generalization, it is widely used in exploratory marketing research involving perception analysis.

Data collection was conducted using a structured questionnaire developed specifically for the study. The instrument comprised 10 statements focusing on awareness, digital influence, sustainability messaging, promotional effectiveness, brand trust, and behavioural intention toward EV adoption. Responses were measured using a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The questionnaire underwent academic validation to ensure relevance, neutrality, and clarity. Respondents participated voluntarily, and ethical considerations such as anonymity and confidentiality were maintained throughout the research process.

For data analysis, descriptive statistical measures including mean and standard deviation were used to identify perception trends. To test the hypothesis, a one-sample t-test was applied by comparing the sample mean against the neutral midpoint value of 3.0 on the Likert scale. Statistical significance was evaluated at a 5 percent level ($\alpha = 0.05$). Secondary data from academic journals, policy reports, and marketing literature were reviewed to strengthen theoretical interpretation and support findings.

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IV. Data Collection

Primary Data

Primary data were gathered through a structured questionnaire administered to 57 respondents from Pune city. The questionnaire measured consumer perceptions regarding marketing influence on EV awareness, digital campaigns, sustainability communication, and purchase interest.

Secondary Data

Secondary data were obtained from academic journals, government policy reports, industry publications and market research studies related to adoption of electric vehicles, sustainable mobility and marketing communication. These sources give important contextual support to understand how marketing affects the consumer behaviour towards EV adoption.

Recent industry reports suggest that the electric vehicle market in India has witnessed a steady growth with the support of the certain government initiatives, like the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme, which offers subsidies for the adoption of EVs. According to NITI Aayog estimates and industry estimates, electric two-wheelers and passenger EVs have shown massive growth on a year-on-year basis, which reflects the growing consciousness among the consumer base and the shift in mobility preferences. Urban cities such as Pune, Bengaluru, and Delhi are recognised as high-potential markets on account of the improvement in environmental awareness, improving charging infrastructure, and technology-driven consumer segments.

Marketing studies also further highlight that digital marketing and sustainability branding have a great impact on EV purchase intention. Reports indicate that close to 60-70% of urban consumers depend on online platforms, reviews on social media and recommendations of influencers, before even thinking about buying an EV. As well, marketing campaigns focusing on environmental benefits and long-term cost savings are generally a positive influence on consumer attitudes, particularly for younger and educated demographics.

Academic literature also suggests that experiential marketing strategies such as test drives, showroom demonstrations and EV awareness events play a crucial role in reducing technological uncertainty among the consumers.

Consumers tend to view EVs as innovative but risky products and thus effective marketing communication is needed to lower the perceived risk and build trust.

Furthermore, related to the measure of secondary studies, it was found that despite increasing awareness, barriers like charging infrastructure concerns, range anxiety and perceived high initial prices remain important barriers affecting the purchase decision. Therefore, marketing strategies that incorporate aspects of educational communication, practical demonstrations, and open information are suggested in order to bridge the divide between awareness and actual adoption. Overall, the secondary data strongly support the idea that strategic marketing is a critical factor in promoting a fast EV adoption in urban markets such as Pune city.

Survey Responses (n = 57)

Question	Survey Statement	Mean Score	Std. Dev
Q1	Marketing campaigns increase awareness about EVs	4.10	0.69
Q2	Social media influences my perception of EV brands	4.05	0.71
Q3	Promotional offers improve interest in EV purchase	4.18	0.64
Q4	Sustainability marketing makes EVs attractive	4.24	0.66
Q5	Brand reputation affects EV buying decisions	4.00	0.73
Q6	Digital advertisements improve EV understanding	4.12	0.70
Q7	Test-drive experiences influence decisions	4.20	0.65
Q8	Marketing reduces fear about EV technology	4.08	0.72
Q9	Online reviews and influencers affect choices	4.15	0.68
Q10	EV marketing should be strengthened in Pune	4.32	0.60

Interpretation:

All responses showed mean scores above 4.00, reflecting strong agreement that marketing plays a positive role in influencing consumer awareness and perceptions toward EV adoption.

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Data Analysis

Test Value (Neutral midpoint) = 3.0
Sample Mean = 4.14
Standard Deviation = 0.69
Sample Size = 57
t = (Mean − Test Value) / (SD / √n)
t = (4.14 − 3) / (0.69 / √57)
t ≈ 12.52
Critical t-value (df = 56, α = 0.05) ≈ 2.00
Since calculated t (12.52) > critical t (2.00), the null hypothesis is rejected.

Interpretation: Marketing strategies significantly influence consumer behaviour toward electric vehicle adoption in Pune city.

V. Findings And Discussion

The results of the study show that marketing communication has a substantial effect on the attitude of consumers towards electric vehicles. Respondents strongly agreed that sustainability-oriented campaigns positively affect their perception of EV brands, indicating that environmental messaging has become a major persuasive factor in modern marketing. Digital marketing channels such as social media, online advertisements, and influencer recommendations were cited as having good potential in creating awareness and building trust.

Experiential marketing elements such as test drives and demonstration events came to be important tools for reducing uncertainty about EV technology. This is consistent with consumer behaviour theories which indicate that direct experience decreases perceived risk and increases the intention to adopt. Brand reputation was also found to influence decision-making, emphasizing the importance of trust and credibility in marketing communication.

However, the results also suggest marketing cannot overcome all barriers. Some respondents had concerns related to charging infrastructure and perceived high costs which may indicate that marketing strategies should have educational and information components addressing practical issues. Overall, the empirical evidence confirms that marketing works as a catalyst in promoting EV adoption, especially when used together with sustainability messaging and technological education.

VI. Suggestions

Based on the findings, a number of recommendations can be suggested:

EV companies should implement integrated marketing communication strategies which integrate the digital, experiential and educational approach.

Sustainability-focused branding should be strengthened in order to appeal to environmentally conscious consumers.

Marketers should deploy localized campaigns in Pune that stress on real life cost savings and availability of infrastructure.

Experiential marketing like test drives and EV exhibitions should be increased for better consumer confidence.

Marketing communication should be aimed at educating consumers about charging solution and long-term benefits.

VII. Conclusion

Electric vehicles are a transformative change for the sustainability of urban mobility, and the marketing has a decisive role to play in influencing consumer behaviour in this transition. The study confirms the significant impact of marketing strategies on consumer awareness, attitudes and intention towards the adoption of EV in Pune city. Digital communication, sustainability branding and experiential campaigns were found to positively influence perception and alleviate resistance to new technology. However, marketing efforts must also focus on practical issues through transparent and educational messaging. Overall, the use of strategic and responsible marketing communication can help to accelerate the adoption of EVs and contribute to India's long-term sustainability goals.

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