Purchase Intention of Electric Vehicles in Durg-Bhilai Region

Dr.Sapna Sharma
Asst. Professor, St. Thomas College Bhilai

Abstract: Electric vehicles (EVs) are revolutionizing the transportation industry by offering clean, efficient, and sustainable alternatives to traditional gas oline-powered cars. Interest in electric vehicles resurged in the late 20th century due to concerns about air pollution and dependence on oil. Through a comprehensive analysis of survey responses from 51 EVS owners, this research endeavors to shed light on the motivations, preferences, and perceptions that influence the adoption of electric vehicles in the Durg Bhilai region.

Key Words: Electric Vehicle: Purchase Intension: Conventional Engine: Plug-in Hybrid Electric Vehicle

INTRODUCTION

An electric vehicle (EVS) is a vehicle that uses one or more electric motors for propulsion. The vehicle can be powered by a collector system, with electricity from extravehicular sources, or can be powered autonomously by a battery or by converting fuel to electricity using a generator or fuel cells. EV include road and rail vehicles, electric boats and underwater vessels, electric aircraft and electric spacecraft.

Electric vehicles (EVs) are vehicles powered by electricity stored in rechargeable batteries. They offer an alternative to traditional internal combustion engine vehicles, running on fossil fuels. EVs produce zero tailpipe emissions, reducing air pollution and greenhouse gas emissions. They typically have lower operating costs and require less maintenance compared to conventional vehicles. EVs come in various types, including Battery Electric Vehicles (BEVs), which run solely on electricity and Plug-in Hybrid Electric Vehicles (PHEVs), which combine an electric motor with a conventional engine. The global shift towards EVs is driven by concerns about climate change, energy security, and improving air quality.

REVIEW OF LITERATURE

STUDIES RELATED TO RESEARCH ON PURCHASE INTENTION OF ELECTRIC VEHICLES IN DURG-BHILAI REGION

- (PrettyBhalla,InassSalamahAli,AfrozeNazneen, European Journal of Scientific Research, 2018) Based on the analysis, it's evident that electric vehicle manufacturers and the Government of India need to make significant investments in fostering social acceptance of these vehicles.
- (Prof. Rajesh, Dr. Rajasulochana, Dr. M. Kethan, Journal of Contemporary Issues in Business and Government, 2022) Understanding the key determinants influencing the adoption of electric vehicles (EVs) entails a comprehensive examination of several critical factors.
- (Anil Khurana, VV Ravi Kumar, Manish Sidhpuria, Vision, 2020) The research paper delves into the intricate factors in fluencing consumer adoption of electric vehicles (EVs) in India against the backdrop of global environmental concerns.
- (Omkar Tupe, Shweta Kishore, Arloph Johnvieira, European Journal of Molecular & ClinicalMedicine,2020) There search paper explores the potential of Electric Vehicles (EVs) in India amid the depletion of fossil fuels and rising prices.
- (VVijai Krishnan, BinoIKoshy, CaseStudiesonTransportPolicy,2021) There search paper delves into the global imperative of mitigating climate change and reducing dependence on foreign oil by promoting sustainable transportation technologies.

OBJECTIVE

GENERAL OBJECTIVE: - To investigate the purchase intention of electric vehicles (EVs) in the Durg-Bhilai region.

SPECIFIC OBJECTIVES: -

- To identify the demographic profile of individuals interested in purchasing electric vehicles in the

Durg - Bhilai region.

- To assess the factors influencing the purchase intention of electric vehicles among residents of the Durg-Bhilai region.
- To examine the perceived advantages and disadvantages of electric vehicles among potential buyers in the Durg-Bhilai region.
- To explore the awareness levels and knowledge about electric vehicles among residents of t Durg-Bhilai region.
- To analyse the perceived barrier and concerns hindering the adoption of electric vehicles in the Durg-Bhilai region.

RESEARCH METHODOLOGY

Research Design:

This study adopts a descriptive research design to explore the purchase intention of electric vehicles (EVs) in the Durg-Bhilai region. It aims to analyse and present the collected data in a descriptive manner to understand the factors influencing consumers' decisions.

