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Consumer Behavior toward Electric Vehicles in Delhi NCR, India

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Abstract

Purpose *– The purpose of study is to explore consumer behavior towards electric vehicles (EVs) in the Delhi NCR region of India. In this study the focus is on the factors influencing the adoption and the challenges faced by the people who want to but the EV, s. Understanding these determinants will help stakeholders, including policymakers and manufacturers, formulate effective strategies to accelerate EV adoption.*

Research Methodology- *A hybrid approach was used, combining qualitative interviews with industry experts and quantitative surveys from 500 consumers in Delhi NCR. The survey was focused on key factors related EVs such as environmental awareness, cost considerations, government policies, charging infrastructure, and social influence. The collected data were analyzed using statistical tools and thematic analysis.*

Findings- *The study finds that while there is a growing awareness in the consumers of the environmental benefits of EVs, price of the EVs remains a significant barrier to adoption. Though government incentives and subsidies are considered positively, but concerns regarding charging infrastructure and range anxiety persist. Additionally, social influence and the perception of EVs as a luxurious product play a role in shaping consumer preferences.*

Research Limitations: *-The research is limited to the Delhi NCR region and may not fully represent the behavior of consumers in other parts of India. Future studies could expand the sample size to assess changes in consumer behavior over time.*

Practical Implications- *The findings of this study will have implications on policymakers and on manufacturers. As policy makers should focus on improving charging infrastructure, giving more incentives to EV buyers, and in increasing awareness in the public regarding the low running cost, reduced emission and low maintenance cost.*

Keywords- *Electric Vehicles (EVs), Consumer Behavior, Environmental Awareness, Government Policies, Charging Infrastructure, Cost Considerations, Social Influence*

Introduction

Growing concerns about air pollution, climate change, and the world's reliance on fossil fuels have fueled one of the biggest trends in the automotive industry: the move to electric cars (EVs). There are serious air quality issues in India, one of the biggest and most populated countries in the world, especially in cities like Delhi NCR. Vehicles are one of the important causes of air pollution in India which emit carbon dioxide and other dangerous pollutants (Kumar et al., 2020). The governments and automakers are pushing electric vehicles as a cleaner and more environmentally friendly option to traditional automobiles. The use of electric vehicles (EVs) has been recognized as a crucial strategy to lower pollution and foster sustainability (KPMG, 2020). However, despite motivation by the government and a growing awareness of the environmental benefits of EVs, the process of adopting EV is very slow, particularly in the Delhi NCR region.

From past few years Delhi NCR has seen tremendous increase in number of vehicles and urbanization and because of this reason it has become one of the most polluted areas. Vehicle emissions are a significant factor to Delhi's regular rankings as one of the most polluted cities in the world, according to a report by the Central Pollution Control Board (CPCB) (CPCB, 2020). The Indian government has responded to this by enacting a number of laws and programs that encourage the use of electric cars. To make EVs more accessible and cheaper, the Faster Adoption and Manufacturing of

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Hybrid and Electric Vehicles (FAME) program was created, in addition to state-specific incentives (Ministry of Heavy Industries and Public Enterprises, 2021). Consumer adoption rates are still low in spite of these initiatives, suggesting a disconnect between the goals of policy and real consumer behavior. Numerous factors, including as views of new technology, financial considerations, infrastructure availability, and environmental consciousness, impact consumer behavior toward electric vehicles (Koul, 2021). Consumer opinions toward the adoption of electric vehicles are changing from few years as they are getting more aware about the environment and its impact on them. These days customers are choosing environmental friendly products as their knowledge about the advantages of EV is enhancing day by day (Dube & Chattopadhyay, 2018). Though initial high cost, lack of proper charging infrastructure and proper range of EV's hampering the speed of this adoption process (Krishnan et al., 2019). This adoption becomes more difficult as the EVs in India comes under the category of luxury goods because of its price.

