



# **CUSTOMER PERCEPTION TOWARDS ELECTRIC VEHICLES IN THE RURAL AREAS OF THE NORTH INDIA**

**Name of student – Shivam Thakur, Shruti Pandey, Sheikh Arshil Suhel, Kapil Dev, Tarun**

**Signature of student -- Shivam thakur, shruti Pandey, sheikh Arshil Suhel, Kapil dev, Tarun**

**Name of Supervisor- Dr. Anuj dixit**

## **ABSTRACT:**

The adoption of electric vehicles (EVs) holds significant promise in mitigating environmental concerns and reducing dependency on fossil fuels. However, understanding customer perceptions towards EVs remains crucial for successful implementation, particularly in rural areas where unique socio-economic and infrastructural challenges exist. This research investigates the perceptions of rural inhabitants in North India towards electric vehicles, aiming to uncover the factors influencing their acceptance or rejection of this emerging technology. Employing a mixed-methods approach, this study combines qualitative interviews and quantitative surveys to gather comprehensive insights. Qualitative interviews delve into the nuanced attitudes, beliefs, and concerns of rural residents towards electric vehicles, offering contextual depth to the quantitative findings. The quantitative survey collects data on demographic variables, awareness levels, perceived benefits, barriers, and preferences related to EV adoption. Preliminary findings suggest a varied landscape of perceptions among rural populations in North India. While some respondents exhibit cautious optimism and interest in the potential benefits of EVs, others express scepticism stemming from concerns about affordability, charging infrastructure, range anxiety, and performance in rural terrains. Socio-cultural factors such as social norms, peer influence, and perceptions of EVs as a status symbol also emerge as influential determinants. The research contributes to the existing literature by offering insights specific to the rural context of North India, filling a significant gap in understanding EV adoption dynamics beyond urban centers. Practical implications of the findings include targeted policy interventions, awareness campaigns, infrastructure development, and market strategies aimed at addressing the identified barriers and enhancing acceptance of electric vehicles in rural areas. Overall, this study provides valuable insights into the complex interplay of factors shaping customer perceptions towards electric vehicles in rural regions of North India, thereby informing strategies for promoting sustainable transportation solutions and fostering socio-economic development in these areas.

## **CHAPTER I. INTRODUCTION:**

Recently we have seen a surge in the usage of EVs. But if we look at the history of EVs, then: It started in the 19<sup>th</sup> century. In the 1830s inventors like Robert Anderson and Sibrandus Stratingh invented crude electric carriages powered by non-rechargeable batteries, but these cars were not for practical transportation. But in the late 19<sup>th</sup> century, when rechargeable batteries were invented, practical EVs were launched like William Morrison's six passenger electric wagon in the US. In the early 20<sup>th</sup> century, the time

for the EVs is favourable but in the late 20<sup>th</sup> century the discovery of the large oil reserves and the development of the efficient gasoline engines has gradually made the road difficult for the EVs. And till the 1970s, EVs were largely confined to the niche market like milk trucks and golf carts etc., because of the lack of achievements in the field of EVs. But after the 1973 oil crisis and growing environmental concerns again sparked the need of the EVs and the new battery technology development, government incentives and rising fuel also contributed towards this.

2000-Present: As we have seen earlier that due to the rise in gasoline price, concerns of global warming and advancement in the battery technology, there is a rise in Electric vehicle acceptance and the year 2000 marked a pivotal role for the electric vehicles. Some key milestones after the year 2000 are given below:

2003: In this year Tesla motors was founded by Elon Musk for developing the high-performance electric car

2008: In this year Tesla launched the Roadster, which had the range of over 200 miles.

2010: In this year, Nissan launched a car 'Nissan Leaf' which has sold about 3,00,000 units worldwide till 2023 and became the first mass market car.

2012: Tesla Model S was launched which is a luxurious sedan with a long range.

2016: Tesla Model 3 was launched which was more affordable and appealing for the mass market.

After 2020s: The year 2020 is the changing point in the history of the electric vehicle as we can see that in the preceding years there was the steady growth but in the 2020s there is an explosive growth. But this time some factors like Government incentives, expanding model offering, falling battery price and growing environmental concerns also played a huge role.

2020: With the sale of over 2.3 million units the global sales of EVs doubled.

2021: With the sale of over 6.6 million units the sale again got doubled as compared to the previous year.

2022: With the sale of over 10 million units, the sale got increase about 55% from 2021.

2023: This year, the growth of the EVs sale is already 2.3 million units in the first quarter.

### **Future of the Electric Vehicles:**

The future of the EVs is also really bright as the international Energy Agency (IEA) has predicted the sales of the EVs sale to reach about 35% of the global market by 2030 which is about 65 million units sold annually.

### **Electric Vehicles in India:**

Surprisingly the history of electric vehicles India also begins from 1830s as at that time experimental electric carriages ran on the streets of Kolkata and Mumbai. But after that the electric vehicles in India came into the picture in 1990s as the vehicles like the Vikram Safa three-wheeler and the BHEL electric bus emerged but due to certain limits like short range and high battery cost, they didn't get successful.

### **21<sup>st</sup> century:**

2001: This is the year when a small and practical electric car named Reva is launched by Reva Electric Car Company (now Mahindra Electric).

2010s: The 2010s is the crucial decade in the history of electric vehicles in India as National Mission for Electric Mobility (NEMO) in 2011 and Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) 2015 launched by government of India for increasing the adoption of electric vehicles in India.

2020s: In India the trend is un the top gear. The diverse range of electric vehicles are launched by the major auto makers in India like Tata Motors, Mahindra & Mahindra and Maruti Suzuki, etc. Startups like Ather and ola electric are also trying their best to revive the competition.

### **Current Situation: If we talk about the current situation in 2024:**

India's EV market is expected to grow by over 80%, making it one of the fastest growing markets in the world. And in it the share of the two wheelers is very high and the cars are about to gain the momentum, as the government of India is also aiming to have 30% sales of electric vehicles out of all vehicles by 2030.

### **Electric Vehicles: A Glimpse into the Future of Transportation**

Electric vehicles (EVs) are rapidly transforming the automotive landscape, offering a sustainable and efficient alternative to traditional gasoline-powered cars. They are powered by electricity stored in rechargeable batteries, and produce zero tailpipe emissions, making them a significant contributor to reducing air pollution and combating climate change.

## What are Electric Vehicles?

An electric vehicle is any vehicle that uses one or more electric motors for propulsion. They can be powered by different sources, including:

- **Battery electric vehicles (BEVs):** These vehicles rely solely on electricity stored in a large battery pack to power the motor. They have zero tailpipe emissions and offer the longest range among all EVs.
- **Plug-in hybrid electric vehicles (PHEVs):** These vehicles combine an electric motor with a gasoline engine. They can be driven on electricity for a shorter range, after which the gasoline engine kicks in to extend the range.
- **Hybrid electric vehicles (HEVs):** These vehicles use both an electric motor and a gasoline engine, but the battery cannot be plugged in to recharge. The electric motor assists the gasoline engine in various driving situations, improving fuel efficiency.

## Segmentation of Electric Vehicles:

The EV market is diverse and caters to various needs and budgets. Here's a breakdown of the main segments:

- **By vehicle type:**
  - Passenger cars: Sedans, hatchbacks, SUVs, trucks, etc.
  - Buses and coaches
  - Light commercial vehicles (LCVs): Vans, trucks, etc.
  - Heavy-duty vehicles (HDVs): Trucks, buses, construction equipment, etc.
  - Two-wheeled vehicles: Scooters, motorcycles, etc.
- **By battery range:**
  - Short-range EVs (up to 100 miles)
  - Mid-range EVs (100-250 miles)
  - Long-range EVs (over 250 miles)
- **By price:**
  - Budget-friendly EVs
  - Mid-range EVs
  - Luxury EVs

## CHAPTER II: LITERATURE REVIEW

- Mittal, G., Garg, A., & Pareek, K. (2024) examine how Indian consumers' perceptions of EVs are influenced by many aspects, including cost, news, after-sales services, and social perspectives. A sample of about 200 respondents—split according to age, gender, education, occupation, and income—is used in the study. The study places a strong emphasis on how branding and favorable media representation influence consumer perception. The two main drawbacks for Indian buyers of EVs are their short driving range and expensive initial costs.
- KV, A. (2022) investigates how Indian consumers' perceptions of EVs are influenced by environmental concerns and demographic factors like age, income, and education. A sample of fifty-eight respondents is analyzed in their study. According to the survey, customer impression of EVs is positively impacted by age, income, and education levels. This implies that people who are younger, better educated, and have stable finances are more likely to have positive opinions on EVs environmental advantages such as less pollution and carbon emissions are important considerations when making purchases. Environmentally concerned consumers are more inclined to think about

buying an EV. The report emphasizes that in order to further enhance the consumer impression, technical breakthroughs are required. Durability and range anxiety are still major obstacles.

