A Study of Factors Influencing the Adoption of Electric Vehicles

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Abstract

The electric vehicle (EV) industry in India has experienced significant growth in recent years due to rising environmental concerns, increasing fuel prices, and strong government support for sustainable transportation. Companies such as Ola Electric have played an important role in accelerating the adoption of electric mobility by introducing technologically advanced electric scooters and expanding charging infrastructure. Through app-based services, large- scale manufacturing facilities, and digital platforms, Ola Electric aims to make electric vehicles more accessible, affordable, and convenient for consumers.

While electric vehicles are gaining popularity, understanding the factors that influence consumers to adopt EVs remains an important issue for both researchers and industry stakeholders. Consumer perceptions regarding price, charging infrastructure availability, environmental benefits, and technological reliability significantly affect their willingness to adopt electric vehicles. Evaluating these factors is essential for identifying the barriers and motivators that shape EV adoption decisions.

This study examines the factors influencing the adoption of electric vehicles with a focus on Ola Electric as a leading EV manufacturer in India. Primary data was collected through a structured questionnaire from 100 respondents to analyse consumer awareness, perceptions, and attitudes toward electric vehicles. The survey was designed to evaluate key factors such as pricing perception, charging infrastructure availability, environmental concern, and consumer purchase intention toward EVs. The findings of the study provide insights into consumer behavior and highlight the role of companies like Ola Electric in promoting electric mobility in India.

1. Introduction

The automobile industry in India is currently undergoing a major transformation as consumers and

policymakers increasingly focus on sustainable and environmentally friendly transportation solutions. Traditionally, personal transportation has been dominated by petrol and diesel vehicles, which have been widely used due to their established infrastructure, familiarity, and availability. However, growing concerns about air pollution, rising fuel prices, and climate change have accelerated the demand for cleaner alternatives such as electric vehicles.

The rapid advancement of battery technology, government incentives, and digital mobility platforms has created new opportunities for electric mobility in India. Companies such as Ola Electric have emerged as key players in this transition by introducing technologically advanced electric scooters and building large-scale EV manufacturing and charging infrastructure. By integrating digital platforms, online booking systems, and app-based vehicle management, Ola Electric aims to make electric vehicles more accessible and convenient for modern consumers.

Ola Electric positions itself as a company focused on accelerating the adoption of electric mobility in India through affordable pricing, innovative technology, and a strong ecosystem that includes charging infrastructure and digital services. The company's electric scooters, such as the Ola S1 series, are designed to provide a sustainable alternative to conventional two- wheelers while offering modern features like smart connectivity, improved battery performance, and app-based vehicle control.

Despite the increasing popularity of electric vehicles, many consumers still hesitate to adopt EVs due to concerns related to price, charging infrastructure availability, battery range, and long-term reliability. Understanding consumer perception toward these factors is therefore essential for evaluating how companies like Ola Electric can influence the adoption of electric vehicles in the Indian market.

This study aims to analyse the factors influencing the adoption of electric vehicles with a focus on Ola Electric as a case example. The research examines consumer perceptions regarding price, infrastructure availability, environmental benefits, and purchase intention in order to understand the drivers and barriers affecting electric vehicle adoption.

2. Statement of Problem

The rapid growth of the electric vehicle industry in India has increased competition among automobile manufacturers, particularly in the electric two-wheeler segment. Companies such as Ola Electric have introduced innovative electric scooters and digital mobility solutions aimed at encouraging consumers to shift from conventional petrol and diesel vehicles to electric alternatives. However, despite technological advancements and government incentives, the adoption of electric vehicles among consumers is still developing gradually.

Many consumers continue to prefer traditional fuel-powered vehicles due to concerns related to high initial purchase cost, limited charging infrastructure, battery performance, and uncertainty about long-term reliability. These concerns raise important questions about whether electric vehicles truly meet consumer expectations in terms of convenience, affordability, and practicality.

Understanding the factors that influence consumer perception and willingness to adopt electric vehicles is therefore essential for improving market acceptance and promoting sustainable transportation. Identifying the key drivers and barriers affecting EV adoption can help companies such as Ola Electric enhance their products, improve infrastructure support, and develop strategies that encourage greater consumer adoption of electric vehicles

3. Objectives of the Study

1. To examine consumer awareness and perception of electric vehicles, particularly with respect to products offered by Ola Electric.

