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Impacts behind Electric Vehicle sales (4wheeler) India

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Abstract:

The global electric vehicle (EV) industry is undergoing rapid transformation, driven by governmental initiatives, shifting consumer preferences, and technological advancements. This study focuses on India, a country with ambitious EV adoption targets and a distinctive socio-economic landscape. Leveraging social media data, the research analyses Indian consumers' concerns towards EVs, providing crucial insights into market dynamics and factors influencing EV uptake. The narrative emphasizes the environmental benefits of electric cars, including reduced carbon emissions and eligibility for government subsidies. The convenience of home charging, lower electricity costs, and minimal maintenance expenses are highlighted as additional advantages. Addressing air pollution and global warming concerns, the study underscores the pivotal role of EVs in mitigating environmental impact. With governments globally indicating a shift away from traditional fuel-powered vehicles, this research positions electric cars as the future of transportation, advocating for their adoption to combat climate change and foster sustainable mobility.

Purpose: This research aims to investigate the factors influencing the acceptance and sales of electric vehicles (EVs) in Bangalore, India. With a growing emphasis on sustainable transportation, understanding the dynamics behind consumer preferences and market trends is crucial for stakeholders in the automotive industry, policymakers, and urban planners.

Findings: The research findings shed light on various factors influencing EV acceptance in Bangalore. Key drivers include.The findings aim to inform industry stakeholders, policymakers, and researchers on strategies to promote sustainable transportation in the context of rapidly evolving urban environments like Bangalore.

Research Limitations: The research findings shed light on various factors influencing EV acceptance and sales in Bangalore. Key drivers include environmental consciousness, financial incentives, charging infrastructure availability, and the overall perception of EVs. The research may not capture all possible factors affecting EV acceptance due to the inherent complexity of consumer behaviour**.**

Originality / Value: The findings aim to inform industry stakeholders, policymakers, and researchers on strategies to promote sustainable transportation in the context of rapidly evolving urban environments like Bangalore.

Keywords

EV acceptance, urban environments, sustainable transportation, charging infrastructure availability, lower electricity costs, fuel-powered vehicles.

INTRODUCTION- The electric vehicle industry is rapidly evolving worldwide, driven by government policies, changing consumer preferences, and technological advancements. India, with its ambitious EV adoption goals and unique economic and social context Analysing Indian consumers' concerns towards EVs using social media data, providing insights into the market context and factors affecting EV uptake.

Electric cars are a great way to protect the environment from the harmful effects of carbon dioxide emissions caused by conventional vehicles. By choosing an electric car, you can also benefit from government subsidies that reward you for being eco-friendly. You can easily charge your electric car at home or work using a normal socket, and enjoy the low cost of electricity compared to gasoline. Electric cars are also cheaper to run and maintain, as they have simpler and more efficient engines that do not require oil changes or other services. Moreover, electric cars are safer a44nd more comfortable to drive, as they have a lower center of gravity and less noise. Electric cars are the future of transportation, and you can be part of it.

Air pollution and global warming are major issues caused by conventional automobiles. While gasoline and diesel vehicles both pollute more than electric vehicles, diesel vehicles have a worse impact on the quality of the air than gasoline vehicles. In an attempt to allay energy concerns, governments everywhere have started to highlight electric vehicles (EVs) and are working tirelessly to replace cars that run on fuel oil as their main mode of transportation with EVs. A number of countries have even specified the year that internal combustion engine vehicles will no longer be sold: Norway, the Netherlands, India, France, and the United Kingdom in 2025, 2030, and 2040, respectively. Although they have been available since the beginning of transportation, fully electric cars have never really gained popularity. But complete.

Literature Review

Sl.no	Name of the author and year	Title of the study	Journal/ institute name	Finding from the source
1	(Bhuvanesh Kumar Sharma- NOV29)	Study on Factors Affecting Electric Vehicle (EV) Purchase in India	Symbiosis Institute of Business Management, Symbiosis International (Deemed University), Pune, Maharashtara, India	The study found that affordability of the vehicle, charging infrastructure, and environmental concern were the major priorities for respondents when buying an electric vehicle.
2	(Sharma)P Neupane and B K Sharma	Study on Factors Affecting Electric Vehicle (EV) Purchase in India	Symbiosis Institute of Business Management, Symbiosis International	affordability of the vehicle, Electric vehicles, consumer perception, EV priorities, customer preference, Expect

			(Deemed University)	
3	(Karkar)Adwait Makarand Karkar	Techno - economics of electric vehicles in India.	Centre for energy studies Indian institute of technology of India.	Cost reduction possibilities for electric vehicles, experience curve effects, economically viable
4	(Amal)	A study on electric vehicle financing for purchase of electric vehicles in India.	South India journal of social science	Financial policy framed by financial institutions, consumers to purchase electric vehicles.
5	(Mahalakshmi)	Consumer Perception of Electric Vehicles in India	Jundishapur Journal of Microbiology	Electric vehicles, Consumer perception, Choice of vehicle, Environment, Conventional vehicle, Government policies
7	(Selvam, 2022)	Development of Electric Vehicle	International Journal for Research	Electric Vehicles (EV's), Battery, Brushless DC Motor (BLDC), DC-DC converters, Permanent Magnet (PM), Hub Motor, Miniature Circuit Breaker (MCB), Field Oriented Control (FOC)
8	(Didip Diandra E. R., 2023)Endang Ruswanti , Zainur Hidayah , Ahmad Azmy	Electric vehicle adoption and sustainability in the urban:Technology acceptance in modern analysis	The 6th International Seminar on Business, Economics, Social Science, and Technology (ISBEST) 2023	Electric Vehicle, Sustainability, TAM analysis
9	(Ramadhanti)Hairani and, Muhammad Innuddin	Electric Vehicle Sales-Prediction Application Using Backpropagation	International Journal of Engineering and Computer Science	Sales Prediction Electric Vehicle, Backpropagation Method, Prediction Application.