- Trivedi, J. P., & Kishore, K. (2020) investigates the factors influencing Indian consumer preference for EVs. Their research examines customer preferences, perceived drawbacks, and the motivations behind EV purchases using a sample size of 212 respondents. According to the survey, participants are willing to convert from conventional cars to environmentally friendly electric vehicles (EVs) and are conscious of environmental concerns. Cost is still a major deterrent to buying an electric vehicle (EV), despite growing environmental consciousness. The report provides insight into customer EV choices. draws attention to how pricing, buying intent, and environmental consciousness interact to shape Indian consumers' judgments about electric vehicles. Policymakers and business executives can use these findings to help build initiatives that will help break down obstacles related to cost and encourage a wider adoption of electric vehicles.
- Bhalla, P., Ali, I. S., & Nazneen, A. (2018) offer a framework of seven important variables affecting consumers' inclination toward electric vehicles. These are issues with the environment, affordability, comfort, trust, technology, social acceptance, and infrastructure accessibility. The study offers a useful foundation for comprehending Indian consumers' preferences for electric vehicles. Their conclusions emphasize how critical it is to solve cost issues, foster societal acceptance, and make technological investments to increase customer interest in EVs. To overcome range anxiety and foster faith in electric vehicles, it is imperative that ongoing investments be made in battery technology and vehicle performance. It emphasizes the necessity of spending money on technology and gaining social acceptance.
- Masurali, A., & Surya, P. (2018) highlights India's significant contribution to transportation sector emissions and positions EVs as a viable solution. The study emphasizes the growing presence of EVs in the Indian market, with various automakers introducing new models. The study underscores the environmental benefits of EVs in reducing air pollution and national dependence on fossil fuels. He found a positive correlation between education level and awareness of EVs. This suggests that targeted educational campaigns could be effective in raising awareness among all consumer segments. The study emphasizes the role of government initiatives in promoting EV awareness and fostering a positive perception among both potential customers and manufacturers. This highlights the importance of government policies and public awareness campaigns in driving EV adoption.
- Krishna, G. (2021) highlights how important it is for consumer perception to have an impact on EV buying decisions. They assert a link between rising EV sales and favorable customer perception. The report makes clear that one important factor affecting EV sales is consumer perception. To maintain a competitive edge, the car industry must place a high priority on influencing consumers' favorable perceptions of EVs. This indicates the necessity for focused marketing campaigns that highlight the advantages of electric vehicles while addressing consumer concerns. The report also suggests government campaigns to support electric vehicles (EVs) as the mode of transportation of the future and positively affect prospective buyers' perceptions.
- Ghasri, M., Ardeshiri, A., & Rashidi, T. (2019) adoption decisions are greatly influenced by consumers' perceptions of a new technology's superiority over alternatives that are currently available. They suggest classifying customer preferences for EVs using psychological and economic research. According to the survey, people are more likely to purchase electric vehicles (EVs) if they believe they offer better performance, have less of an impact on the environment, or meet other criteria than traditional gasoline-powered cars. It also emphasizes how consumer preferences for EVs can be better understood by utilizing research frameworks from both psychology and economics. The theory of utility maximization is mentioned in the study as the basis for discrete choice modeling, a popular approach in economic research.
- Acharya, D., Tyagi, S., & Bansal, S. (2021) examines the relationship between EVs' perceived environmental sustainability and consumer perception. The study highlights the issue of lowering air pollution and greenhouse gas emissions and suggests that EVs may help with this. In comparison to traditional gasoline-powered cars, EVs have the potential to reduce air pollution and greenhouse gas

emissions, which is highlighted by the study. The researchers found that cutting greenhouse gas emissions and switching to new electric cars from older, conventional cars are the best ways to maintain low pollution levels.

- Kazemzadeh, K., Bansal, P., & Patil, P. (2023) examine willingness to pay as a lens through which to examine Indian consumers' preferences for electric vehicles. To determine what influences consumers' decisions to buy, they examine data from 1,000 respondents. The survey, which focuses on consumers' willingness to pay for EVs, indicates that Indian consumers are sensitive to pricing. He looked into how different car features affected what consumers preferred. It is essential to comprehend these elements to design EVs that satisfy the demands of Indian consumers.
- Tu, J. C., & Yang, C. (2019) acknowledge customer reluctance towards new technologies while highlighting the potential of EVs. up order to promote adoption, they suggest striking a balance between filling up information gaps and highlighting the advantages of EVs. The study highlights the value of electric vehicles (EVs) and the necessity of a gradual transition to them. According to the report, automakers should create consumer-focused, appealing programs to encourage the adoption of electric vehicles. Promoting the use of electric vehicles requires resolving consumer concerns and understanding their preferences. According to the research, buyers are more inclined to select electric vehicles (EVs) if they believe they are comparable to conventional cars in terms of price and functionality. This emphasizes how crucial it is to deal with concerns about pricing and range anxiety to increase purchase intent.
- S.Prasanna et al (2022) examined the factors influencing consumers' choice for electric vehicles in India. Despite a shifting consumer mindset towards electric vehicles (EVs), adoption rates remain stagnant due to financial, vehicle, and infrastructure barriers. In India, where consumers are price-sensitive, these barriers pose significant challenges. Government initiatives like the FAME scheme aim to promote EV adoption through funding for demand creation, infrastructure development, and tax incentives. However, understanding consumer preferences is crucial for policy effectiveness and market strategies to drive EV uptake in India. Recognizing the need to address these barriers, the Government of India has taken proactive measures to promote the development and usage of AFVs, particularly EVs, since April 2019. Initiatives such as the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme aim to stimulate demand, establish charging infrastructure, and promote EVs in India.
- Rafiq, F., Parthiban, E. S., Rajkumari, Y., Adil, M., Nasir, M., & Dogra, N. (2023) investigated the transition from fossil-fuel vehicles to electric vehicles (EVs) which represents a significant stride towards environmental conservation within the automobile industry. The industry demonstrates a commitment to aligning with evolving consumer preferences for sustainability, evident in the proliferation of eco-friendly vehicle options across various price points. Notably, EVs offer financial incentives and tax benefits, contributing to their increasing demand and profitability compared to traditional fossil-fuel variants. However, post-purchase environmental impacts remain a concern, with the automotive sector implicated in resource depletion, carbon emissions, and non-biodegradable waste generation.
- Van Bree, B., Verbong, G. P., & Kramer, G. J. (2010) explored a variety of angles about the launch of battery-electric and hydrogen-powered cars. During the past century, personal mobility has increased dramatically and is now a necessary component of contemporary society. The development and widespread use of the vehicle is largely to blame for this. Internal combustion engine (ICE) use is directly linked to a number of issues, including growing fuel prices, worries about energy supply security, and the release of pollutants that worsen local air quality and contribute to climate change. These problems might be resolved by switching to alternate fuels from fossil fuels. With regard to battery-electric vehicles (BEVs) and fuel cell cars (FCVs), notable advancements have been achieved.