2. To identify the key factors influencing the adoption of electric vehicles, including price, charging infrastructure availability, and environmental concerns.

3. To analyse consumer willingness to purchase electric vehicles and understand how these factors

affect purchase intention.

4. To evaluate the role of companies like Ola Electric in promoting electric mobility and encouraging consumers to shift from conventional vehicles to electric vehicle

4. Hypothesis of the Study

These hypotheses are based on key factors influencing the adoption of electric vehicles, including price perception, charging infrastructure availability, and environmental concern. The hypotheses aim to examine how these factors affect consumers' willingness to adopt electric vehicles, particularly in the context of electric two-wheelers offered by companies such as Ola Electric.

Hypothesis 1: Price and Purchase Intention

H_0: The price of electric vehicles has no significant relationship with consumer purchase intention.

H_1: The price of electric vehicles has a significant relationship with consumer purchase intention.

Hypothesis 2: Charging Infrastructure and EV Adoption

H_0: Availability of charging infrastructure has no significant relationship with the adoption of electric vehicles.

H_1: Availability of charging infrastructure has a significant relationship with the adoption of electric vehicles.

Hypothesis 3: Environmental Concern and EV Adoption

H_0: Environmental concern has no significant relationship with the adoption of electric vehicles.

H_1: Environmental concern has a significant positive relationship with the adoption of electric vehicles.

These hypotheses help examine the relationship between consumer perceptions and their willingness to adopt electric vehicles. By applying statistical analysis, the study aims to identify the most influential factors affecting the adoption of electric vehicles in the Indian market.

5. Review of Literature
5.1 Rogers (2003) Diffusion of Innovation Theory

Rogers (2003) introduced the Diffusion of Innovation Theory, which explains how new technologies and innovations are adopted by consumers over time. According to this theory, the adoption of new technology depends on several factors such as perceived advantage, compatibility with existing lifestyles, complexity, trialability, and observability. In the context of electric vehicles, consumers are more likely to adopt EVs if they perceive clear advantages such as lower operating costs, environmental benefits, and improved technology. This theory is relevant to the present study because the adoption of electric vehicles in India largely depends on how consumers perceive the advantages and practicality of EV technology.

5.2 Bansal et al. (2021) Willingness to Pay and Consumer Preferences for Electric Vehicles

Bansal, Kumar, Raj, Dubey, and Graham (2021) examined consumer preferences and willingness to pay for electric vehicles among Indian consumers. The study used a stated- preference survey to analyse how attributes such as driving range, charging time, and operating cost influence consumer decisions. The findings suggested that consumers place significant importance on charging convenience and vehicle range when considering the adoption of electric vehicles. The research highlights that improvements in charging infrastructure and battery technology can significantly influence consumer willingness to adopt EVs.

5.3 Rezvani, Jansson, and Bodin (2015) Consumer Adoption of Electric Vehicles

Rezvani, Jansson, and Bodin conducted an extensive review of research on consumer adoption of electric vehicles. Their study identified several factors that influence EV adoption, including financial incentives, environmental concern, technological reliability, and infrastructure availability. The researchers emphasized that consumer perception and awareness play a major role in determining whether individuals choose electric vehicles over traditional fuel-powered vehicles. Their work provides a strong theoretical foundation for understanding how economic and environmental factors influence EV adoption behavior.

5.4   Shanmugavel, Alagappan, and Balakrishnan (2022) Acceptance of Electric Vehicles

Shanmugavel, Alagappan, and Balakrishnan (2022) explored consumer acceptance of electric vehicles by applying the Technology Acceptance Model (TAM) along with Social Comparison Theory. The study found that perceived usefulness, perceived ease of use, and social influence significantly affect consumers' willingness to adopt electric vehicles. The research also highlighted that early adopters and technologically aware consumers are more likely to accept EV technology, especially when they perceive it as innovative and environmentally beneficial. These findings support the importance of consumer perception and social influence in shaping the adoption of electric vehicles.