Although government is giving incentives and subsidies to manufacturer which has successfully reduced the cost of EVs in Delhi NCR, still infrastructure problems such as a shortage of charging stations and other related infrastructure discourage prospective purchasers from adopting these (Patel & Rao, 2020). Furthermore, many people are still concerned about the high cost of EVs in comparison to conventional vehicles, particularly given India's diverse economic environment. Because of difference in prices and the perception that EVs are a luxury or status symbol, middle-class and lower-class consumers find them less appealing. Additionally, in the Indian context, social influence—which includes the attitudes of peers, family, and friends—is very important in making buying decisions that an individual's make as consumers (Ganguly & Haldar, 2020). The consumer behavior in India, particularly in areas like Delhi NCR where air pollution is a major issue, despite the fact that several efforts by the government have been done on EV adoption still the process is very slow. This study will research help the all concerned to better understand the elements affecting customer acceptance and identify practical ways to switch to electric vehicles. In addition to taking into account the role of infrastructure, social influence, and the perception of EVs as a luxury product, this study intends to examine consumer behavior toward electric vehicles in Delhi NCR, with a particular emphasis on important aspects such as environmental awareness, cost considerations, and government policies.

Literature Review

Worldwide, the use of electric vehicles (EVs) is becoming more and more important, it become more important to nations like India that have serious air pollution problems. Governments and organizations are turning to EVs as a way to reduce the damaging effects of traditional vehicles on the environment. For having sustainable solutions of transportation, the EVs are by far best solution. The literature will cover different studies on different variables like cost considerations, social influence, infrastructure difficulties, environmental awareness, and governmental regulations.

Environmental Awareness and Attitudes

Environmental awareness is one of the most important elements which affect customer behavior toward EVs. Customers who are more aware as how conventional vehicles harm the environment and air quality are more likely to be interested in switching to electric vehicles. The people who are more concerned about the environment are more inclined to think about buying an electric car because of the apparent environmental advantages (Dube and Chattopadhyay.2018). As people are getting aware about the environment, they are getting more concerned and this concern and their pro-environmental attitudes are key drivers for the adoption of green technologies (Koul, 2021). In India, however, the awareness of the environmental benefits of EVs is still developing, and significant efforts are needed to increase consumer knowledge and understanding of how EVs contribute to reducing pollution (Krishnan et al., 2019).

Cost Considerations and Affordability

Although being environmental conscious is important, the high initial cost of electric vehicles is frequently mentioned as a major deterrent to

adoption. Because lithium-ion batteries are expensive and need sophisticated technology, EVs are often more expensive than traditional internal combustion engine (ICE) cars (Patel & Rao, 2020). The high price of EVs restricts their popularity in India, where a sizable section of the populace is still price-sensitive. Despite decreased long-term operating expenses, research indicates that prospective customers are worried about the initial investment (Krishnan et al., 2019). Furthermore, the greater purchase price frequently outweighs the perceived financial benefit of lower fuel and maintenance costs (Kumar et al., 2020). Government subsidies and incentives, such as the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme, have been implemented to make EVs more affordable, but the financial gap between EVs and conventional vehicles remains a significant barrier to widespread adoption (Ministry of Heavy Industries and Public Enterprises, 2021).

Infrastructure Challenges

The absence of infrastructure for charging electric vehicles is one of the main obstacles preventing widespread use of EVs. Consumer have a fear of running out of battery without access to a charging point and this is a major issue for consumers so the development of a dependable and easily accessible network of charging stations is essential for EV adoption (Ganguly & Haldar, 2020). Many prospective EV purchasers in Delhi NCR don't buy the EVs because they worry about the accessibility to charging stations so this is one of the important obstacles in adoption process, to overcome this obstacle, there is need to develop the charging infrastructure (Patel & Rao, 2020).

Social Influence and Perceptions

Consumer behavior is also greatly influenced by social variables, especially in India, where social and cultural considerations have a big impact on what people buy (Ganguly & Haldar, 2020). It has been determined that one of the key factors influencing consumer decisions is whether or not electric vehicles are viewed as luxury goods or status symbols. EVs are not as appealing to the general public because many customers believe that they are expensive, cutting-edge technology that only wealthy people can afford. The greater purchase price and scarcity of less expensive versions contribute to the perception of EVs as luxury products (KPMG, 2020). Social perceptions may change as the EV market grows and more reasonably priced models are released, increasing the appeal of EVs to middle-class buyers.