		Algorithm Based on Web	Applications (IJECSA)	
10	(Motwani)Dr. Bharti Motwani	Customer intentions towards electric vehicle in India.	International Journal of Mechanical Engineering and Technology (IJMET	Electric Vehicle future, Electric vehicle Acceptance, Factors influencing EV adoption, Gov. attitude towards Electric vehicle
11	(Khan, September 2023)	Future Trends and Developments in Eco-Friendly Electric Vehicles, with a Focus on India	South Indian Journal of Social Science	lient impression, Reception, Vehicle decision, Climate, Ordinary vehicle, Governmentstrategy, Electric vehicles
12	(Lituhayu, 2023)	Public Response on Twitter: The Urgency of Government Policy on Electric Vehicles	EDP Sciences.	Environmental politics, electric vehicle, vehicle charging, energy saving, environmentally friendly, social media
13	(Jian Chen, 2024)	Research on the Purchase Intention of Electric Vehicles Based on Customer Evaluation and Personal Information	World Electric Vehicle Journal	electric vehicles; vehicle purchase forecast; sales plan optimization; ANOVA algorithm
14	(K.Uma, 2023)	Future of Transport – Rise of Electric Vehicles in India	ComFin Research	Electric Vehicles, Environmental Concern, Climate Change & Air Pollution.
15	(Senthilkumar, 2023)	Design and development of renewable electric vehicle	IOP Publications	renewable electric vehicles (REVs), renewable energy , solar energy

16	(Rubal Dua a, 2021)	Enablers and disablers to plug-in electric vehicle adoption in India: Insights from a survey of experts	Elsevier	PEV adoption, Expert survey , Societal gains from PEV adoption
17	(Meghna Verma, September 2020)	Factors Influencing the Adoption of Electric Vehicles in Bengaluru	Transportation in Developing Economies	Purchase decision ·Conventional vehicles
18	(Chaturvedi, 2022)	Projected transition to electric vehicles in India and its impact on stakeholders	Energy for Sustainable Development	This paper is a modest attempt to capture the projected transition to EVs in India and its impact on the stakeholders.
19	(Pritam Keshavdas Gujarathi, 18 June 2018)	Electric Vehicles in India: Market Analysis with Consumer Perspective Policies and Issues	Journal of Green Engineering	The paper presents the current Indian EV market, market players in two and four-wheeler with recent developments along with the current status of Indian road transportation
20	(Sumit Saha P. K., 2019)	Determinants of Cross-Functional Sales Performance Variables in IT/ITes	Journal of Interdisiplinary Cycle Research	This exploratory research in IT/ITes companies in Bangalore identifies influential cross-functional factors, culminating in a statistical model based on 33 indicators for enhanced revenue growth and strategic support in benchmarking industry standards.

21	(Dr. Sumit Saha, 2023)	AIR INDIA ACQUISITION Eight decades of being 'maharaja'	VLEARNY Journal of Business1 (1) 2024, 54-6	For students pursuing an MBA or PGDM, the case offers a complex backdrop. Students studying marketing, strategy, and entrepreneurship can utilize it to gain a deeper understanding of the merger and acquisition idea and its rationale.
22	(Sumit Saha K. J., 2023)		Journal of Commerce and Accounting Research	In the end, the review suggests that assessing vendors according to their skills is a more sensible method of supplier selection and lays the ground for a study comparing the influence of salespeople's contacts against suppliers' capabilities on contract awards from clients
23	(Saha S. , 2023)	COMPUTATION OF PLANTS' HAPPINESS SCORE: A NEW HORIZON OF URBAN PLANNING AND MANAGEMENT	VLEARNY Journal of Business	Recent scientific and technological advancements have yielded a specialized Happiness Index for plants, validated through statistical tools, offering a potential parameter for environmental assessments and funding decisions, particularly in urban areas, to enhance plant well-being and contribute to a cleaner environment.