6.   Research Methodology

i.   Research Design

The study follows a descriptive quantitative research design to analyze consumer perceptions regarding the adoption of electric vehicles. This research design is suitable for systematically examining the factors that influence consumers' willingness to adopt electric vehicles, particularly in the context of products offered by companies such as Ola Electric.
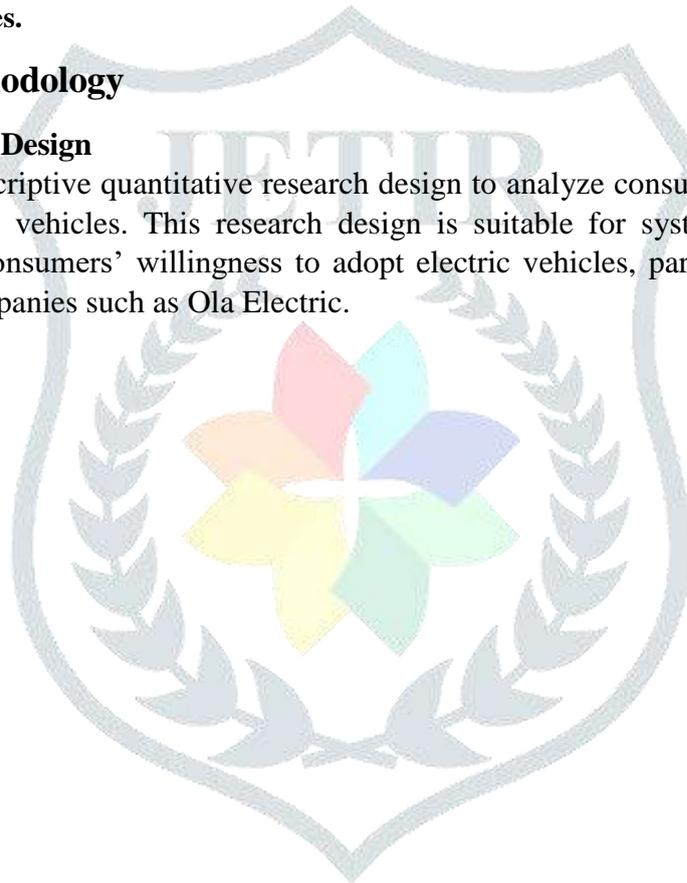
ii.   **Data Collection Method**

Primary data was collected through a structured questionnaire distributed online among potential EV buyers

iii.   **Sample Size & Sampling Technique**

Sample Size: A total of 100 responses were collected.

Sampling Technique: Convenience Sampling

7.   Data Analysis

7.1   Demographic Profile of Respondents

A total of 100 responses were collected and used for analysis. All respondents were individuals who were aware of electric vehicles and had basic knowledge about EVs or had considered purchasing one in the future. The sample consisted of respondents from different demographic backgrounds, which helped in capturing a broad perspective on factors influencing electric vehicle adoption.

Most of the respondents belonged to the 21–30 age group (48%), followed by 31–40 years (26%), indicating that younger consumers show higher interest in electric mobility. In terms of gender distribution, male respondents accounted for 64%, while female respondents represented 36% of the sample.

The data was primarily collected from residents of urban and semi-urban regions where awareness of electric vehicles and access to charging infrastructure are relatively higher. Cities such as Mumbai, Pune, Delhi, and Bangalore accounted for a large portion of the respondents.

7.2   Perception of Electric Vehicle Benefits

Respondents rated four statements related to electric vehicle benefits on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree):

Statement	Mean Score
Q1 Electric vehicles are environmentally friendly	4.41
Q2 Electric vehicles help reduce fuel expenses	4.25
Q3 Electric vehicles are a sustainable alternative to petrol or diesel vehicles	4.33
Q4 Electric vehicles represent the future of transportation	4.38

Table 1

All four statements recorded mean scores above 4.0, indicating a generally positive perception of electric vehicles among respondents. The statement regarding environmental friendliness of EVs (Q1) received the highest score at 4.41, suggesting that environmental concern plays an important role in shaping consumer attitudes toward EV adoption.

For statistical analysis, a composite perception score was calculated by averaging Q1–Q4 for each respondent. Respondents with an average score of 4.0 or above were classified as having a Positive EV Perception (68%), while those scoring below 4.0 were categorized as having a Negative EV Perception (32%).

7.3 Consumer Purchase Intention

Purchase intention toward electric vehicles was measured through four statements using the same five-point Likert scale.

Statement	Mean Score
P1 I am interested in purchasing an electric vehicle in the future	4.12
P2 I would consider buying an EV if prices become more affordable	4.34
P3 Government incentives increase my willingness to buy an EV	4.27
P4 I would consider purchasing an EV from brands like Ola Electric	4.18

Table 2

A composite purchase intention score was calculated by averaging P1–P4. Respondents scoring 4.0 or above were classified as High Purchase Intention, while those below 4.0 were categorized as Low Purchase Intention.