The influence of peers, family, and friends on purchase decisions is another example of social influence. People are more inclined to purchase electric vehicles if they believe that others in their neighborhood or social circle are also purchasing (Ganguly and Haldar, 2020). Adoption can be facilitated by societal trends and positive word-of-mouth, which can help allay worries about new technologies. For instance, in cities like Delhi NCR, where people are more conscious of environmental problems and the need for sustainable solutions, EV adoption is more likely.

Government Policies and Incentives

The process of adoption of electric vehicles is significantly influenced by government policies. The government is giving tax exemptions, subsidies and incentives to manufacturers to build EVs under the FAME plan to promote the usage of EVs (Ministry of Heavy Industries and Public Enterprises, 2021). In many areas, these policies are effective in encouraging the adoption of EVs but, more thorough and focused policies are required to overcome the obstacles to adoption of EVs in all the areas of the Country. The government assistance, both in the form of financial incentives and the construction of infrastructure, is necessary to improve the speed of adoption from traditional to electric vehicles (Kumar et al., 2020).

Research Gap

Even though a lot of studies have been done in the world on the of adoption of EVs, little is known about how Indian consumers behave when it comes to EVs. This disparity is especially noticeable in the Delhi NCR area, which has serious air quality issues despite being a promising EV market. The majority of current research tends to highlight the advantages for the environment, new developments in technology, and laws that encourage the use of EVs. But they frequently ignore the particular social,

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cultural, and infrastructure elements that influence the decisions made by Indian customers (Patel & Rao, 2020).

Very few studies have paid attention to variables like price sensitivity and affordability which are very important for understanding customer behavior in a price-conscious market like India. The cost has been identified as a barrier by certain studies (Krishnan et al., 2019; Kumar et al., 2020) however these studies usually neglect to explore the complex economic strata of India which affects the adoption of EVs. The socioeconomic diversity of India, where a large portion of the population is still highly price sensitive, is overlooked in much of the present research, which is largely generalized.

Though lack of charging infrastructure which is influencing the adoption of electric vehicles is one most important variable but still there is a significant study gap. There are other factors which need to be properly studied like accessibility, convenience, and consumer worry over range affect the speed to adoption EVs because India's EVs sector is still in its infancy (Koul, 2021). Furthermore, little is known about how infrastructure development affects customer adoption trends in the Delhi NCR region, a significant EV market.

The impact of social and cultural factors on EV adoption is another important topic that requires further research. As how customers attitudes toward EVs specifically, their associations with luxury or social status affect adoption rates (Ganguly and Haldar 2020). This is especially important for lower to middle-class consumers, who may be hesitant to switch to electric vehicles (EVs) even in the face of growing environmental awareness. To obtain a thorough understanding of the obstacles and drivers surrounding EV adoption in India, it is imperative to close these gaps.

Research Methodology

Objectives of the Study-

1. To investigate the factors affecting Delhi NCR consumers' decisions to purchase electric cars (EVs).
2. To evaluate how government subsidies, incentives, and policies influence consumer attitudes and choices about buying EVs.
3. To assess how customer preferences and adoption rates in Delhi NCR are impacted by social influence and the idea that EVs are a luxury good.

Hypothesis

- **H1:** Environmental awareness positively influences the likelihood of consumers adopting electric vehicles in Delhi NCR.
- **H2:** Cost-related factors (purchase price, maintenance, and operational cost) negatively impact consumer adoption of electric vehicles in Delhi NCR.
- **H3:** The availability of government incentives and subsidies positively affects the adoption rate of electric vehicles in Delhi NCR.

Sample Design

In this study, the consumer behavior towards electric cars (EVs) in Delhi, NCR, and India has been studied using a mixed approach. The variables influencing a customer's decision to buy EVs were provided to sample by the mixed-methods design (Creswell & Creswell, 2017). A sample of 500 respondents from respondents belonging to different socioeconomic levels in the Delhi NCR area was interviewed in-person to gather data using a structured questionnaire. The objective of survey was to collect information on variable like government incentives, cost considerations, environmental awareness, consumer attitudes, and the function of charging infrastructure. In this study random sampling technique has been used to select the respondents, but while choosing sample the consideration is given that sample must represent the different age groups, genders, income levels, and educational backgrounds. To gather information about respondents' attitudes toward adoption and the variables influencing their purchase decisions, the questionnaire is comprised with multiple-choice and Likert-scale questions. To determine the main factors influencing customer behavior, the survey data was examined using mean, variance, correlation analysis, and descriptive statistics (Hair et al., 2019). Twenty industry professionals, legislators, and EV owners participated in in-depth interviews in addition to the survey to acquire a better understanding of the prospects and problems related to EV adoption in India. To find variables on

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customer perception, potential barriers, the role of social influence, and government policies, thematic analysis was used to examine the qualitative data (Braun & Clarke, 2006).