Sampling Technique:

A convenience sampling technique is employed to select participants for the study. EV owners in the Durg-Bhilai region are identified through various channels such as EV forums, social media groups, and local EV dealerships.

Data Collection Instrument:

A structured questionnaire is used to collect data from the identified EV owners. The questionnaire covers demographic information, EV ownership experience, and factors influencing purchase intention.

DataCollectionProcess:

The questionnaire is distributed electronically to the identified EV owners, who voluntarily respond to the survey. The responses are collected anonymously to ensure privacy and confidentiality. A total of 51 responses are received and included in the analysis.

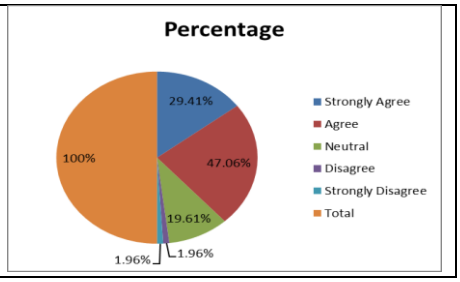
SAMPLING:

Sample Size	51
Sampling Method	Random Sampling Method
Sample Unit	Customer shaving Electric Vehicles
Measuring Tools	Questionnaires

DATA ANALYSIS AND INTERPRETATION

- Electric Vehicles are cost effective for most of the buyer.

Particulars	Frequency	Percentage
Strongly Agree	15	29.41%
Agree	25	47.06%
Neutral	10	19.61%
Disagree	1	1.96%
Strongly Disagree	1	1.96%
Total	51	100%



Analysis:

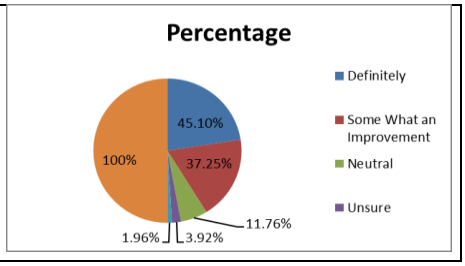
From the survey of 51 respondents it is found that 29.41% Strongly Agree, 47.1%Agree, 19.6% Neutral, 1.96% Disagree, 1.96% Strongly Disagree.

Interpretation:

Mostofthecustomersareagreeingthattheelectricvehicle iscosteffectivebutalittle amount of 4% of the customers are disagreeing to the cost effectiveness.

- Is buying electric vehicle is safe for the environment.

Particulars	Frequency	Percentage
Definitely	23	45.10%
Some What an Improvement	19	37.25%
Neutral	6	11.76%
Unsure	2	3.92%
Not At All	1	1.96%
Total	51	100%

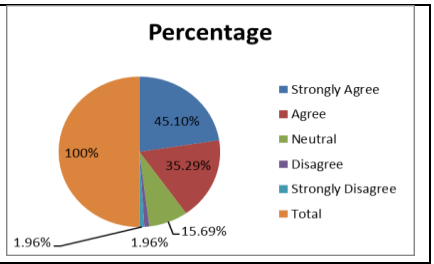


Analysis:-
The survey of51respondents were asked if the electric vehicle is safe for the environment or not is 45.10% said Definitely, 37.25% said that there is some what an improvement, whereas 11.76% were on the Neutral side, and 3.92% were unsure, 1.96% said not at all.

Interpretation:-
The survey suggests that a significant number of respondents in the Durg-Bhilai region perceive electric vehicles positively for their environmental impact. While a majority view them as safe for the environment, there are some reservations and uncertainties among a smaller portion of respondents. Understanding these attitudes is crucial for gauging purchase intentions and tailoring marketing strategies effectively

Electric Vehicles can help in reducing Global Warming

Particulars	Frequency	Percentage
Strongly Agree	23	45.10%
Agree	18	35.29%
Neutral	8	15.69%
Disagree	1	1.96%
Strongly Disagree	1	1.96%
Total	51	100%



- Analysis:-

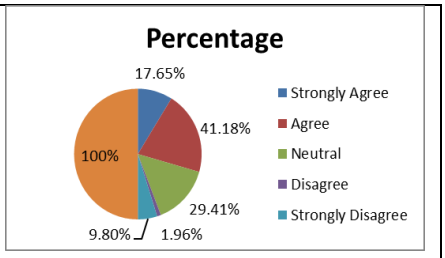
According to the survey, 45.10% of the people strongly agreeing that electric vehicle can help in reducing the global warmingwhile35.29%peopleagreeingtothiswhereas15 .69% of people are neutral and 1.96% of people are against it while the other 1.96% are strongly against it.

