

# Consumer Buying Decision Over Electric Vehicles and Other Variants in NCR Region

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## **Abstract**

The study will be concentrating on consumer purchasing decisions for electronic vehicles by examining the effect of consumer innovation and raising concerns about the practical abilities of digital engines relative to their alternatives for EV and other editions. A conceptual framework is created and put into use that includes evaluations of inventiveness at the adoption stage, principally based on an analysis of generational possession and a cohort of psychological and social factors. It is necessary to find a way to reinforce cars since fossil fuels are still running out and prices are rising. As a remedy for the industry and the environment, electric powered automobiles are being supplied by utilising India's automobile sector. Despite the Delhi government passing laws governing electronic vehicles, digital motors are becoming more and more prevalent on the market today. This study may evaluate a consumer's buying behaviour together with their impressions about electric-powered automobiles in India. Statistics from both primary and secondary sources may be used in the study. A survey of the market and a questionnaire will be used to compile the data. -wheeler, three-wheeler, and four-wheeler OEM dealers, students, and operational employees are the target audience for the statistics collecting. The intended buyer can come from tier 1 and tier 2 cities.

## **Introduction:**

Because of their inherent characteristics, cheap running costs, and government incentives, electric-powered motors (EVs) are becoming more and more common. Yet, the steep upfront cost and limited selection could put off some buyers. On the other hand, because they can operate on both gas and electricity, hybrid motors offer a middle ground between traditional fuel-powered cars and EVs.

Customers in the NCR region also have the choice of compressed natural gas (CNG) engines, which are significantly less expensive than EVs and hybrids and produce lower levels of greenhouse emissions. For some clients, the availability of CNG stations may provide a problem. In the end, the decision to purchase an EV, hybrid, or CNG automobile relies on the person's preferences and financial situation. While buyers who emphasise comfort and a larger variety may choose hybrids or CNG cars, those who prioritise environmental sustainability and low operating costs may also choose EVs.

It is also important to note that the government is working to promote the use of electric vehicles in the NCR region through incentives and the development of a charging infrastructure. This will increase the customer attractiveness of EVs inside the future.

## **Objectives:**

The study's goal was to better understand why consumers choose electric motors over other models while making their purchasing decisions.

- To identify the key factors influencing customers' car-buying decisions.
- To comprehend the expansion of the electric motors sector in NCR.
- To understand how consumers perceive internal combustion engines.

**Hypothesis:**

There is no connection between proudly driving an electric car and petrol price increases, or between driving an electric car with environmental protection initiatives.

- Age, education level, and knowledge about electric-powered automobiles have no correlation with one another.

**Problem Statement**

The growth of electric cars was extremely sluggish in NCR, and there aren't many electric vehicle businesses setting up shop in India. Customers don't have a lot of information on electric vehicles. Due to several factors, customers who currently own cars are not eager to switch to an electric vehicle.

**Literature Review:**

G. Akar and I. Yildirim (2018). customer innovation, environmental consciousness, and trust all have an impact on how ready consumers are to pay extra for electric automobiles. *Transport and Environment: Part D of the Transportation Research*. This study investigates how customer trust, environmental awareness, and innovativeness affect their willingness to pay extra for EVs. According to the research, EV price sensitivity is significantly predicted by environmental consciousness.

Sun, S., Liu, X., and Lu, Y. (2018). A Macau research looked at consumer choice and willingness to pay for electric automobiles.

Understanding the uptake of electric vehicles by Chinese consumers: Perceived advantages, consumer innovation, and government backing. *Transport and Environment in Transportation Research, Part D*. The adoption of EVs by Chinese customers is examined in this study's examination of those elements. The findings indicate that consumer desire to embrace EVs is significantly predicted by perceived advantages, consumer inventiveness, and government backing.

**Methodology:**

Go-sectional survey design will be used in this study to get information from customers inside the NCR area.

pattern selection: To identify participants, the examination will employ a non-chance sampling approach, notably comfort sampling. The pattern will include buyers who are actively looking for a brand-new car or who have just purchased a car within the last six months.

gathering statistics A online survey tool may be used to collect the data. The questionnaire will ask questions on the clientele's demographics, car preferences, deciding factors for purchases, and opinions on electric cars.