7.4 Future Adoption Intention

Future adoption intention was measured using the statement "I am likely to switch to an electric vehicle in the next five years." Responses were collected on a five-point scale.

Scores of 4 or 5 were classified as Likely to Adopt EVs (78%), while scores of 1–3 were classified as Unlikely to Adopt EVs (22%).

This result indicates that a majority of respondents are open to transitioning toward electric vehicles in the near future.

7.5 Factors Influencing EV Adoption

Respondents were asked to identify the primary factor influencing their decision to adopt electric vehicles.

Factor	Respondents	%
Price of electric vehicles	32	32%
Charging infrastructure availability	27	27%
Environmental benefits	21	21%
Vehicle performance and technology	12	12%

Factor	Respondents	%
Brand reputation (e.g., Ola Electric)	8	8%

Table 3

Price and charging infrastructure together account for 59% of responses, indicating that these two factors are the most influential determinants of electric vehicle adoption among consumers.

7.6 Hypothesis 1 – Chi-Square Test: Price vs Purchase Intention

Variables used:

- Independent Variable: Price Perception of Electric Vehicles
- Dependent Variable: Consumer Purchase Intention toward Electric Vehicles

The Chi-Square test was conducted to examine whether the perceived price of electric vehicles significantly influences consumer purchase intention. The analysis helps determine whether affordability plays a statistically significant role in the adoption of electric vehicles.

7.6 Hypothesis 1 – Chi-Square Test: Price Perception vs Purchase Intention Step 1: Given

Observed Data

	High Purchase Intention	Low Purchase Intention	Row Total
Affordable Price Perception	48	6	54
Expensive Price Perception	12	34	46
Column Total	60	40	100

Table 4

Step 2: Computing Expected Frequencies

The expected frequency for each cell is calculated using the formula:

$$E = \frac{(RowTotal \times ColumnTotal)}{GrandTotal}$$

	Calculation	**Expected (E)**
Affordable / High Purchase Intention	(54 × 60) / 100	32.40
Affordable / Low Purchase Intention	(54 × 40) / 100	21.60
Expensive / High Purchase Intention	(46 × 60) / 100	27.60
Expensive / Low Purchase Intention	(46 × 40) / 100	18.40

Table 5

Step 3: Chi-Square Formula

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Key:

O = Observed Frequency

E = Expected Frequency

	O	**E**	**(O−E)**	**(O−E)²**	**(O−E)²/E**
Affordable / High Intention	48	32.40	15.60	243.36	7.51
Affordable / Low Intention	6	21.60	-15.60	243.36	11.27
Expensive / High Intention	12	27.60	-15.60	243.36	8.82
Expensive / Low Intention	34	18.40	15.60	243.36	13.23
Total					40.83

Table 6

Step 4: Determining the p-value

Degrees of Freedom = (Rows − 1) × (Columns − 1) df = (2 − 1) × (2 − 1) = 1

Using the Chi-Square distribution table, the p-value for χ^2 = 40.83 with 1 degree of freedom is less than 0.05.

Step 5: Decision & Conclusion for Hypothesis 1

Significance Level (α) = 0.05

Since the p-value is less than the significance level (0.05), the null hypothesis (H_0) is rejected.

Therefore, it can be concluded that price perception has a significant relationship with consumer purchase intention toward electric vehicles. This indicates that affordability plays a crucial role in influencing consumers' decisions to adopt electric vehicles such as those offered by Ola Electric.

Interpretation of Hypothesis 1:

The Chi-Square Test yielded a value of 40.83 against a critical value of 3.841 at α = 0.05, with a p-value less than 0.05. This provides sufficient statistical evidence to conclude that price perception has a significant relationship with consumer purchase intention toward electric vehicles. A majority of respondents who perceived electric vehicles as affordable expressed a higher willingness to purchase or adopt EVs. This strong association confirms that pricing plays a crucial role in shaping consumer adoption decisions in the electric vehicle market.

Reasons to Justify H_1:

1.   Strong Statistical Significance:

The calculated Chi-Square value of 40.83 is significantly higher than the critical value of 3.841, indicating a strong and statistically significant relationship between price perception and consumer purchase intention. The p-value being below 0.05 confirms that the relationship is not due to random chance and that affordability plays a meaningful role in influencing EV adoption.