- Interpretation:-

The survey findings indicate that a significant proportion of respondents believe that electric vehicles can contribute to reducing global warming, with a large portion strongly agreeing and a notable percentage also in agreement. Understanding these attitudes is important for informing discussions on the role of electric vehicles in combating climate change and shaping policies to promote their adoption.

Electric Vehicles can save natural resources.

Particulars	Frequency	Percentage
Strongly Agree	9	17.65%
Agree	21	41.18%
Neutral	15	29.41%
Disagree	1	1.96%
Strongly Disagree	5	9.80%
Total	51	100%



- Analysis:-

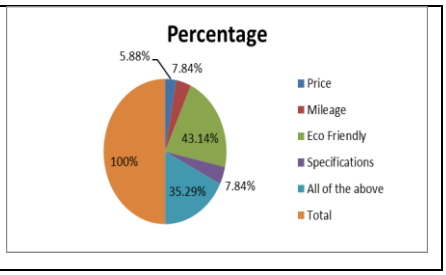
From the survey of 51respondents,it is shown that 17.65% of people are strongly agreeing that the electric vehicle can save the natural resources and 41.18% of the people are agreeing whereas 29.41% of people are neutral while the 9.80% of people are strongly opposing and 1.96% are opposing with this statement.

The survey results reveal varying attitudes towards the belief that electric vehicles can conserve natural resources. While a significant portion of respondents agree with this idea, there are also notable percentages who remain neutral or express opposition. Understanding these perspectives is essential for assessing the perceived benefits of electric vehicles in terms of resource conservation and informing strategies to promote their adoption.

Interpretation:-

- What factors encourage you to consider buying Electric Vehicles?

Particulars	Frequency	Percentage
Price	3	5.88%
Mileage	4	7.84%
Eco Friendly	22	43.14%
Specifications	4	7.84%
All of the above	18	35.29%
Total	51	100%



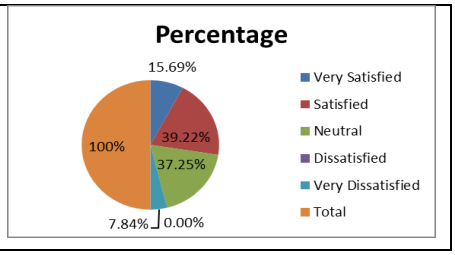
Analysis:-
According to the survey, the factors which encourage the customers for buying the electric vehicle are price (5.88%), mileage (7.84%), eco friendly (43.15%), specifications (7.84%), all the above (35.29%).

Interpretation:-

The research findings suggest that the primary factors driving customer interest in purchasing electric vehicles are price, mileage, eco-friendliness, and specifications. Notably, a significant portion of respondents indicated that all these factors play a role in their decision-making process.

- Satisfaction level ofElectric Vehicle purchased by you.

Particulars	Frequency	Percentage
Very Satisfied	8	15.69%
Satisfied	20	39.22%
Neutral	19	37.25%
Dissatisfied	0	0.00%
Very Dissatisfied	4	7.84%
Total	51	100%



Analysis:-
According to the survey, 15.69% of the people are very satisfied whereas 39.22% of the people are satisfied , while 37.25% of the people are neutral and the remaining 7.84% of the people are very dissatisfied.

Interpretation:-
The analysis suggests a range of satisfaction levels among respondents regarding electric vehicles. A notable portion expressed satisfaction, with a smaller group indicating being very satisfied. However, a substantial proportion of respondents remained neutral, while a minority reported feeling very dissatisfied. This indicates varying degrees of satisfaction and dissatisfaction within the surveyed population regarding electric vehicles.