**Analysis and Interpretation of Data:**

**Introduction**

This chapter presents the study's conclusions, which are entirely based on data gleaned from respondents regarding the study's objectives. The study's goal was to understand the respondent's purchasing behaviour with regard to the electronic car.

The questionnaire was created with the understanding that consumers' preferences influence their capacity to purchase digital automobiles and their propensity to switch to them.

Six sections made up the questionnaire.

Part 1: What age range do you fall into?

Part 2: What gender are you?

Part 3: What kind of car do you now possess, according to Section 3?

part 4: What aspects affect your decision to purchase a car?

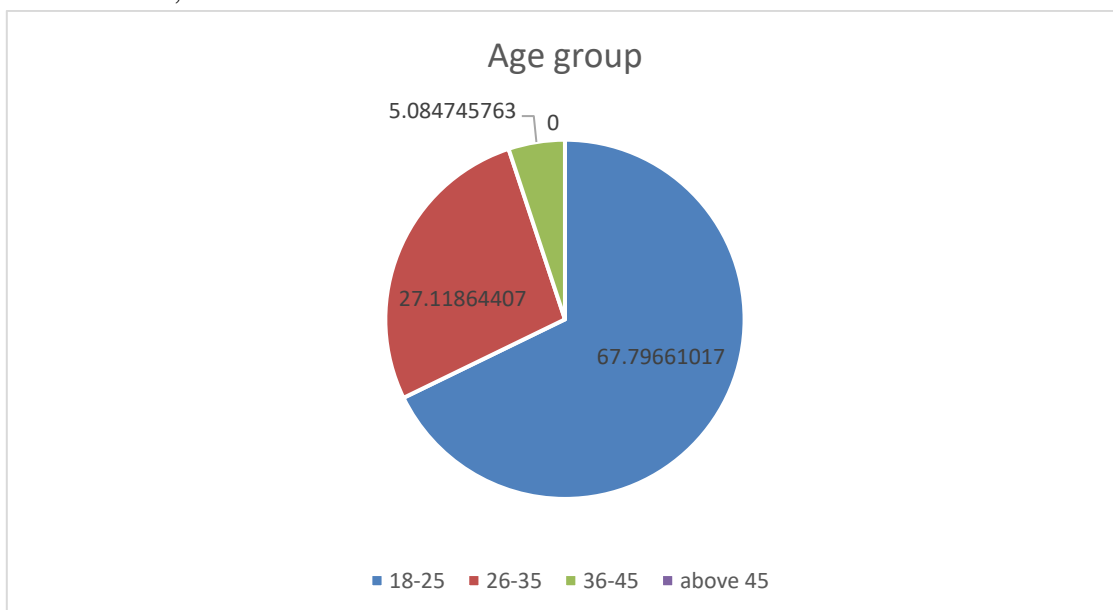
Part 5: What impressions do you have about electric vehicles?

Part 6: In the future, would you be open to switching to an electric vehicle?

**PART 1. AGE GROUP**

S.NO.	AGE GROUP	FREQUENCY	PERCENTAGE
1	18-25	40	67.79661
2	26-35	16	27.11864
3	36-45	3	5.084746
4	Above 45	0	0
	Total	59	100