- Fojcik, T.M. and Proff, H. (2014) analysed customer approval and readiness to pay in the realm of technical advances, consumer acceptance which is defined as customers' propensity to accept or adopt novel goods or service grown significantly in importance. Since the 1990s, acceptance research has contributed significantly to our understanding of why certain innovations succeed in the market while others fail, by illuminating the process and timing of individual adoption of novel goods and services. Consumers' decisions to accept or reject innovations are influenced by perceived qualities of the novel product or service in addition to socioeconomic traits, innovativeness, and communication style.
- Egbue, O., & Long, S. (2012) examine how variations in consumer demographics affect attitudes and beliefs toward electric vehicles (EVs) and can be utilized to identify possible socio-technical barriers to EV adoption. The goal of promoting electric cars (EVs) as a practical near-term vehicle technology is to lessen reliance on fossil fuels and the subsequent greenhouse gas (GHG) emissions that come with driving conventional vehicles (CVs). Notwithstanding the advantages of EVs, there are a few challenges that must be solved before EVs. Even with these possible benefits, there are still major obstacles in the way of EV technology's broad acceptance, and as of right now, EVs only make up a small portion of the market share of vehicles that are in use.

### CHAPTER III: RESEARCH GAP

With the increase in the pollution, we are shifting from Tradition resources of the energy towards the green energy. Similarly in the automobile sector to reduce carbon emission and air pollution people are adopting EVs over the oil engine cars as they are the great substitute for this. But choosing EVs, a lot of factors influence the buying decision as we are at the change right now. To understand these, lot of research has been done in India also, but by doing the review of the literature we came to know that most of them are Urban centric. Since rural market also represents a huge share in the automobile sector, we can't neglect the customer perception of the customer in the rural India towards the electric vehicles. Some of the possible gaps which we can cover with our research are:

**Lack of research:** While there have been some studies on the adoption of electric vehicles in urban areas of India, there is a lack of research on the adoption of electric vehicles in rural areas. Given the different socio-economic conditions and infrastructural challenges faced by rural areas, it is important to understand how consumers in rural areas perceive and adopt electric vehicles. Especially in the North Indian states like Himachal, Uttarakhand, and J&K where there are hilly areas and geographical conditions are extreme as compared to other parts.

**Perception and awareness:** It is important to understand the level of awareness and perception of electric vehicles among rural consumers. There may be a lack of awareness and understanding of the benefits of electric vehicles, and there may be misconceptions or concerns about the technology that need to be addressed.

**Cost and affordability:** Cost is a major factor affecting the adoption of electric vehicles, especially in rural areas where incomes may be lower. It is important to understand how rural consumers perceive the cost and affordability of electric vehicles, and to know whether they are aware of the government policies and the subsidies, or they need any specific help from the government's side.

**Infrastructure and charging facilities:** Infrastructure is a key factor in the adoption of electric vehicles, particularly the availability of charging facilities. Rural areas may have limited infrastructure and charging facilities, which could be a barrier to adoption. But no research is done to know whether people in the rural parts of the North India access to EV has charging stations and service centers near them or not.

Overall, research on the consumer behavior towards electric vehicles in rural India can help to inform policies and strategies for promoting the adoption of electric vehicles in rural areas and addressing the unique challenges and opportunities in these areas.

## CHAPTER IV: RESEARCH OBJECTIVES

- To understand the level of awareness, knowledge, and interest among the people about the electric vehicles in the rural parts of the North India.
- To identify the key factors that can influence the purchase intention of electric vehicles in these parts.
- To know about the awareness among the people about the potential government interventions or schemes that can promote electric vehicle adoption in the rural part of the North India.
- To identify the perception of the people regarding the performance of electric vehicles in mountains and flood prone areas of the North Indian states.

## CHAPTER V: RESEARCH METHODOLOGY

**Sample Size:** Total Responses: 112

### **Gender Distribution:**

- Male: 78 (69.6%)
- Female: 29 (25.9%)
- Other: 5 (4.5%)

### **Age Distribution:**

- 18-30: 103 (92%)
- 30-50: 4 (3.6%)
- 50+: 5 (4.5%)

### **Occupation:**

- Student: 85 (75.9%)
- Employee: 16 (14.3%)
- Transport worker & Others: 11 (9.8%)

### **Education Level:**

- Elementary: 8 (7.1%)
- Secondary: 4 (3.6%)
- Higher: 92 (82.1%)

In a comprehensive survey conducted both online and offline in rural areas of North India, specifically in regions encompassing states like Uttar Pradesh, Bihar, Rajasthan, Punjab, and Himachal Pradesh, regarding customer perception towards electric vehicles (EVs), the following key insights were gathered:

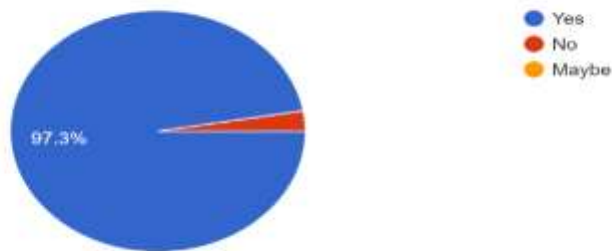
### **Factors we have focused upon while doing the survey are:**

1. Awareness and Knowledge
2. Purchase Intent
3. Barriers to Adoption
4. Government Initiatives
5. Incentives and Subsidies
6. Comparative Analysis
7. Infrastructure and Terrain Suitability
8. Challenges
9. Performance Concerns

## CHAPTER VI: RESULTS AND DISCUSSION

Have you heard about electric vehicles (EVs)?

110 responses



From the provided data, we have responses from 110 individuals regarding their awareness of electric vehicles (EVs), categorized into three groups:

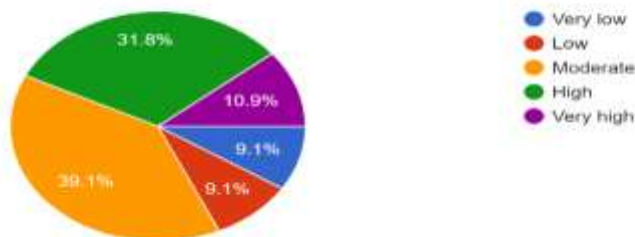
- **Yes: 107 responses**
- **No: 3 responses**
- **Maybe: 0 responses**

Interpreting this data, we can see that the vast majority of respondents, approximately 97.3% of the total, have heard about electric vehicles. Only a very small proportion of respondents, approximately 2.7%, have not heard about electric vehicles.

This data indicates a high level of awareness about electric vehicles among the respondents. The low number of respondents who have not heard about electric vehicles suggests that the topic is relatively well-known among the surveyed population. Researchers can use this information to gauge the level of familiarity with electric vehicles within the target demographic and tailor their research or interventions accordingly.

If yes, how would you rate your knowledge about electric vehicles?

110 responses



From the provided data, we have responses from 110 individuals regarding their self-rated knowledge about electric vehicles, categorized into five groups:

- **Very low: 10 responses**
- **Low: 10 responses**
- **Moderate: 43 responses**
- **High: 35 responses**
- **Very high: 12 responses**

Interpreting this data, we can observe the data of self-rated knowledge levels among respondents:

- A significant portion of respondents rated their knowledge as moderate, comprising approximately 39.1% of the total responses.
- High knowledge ratings were also relatively common, with approximately 31.8% of respondents indicating a high level of knowledge.
- A smaller proportion of respondents rated their knowledge as very low or low, comprising approximately 9.1% each.



- The least common rating was "Very high," with approximately 10.9% of respondents indicating this level of knowledge.

This data suggests that a considerable portion of respondents perceive themselves to have at least a moderate level of knowledge about electric vehicles. However, there is variability in knowledge levels among respondents, with some indicating lower levels of familiarity and others indicating higher levels of expertise. Researchers can use this information to understand the knowledge landscape within the surveyed population and tailor educational interventions or communication strategies accordingly.

Where do you usually get information about electric vehicles from?