24	(Sumit Saha D. S., 2024)	The 22 immutable laws of marketing: Violate at your own risk	JIMS8M The Journal of Indian Management & Strategy	Al Ries and Jack Trout's book, "The 22 Immutable Laws of Marketing," offers priceless insights into the field of marketing. It clarifies basic ideas that are necessary to prosper in the highly competitive business environment. The book explores important ideas such as how important it is to hold the top spot in consumers' minds, how perception often counts more than truth, and how important it is to focus on specific market sectors in order to achieve supremacy.
25	(Sumit Saha Subhasreekar, 2023)	Salespersons performance predictor model: An exploratory factor analysis	JIMS8M The Journal of Indian Management & Strategy	Through a quantitative approach involving a survey of 310 sales professionals in 90+ IT companies, this research utilizes Exploratory and Confirmatory Factor Analyses to pinpoint and quantify 15 cross-functional sales performance determinants, culminating in a distinctive predictive model for enhancing industry-specific sales

				benchmarks in the IT/ITes sector.
26	(Sumit Saha K. j., 2023)	Large vendor's capability and relationship management: An idea of winning contract mechanism in B2B	JIMS8M The Journal of Indian Management & Strategy	This study examines B2B transactions, comparing the impact of salesperson relationships and vendor capabilities on the awarding of contracts by observing commercial interactions, interviewing buyers from various-sized companies, and finding a correlation between vendor organizations' overall capabilities and successful long-term relationships with clients in influencing purchase decisions
27	(Sumit Saha S. , 2023)	Measurement of the threshold values of sales performance factors: A formative scale construction in onyx	JIMS8M The Journal of Indian Management & Strategy	This paper seeks to create and validate the Sales Performance Index, a unique measurement scale, via exploratory research in IT/ITes companies, empowering industry decision-makers with insights into their sales performance compared to peers, enabling proactive decision-making, and serving as a valuable tool for comprehensive industry

				performance assessment
28	(Sumit Saha S. K., 2021)	Computation of sales performance score and key cross-functional factors: a performance dynamics in IT/ITES	American Journal of Business	This research introduces a novel model for the IT/ITES industry to quantify and improve sales performance by identifying cross-functional factors, culminating in a unique Sales Performance Score for strategic decision-making.

Literature Review- paragraph

Priorities for EVs include accelerating adoption, improving the infrastructure for charging of Bhuvanesh Kumar, maximizing battery technology, and promoting renewable energy sources. In addition to this The level of quality, service, and pleasure that customers or businesses expect from a product, service, or experience is referred to as their "customer expectations. The experience curve effect refers to the systematic reduction in production costs and improvement in efficiency that occur as cumulative output increases, driven by learning and economies of scale, by (Karkar).Consumers are increasingly opting for electric vehicles due to environmental concerns, cost savings on fuel, and the expanding infrastructure for charging stations, (Amal)Along with it Government policies could get along with the Government policies are guiding decisions that shape a nation's direction, encompassing regulations, resource allocation, and societal structures. A car battery charger replenishes your vehicle's battery, keeping your engine humming and adventures rolling (Selvam, 2022)Along with it E-vehicles cut tailpipe emissions, embracing greener roads and cleaner air for all (Didip Diandra E. R., 2023) .In order to make sound business choices, sales modeling is the practice of projecting future sales based on historical data (Ramadhanti, Electric

Vehicle Sales-Prediction Application Using Backpropagation Algorithm Based on Web) market trends, and other pertinent criteria.(Electric Vehicle Acceptance) (Motwani)The willingness and adoption of electric vehicles by individuals, businesses, and society at large. (Khan, September 2023) clients impression of a product, service, or company is the judgment they make about it after their interactions and experiences. The process of using less energy to carry off operations or run devices is known as energy saving (Lituhayu, 2023)and it helps to lower overall energy consumption and its impact on the environment. Sales plan optimization involves refining strategies and processes to enhance efficiency, maximize revenue, and achieve organizational sales goals (K.Uma, 2023) Climate change refers to long-term alterations in global or regional climate patterns, often driven by human activities. Renewable energy sources are sustainable, environmentally friendly power generation options derived from naturally replenishing resources, such as sunlight, wind, and hydropower (Senthilkumar, 2023)PEV (Plug-in Electric Vehicle) adoption refers to the widespread integration and usage of electric vehicles that can be charged by plugging into external power sources. By adding to this (Meghna Verma, September 2020) A purchase decision is the process by which a consumer evaluates options. (Chaturvedi, 2022)Transition is the process or period of changing from one state, condition, or form to another (Parimita Mohanty, 2017)Market analysis is the assessment of various factors, such as trends, demand, competition, and opportunities,

Parameters

Variable	Citation	Definition
Sales Prediction	(Ramadhanti, Electric Vehicle Sales-Prediction Application Using Backpropagation Algorithm Based on Web, 2023)	In to make sound business choices, sales modeling is the practice of projecting future sales based on historical data, market trends, and other pertinent criteria order
EV priorities	(Bhuvanesh Kumar Sharma- NOV29)	Priorities for EVs include accelerating adoption, improving the infrastructure for charging, maximizing battery technology, and promoting renewable energy sources.