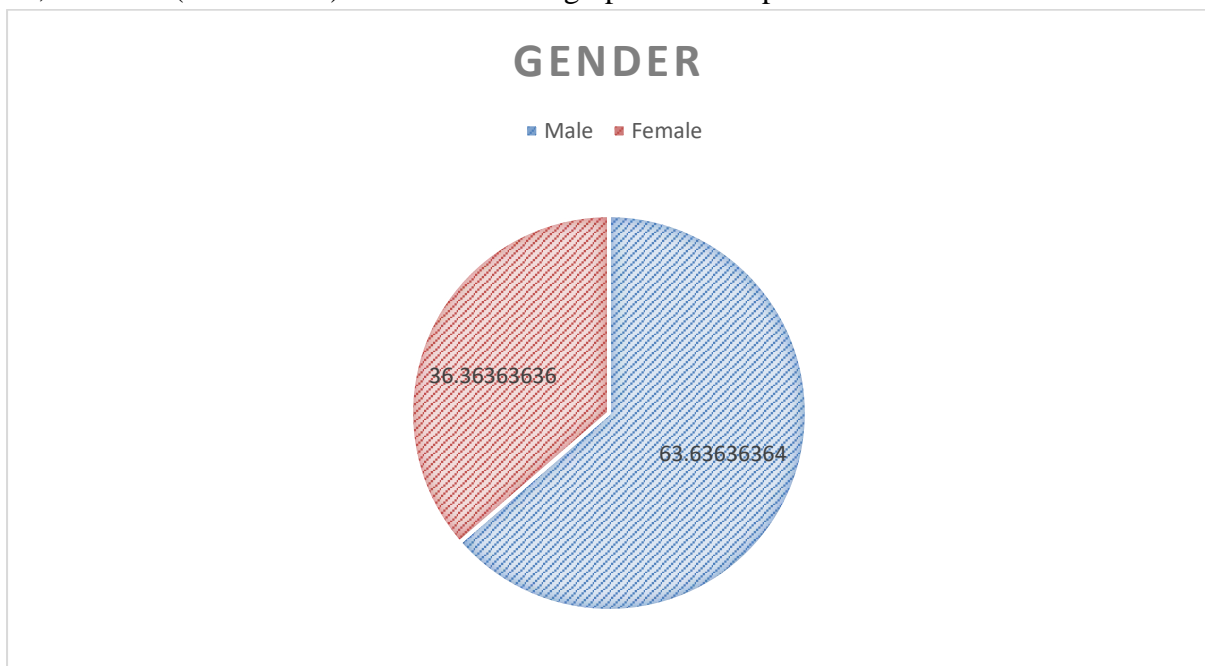
According to the respondent's age group, Table 1 separated the respondents into four categories. Table 1 displays the frequency and proportion of responders. Of of 55 responders, 40 (72.72727%) are between the ages of 18 and 25, while 16 (29.09091%) are between the ages of 26 and 35. The graph provides an explanation for this: 1, below.



**Part 2: The Gender of the respondent**

SERIAL NUMBER	GENDER	FREQUENCY	PERCENTAGE
1	Male	35	59.32203
2	Female	24	40.67797
	Total	59	100

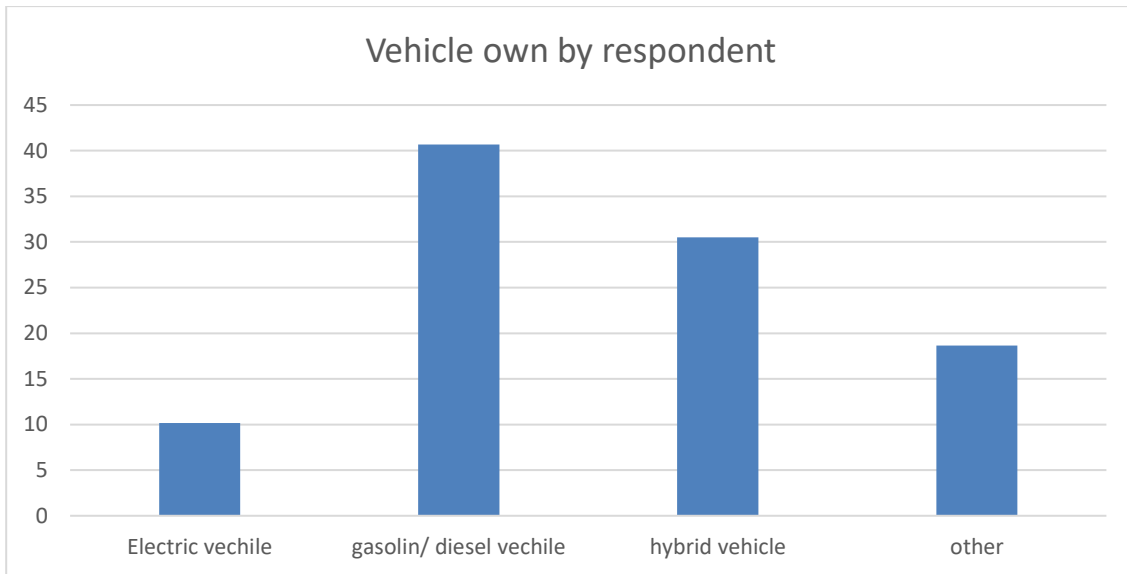
Based only on the respondent's gender, Table 2 separated the respondent into 2 agencies. Table 1 demonstrates the frequency and proportion of responders. Of of 59 responders, 35 (59.32203%) of them are men, while 20 (40.67797%) are women. The graph below explains this: Two underneath