110 responses



From the provided data, we have responses from 110 individuals regarding their usual sources of information about electric vehicles, categorized into different channels:

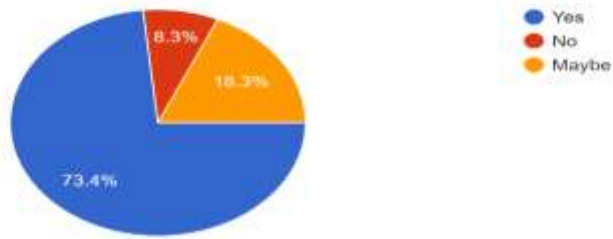
- **Television advertisements: 20 responses**
- **Online advertisements: 19 responses**
- **Social media: 40 responses**
- **Word of mouth (friends, family, neighbours): 16 responses**
- **Print media (newspapers, magazines): 7 responses.**
- **Public events or exhibitions: 6 responses**
- **Other (please specify): 2 responses.**

Interpreting this data, we can observe the data of preferred information sources among respondents:

- Social media appears to be the most common source of information about electric vehicles, with approximately 36.4% of respondents indicating this channel.
- Television advertisements and online advertisements are also popular sources, with approximately 18.2% and 17.3% of respondents respectively.
- Word of mouth, from friends, family, and neighbours, is cited by approximately 14.5% of respondents.
- Print media and public events or exhibitions are less frequently cited sources, each accounting for approximately 6% or fewer of responses.
- Other sources, which were not specified in the provided data, are mentioned by a very small proportion of respondents.

This data suggests that social media is a prominent channel for accessing information about electric vehicles among the surveyed population, followed by traditional advertising channels such as television and online advertisements. Word of mouth also plays a notable role, indicating the influence of personal networks in spreading information about electric vehicles. Researchers can use this information to understand the preferred communication channels of the target audience and tailor information dissemination strategies accordingly.

Would you consider purchasing an electric vehicle in the future?  
109 responses



From the provided data, we have responses from 109 individuals regarding their willingness to consider purchasing an electric vehicle in the future, categorized into three options:

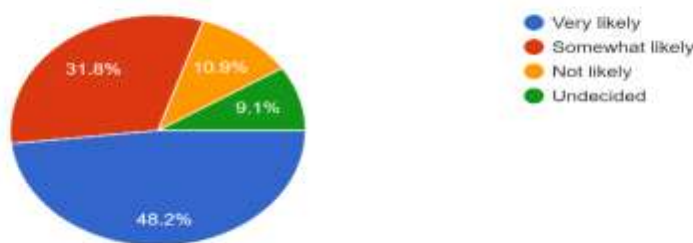
- **Yes: 80 responses**
- **No: 9 responses**
- **Maybe: 20 responses**

Interpreting this data, we observe the following data:

- The majority of respondents, approximately 73.4% of the total, expressed a willingness to consider purchasing an electric vehicle in the future.
- A smaller proportion of respondents, approximately 8.3%, indicated that they would not consider purchasing an electric vehicle.
- Approximately 18.3% of respondents were uncertain or undecided about whether they would consider purchasing an electric vehicle in the future.

This data suggests that a significant portion of the surveyed population is open to the idea of purchasing an electric vehicle in the future. However, there is also a notable proportion of respondents who are either undecided or unwilling to consider purchasing an electric vehicle. Researchers can use this information to understand consumer attitudes towards electric vehicles and identify potential barriers or motivators for adoption within the target population.

How likely are you to purchase an electric vehicle in the next 5 years?  
110 responses



From the provided data, we have responses from 110 individuals regarding their likelihood of purchasing an electric vehicle in the next 5 years, categorized into four options:

- **Very likely: 53 responses**
- **Somewhat likely: 35 responses**
- **Not likely: 12 responses**
- **Undecided: 10 responses**

Interpreting this data, we observe the following data:

- A significant portion of respondents, approximately 48.2% of the total, expressed that they are very likely to purchase an electric vehicle in the next 5 years.

- A further proportion of respondents, approximately 31.8%, indicated that they are somewhat likely to make such a purchase.
- Approximately 10.9% of respondents stated that they are not likely to purchase an electric vehicle within the next 5 years.
- A smaller proportion of respondents, approximately 9.1%, were undecided about their likelihood of purchasing an electric vehicle within the specified timeframe.

This data suggests that a considerable portion of the surveyed population is open to the idea of purchasing an electric vehicle within the next 5 years, with varying degrees of certainty. However, there are also individuals who are either not likely to make such a purchase or are undecided. Researchers can use this information to understand the timeframe within which potential consumers may be considering electric vehicle purchases and to identify factors influencing their decision-making process.

If not interested, what are the primary reasons for your lack of interest in purchasing an electric vehicle?

105 responses



From the provided data, we have responses from 105 individuals regarding the primary reasons for their lack of interest in purchasing an electric vehicle, categorized into different factors:

- **High purchase cost: 19 responses**
- **Limited charging infrastructure: 39 responses**
- **Insufficient driving range: 12 responses**
- **Lack of awareness and information: 13 responses**
- **Limited availability of electric vehicle models: 5 responses**
- **Concerns about battery life and replacement: 17 responses**

Interpreting this data, we observe the following data of reasons for lack of interest in purchasing an electric vehicle:

- The most cited reason is limited charging infrastructure, with approximately 37.1% of respondents expressing concerns about this factor.
- Concerns about battery life and replacement were also significant, with approximately 16.2% of respondents indicating this as a primary reason for their lack of interest.
- High purchase cost and lack of awareness and information were cited by approximately 18.1% and 11.4% of respondents respectively.
- Insufficient driving range and limited availability of electric vehicle models were mentioned by smaller proportions of respondents, each accounting for approximately 11.4% or fewer of responses.

This data suggests that infrastructure-related factors, such as charging infrastructure availability, and concerns about battery performance are prominent barriers to the adoption of electric vehicles among the surveyed population. Additionally, cost-related factors and lack of awareness also contribute to the lack of interest in purchasing electric vehicles. Researchers can use this information to identify key barriers to adoption and develop strategies to address these challenges effectively.

## What are the most pressing infrastructure needs in our village?

108 responses



From the provided data, we have responses from 108 individuals regarding the most pressing infrastructure needs in their village, categorized into different factors:

- **Road maintenance and repair: 36 responses**
- **Access to clean drinking water: 7 responses**
- **Electricity supply and reliability: 37 responses**
- **Public transportation services: 19 responses**
- **Waste management and sanitation: 8 responses.**
- **Other (Please Specify): 1 response.**

Interpreting this data, we observe the following data of pressing infrastructure needs:

- The most cited infrastructure need is electricity supply and reliability, with approximately 34.3% of respondents expressing concerns about this factor.
- Road maintenance and repair is also identified as a significant infrastructure need, with approximately 33.3% of respondents indicating this as a pressing issue.
- Public transportation services were mentioned by approximately 17.6% of respondents as a priority infrastructure need.
- Access to clean drinking water and waste management and sanitation were cited by smaller proportions of respondents, each accounting for approximately 6.5% or fewer of responses.
- Other specified infrastructure needs were mentioned by a very small proportion of respondents.

This data suggests that ensuring reliable electricity supply and improving road maintenance and repair are the most pressing infrastructure needs in the surveyed villages. Public transportation services, access to clean drinking water, and waste management and sanitation are also important concerns, although to a lesser extent. Researchers can use this information to prioritize infrastructure development efforts and address the identified needs effectively.

## What do you perceive as the main barriers to adopting electric vehicles in rural areas?

109 responses



From the provided data, we have responses from 109 individuals regarding the main barriers to adopting electric vehicles in rural areas, categorized into different factors:

- **Lack of awareness: 25 responses**
- **High initial cost: 21 responses**
- **Limited availability of charging stations: 43 responses**
- **Concerns about vehicle performance and range: 17 responses**
- **Lack of government support: 3 responses**

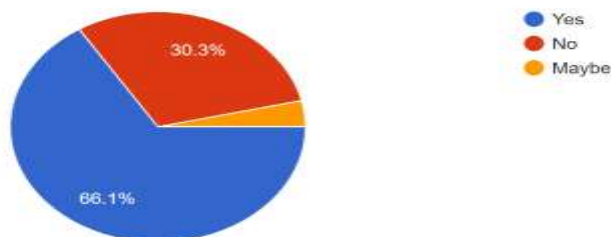
Interpreting this data, we observe the following data of main barriers to adopting electric vehicles in rural areas:

- The most commonly cited barrier is the limited availability of charging stations, with approximately 39.4% of respondents expressing concerns about this factor.
- High initial cost is also identified as a significant barrier, with approximately 15.6% of respondents indicating this as a main obstacle to adoption.
- Concerns about vehicle performance and range were mentioned by approximately 15.6% of respondents as a key barrier.
- Lack of awareness and lack of government support were cited by smaller proportions of respondents, each accounting for approximately 22.9% or fewer of responses.