Data Analysis and Findings

Both descriptive and inferential statistics were used to analyze the data gathered from the survey. The objective of the analysis was to identify the main variables affecting the attitude of consumer in Delhi NCR about electric cars (EVs). Statistical software like SPSS was used to process the data, and a number of statistical tests were run to evaluate the relationship between EV adoption variables like cost considerations, environmental consciousness, and consumer demographics.

The data gathered from survey was summarized using descriptive statistics, including frequency distributions, percentages; mean scores, and standard deviations. The broad trends in consumer preferences for EVs are also analyzed by these statistics. With a mean age of 30, the age distribution of respondents revealed that younger consumers were more likely to be interested in EVs. Correlation analysis was used to investigate the connections between various variables. The direction and strength of the correlations between the important variables were assessed using Pearson's correlation coefficient. The key determinants of EV adoption were found using statistical tools

Reliability of Instrument

The questionnaire's acceptability and reliability have been assessed using the Cronbach's reliability test. The alpha of Delhi NCR, India's customer impression of electric vehicles is higher than 0.70 (Table 1), suggesting that the variables measuring consumer behavior toward electric vehicles in Delhi NCR, India, are acceptable and dependable. Every component of the survey instrument received reliability scores ranging from satisfactory to good, indicating that it is a good tool for examining how consumers behave toward electric vehicles.

Table:1 Cronbach's Alpha Test for each factor to test Reliability of Instrument

S.No	Factor	Number of Items	Cronbach's Alpha
1	Cost Consideration	5	0.82
2	Government Incentives	4	0.78
3	Charging Infrastructure	6	0.85
4	Social Influence	4	0.74
5	Environmental Awareness	5	0.81
6	Technology & Innovation in EV	5	0.83
7	Public Perception & Education	4	0.77

Source: Self Compiled SPSS

Descriptive Analysis of Survey Data

The data was gathered from the Delhi NCR survey of 500 respondents. An overview of the main variables affecting EV adoption is provided in table -3, along with averages a, standard deviations and variance to provide information on core tendencies and variability.

Table 2: Descriptive Statistics of the items in the instrument

S No.	Factor	Mean (M)	Standard Deviation (SD)	Variance
1	Cost Consideration	3.8	0.9	0.81
2	Government Incentives	4.1	0.7	0.49
3	Charging Infrastructure	3.6	1	1
4	Social Influence	3.2	1.1	1.21
5	Environmental Awareness	4.3	0.6	0.36
6	Technology & Innovation in EV	4	0.8	0.64
7	Public Perception & Education	3.5	0.9	0.81

Source: Self Compiled with SPSS

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There is considerable agreement among respondents about the significance of environmental awareness in promoting EV adoption, as evidenced by the fact that it shows the least variance (0.36) (M = 4.3, SD = 0.6). This implies that the majority of participants view EVs' advantages for the environment as a primary motivator. Similar to this, government incentives (M = 4.1, SD = 0.7) exhibit low variance (0.49), indicating broad consensus regarding the beneficial effects of laws like tax breaks and subsidies in promoting the adoption of EVs. On the other hand, there is moderate diversity in Cost Consideration (M = 3.8, SD = 0.9) and Public Perception & Education (M = 3.5, SD = 0.9), which represent differing opinions regarding the financial obstacles and consumer knowledge. Social Influence (M = 3.2, SD = 1.1, Var = 1.21) has the highest variance, indicating diverse opinions on how peer and societal factors impact the decision to adopt EVs, emphasizing the need for targeted social campaigns to address this inconsistency.