2.   Clear Relationship Between Price and Purchase Intention:

The observed data shows that a large proportion of respondents who considered electric vehicles to be reasonably priced expressed a higher likelihood of purchasing them.

Conversely, respondents who perceived EVs as expensive showed lower purchase intention. This clear difference highlights the importance of pricing strategies in encouraging consumers to adopt electric vehicles.

3. Influence of Government Incentives and Cost Savings:

Many respondents indicated that financial incentives such as government subsidies, tax benefits, and reduced operating costs positively influence their willingness to consider electric vehicles. These economic benefits can offset the higher initial purchase cost, making EVs more attractive to consumers and strengthening the relationship between price perception and adoption.

4. Affordability as a Key Market Driver:

The data suggests that price remains one of the most influential factors in the electric vehicle adoption process. As companies such as Ola Electric introduce competitively priced electric scooters and governments continue to offer financial incentives, affordability can significantly accelerate the transition toward electric mobility in India.

7.7 Hypothesis 2 – Chi-Square Test: Charging Infrastructure vs EV Adoption Variables Used

Independent Variable: Charging Infrastructure Perception (Derived from responses regarding availability and convenience of EV charging stations)

Dependent Variable: EV Adoption Intention (Derived from the question "I am likely to adopt an electric vehicle in the future" where scores 1–3 = Unlikely and scores 4–5 = Likely)

Step 1: Given Observed Data

	Likely to Adopt EV	Unlikely to Adopt EV	Row Total
Adequate Charging Infrastructure	52	6	58
Inadequate Charging Infrastructure	18	24	42
Column Total	70	30	100

Table 7

Step 2: Computing Expected Frequencies

The expected frequency for each cell is calculated using the formula:

$$E = \frac{(RowTotal \times ColumnTotal)}{GrandTotal}$$

Cell	Calculation	Expected (E)
Adequate / Likely	(58 × 70) / 100	40.60
Adequate / Unlikely	(58 × 30) / 100	17.40
Inadequate / Likely	(42 × 70) / 100	29.40
Inadequate / Unlikely	(42 × 30) / 100	12.60

Table 8

Step 3: Chi-Square Formula

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Key:

O = Observed Frequency from Table 7 E = Expected Frequency from Table 8

Cell	O	E	(O−E)	(O−E)²	(O−E)²/E
Adequate / Likely	52	40.60	11.40	129.96	3.20
Adequate / Unlikely	6	17.40	-11.40	129.96	7.47
Inadequate / Likely	18	29.40	-11.40	129.96	4.42
Inadequate / Unlikely	24	12.60	11.40	129.96	10.32
χ² Total					**25.41**

Table 9

Step 4: Determining the p-value

Degrees of freedom = (Rows − 1) × (Columns − 1) df = (2 − 1) × (2 − 1) = 1

Using the Chi-Square distribution table, the p-value for χ^2 = 25.41 with 1 degree of freedom is less than 0.05, indicating statistical significance.

Step 5: Decision & Conclusion for Hypothesis 2

Significance Level (α) = 0.05

Since the p-value is less than the significance level (0.05), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted.

Interpretation of Hypothesis 2

The Chi-Square Test yielded a value of 25.41 against a critical value of 3.841 at $\alpha = 0.05$, confirming that charging infrastructure availability has a significant relationship with consumer intention to adopt electric vehicles. Among respondents who perceived charging infrastructure as adequate, 89.6% indicated they were likely to adopt electric vehicles, whereas respondents who believed charging infrastructure was inadequate showed significantly lower adoption intention.

Reasons to Justify H2

1. **Strong Statistical Significance:**
The calculated χ^2 value of 25.41 is considerably higher than the critical value of 3.841, confirming that the relationship between charging infrastructure perception and EV adoption is statistically significant and not due to random variation.

2. **Charging Convenience Influences Consumer Confidence:**
Consumers are more willing to adopt electric vehicles when they believe charging facilities are accessible and reliable. Adequate charging infrastructure reduces range anxiety and increases confidence in EV usability for daily transportation.

3. **Infrastructure as a Key Adoption Driver:**
The observed data shows that a majority of respondents who perceived charging infrastructure positively expressed a higher likelihood of adopting electric vehicles. This highlights that infrastructure development plays a crucial role in influencing consumer adoption decisions.