This data suggests that addressing the limited availability of charging stations is perceived as the most critical barrier to adopting electric vehicles in rural areas. High initial cost and concerns about vehicle performance and range are also important factors influencing adoption. Lack of awareness and government support are mentioned by a smaller proportion of respondents but are still considered significant barriers. Researchers can use this information to develop targeted interventions aimed at overcoming these barriers and promoting electric vehicle adoption in rural areas.

Are you aware of the government initiative called "Faster Adoption of Electric Vehicles in India (FAME)"?

109 responses



From the provided data, we have responses from 109 individuals regarding their awareness of the government initiative called "Faster Adoption of Electric Vehicles in India (FAME)," categorized into different responses:

- **Yes: 72 responses**
- **No: 33 responses**
- **Maybe: 4 responses**

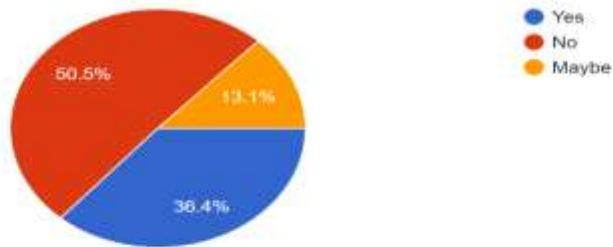
Interpreting this data, we observe the following data of awareness of the FAME initiative:

- Approximately 66.1% of respondents are aware of the FAME initiative.
- Approximately 30.3% of respondents are not aware of the FAME initiative.
- A very small proportion of respondents (approximately 3.7%) are unsure or uncertain about their awareness of the FAME initiative.

This data suggests that a majority of respondents are familiar with the FAME initiative, indicating a notable level of awareness among the surveyed population. However, there is still a significant portion of respondents who are either unaware or unsure about the initiative. Researchers can use this information to gauge the effectiveness of awareness campaigns and identify areas where additional efforts may be needed to enhance awareness of government initiatives related to electric vehicles.

Have you personally benefited from any incentives or subsidies provided under the FAME scheme?

107 responses



From the provided data, we have responses from 107 individuals regarding whether they have personally benefited from any incentives or subsidies provided under the FAME scheme, categorized into different responses:

- **Yes: 39 responses**
- **No: 54 responses**
- **Maybe: 14 responses**

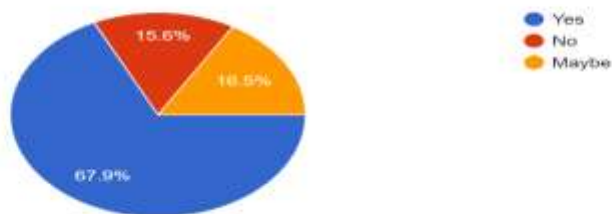
Interpreting this data, we observe the following data of personal benefit from incentives or subsidies provided under the FAME scheme:

- Approximately 36.4% of respondents have personally benefited from incentives or subsidies under the FAME scheme.
- Approximately 50.5% of respondents have not personally benefited from incentives or subsidies under the FAME scheme.
- A smaller proportion of respondents (approximately 13.1%) are unsure or uncertain about whether they have personally benefited from incentives or subsidies under the FAME scheme.

This data suggests that while a significant portion of respondents have personally benefited from incentives or subsidies provided under the FAME scheme, there is still a considerable number of individuals who have not received such benefits. Additionally, there is some uncertainty among respondents regarding their personal benefit from the scheme. Researchers can further investigate the reasons behind the disparities in benefit distribution and assess the effectiveness of the FAME scheme in reaching its intended beneficiaries.

Do you think government incentives and subsidies would encourage you to purchase an electric vehicle?

109 responses



From the provided data, we have responses from 109 individuals regarding whether government incentives and subsidies would encourage them to purchase an electric vehicle, categorized into different responses:

- **Yes: 74 responses**
- **No: 17 responses**
- **Maybe: 18 responses**

Interpreting this data, we observe the following data of opinions regarding the impact of government incentives and subsidies on electric vehicle purchases:

- Approximately 67.9% of respondents believe that government incentives and subsidies would encourage them to purchase an electric vehicle.

- Approximately 15.6% of respondents do not believe that government incentives and subsidies would encourage them to purchase an electric vehicle.
- A notable proportion of respondents (approximately 16.5%) are uncertain or undecided about whether government incentives and subsidies would influence their decision to purchase an electric vehicle.

This data suggests that most respondents perceive government incentives and subsidies as influential factors that would encourage them to purchase an electric vehicle. However, there is also a significant portion of individuals who are either sceptical about the effectiveness of such incentives or uncertain about their impact. Researchers can delve deeper into the reasons behind these perceptions and assess the potential effectiveness of government policies aimed at promoting electric vehicle adoption.

What is your opinion about electric vehicles compared to traditional petrol/diesel vehicles?  
108 responses



From the provided data, we have responses from 108 individuals regarding their opinions about electric vehicles (EVs) compared to traditional petrol/diesel vehicles, categorized into different responses:

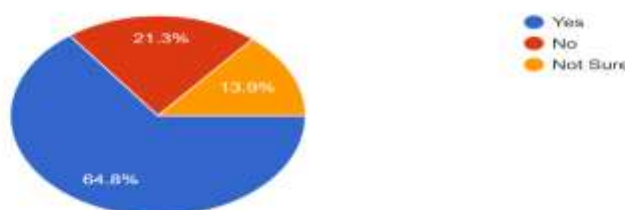
- **Prefer EVs: 64 responses.**
- **Prefer petrol/diesel vehicles: 29 responses.**
- **No Preference: 15 responses**

Interpreting this data, we observe the following data of opinions about electric vehicles compared to traditional petrol/diesel vehicles:

- Approximately 59.3% of respondents prefer electric vehicles over petrol/diesel vehicles.
- Approximately 26.9% of respondents prefer petrol/diesel vehicles over electric vehicles.
- Approximately 13.9% of respondents have no preference between electric vehicles and petrol/diesel vehicles.

This data suggests that a majority of respondents have a preference for electric vehicles compared to traditional petrol/diesel vehicles. However, there is also a substantial portion of individuals who still prefer petrol/diesel vehicles, indicating varying preferences within the surveyed population. Researchers can explore the underlying reasons behind these preferences further to better understand consumer attitudes towards electric vehicles and inform policy decisions aimed at promoting their adoption.

Are you concerned about the maintenance and repair costs of electric vehicles compared to petrol/diesel vehicles?  
108 responses



From the provided data, we have responses from 108 individuals regarding their concerns about the maintenance and repair costs of electric vehicles compared to petrol/diesel vehicles, categorized into different responses:

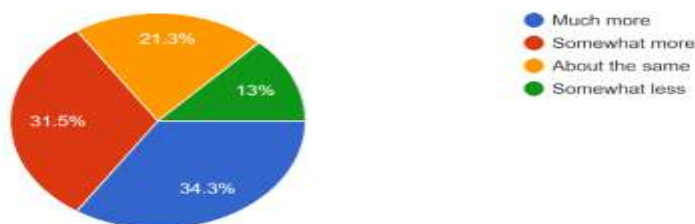
- **Yes: 70 responses**
- **No: 23 responses**
- **Not Sure: 15 responses**

Interpreting this data, we observe the following data of concerns about maintenance and repair costs:

- Approximately 64.8% of respondents are concerned about the maintenance and repair costs of electric vehicles compared to petrol/diesel vehicles.
- Approximately 21.3% of respondents are not concerned about the maintenance and repair costs of electric vehicles compared to petrol/diesel vehicles.
- Approximately 13.9% of respondents are unsure or not sure about their concerns regarding maintenance and repair costs.