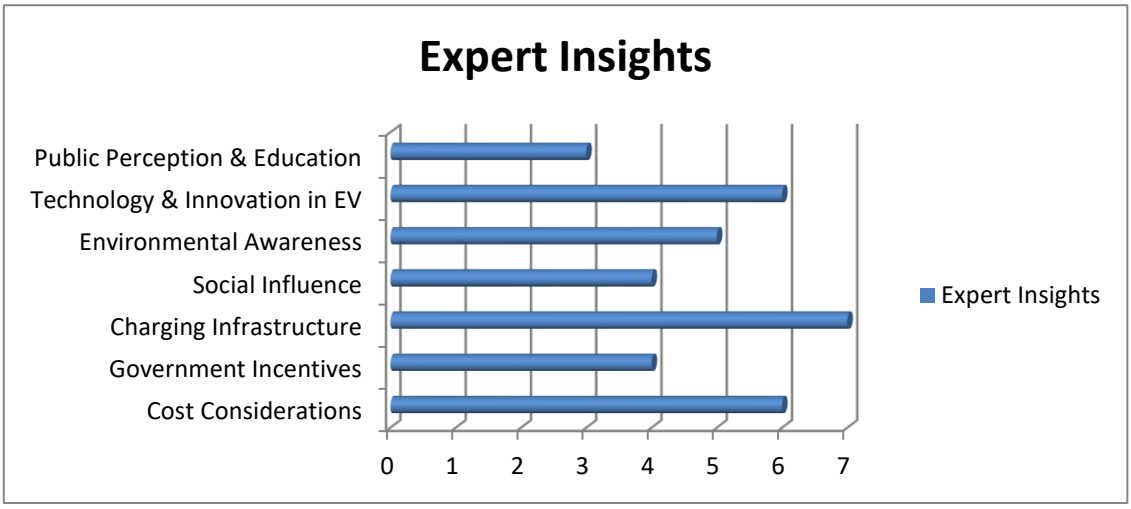

Figure 1 Expert Opinions

Source: Self Compiled

Figure 1 presents the opinions of 20 industry professionals regarding consumer behavior toward electric vehicles in Delhi NCR, India. 30% of experts believe that cost considerations have a substantial impact on consumer behavior. According to these experts, consumers feel discouraged from adopting EVs due high perceived costs of EVs. Four experts emphasized that government incentives like tax cuts, grants, and rebates encourage people to purchase electric vehicles. According to 35% experts, charging infrastructure has a significant influence on customer decisions. As per their opinion range anxiety is one of the main issues with EVs that is addressed by the availability of quick and easy charging facilities. Twenty percent of experts identified social influence, which reflects the expanding power of peers, social media, and environmental movements.

As more people will adopt EVs and share their experiences, more people will be influenced by trends and this will transform the culture as others are likely to follow them, though 25% of experts have noted that environmental awareness is a key variable. 30% of experts think that technological advancements in battery life, efficiency, and autonomous driving features make EVs more appealing, while 15% have stressed the importance of educating consumers about the benefits and common misconceptions surrounding EVs to ensure informed decision-making in the marketplace.

Figure 1 shows that consumers are worried about how traditional cars affect the environment in terms of pollution and carbon emissions. Customers' intention to purchase an electric vehicle (EV) rises in tandem with their level of environmental consciousness, according to a high positive correlation of 0.45. This is in line with earlier research (Dube & Chattopadhyay, 2018), which indicates that consumers who care about the

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environment are more likely to embrace sustainable technologies. For example, the highest correlation of 0.52 among all factors indicates that consumers are more likely to adopt EVs if they believe that charging infrastructure is widely available and convenient. It means range anxiety can result from perceived inconvenience or a shortage of charging stations, charging infrastructure therefore this is a crucial consideration for prospective EV purchasers. The negative correlation of -0.37 indicates that customers' propensity to adopt EVs declines as they believe that EVs are expensive, either in terms of initial costs or ongoing expenses. EV adoption intention has a positive correlation (0.41) with government incentives, including tax exemptions, subsidies, and other financial benefits. This suggests that customers are more inclined to think about EVs as a possibility if they believe that government initiatives encouraging EV adoption are beneficial.