Choice of vehicle	(Mahalakshmi, Consumer Perception of Electric Vehicles in India)	Choice of vehicles means the different kinds of vehicles and their characteristics that one can choose from. It reflects one's personal taste and needs in selecting a vehicle.
Expectations of customers	(Bhuvanesh Kumar Sharma- NOV29)	The level of quality, service, and pleasure that customers or businesses expect from a product, service, or experience is referred to as their "customer expectations.
Conventional vehicle	(Mahalakshmi, Consumer Perception of Electric Vehicles in India, 2022)	When we talk about a conventional car, we usually mean an old-fashioned kind of transportation that runs on petrol or diesel instead than electric or other fuels. Typical vehicle kinds including gasoline-powered cars, trucks, and motorcycles are among these.
Electric Vehicle	(Ramadhanti, Electric Vehicle Sales-Prediction Application Using Backpropagation Algorithm Based on Web, 2023)	An electric vehicle (EV) is a type of vehicle that runs on electricity and replaces combustion engines with one or more electric motors for propulsion**.**
customer preference	(Bhuvanesh Kumar Sharma- NOV29)	Consumer preferences pertain to the distinct and personalized selections, interests, and interests that customers have with respect to products, services, and life in general.
Government policies	(Mahalakshmi, Consumer Perception of Electric Vehicles in India, 2022)	Government policies are guiding decisions that shape a nation's direction, encompassing regulations, resource allocation, and societal structures.
Battery	(Selvam, 2022)	A battery stores and delivers electrical energy, like a mini power bank, fueling devices from phones to cars.

Battery Charger	(Selvam, 2022)	A car battery charger replenishes your vehicle's battery, keeping your engine humming and adventures rolling.
Sustainability	(Didip Diandra E. R., 2023)	E-vehicles cut tailpipe emissions, embracing greener roads and cleaner air for all!
Environmentally friendly	(Lituhayu, 2023)	The term "environmentally friendly" describes actions, goods, or behaviors that support sustainability and conservation while having no negative impact on the environment.
Energy saving	(Lituhayu, 2023)	The process of using less energy to carry off operations or run devices is known as energy saving, and it helps to lower overall energy consumption and its impact on the environment.
Government strategy	(Khan, September 2023)	Government strategy is the methodical planning and decision-making that a government does to accomplish certain goals, deal with issues, and direct general governance.
client impression	(Khan, September 2023)	A clients impression of a product, service, or company is the judgment they make about it after their interactions and experiences.
Difficulties	(Khan, September 2023)	Challenges, impediments, or issues that make things feel hard or complicated in different contexts are referred to as difficulties.
Electric Vehicle Acceptance	(Motwani)	The willingness and adoption of electric vehicles by individuals, businesses, and society at large.

PEV adoption	(Rubal Dua a, 2021)	PEV adoption refers to the increasing acceptance and use of Plug-in Electric Vehicles (PEVs) in place of traditional internal combustion engine vehicles.
Policy levers for PEV adoption	(Rubal Dua a, 2021)	---- Policy levers for PEV adoption refer to governmental measures and tools, such as incentives, regulations, and infrastructure development, designed to promote the widespread adoption of Plug-in Electric Vehicles.
Purchase decision	(Meghna Verma, September 2020)	---A purchase decision is the process by which a consumer evaluates options, weighs considerations, and ultimately chooses a product or service to buy.
Transition	(Chaturvedi, 2022)	Transition is the process or period of changing from one state, condition, or form to another
Stakeholders	(Chaturvedi, 2022)	Stakeholders are individuals, groups, or entities that have an interest, influence, or concern in a particular organization, project, or system.
Consumer	(Pritam Keshavdas Gujarathi, 18 June 2018)	A consumer is an individual or entity that purchases goods or services for personal use or consumption.

Market Analysis	(Pritam Keshavdas Gujarathi, 18 June 2018)	Market analysis is the assessment of various factors, such as trends, demand, competition, and opportunities, to understand and evaluate the conditions within a specific market.
Policy	(Pritam Keshavdas Gujarathi, 18 June 2018)	Policy is a set of principles, guidelines, or rules established by an organization, government, or authority to influence and determine actions, decisions, and outcomes in a particular area.

3. Research Methodology

The study employs a mixed-methods approach, combining quantitative surveys and qualitative interviews. A structured questionnaire will be administered to a diverse sample of Bangalore residents, including potential and current EV owners, as well as those still using traditional internal combustion engine vehicles. In-depth interviews will be conducted with key industry players, policymakers, and experts to gain nuanced insights into the factors shaping the EV landscape in Bangalore.

3.1 Research Problem Statement-

The following research problems apply to the current study:

a) It is necessary to understand the additional elements that affect customer satisfaction with EVs (four-wheelers).
b) Knowledge is necessary. Effects of loyalty programs and promotions on customer satisfaction
c) Being aware of Indian consumers' worries over the sales of electrical four-wheeler vehicles. Regarding Customer Contentment

3.2 Research Conceptualization:

Investigating the multifaceted impacts on 4-wheeler electric vehicle sales in India, focusing on economic, regulatory, technological, and environmental factors, along with assessing consumer perception and the role of infrastructure development.

3.3 Objectives of Research

The specific objectives of this study are:

a) Understanding Indian Consumers’ concerns with sales of (4Wheeler) electrical vehicles.
b) To overcome the drawback of existing EV's

Hypothesis:

1. H1: Economic factors influence electric vehicle sales in India.

2. H2: Government policies drive the adoption of electric vehicles.

3. H3: Consumer perception positively correlates with electric vehicle sales.

4. H4: Ongoing technological advancements impact consumer preferences.

5. H5: Environmental sustainability concerns drive electric vehicle sales.

6. H6: Accessible charging infrastructure boosts electric vehicle adoption.

7. H7: Availability of maintenance facilities affects consumer confidence in electric vehicles.

3.4 Methodology Adopted:

1. Data Collection
Primary Data: Surveys, interviews, and focus groups with diverse potential electric vehicle consumers, industry experts, and policymakers.
Secondary Data: Analysis of market reports, government publications, and academic literature.
2.Sampling
Random sampling across demographics, income levels, and regions to ensure representative insights.
3. Data Analysis
a) Statistical methods (regression, correlation) for quantitative analysis.
b) Qualitative analysis of interviews and focus group discussions.
4. Research Design
a) Cross-sectional study for a snapshot of current trends.
b) Longitudinal study to track changes over time.
c) Mixed-methods approach for a comprehensive understanding.
d) Comparative analysis to identify regional variations.