This data indicates that a majority of respondents have concerns about the maintenance and repair costs associated with electric vehicles compared to petrol/diesel vehicles. However, there are also individuals who do not share these concerns or are unsure about them. Researchers can further investigate the factors influencing these concerns and assess the perceived cost-effectiveness of electric vehicles relative to traditional vehicles.

How much do you trust electric vehicle technology compared to conventional vehicle technology?  
108 responses



From the provided data, we have responses from 108 individuals regarding their level of trust in electric vehicle (EV)

technology compared to conventional vehicle technology, categorized into different responses:

- **Much more: 37 responses**
- **Somewhat more: 34 responses**
- **About the same: 23 responses**
- **Somewhat less: 14 responses**

Interpreting this data, we observe the following data of trust levels in EV technology compared to conventional vehicle technology:

- Approximately 34.3% of respondents trust EV technology much more than conventional vehicle technology.
- Approximately 31.5% of respondents trust EV technology somewhat more than conventional vehicle technology.
- Approximately 21.3% of respondents trust EV technology about the same as conventional vehicle technology.
- Approximately 13% of respondents trust EV technology somewhat less than conventional vehicle technology.

This data indicates that a majority of respondents have a high level of trust in EV technology, with a significant portion expressing even higher trust in EVs compared to conventional vehicles. However, there are also individuals who trust EV technology less than conventional vehicle technology, albeit a smaller percentage. Researchers can explore the underlying factors influencing these trust levels and assess the implications for the adoption of electric vehicles.



How do you perceive the reliability and durability of electric vehicles compared to traditional gasoline/diesel vehicles?

107 responses



From the provided data, we have responses from 107 individuals regarding their perception of the reliability and durability of electric vehicles (EVs) compared to traditional gasoline/diesel vehicles, categorized into different responses:

- **Much more reliable and durable: 22 responses**
- **Somewhat more reliable and durable: 42 responses**
- **About the same: 27 responses**
- **Somewhat less reliable and durable: 14 responses**
- **Much less reliable and durable: 2 responses**

Interpreting this data, we observe the following data of perceptions regarding the reliability and durability of EVs compared to traditional vehicles:

- Approximately 20.6% of respondents perceive EVs to be much more reliable and durable than traditional vehicles.
- Approximately 39.3% of respondents perceive EVs to be somewhat more reliable and durable than traditional vehicles.
- Approximately 25.2% of respondents perceive EVs and traditional vehicles to be about the same in terms of reliability and durability.
- Approximately 13.1% of respondents perceive EVs to be somewhat less reliable and durable than traditional vehicles.
- Approximately 1.9% of respondents perceive EVs to be much less reliable and durable than traditional vehicles.

This data suggests that a majority of respondents perceive electric vehicles to be at least as reliable and durable as traditional gasoline/diesel vehicles, with a significant portion perceiving them to be even more reliable and durable. However, there are also individuals who perceive electric vehicles to be less reliable and durable, albeit a smaller percentage. Researchers can further investigate the factors influencing these perceptions and address any misconceptions that may exist about the reliability and durability of electric vehicles.

What factors do you believe contribute most to shaping consumer perceptions of electric vehicles?

108 responses



From the provided data, we have responses from 108 individuals regarding the factors they believe contribute most to shaping consumer perceptions of electric vehicles (EVs), categorized into different responses:

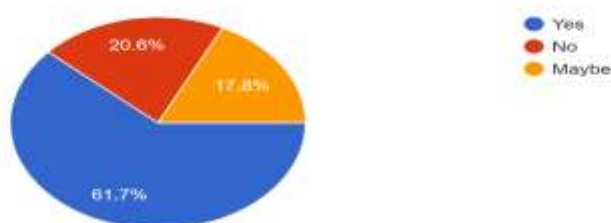
- **Media coverage and portrayal: 24 responses**
- **Government policies and incentives: 38 responses**
- **Personal experiences or word of mouth: 22 responses**
- **Environmental awareness campaigns: 21 responses**
- **Other (please specify): 3 responses.**

Interpreting this data, we observe the following data of factors contributing to shaping consumer perceptions of EVs:

- Approximately 22.2% of respondents believe that media coverage and portrayal play a significant role in shaping consumer perceptions of EVs.
- Approximately 35.2% of respondents believe that government policies and incentives are the most influential factors in shaping consumer perceptions of EVs.
- Approximately 20.4% of respondents believe that personal experiences or word of mouth have the greatest impact on consumer perceptions of EVs.
- Approximately 19.4% of respondents believe that environmental awareness campaigns contribute most to shaping consumer perceptions of EVs.
- A small percentage of respondents (2.8%) specified other factors not listed in the provided options.

This data suggests that government policies and incentives are perceived as the most influential factors in shaping consumer perceptions of EVs, followed by media coverage and portrayal, personal experiences or word of mouth, and environmental awareness campaigns. Researchers can further explore these factors and their relative importance in influencing consumer attitudes towards EVs. Additionally, investigating the specific "other" factors mentioned by respondents can provide valuable insights into additional influences on consumer perceptions of EVs.

Do you believe the high price of petrol/diesel is a significant factor motivating the shift to electric vehicles?  
107 responses



From the provided data, we have responses from 107 individuals regarding whether they believe the high price of petrol/diesel is a significant factor motivating the shift to electric vehicles (EVs), categorized into different responses:

- **Yes: 66 responses**
- **No: 22 responses**
- **Maybe: 19 responses**

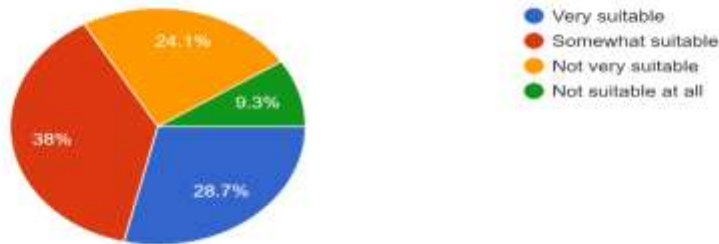
Interpreting this data, we observe the following data of beliefs regarding the significance of the high price of petrol/diesel in motivating the shift to EVs:

- Approximately 61.7% of respondents believe that the high price of petrol/diesel is a significant factor motivating the shift to EVs.
- Approximately 20.6% of respondents do not believe that the high price of petrol/diesel is a significant factor motivating the shift to EVs.

- Approximately 17.8% of respondents are unsure or believe it may be a factor, indicating a level of uncertainty or ambiguity in their perception.

This data suggests that a majority of respondents perceive the high price of petrol/diesel as a significant factor motivating the shift to EVs. However, a notable portion of respondents either do not see it as significant or are uncertain about its impact. Researchers can further explore the reasons behind these perceptions and assess the role of other factors in driving the adoption of EVs.

How suitable do you think electric vehicles are for navigating mountainous terrains in your area?  
108 responses



From the provided data, we have responses from 108 individuals regarding how suitable they think electric vehicles (EVs) are for navigating mountainous terrains in their area, categorized into different responses:

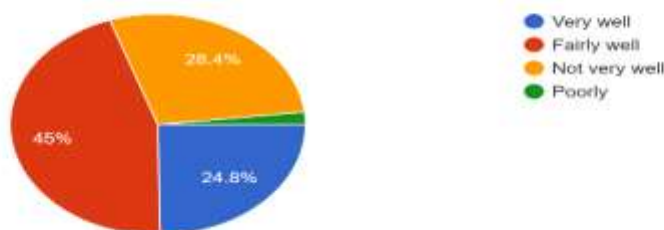
- **Very suitable: 31 responses**
- **Somewhat suitable: 41 responses**
- **Not very suitable: 26 responses**
- **Not suitable at all: 10 responses**

Interpreting this data, we observe the following data of perceptions regarding the suitability of EVs for navigating mountainous terrains:

- Approximately 28.7% of respondents believe that EVs are very suitable for navigating mountainous terrains.
- Approximately 37.9% of respondents believe that EVs are somewhat suitable for navigating mountainous terrains.
- Approximately 24.1% of respondents believe that EVs are not very suitable for navigating mountainous terrains.
- Approximately 9.3% of respondents believe that EVs are not suitable at all for navigating mountainous terrains.