Table 3 Descriptive statistics and correlations analysis of respondents

S No	Variable	Mean	Standard Deviation	Pearson's Correlation with EV Adoption
1	Environmental Awareness	3.89	0.78	0.45
2	Cost Considerations	4.12	0.92	-0.37
3	Charging Infrastructure	3.76	0.85	0.52
4	Government Incentives	4.05	0.71	0.41
5	Social Influence	3.58	0.79	0.28
6	EV Adoption Intention	4.01	0.8	-

The table-3 shows positive Pearson's correlation (0.45) between Environmental Awareness and EV Adoption Intention supports the Hi hypothesis. The chance of adopting electric vehicles is positively correlated with environmental consciousness, suggesting that consumers who are more aware of the environmental impact of conventional vehicles are more likely to select EVs. This confirms the findings of earlier research and supports the idea that there is a positive correlation between environmental consciousness and EV adoption in Delhi NCR (Dube & Chattopadhyay, 2018; Krishnan et al., 2019).

The table -3 shows the negative Pearson's correlation (-0.37) between Cost Considerations and EV Adoption Intention supports the H2 hypothesis. The findings imply that the likelihood of EV adoption declines as cost concerns rise (for example, high initial purchase price, operating, and maintenance costs). This is consistent with earlier studies' findings (Patel & Rao, 2020; Kumar et al., 2020), which highlight that cost is still a significant deterrent for buyers of electric vehicles, especially in a country as price-sensitive as India.

The table-3 shows the positive Pearson's correlation (0.41) between government incentives and EV adoption intention supports the H3 theory. The findings imply that the chance of adopting electric vehicles is positively impacted by government subsidies and incentives. Customers are more inclined to purchase EVs when they believe that government initiatives, like tax reductions or subsidies, are beneficial. This supports the conclusions of the FAME plan (Ministry of Heavy Industries and Public Enterprises, 2021) and KPMG's (2020) research, which show that government initiatives greatly promote EV adoption.

Conclusion

The Delhi NCR region's consumer behavior study on electric cars (EVs) produced a number of important conclusions about the variables affecting EV adoption. These conclusions came from the examination of survey data, which looked at how social factors, government incentives, financial concerns, charging infrastructure, and environmental awareness affected people's intentions to purchase EVs.

The study found a high positive correlation between EV adoption intention of the consumers and environmental awarenes. According to the data, customers were more likely to show interest in switching to electric vehicles if they were more environmentally conscious. This was demonstrated by a positive association (0.45) between the intention to buy EVs and environmental awareness. Respondents were more likely to view EVs as a practical and sustainable substitute if they were aware of the damaging impact of the conventional vehicles on the environment, such as air pollution and greenhouse gas emissions which is affecting the health of people. This finding aligns with previous research that suggests environmental attitudes play a crucial role in the adoption of sustainable technologies (Dube & Chattopadhyay, 2018; Krishnan et al., 2019). It highlights the potential for awareness campaigns and educational initiatives to influence consumer behavior and increase the demand for electric vehicles.

The detrimental effect of economic considerations on EV adoption was another noteworthy observation. The study found a substantial negative association (-0.37) between the intention to adopt EVs and economic concerns, including purchase price, maintenance, and operating costs. Respondents were less likely to indicate an intention to adopt EVs if they thought EVs were pricey, particularly when considering the initial purchase price. This finding is in line with earlier research showing that one of the biggest obstacles to EV adoption in developing nations like India is still cost (Patel & Rao, 2020; Kumar et al., 2020). Many prospective buyers are put off by EVs' higher initial prices when compared to traditional cars, even though they can save money on gasoline and maintenance over time. According to the study, lowering the cost of EVs through subsidies or other incentives may greatly boost adoption rates. The importance of charging infrastructure for the uptake of electric vehicles was also emphasized by the study. Customers are more inclined to embrace electric vehicles if charging stations are easily available and convenient, according to a positive correlation (0.52) found between charging infrastructure and EV adoption intention. Concerns over charging station availability were voiced by respondents, many of whom claimed that inadequate infrastructure was a major deterrent to considering EVs. This research lends credence to the notion that increasing the number and accessibility of charging stations can help reduce range anxiety, or the dread of running out of battery, which prospective EV purchasers face. Fast-charging networks and extensive infrastructure can boost customer trust in EV adoption, indicating that infrastructure development expenditures are essential to boosting EV adoption in Delhi NCR.