**Part 3:**

Based on the kind of vehicle the respondent currently owns, the respondent was split into four agencies in Table 3. Table 3 demonstrates the frequency and proportion of responders. Of of 59 respondents, 6 (10.16949%) own electric cars, 24 (40.67797%) drive CNG, natural gas, or diesel vehicles, 18 (30.50847%) drive hybrids, and 11 (18.64407%) drive petrol or other types of vehicles. The following is explained in the graph: three below

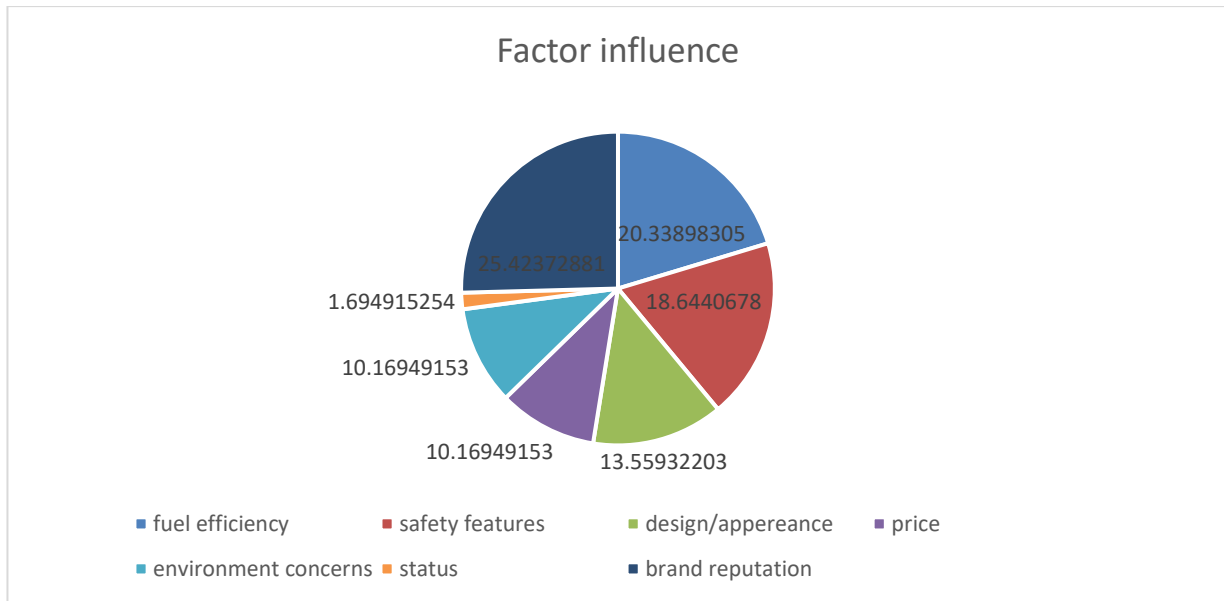
S. No.	Vehicle Own Buy Them	Frequency	Percentage
1	Electric Vehicle	6	10.16949
2	Gasoline/ Diesel Vehicle	24	40.67797
3	Hybrid Vehicle	18	30.50847
4	Other	11	18.64407
	Total	59	100



Part 4:

According to the criteria that affect the respondents' decision to purchase a car, the respondents were split into 7 categories in Table 4. In table 4, the frequency and proportion of responders are displayed. Of of 59 respondents, 12 respondents (20.33898%) are interested in a car's fuel efficiency, 11 respondents (18.64407%) are interested in its safety features, and 8 respondents (13.55932%) are interested in the design or look of a vehicle. 6 respondents (10.17194%) said they examine pricing for their budget. 6 responders (10.16949%) expressed concern for the environment. 1.694915 percent of respondents believe that driving a certain type of car will elevate their status. Checking pricing for Brand is done by 15 responders (25.42373%).