5.Validity of Sample Size
The KMO, "Anti image," and "Bartley test of sphericity" values cross-validate the sample size in order to aid in "Factor Analysis" and modeling during data processing.
The "KMO value" shows whether or not the sample size allows for the completion of an overall factor analysis. If the KMO value is more than or equal to 0.7, the sample size is appropriate for factor analysis and inference.
The correlation matrices' identity matrix status is ascertained through the application of the "Bartley test of sphericity." The number of components, indicators, items, and variables will be shown if the identity matrix is present.

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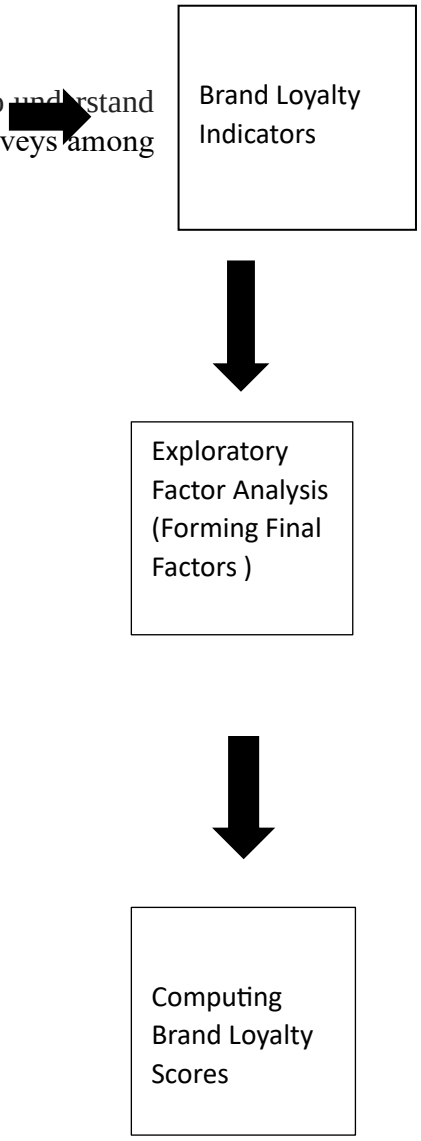
"Anti-Image" generates unique covariance matrices (takes any value) and correlation (0 to +1). It indicates if there is enough sample size for each and every variable. If the value is less than or equal to +0.5, we can exclude the variable.

3.4.1 CONCEPTUAL FRAME WORK

3.4.2 Sources of Data

We referred various Journal and articles for the secondary data to understand the research topic. Primary data was mainly collected through surveys among people who purchase electronic products across India.

Sales Prediction, (Ramadhanti, Electric Vehicle Sales-Prediction Application Using Backpropagation Algorithm Based on Web)
Electric Vehicle, (Ramadhanti, Electric Vehicle Sales-Prediction Application Using Backpropagation Algorithm Based on Web)
EV priorities (Bhuvanesh Kumar Sharma- NOV29)
Expectations of customers (Bhuvanesh Kumar Sharma- NOV29)
Customer preference (Bhuvanesh Kumar Sharma- NOV29)
Conventional vehicle (Mahalakshmi, Consumer Perception of Electric Vehicles in India, 2022)
Government policies (Mahalakshmi, Consumer Perception of Electric Vehicles in India, 2022)
Choice of vehicle (Mahalakshmi, Consumer Perception of Electric Vehicles in India, 2022)
Battery, (Selvam, 2022)
Battery Charger (Selvam, 2022)
Sustainability (Didip Diandra E. R., 2023)
Environmentally, (Lituhayu, 2023)
friendly Energy saving (Lituhayu, 2023)
Government strategy (Khan, September 2023)
client impression (Khan, September 2023)
Difficulties (Khan, September 2023)
Electric Vehicle Acceptance (Motwani)
PEV adoption (Rubal Dua a, 2021)
Policy levers for PEV adoption (Rubal Dua a, 2021)
Purchase decision (Meghna Verma, September 2020)
Transition, Stakeholders (Chaturvedi, 2022)
Consumer Market, Analysis, Policy (Pritam Keshavdas Gujarathi, 18 June 2018)



3.4.4 Sampling Method

Data were gathered using the random sampling approach (Probability Sampling). Here, respondents to the poll were chosen at random from all around India. Since the criteria from which the analysis and consideration of the data must be derived, all respondents are customers of the Electric Vehicle.

3.4.5 Sample size validity

The final study includes factor analysis. As the thumb rule mentions, for 25 variables, we have collected 251 samples. However, the needed and actual sample size will be checked during the various tests such as KMO, Bartlett's Test of Sphericity and anti-image.