This data suggests that the majority of respondents perceive EVs to be suitable, either very or somewhat, for navigating mountainous terrains in their area. However, there is a noticeable portion of respondents who believe EVs are not very suitable or not suitable at all for this purpose. Researchers may further investigate the reasons behind these perceptions, such as concerns about range, performance, or infrastructure limitations in mountainous regions.

How do you think electric vehicles perform in areas with frequent river crossings or waterlogged roads?  
109 responses



From the provided data, we have responses from 109 individuals regarding how they think electric vehicles (EVs) perform in areas with frequent river crossings or waterlogged roads, categorized into different responses:

- **Very well: 27 responses**
- **Fairly well: 49 responses**
- **Not very well: 31 responses**
- **Poorly: 2 responses**

Interpreting this data, we observe the following data of perceptions regarding the performance of EVs in areas with frequent river crossings or waterlogged roads:

- Approximately 24.8% of respondents believe that EVs perform very well in such areas.
- Approximately 44.9% of respondents believe that EVs perform fairly well in such areas.
- Approximately 28.4% of respondents believe that EVs do not perform very well in such areas.
- Approximately 1.8% of respondents believe that EVs perform poorly in such areas.

This data suggests that a significant portion of respondents perceive EVs to perform well or fairly well in areas with frequent river crossings or waterlogged roads. However, there is also a notable proportion who believe that EVs do not perform very well in such conditions, indicating potential concerns about the suitability or performance of EVs in these challenging environments. Further research could explore specific factors influencing these perceptions, such as battery and drivetrain durability, traction control systems, or the availability of charging infrastructure in flood-prone areas.

Do you have access to reliable maintenance and servicing facilities for electric vehicles in your area?  
107 responses



From the provided data, we have responses from 107 individuals regarding their access to reliable maintenance and servicing facilities for electric vehicles (EVs) in their area, categorized into different responses:

- **Yes, easily accessible: 32 responses.**
- **Yes, but not very accessible: 38 responses.**
- **No, but I've heard of them in nearby towns/cities: 26 responses.**
- **No, not available nearby: 11 responses.**

Interpreting this data, we observe the following data of responses regarding access to maintenance and servicing facilities for EVs:

- Approximately 29.9% of respondents have easy access to reliable maintenance and servicing facilities for EVs.
- Approximately 35.5% of respondents have access to such facilities, but they are not very accessible.
- Approximately 24.3% of respondents have heard of maintenance and servicing facilities in nearby towns or cities.
- Approximately 10.3% of respondents do not have access to maintenance and servicing facilities nearby.

This data suggests that while a considerable portion of respondents have access to maintenance and servicing facilities for EVs, there is also a significant proportion who either find them inaccessible or have to rely on facilities in nearby areas. Understanding the factors influencing accessibility to these facilities can provide insights into improving EV ownership experiences, particularly in areas with limited infrastructure.

Are there charging stations for electric vehicles available within a reasonable distance from mountainous or riverside areas?

107 responses



From the provided data, we have responses from 107 individuals regarding the availability of charging stations for electric vehicles (EVs) within a reasonable distance from mountainous or riverside areas, categorized into different responses:

- **Yes, readily available: 20 responses.**
- **Yes, but somewhat distant: 43 responses.**
- **No, only available in nearby towns/cities: 31 responses.**
- **No, not available nearby: 13 responses.**

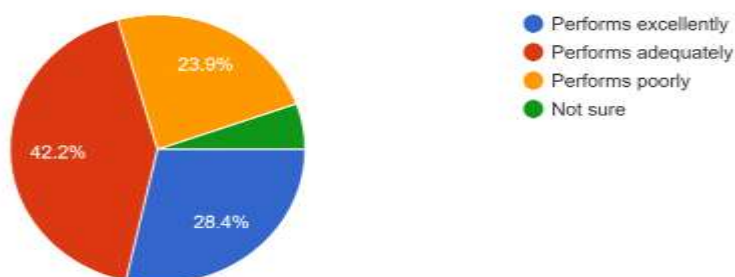
Interpreting this data, we observe the following data of responses regarding the availability of charging stations for EVs in mountainous or riverside areas:

- Approximately 18.7% of respondents indicated that charging stations for EVs are readily available in these areas.
- Approximately 40.2% of respondents mentioned that charging stations are available but somewhat distant.
- Approximately 29% of respondents stated that charging stations are only available in nearby towns or cities.
- Approximately 12.1% of respondents reported that charging stations are not available nearby in mountainous or riverside areas.

This data suggests that while a portion of respondents have access to charging stations within mountainous or riverside areas, many respondents find them either distant or only available in nearby towns or cities. Understanding the distribution and accessibility of charging infrastructure can inform efforts to expand charging networks and improve EV adoption in these regions.

How do you perceive the performance of electric vehicles in adverse weather conditions common in mountainous or riverside areas (e.g., snow, heavy rain)?

109 responses



From the provided data, we have responses from 109 individuals regarding their perception of the performance of electric vehicles (EVs) in adverse weather conditions common in mountainous or riverside areas, categorized into different responses:

- **Performs excellently: 31 responses.**
- **Performs adequately: 46 responses.**
- **Performs poorly: 26 responses.**
- **Not sure: 6 responses**

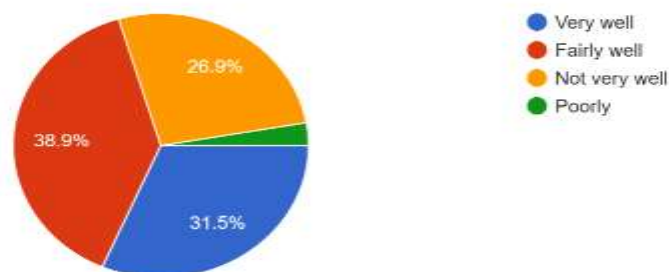
Interpreting this data, we observe the following data of responses regarding the performance of EVs in adverse weather conditions:

- Approximately 28.4% of respondents believe that EVs perform excellently in adverse weather conditions.
- Approximately 42.2% of respondents perceive that EVs perform adequately in such conditions.
- Approximately 23.9% of respondents think that EVs perform poorly in adverse weather conditions.
- Approximately 5.5% of respondents were not sure about the performance of EVs in these conditions.

This data suggests that a significant portion of respondents perceive EVs to perform adequately or excellently in adverse weather conditions common in mountainous or riverside areas. However, there is also a notable proportion of respondents who believe that EVs perform poorly in such conditions. Understanding these perceptions can guide efforts to improve EV technology and address concerns related to adverse weather conditions.

How do you think electric vehicles fare on roads prone to flooding or river crossings in your area?

108 responses



From the provided data, we have responses from 108 individuals regarding how they perceive electric vehicles (EVs) fare on roads prone to flooding or river crossings in their area, categorized into different responses:

- **Very well: 34 responses**
- **Fairly well: 42 responses**
- **Not very well: 29 responses**
- **Poorly: 3 responses**

Interpreting this data, we observe the following data of responses regarding how EVs fare on roads prone to flooding or river crossings:

- Approximately 31.5% of respondents believe that EVs fare very well on such roads.
- Approximately 38.9% of respondents perceive that EVs fare fairly well on such roads.
- Approximately 26.9% of respondents think that EVs do not fare very well on such roads.
- Approximately 2.8% of respondents believe that EVs fare poorly on such roads.