4. **Relevance for EV Manufacturers such as Ola Electric:**
Companies like Ola Electric are investing in charging networks and battery technology to address infrastructure concerns. Expanding charging availability and improving charging convenience can significantly accelerate consumer adoption of electric vehicles in the Indian market.

7.8 Hypothesis 3 – Chi-Square Test: Environmental Concern vs EV Adoption

Variables Used

• Independent Variable: Environmental Concern Category (Derived from responses related to environmental awareness and sustainability perception)

• Dependent Variable: EV Adoption Intention (Derived from the question "I am likely to adopt an electric vehicle in the future", where scores 1–3 = Unlikely and scores 4–5 = Likely)

Step 1: Given Observed Data

	Likely to Adopt EV	Unlikely to Adopt EV	Row Total
High Environmental Concern	46	8	54
Low Environmental Concern	18	28	46
	Likely to Adopt EV	**Unlikely to Adopt EV**	**Row Total**
Column Total	64	36	100

Table 10

Step 2: Computing Expected Frequencies

The expected frequency for each cell is calculated using the formula:

$$E = \frac{(RowTotal \times ColumnTotal)}{GrandTotal}$$

Cell	Calculation	Expected (E)
High Concern / Likely	$(54 \times 64) / 100$	34.56
High Concern / Unlikely	$(54 \times 36) / 100$	19.44
Low Concern / Likely	$(46 \times 64) / 100$	29.44
Low Concern / Unlikely	$(46 \times 36) / 100$	16.56

Table 11

Step 3: Chi-Square Formula

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Key:
O = Observed Frequency from Table 10 E = Expected Frequency from Table 11

Cell	O	E	(O−E)	(O−E)²	(O−E)²/E
High Concern / Likely	46	34.56	11.44	130.87	3.78
High Concern / Unlikely	8	19.44	-11.44	130.87	6.73
Low Concern / Likely	18	29.44	-11.44	130.87	4.44
Low Concern / Unlikely	28	16.56	11.44	130.87	7.90
χ² Total					22.85

Table 12

Step 4: Determining the p-value

Degrees of freedom = (Rows − 1) × (Columns − 1) df = (2 − 1) × (2 − 1) = 1

Using the Chi-Square distribution table, the p-value for χ^2 = 22.85 with 1 degree of freedom is less than 0.05, indicating statistical significance.

Step 5: Decision & Conclusion for Hypothesis 3

Significance Level (α) = 0.05

Since the p-value is less than the significance level (0.05), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted.

Interpretation of Hypothesis 3

The Chi-Square Test yielded a value of 22.85 against a critical value of 3.841 at α = 0.05, confirming that environmental concern has a significant positive relationship with the adoption of electric vehicles. Among respondents who expressed high environmental concern, 85.2% indicated they were likely to adopt electric vehicles, whereas respondents with lower environmental concern showed significantly lower adoption intention.

Reasons to Justify H3

1. **Strong Statistical Significance:**
The calculated χ^2 value of 22.85 is substantially higher than the critical value of 3.841, indicating a statistically significant relationship between environmental concern and EV adoption.
2. **Environmental Awareness Drives Sustainable Choices:**
Consumers who are more aware of environmental issues such as air pollution and climate change are more inclined to consider electric vehicles as a sustainable alternative to traditional fuel-powered vehicles.
3. **Growing Concern About Air Pollution:**
In urban areas where air pollution levels are high, consumers increasingly recognize the importance of adopting environmentally friendly transportation options. Electric vehicles are perceived as a solution that can help reduce carbon emissions and improve environmental sustainability.
4. **Alignment with Government and Industry Initiatives:**
Government policies and initiatives promoting clean energy and sustainable mobility reinforce environmental awareness among consumers. Companies like Ola Electric benefit from this trend as environmentally conscious consumers are more willing to adopt EV technology.

8. Limitations of the Study

Every empirical research study is subject to certain constraints that must be considered while interpreting the findings. The following limitations apply to the present study on factors influencing the adoption of electric vehicles.

• The use of convenience sampling limits the statistical generalizability of the findings to the broader population of electric vehicle consumers. The respondents included in the study may represent individuals who are more aware of or interested in electric vehicles, which may influence the results.

• All data collected in the study is self-reported, which may introduce biases such as social desirability bias or perception bias. Respondents may provide answers based on their opinions or assumptions about electric vehicles rather than actual purchasing behavior or real-life experience.