Table 3.1 KMO and Bartlett's Test

KMO and Bartett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	4203.585
	D F	300
	Sig.	<.001

*KMO>=7.0 is accepted reference value

All above tests are done through IBM SPSS

All the above KMO value is .955 (>7) Which is sufficient for adequate sample size to perform factor analysis (Sumit Saha S. K., Salespersons performance predictor model: An exploratory factor analysis, 2023)

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Table 3.2 **Anti image Covariance and correlation matrix**

Anti-image Covariance

	VAR0002	VAR0003	VAR0004	VAR0005	VAR0006	VAR0007	VAR0008	VAR0009	VAR0010	VAR0011	VAR0012	VAR0013	VAR0014	VAR0015	VAR0016	VAR0017	VAR0018	VAR0019	VAR0020	VAR0021	VAR0022	VAR0023	VAR0024	VAR0025	VAR0026
VAR0002	0.524	-0.03	-0.04	-0.08	-0.05	0.009	0.007	-0.02	-0.03	-0.02	0.07	-0	-0.02	0.04	0.023	-0.02	-0.15	-0	-0.02	0.013	0.018	-0.02	-0.04	-0.01	0.012
VAR0003	-0.03	0.459	0.011	-0.12	-0.01	0.011	-0.08	-0.03	-0.01	-0.06	0.055	-0.05	0.024	-0.01	0.005	-0.05	0.01	-0	0.017	-0.04	-0.09	-0.01	0.027	0.011	0.005
VAR0004	-0.04	0.011	0.496	-0.12	-0.08	0.014	0.02	0.017	-0.02	-0	-0.02	-0.02	-0.07	-0.04	-0.02	-0.01	0.064	-0.04	0	-0.04	0.026	0.071	-0.07	-0.04	0.048
VAR0005	-0.08	-0.12	-0.12	0.425	0.045	-0.01	0.026	-0.06	-0.02	-0.04	-0.05	0.007	0.007	0.041	-0.04	-0.03	0.041	0.017	-0.04	0.004	-0.02	0.023	0.064	-0.07	-0.01
VAR0006	-0.05	-0.01	-0.08	0.045	0.495	-0.1	-0.06	-0.06	-0.02	-0.03	0.009	0.002	0.024	0.053	-0.06	0.014	0.068	0.01	0.012	-0.05	-0.03	-0.01	-0.02	0.032	-0.04
VAR0007	0.009	0.011	0.014	-0.01	-0.1	0.364	-0.07	-0.02	-0.03	-0.01	0.031	-0.13	-0.06	0.01	0.021	-0.04	-0.1	0.053	0.041	0.013	0	-0.02	-0.01	-0.02	0.034
VAR0008	0.007	-0.08	0.02	0.026	-0.06	-0.07	0.411	0.006	-0.07	0.018	-0.09	-0.03	-0.06	-0	0.012	0.039	0.014	-0.03	-0.05	0.033	0.053	0.027	-0.03	-0.02	-0.03
VAR0009	-0.02	-0.03	0.017	-0.06	-0.06	-0.02	0.006	0.402	-0.07	-0.05	-0.07	0.018	0.002	-0.07	-0.01	0.032	0.019	-0.06	0.005	0.035	0.015	-0.01	0.02	-0.02	-0.04
VAR0010	-0.03	-0.01	-0.02	-0.02	-0.02	-0.03	-0.07	-0.07	0.443	-0.03	-0.03	0.04	-0.05	0.033	-0.04	-0.06	0.007	0.012	0.026	-0.02	-0.01	0.001	0.013	0.006	-0.05
VAR0011	-0.02	-0.06	-0	-0.04	-0.03	-0.01	0.018	-0.05	-0.03	0.393	-0	0.013	-0.04	-0.04	-0.01	-0.06	-0.04	-0	-0.06	0.004	0.031	-0	0.052	-0.04	-0.01