FINDINGS

The majority of customers perceive electric vehicles as cost-effective, indicating a positive attitude towards their financial benefits. However, a small percentage (4%) disagrees with this perception, signaling a need to address concerns regarding the economic viability of electric vehicles.

- There's a significant positive perception regarding the environmental impact of
- electric vehicles among respondents. Most view them as beneficial for reducing global warming and conserving natural resources, although there are some reservations and uncertainties among a smaller portion of respondents.
- Respondents display varying attitudes towards the idea of electric vehicles replacing regular ones, with a majority remaining neutral. This uncertainty suggests the need for further education and discussion about the role of electric vehicles in the future of transportation.
- Price, mileage, eco-friendliness, and specifications emerge as primary factors influencing customer interest in purchasing electric vehicles, indicating key areas to focus on in marketing and product development.
- Preferences for warranty periods vary among respondents, with expectations ranging from 15 to over 30 years, highlighting the need for flexible warranty options to cater to diverse customer

needs.

- Respondents express varying timelines for purchasing electric vehicles, with some eager to buy soon, while others plan to do so within the next 5 or 10 years. Understanding these differing timelines is crucial for market planning and forecasting.
- The majority intend to use electric vehicles for household purposes, emphasizing the importance of targeting residential consumers in marketing efforts.
- While a notable portion of respondents express satisfaction with electric vehicles, there are also varying levels of neutrality and dissatisfaction, indicating the need for continuous improvement and addressing concerns to enhance overall customer satisfaction.

SUGGESTIONS

- Provide more information and transparency about the long-term cost benefits of electric vehicles through targeted marketing campaigns and financial incentives to alleviate concerns and promote adoption.
- Continue educating the public about the positive environmental impact of electric vehicles through awareness campaigns, highlighting their role in reducing global warming and conserving natural resources.
- Facilitate discussions and forums to address uncertainties about the future of electric vehicles, emphasizing their potential to replace regular vehicles and the benefits of transitioning to sustainable transportation solutions.
- Emphasize key purchase drivers such as price, mileage, and eco-friendliness in marketing efforts, while also offering customizable warranty options to meet diverse customer preferences.
- Develop strategies to engage potential buyers based on their timelines for purchasing electric vehicles, offering incentives and promotions to encourage earlier adoption and maintaining communication with those planning to buy in the future.
- Target residential consumers with marketing efforts and incentives, recognizing the predominant use of electric vehicles for household purposes among respondents.

CONCLUSION

The survey findings in the Durg-Bhilai region underscore a predominantly positive inclination towards electric vehicles (EVs), with a notable majority acknowledging their cost-effectiveness and substantial environmental benefits. Many respondents express favourable attitudes towards EVs for their potential to mitigate global warming and conserve natural resources, although certain reservations persist, particularly regarding the replacement of conventional vehicles and preferences regarding warranty coverage. Key determinants shaping purchase intentions encompass multifaceted considerations such as price competitiveness, mileage capabilities, and eco-friendliness. It is imperative to grasp the nuances of varying timelines and intentions among potential buyers, the majority of whom envisage household utilization for EVs. Despite a spectrum of satisfaction levels, the need to address concerns comprehensively and deploy targeted marketing strategies tailored to local contexts emerges as pivotal in effectively fostering EV adoption across the region.

REFERENCE

[1] Pretty Bhalla, InassSalamah Ali, Afroze Nazneen, European Journal of Scientific Research, 2018
[2] Prof. Rajesh, Dr. Rajasulochana, Dr. M. Kethan, Journal of Contemporary Issues in Business and Government, 2022
[3] AnilKhurana, VVRaviKumar, ManishSidhpuria, Vision, 2020
[4] OmkarTupe, ShwetaKishore, ArlophJohnvieira, EuropeanJournal of Molecular& Clinical Medicine, 2020
[5] VVijaiKrishnan, BinoIKoshy, Case Studies on Transport Policy, 2021
[6] https://www.twi-global.com
[7] http://en.m.wikipedia.org