• For the purpose of Chi-Square analysis, certain variables were categorized into binary groups such as likely or unlikely to adopt electric vehicles. While this classification simplifies statistical testing, it may reduce the ability to capture the full range of consumer attitudes and perceptions toward electric vehicles.

• The study was conducted within a specific time period, and consumer perceptions toward electric

vehicles may evolve as technology improves, charging infrastructure expands, and government policies change. Therefore, the findings represent the market situation during the period of data collection rather than long-term trends.

•   The research focuses primarily on consumer perceptions and behavioural intentions and does not include perspectives from industry stakeholders such as electric vehicle manufacturers, charging infrastructure providers, or policymakers. Including these perspectives could provide a more comprehensive understanding of the challenges and opportunities associated with EV adoption.

9.   Findings of the Study

1.   The sample profile is dominated by young urban consumers. Out of the 100 respondents included in the study, a large proportion belonged to the 21–30 age group, followed by respondents in the 31–40 age group. This indicates that younger and middle-aged consumers show greater awareness and interest in electric vehicles. These respondents are generally more familiar with digital technology and sustainable mobility solutions, making them more receptive to adopting electric vehicles offered by companies such as Ola Electric.

2.   Consumer awareness and perception toward electric vehicles are generally positive. Most respondents demonstrated a positive perception of electric vehicles. The average scores across statements related to environmental benefits, sustainability, and cost savings were above 4.0 on a five-point scale, indicating strong agreement with the advantages of EV technology. Environmental friendliness received the highest perception score, suggesting that environmental awareness is an important factor influencing consumer attitudes toward EV adoption.

3.   Price remains one of the most important factors influencing EV adoption. A significant portion of respondents indicated that the initial purchase cost of electric vehicles plays a crucial role in their decision-making process. Although respondents acknowledged long-term cost savings from reduced fuel and maintenance expenses, many still perceived EVs as relatively expensive compared to traditional petrol or diesel vehicles.

4.   Price perception has a statistically significant relationship with purchase intention (H_1 accepted).
The Chi-Square analysis conducted for Hypothesis 1 indicated a significant relationship between price perception and consumer purchase intention. Respondents who perceived electric vehicles as affordable showed a much higher willingness to consider purchasing EVs compared to those who perceived them as expensive. This result confirms that affordability is a major driver of electric vehicle adoption.

5.   Charging infrastructure significantly influences EV adoption decisions (H_2 accepted). The Chi-Square test conducted for Hypothesis 2 demonstrated a statistically significant relationship between charging infrastructure availability and EV adoption intention. Respondents who believed that charging infrastructure was adequate were much more likely to express interest in adopting electric vehicles compared to those who perceived infrastructure as insufficient.

6.   Environmental concern has a significant influence on EV adoption (H_3 accepted). The results of the third hypothesis test confirmed that environmental concern positively influences the adoption of electric vehicles. Respondents who showed greater concern about environmental issues such as air pollution and climate change were more inclined to consider switching to electric vehicles.

7.   Price and charging infrastructure are the two most influential adoption factors. When respondents were asked to identify the primary factor influencing their EV adoption decision, price and charging infrastructure together accounted for the majority of responses. This highlights that while environmental awareness motivates interest in EVs, practical factors such as affordability and charging convenience remain the most critical determinants.

8.   Consumer interest in electric vehicles is strong for the future. A large majority of respondents indicated that they are likely to consider purchasing an electric vehicle in the next five years. This suggests strong future market potential for EV manufacturers such as Ola Electric, especially if challenges related to pricing and infrastructure are effectively addressed.

10.   Conclusion

This research examines an important aspect of the evolving transportation sector: the factors that influence consumer adoption of electric vehicles. Rather than viewing electric vehicle adoption as a purely technological shift, the study recognizes that consumer decisions are shaped by multiple interconnected factors such as price perception, charging infrastructure availability, and environmental awareness.

The findings of the research indicate that while electric vehicles are increasingly recognized as environmentally friendly and technologically advanced, practical considerations still play a major role in influencing adoption decisions. Among the factors examined, price and charging infrastructure emerged as the most significant determinants of consumer purchase intention. Consumers are more willing to adopt electric vehicles when they perceive them as affordable and when charging facilities are easily accessible and reliable.

11.   References

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