VAR0012	0.07	0.055	-0.02	-0.05	0.009	0.031	-0.09	-0.07	-0.03	-0	0.389	-0.09	-0.01	0.032	-0.08	-0.05	-0.07	0.031	0.011	0.003	0.023	-0.03	-0.01	0.033	-0.02
VAR0013	-0	-0.05	-0.02	0.007	0.002	-0.13	-0.03	0.018	0.04	0.013	-0.09	0.344	-0.01	-0.08	-0.01	0.06	0.019	-0.01	0.011	-0.04	0.013	-0.05	0.001	-0.01	-0.01
VAR0014	-0.02	0.024	-0.07	0.007	0.024	-0.06	-0.06	0.002	-0.05	-0.04	-0.01	-0.01	0.32	-0.05	-0.03	0.041	-0.01	0.014	-0.02	-0.05	-0.07	-0.01	-0.06	0.08	0.001
VAR0015	0.04	-0.01	-0.04	0.041	0.053	0.01	-0	-0.07	0.033	-0.04	0.032	-0.08	-0.05	0.401	-0.08	-0.1	0.027	-0.04	0.025	-0.01	-0.07	0.018	0.053	-0.03	-0.02
VAR0016	0.023	0.005	-0.02	-0.04	-0.06	0.021	0.012	-0.01	-0.04	-0.01	-0.08	-0.01	-0.03	-0.08	0.306	0.008	-0.06	-0	-0.06	0.028	0.023	-0.01	-0.05	-0.03	0.05
VAR0017	-0.02	-0.05	-0.01	-0.03	0.014	-0.04	0.039	0.032	-0.06	-0.06	-0.05	0.06	0.041	-0.1	0.008	0.431	0.003	-0.03	-0.07	-0.01	0.103	-0.06	-0.06	0.012	-0.02
VAR0018	-0.15	0.01	0.064	0.041	0.068	-0.1	0.014	0.019	0.007	-0.04	-0.07	0.019	-0.01	0.027	-0.06	0.003	0.385	-0.08	-0.02	-0.03	-0.08	0.064	0.035	-0.02	-0.06
VAR0019	-0	-0	-0.04	0.017	0.01	0.053	-0.03	-0.06	0.012	-0	0.031	-0.01	0.014	-0.04	-0	-0.03	-0.08	0.344	-0.04	-0.09	0.042	-0.07	0.022	-0.04	-0.03
VAR0020	-0.02	0.017	0	-0.04	0.012	0.041	-0.05	0.005	0.026	-0.06	0.011	0.011	-0.02	0.025	-0.06	-0.07	-0.02	-0.04	0.391	-0.04	-0.04	-0.01	-0.05	0.028	-0.04
VAR0021	0.013	-0.04	-0.04	0.004	-0.05	0.013	0.033	0.035	-0.02	0.004	0.003	-0.04	-0.05	-0.01	0.028	-0.01	-0.03	-0.09	-0.04	0.397	-0.03	-0.07	0.024	-0.01	0.018
VAR0022	0.018	-0.09	0.026	-0.02	-0.03	0	0.053	0.015	-0.01	0.031	0.023	0.013	-0.07	-0.07	0.023	0.103	-0.08	0.042	-0.04	-0.03	0.41	-0.1	-0.07	-0.02	-0.02
VAR0023	-0.02	-0.01	0.071	0.023	-0.01	-0.02	0.027	-0.01	0.001	-0	-0.03	-0.05	-0.01	0.018	-0.01	-0.06	0.064	-0.07	-0.01	-0.07	-0.1	0.304	-0.01	-0.08	-0
VAR0024	-0.04	0.027	-0.07	0.064	-0.02	-0.01	-0.03	0.02	0.013	0.052	-0.01	0.001	-0.06	0.053	-0.05	-0.06	0.035	0.022	-0.05	0.024	-0.07	-0.01	0.366	-0.08	-0.11
VAR0025	-0.01	0.011	-0.04	-0.07	0.032	-0.02	-0.02	-0.02	0.006	-0.04	0.033	-0.01	0.08	-0.03	-0.03	0.012	-0.02	-0.04	0.028	-0.01	-0.02	-0.08	-0.08	0.349	-0.06
VAR0026	0.012	0.005	0.048	-0.01	-0.04	0.034	-0.03	-0.04	-0.05	-0.01	-0.02	-0.01	0.001	-0.02	0.05	-0.02	-0.06	-0.03	-0.04	0.018	-0.02	-0	-0.11	-0.06	0.382