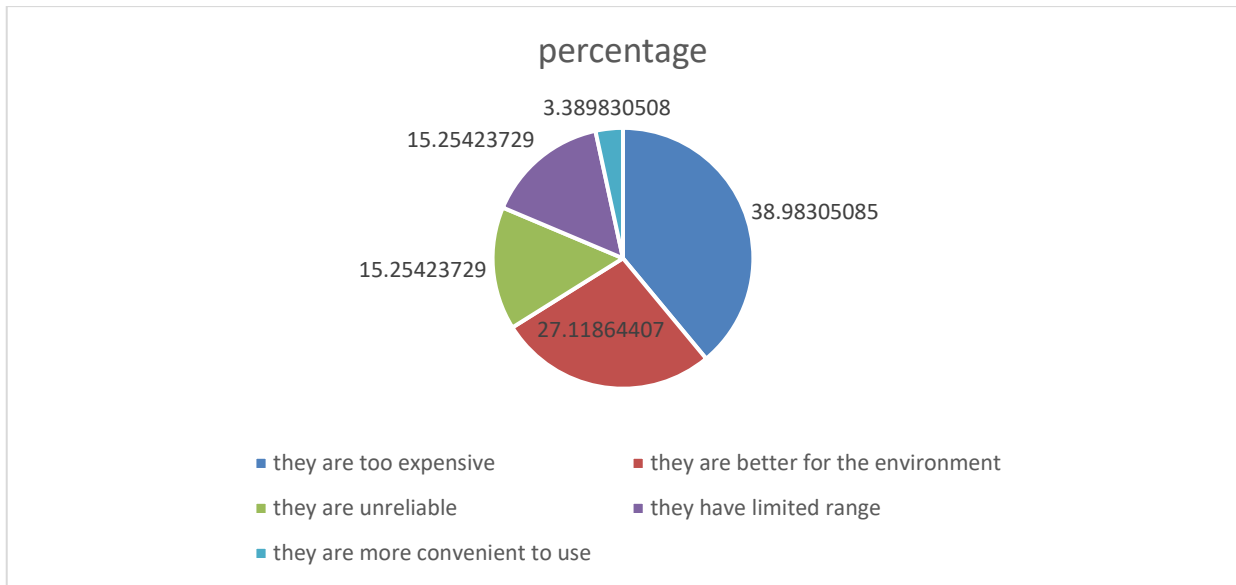
S. NO.	FACTOR INFLUENCE	FREQUENCY	PERCENTAGE
1	Fuel Efficiency	12	20.33898
2	Safety Features	11	18.64407
3	Design/Appearance	8	13.55932
4	Price	6	10.16949
5	Environment Concerns	6	10.16949
6	Status	1	1.694915
7	Brand Reputation	15	25.42373
	Total	59	100



Part 5.

Based on the type of vehicle each respondent currently owned, the respondent was split into 5 categories in Table 5. Table 5 displays the frequency and proportion of responders. Out of 59 respondents, 23 (38.98305%) believe that electric vehicles are too expensive, 16 (27.11864%) believe that they are important for the environment, 9 (15.25424%) believe that EVs are unreliable, 9 (15.25424%) believe that EVs have a limited range, and 2 (3.389831%) believe that EVs are more convenient to use. The graph:5 below provides an explanation of this.