This data suggests that a significant portion of respondents believe that EVs fare well or fairly well on roads prone to flooding or river crossings in their area. However, there is also a notable proportion of respondents who think that EVs do not fare very well or fare poorly on such roads. Understanding these perceptions can help in addressing concerns and improving the suitability of EVs for different road conditions, including those prone to flooding or river crossings.

Are there specific infrastructure challenges (e.g., road conditions, lack of bridges) that might hinder the adoption or usage of electric vehicles in your mountainous or riverside area?

109 responses



From the data provided, we have responses from 109 individuals regarding specific infrastructure challenges that might hinder the adoption or usage of electric vehicles (EVs) in their mountainous or riverside area, categorized into different responses:

- **Yes, significant challenges: 33 responses.**
- **Yes, some challenges: 51 responses.**
- **No, minimal challenges: 23 responses.**
- **No, no challenges at all: 2 responses.**

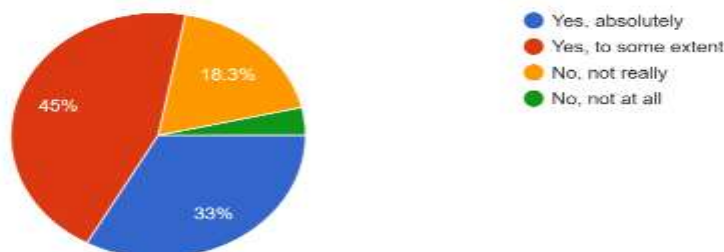
Interpreting this data, we observe the following data of responses regarding the presence of infrastructure challenges hindering the adoption or usage of EVs in mountainous or riverside areas:

- Approximately 30.3% of respondents perceive significant challenges that may hinder EV adoption or usage.
- Approximately 46.8% of respondents believe that there are some challenges presents.
- Approximately 21.1% of respondents indicate minimal challenges.
- A very small percentage (about 1.8%) of respondent's state that there are no challenges at all.

This data suggests that a majority of respondents acknowledge the presence of challenges, either significant or some, which may impede the adoption or usage of EVs in mountainous or riverside areas. Identifying and addressing these challenges can be crucial for promoting the adoption and integration of EVs in such geographical regions.

Do you believe electric vehicles offer satisfactory performance in terms of power and torque required for uphill climbs in mountainous regions?

109 responses



From the data provided, we have responses from 109 individuals regarding their belief in whether electric vehicles (EVs) offer satisfactory performance in terms of power and torque required for uphill climbs in mountainous regions, categorized into different responses:

- **Yes, absolutely: 31 responses.**
- **Yes, to some extent: 41 responses.**
- **No, not really: 26 responses.**
- **No, not at all: 10 responses.**

Interpreting this data, we observe the following distribution of responses regarding the belief in the performance of EVs for uphill climbs in mountainous regions:

- Approximately 28.4% of respondents strongly believe that EVs offer satisfactory performance.
- About 37.6% of respondents believe that EVs offer performance to some extent.
- Around 23.9% of respondents are skeptical about the performance of EVs for uphill climbs.
- Approximately 9.2% of respondents do not believe that EVs offer satisfactory performance for uphill climbs at all.

This data suggests that while a significant portion of respondents believe in the satisfactory performance of EVs for uphill climbs in mountainous regions, there are also individuals who have reservations or doubts about this aspect. Addressing these concerns could be important for encouraging broader acceptance of EVs in such terrains.

## CHAPTER VII: CONCLUSION

The Above study to know about the client perception among the pastoral areas of North India depicts that a sizable portion of the population is apprehensive about electric vehicles (EVs) and is interested in buying one in the future. resides' mindfulness of the government's FAME action and their recognition that subventions would greatly encourage EV relinquishment are factors that further energy this desire. Repliers had a positive opinion about EVs. When it comes to performance, they see EVs as being on par with conventional petrol and diesel buses, especially in mountainous and flood tide-prone locales. This dispels the myth that EVs are unhappy for use in pastoral areas. On the other hand, one of the main obstacles to EV relinquishment is the absence of service centres and charging stations. To close the intent-action gap and enable a flawless shift to electric vehicles in pastoral regions, it's imperative to address this infrastructural gap. Considering these results, it's advised that the Government should encourage EV copping in pastoral regions, the government should maintain and grow schemes like FAME. This will take care of the original high-cost hedge in addition to promoting relinquishment. structure development to guarantee availability and palliate range anxiety, concentrate on erecting a strong network of service centres and charging stations in remote locales. In pastoral North India, there might be a major shift towards electric transportation by exploiting the good view of EVs and working these essential infrastructural gaps. Giving guests an affordable and environmentally friendly transportation choice will also help achieve environmental pretensions by lowering reliance on fossil energies.

**Government efforts:** To encourage EV purchasing in rural regions, the government should maintain and grow schemes like FAME. This will take care of the initial high-cost barrier in addition to promoting adoption.

**Infrastructure development:** To guarantee accessibility and alleviate range anxiety, concentrate on building a strong network of service centres and charging stations in remote locations.

In rural North India, there might be a major shift towards electric transportation by exploiting the good view of EVs and solving these essential infrastructural gaps. By giving customers an affordable and environmentally friendly transportation choice, this will also help achieve environmental goals by lowering reliance on fossil fuels.

## CHAPTER VIII: CITATION

- Mittal, G., Garg, A., & Pareek, K. (2024). A review of the technologies, challenges and policies implications of electric vehicles and their future development in India. *Energy Storage*, 6(1), e562.
- KV, A. (2022). *Impact of Behavioural and Social Factors on the Intention to Adopt Electric Vehicles: An Empirical Investigation* (Doctoral dissertation, National Institute of Technology Karnataka, Surathkal).



- Trivedi, J. P., & Kishore, K. (2020). Investigating the factors influencing consumers' purchase intention for electric cars: an emerging market perspective. *International Journal of Economics and Business Research*, 20(2), 117-137.
- Bhalla, P., Ali, I. S., & Nazneen, A. (2018). A study of consumer perception and purchase intention of electric vehicles. *European Journal of Scientific Research*, 149(4), 362-368.
- Masurali, A., & Surya, P. (2018). Perception and awareness level of potential customers towards electric cars. *International Journal for Research in Applied Science & Engineering Technology*, 6(3), 359-362.
- Krishna, G. (2021). Understanding and identifying barriers to electric vehicle adoption through thematic analysis. *Transportation Research Interdisciplinary Perspectives*, 10, 100364.
- Ghasri, M., Ardeshiri, A., & Rashidi, T. (2019). Perception towards electric vehicles and the impact on consumers' preference. *Transportation Research Part D: Transport and Environment*, 77, 271-291.
- Acharya, D., Tyagi, S., & Bansal, S. (2021). *Consumer Perception Towards Electric Vehicles* (Doctoral dissertation).
- Patil, P., Kazemzadeh, K., & Bansal, P. (2023). Integration of charging behavior into infrastructure planning and management of electric vehicles: A systematic review and framework. *Sustainable Cities and Society*, 88, 104265.
- Tu, J. C., & Yang, C. (2019). Key factors influencing consumers' purchase of electric vehicles. *Sustainability*, 11(14), 3863.
- Prasanna, S., Rangarajan, V., Khan, M., & Ahmed, K. A. (2021). Examining the factors influencing consumers' choice for electric vehicles in India. *International Journal of Electric and Hybrid Vehicles*, 13(3-4), 302-320.
- Rafiq, F., Parthiban, E. S., Rajkumari, Y., Adil, M., Nasir, M., & Dogra, N. (2023). From Thinking Green to Riding Green: A Study on Influencing Factors in Electric Vehicle Adoption. *Sustainability*, 16(1), 194.
- Van Bree, B., Verbong, G. P., & Kramer, G. J. (2010). A multi-level perspective on the introduction of hydrogen and battery-electric vehicles. *Technological forecasting and social change*, 77(4), 529-540.
- Fojcik, T. M., & Proff, H. (2014). Accelerating market diffusion of battery electric vehicles through alternative mobility concepts. *International Journal of Automotive Technology and Management* 20, 14(3-4), 347-368.
- Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. *Energy policy*, 48, 717-729.