The study also discovered a favorable correlation between the inclination to embrace EVs and government incentives. Customers were more inclined to contemplate buying an EV if they were aware of financial advantages, such as tax exemptions and subsidies, according to a correlation of 0.41. Consumers viewed government measures that lower the effective cost of EVs favorably, and many respondents mentioned subsidies as a major consideration when making their choice. This research highlights how crucial government assistance is to removing the cost barrier to EV adoption. By making electric vehicles more accessible to a larger range of consumers, financial incentives can increase demand for them, according to existing research (KPMG, 2020; Ministry of Heavy Industries and Public Enterprises, 2021).

However, it was evident that social variables, like influence of friends, family, and societal trends, also influenced how consumers perceived EVs, even though the study indicated a moderately favorable correlation (0.28) between social influence and EV adoption intention. EVs were perceived as luxury goods by some respondents, a position that was especially prevalent among those with higher incomes. This implies that adoption trends may be influenced by social status and views of EVs as a "premium" product, particularly in urban locations such as Delhi NCR. The moderate correlation indicates that although social influence plays a role in the choice to switch to electric vehicles, it is not as important as other considerations like infrastructure availability and cost. However, by fostering a favorable view of EVs, public attitudes and the support of powerful individuals or organizations may encourage EV adoption even more.

The results highlight the need for focused regulations and awareness campaigns and support the theories that financial concerns, government incentives, and environmental consciousness play a key role in influencing consumer behavior toward EV adoption.

Significance and Rationale of the Study

The adoption of electric vehicles (EVs) has become a major topic of study and policy discussions due to the fast rise of urbanization and the growing worries about environmental degradation in metropolitan areas like Delhi NCR. The main cause of the serious air quality problems in Delhi NCR, one of the most polluted areas in India, is emissions from internal combustion engine automobiles. Alarmingly high levels of air pollution in Delhi NCR have resulted in major health problems, such as cardiovascular problems, respiratory illnesses, and early mortality (Kumar et al., 2020). Because it specifically examines the obstacles and facilitators to EV adoption in Delhi NCR, where the need for an electric vehicle transition is more pressing due to high pollution levels, this study is extremely important. Designing successful policies and tactics that will boost EV adoption and eventually contribute to cleaner, healthier urban environments requires an understanding of consumer perceptions, behavior, and adoption hurdles.

India has a lot of economic potential when it comes to the adoption of electric vehicles. The FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) program is one of the main forces behind the Indian government's ambitious goals to establish the nation as a leader in electric mobility (Ministry of Heavy Industries and Public Enterprises, 2021). By lowering India's dependency on foreign oil and encouraging domestic production of EVs and related infrastructure, the transition to electric cars promises both economic and environmental benefits. In order to make the country's transition to electric mobility economically feasible, the results of this study can help government and industry stakeholders understand the elements that may encourage increased consumer adoption of electric vehicles. This study offers insights that can direct the creation of policies intended to reduce the practical and financial obstacles that prospective EV customers encounter by concentrating on infrastructure issues, cost-related barriers, and the function of government incentives.

As this study assesses important elements that affect consumer decisions regarding EV adoption, including government incentives, charging infrastructure, and environmental consciousness, this study is important for policymakers. The results of this study can be used by Delhi NCR policymakers to create focused interventions, like increasing the network of charging stations, providing tax breaks and subsidies to EV purchasers, and strengthening public awareness initiatives regarding the environmental advantages of EVs. This study also emphasizes how crucial it is to match policy to customer preferences. Although subsidies and incentives are beneficial, the high cost of buying an EV and the dearth of suitable charging infrastructure are major obstacles that must be removed to ensure widespread adoption. Through the identification of these gaps, the study offers practical suggestions for resolving these issues, ultimately directing the growth of a more resilient ecosystem for electric vehicles in Delhi NCR. Since consumer behavior is crucial for businesses and marketing tactics in the EV industry, this study provides insight into how consumers behave toward electric vehicles. This study offers important insights for marketers and manufacturers looking to get into India's expanding EV industry by examining the elements that influence consumers' intentions to adopt EVs. The study helps firms customize their goods and marketing strategies to match the unique demands of consumers by illuminating the ways in which environmental awareness, cost perceptions, government incentives, and charging infrastructure impact purchasing decisions. Future research, regulatory choices, and business models in the electric car industry, both domestically in India and internationally, may be influenced by the study's conclusions.

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