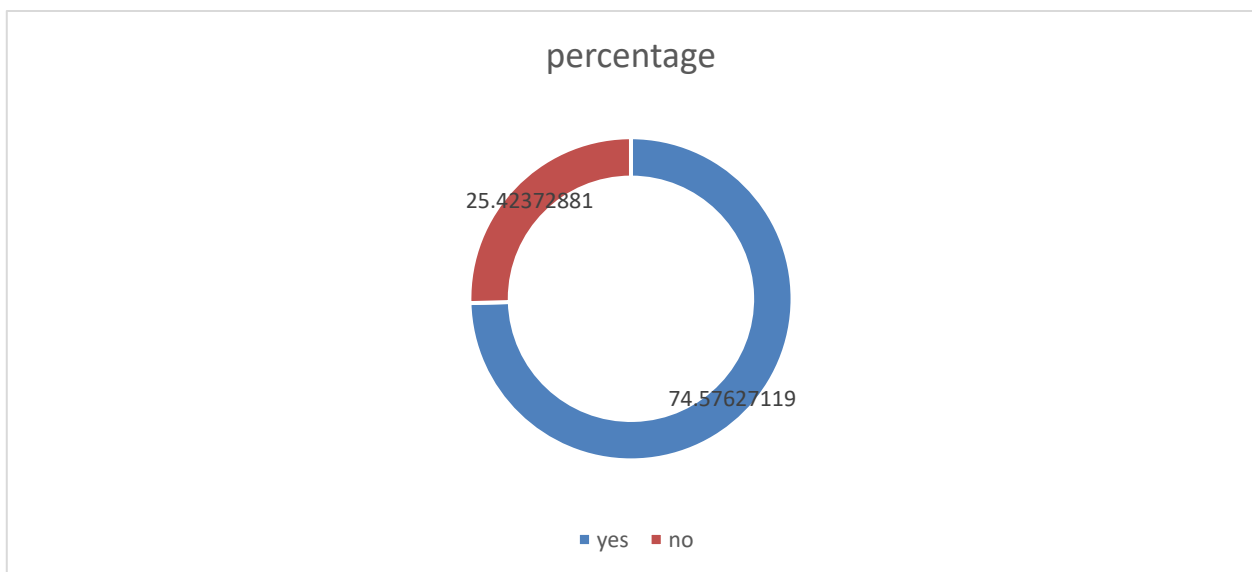
S. NO.	PERCEPTION OF RESPONDENTS OF ELECTRIC VEHICLE	FREQUENCY	PERCENTAGE
1	They are too expensive	23	38.98305
2	They are better for the environment	16	27.11864
3	They are unreliable	9	15.25424
4	They have a limited range	9	15.25424
5	They are more convenient to use	2	3.389831
	Total	59	100



## Part 6.

According to their preferences about whether they would purchase EVs, the respondents were split into two groups in Table 6. In table 6, the frequency and proportion of responders are displayed. Of of 59 replies, 44 respondents (74.57627%) said they would choose EV above other Variants, while 15 respondents (25.42373%) said they would not. The graph:6 below explains this in more detail.

S. NO.	PREFER FOR ELECTRIC CAR	FREQUENCY	PERCENTAGE
1	Yes	44	74.57627
2	No	15	25.42373
	Total	59	100



**Findings:**

- 67.8% of the responders are younger than the institution's 18–24 age range.
- Men make up 59.3% of the responders.
- 69.5% of respondents said they have thought about looking at electric automobiles.
- Among the respondents, 45.7% are motivated to look into EVs.
- The major impact is fuel economy and logo acclaim.
- In order to purchase an EV, 64.4% of respondents must spend less than 10 lakhs.
- 28.8% of respondents favoured EVs' range (which let cars to operate at an unmarried pace).
- A total of 69.5% of respondents drive hybrid or diesel/gasoline vehicles.
- 69.5% of the respondents said they would trust EVs to give good advise.
- In terms of environmental safety, 30.5% of the respondents already had a superior vehicle.

**Conclusion:**

It may be inferred that there may be an increasing interest among customers in electric powered cars in the region, mostly based on the research done on the subject of Consumer Purchasing Decision Over Electric Vehicle and Other Variant in NCR Area. According to the study, factors including petrol mileage, pricing, environmental concerns, and government subsidies have a significant impact on consumers' decisions to acquire electric vehicles.

The study also discovered that buyers had several concerns about buying electric cars, including range anxiety, a lack of charging infrastructure, and expensive upfront prices. However the study found that these problems have been gradually resolved as more charging stations became available and electric cars became more affordable.

universal, Along with range anxiety, a lack of charging infrastructure, and expensive upfront prices, the research also revealed that buyers of electric-powered automobiles had a few other concerns. However, the study found that these problems have been gradually resolved as a result of the expansion of charging stations and the falling price of electric cars.

Overall, the findings support the expectation that the market for electric cars in the NCR region will expand over the next several years as more consumers become aware of their benefits and the government continues to provide incentives to encourage the use of these vehicles. To solve the primary barriers to the widespread adoption of electric automobiles, comparable research and policy actions are still needed.

**References:**

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