Anti-image Correlation

	VAR0002	VAR0003	VAR0004	VAR0005	VAR0006	VAR0007	VAR0008	VAR0009	VAR0010	VAR0011	VAR0012	VAR0013	VAR0014	VAR0015	VAR0016	VAR0017	VAR0018	VAR0019	VAR0020	VAR0021	VAR0022	VAR0023	VAR0024	VAR0025	VAR0026
VAR0002	.952[a]	-0.07	-0.09	-0.17	-0.1	0.021	0.014	-0.03	-0.07	-0.04	0.156	-0.01	-0.04	0.088	0.057	-0.04	-0.34	-0.01	-0.03	0.028	0.039	-0.05	-0.1	-0.03	0.027
VAR0003	-0.07	.957[a]	0.022	-0.26	-0.02	0.027	-0.18	-0.07	-0.01	-0.13	0.13	-0.13	0.063	-0.02	0.014	-0.12	0.025	-0.01	0.04	-0.1	-0.21	-0.02	0.066	0.027	0.011
VAR0004	-0.09	0.022	.944[a]	-0.25	-0.16	0.032	0.045	0.039	-0.04	-0	-0.05	-0.04	-0.17	-0.08	-0.06	-0.03	0.147	-0.11	0.001	-0.09	0.057	0.183	-0.17	-0.09	0.111
VAR0005	-0.17	-0.26	-0.25	.939[a]	0.099	-0.03	0.061	-0.15	-0.03	-0.09	-0.11	0.019	0.02	0.099	-0.1	-0.07	0.1	0.044	-0.11	0.009	-0.06	0.064	0.161	-0.18	-0.01
VAR0006	-0.1	-0.02	-0.16	0.099	.950[a]	-0.24	-0.14	-0.14	-0.04	-0.07	0.021	0.004	0.06	0.119	-0.16	0.03	0.157	0.025	0.026	-0.11	-0.07	-0.02	-0.05	0.077	-0.09
VAR0007	0.021	0.027	0.032	-0.03	-0.24	.933[a]	-0.19	-0.06	-0.07	-0.04	0.082	-0.37	-0.17	0.027	0.063	-0.09	-0.26	0.15	0.108	0.035	0.001	-0.05	-0.03	-0.04	0.092
VAR0008	0.014	-0.18	0.045	0.061	-0.14	-0.19	.953[a]	0.015	-0.15	0.045	-0.23	-0.09	-0.16	-0.01	0.034	0.093	0.035	-0.08	-0.12	0.081	0.129	0.077	-0.07	-0.04	-0.08
VAR0009	-0.03	-0.07	0.039	-0.15	-0.14	-0.06	0.015	.967[a]	-0.16	-0.12	-0.17	0.049	0.007	-0.17	-0.02	0.077	0.049	-0.17	0.013	0.089	0.038	-0.02	0.052	-0.04	-0.11
VAR0010	-0.07	-0.01	-0.04	-0.03	-0.04	-0.07	-0.15	-0.16	.975[a]	-0.07	-0.08	0.103	-0.14	0.079	-0.1	-0.13	0.017	0.032	0.064	-0.06	-0.03	0.004	0.031	0.016	-0.11
VAR0011	-0.04	-0.13	-0	-0.09	-0.07	-0.04	0.045	-0.12	-0.07	.976[a]	-0.01	0.036	-0.12	-0.1	-0.03	-0.14	-0.09	-0.01	-0.15	0.01	0.077	-0	0.136	-0.1	-0.02
VAR0012	0.156	0.13	-0.05	-0.11	0.021	0.082	-0.23	-0.17	-0.08	-0.01	.945[a]	-0.24	-0.03	0.08	-0.24	-0.12	-0.17	0.086	0.028	0.007	0.057	-0.07	-0.02	0.091	-0.05
VAR0013	-0.01	-0.13	-0.04	0.019	0.004	-0.37	-0.09	0.049	0.103	0.036	-0.24	.948[a]	-0.03	-0.22	-0.03	0.157	0.052	-0.02	0.029	-0.11	0.034	-0.15	0.003	-0.04	-0.04
VAR0014	-0.04	0.063	-0.17	0.02	0.06	-0.17	-0.16	0.007	-0.14	-0.12	-0.03	-0.03	.955[a]	-0.15	-0.1	0.111	-0.04	0.042	-0.05	-0.14	-0.2	-0.04	-0.18	0.238	0.002
VAR0015	0.088	-0.02	-0.08	0.099	0.119	0.027	-0.01	-0.17	0.079	-0.1	0.08	-0.22	-0.15	.944[a]	-0.23	-0.25	0.067	-0.1	0.063	-0.03	-0.16	0.052	0.138	-0.09	-0.04
VAR0016	0.057	0.014	-0.06	-0.1	-0.16	0.063	0.034	-0.02	-0.1	-0.03	-0.24	-0.03	-0.1	-0.23	.961[a]	0.023	-0.18	-0.01	-0.17	0.081	0.064	-0.03	-0.16	-0.1	0.147
VAR0017	-0.04	-0.12	-0.03	-0.07	0.03	-0.09	0.093	0.077	-0.13	-0.14	-0.12	0.157	0.111	-0.25	0.023	.939[a]	0.007	-0.08	-0.18	-0.03	0.246	-0.17	-0.14	0.031	-0.06
VAR0018	-0.34	0.025	0.147	0.1	0.157	-0.26	0.035	0.049	0.017	-0.09	-0.17	0.052	-0.04	0.067	-0.18	0.007	.919[a]	-0.22	-0.05	-0.08	-0.21	0.186	0.092	-0.06	-0.16
VAR0019	-0.01	-0.01	-0.11	0.044	0.025	0.15	-0.08	-0.17	0.032	-0.01	0.086	-0.02	0.042	-0.1	-0.01	-0.08	-0.22	.956[a]	-0.11	-0.24	0.113	-0.23	0.063	-0.11	-0.09
VAR0020	-0.03	0.04	0.001	-0.11	0.026	0.108	-0.12	0.013	0.064	-0.15	0.028	0.029	-0.05	0.063	-0.17	-0.18	-0.05	-0.11	.970[a]	-0.1	-0.1	-0.04	-0.13	0.076	-0.1
VAR0021	0.028	-0.1	-0.09	0.009	-0.11	0.035	0.081	0.089	-0.06	0.01	0.007	-0.11	-0.14	-0.03	0.081	-0.03	-0.08	-0.24	-0.1	.966[a]	-0.08	-0.19	0.063	-0.02	0.046
VAR0022	0.039	-0.21	0.057	-0.06	-0.07	0.001	0.129	0.038	-0.03	0.077	0.057	0.034	-0.2	-0.16	0.064	0.246	-0.21	0.113	-0.1	-0.08	.928[a]	-0.28	-0.17	-0.06	-0.04
VAR0023	-0.05	-0.02	0.183	0.064	-0.02	-0.05	0.077	-0.02	0.004	-0	-0.07	-0.15	-0.04	0.052	-0.03	-0.17	0.186	-0.23	-0.04	-0.19	-0.28	.948[a]	-0.04	-0.25	-0.01
VAR0024	-0.1	0.066	-0.17	0.161	-0.05	-0.03	-0.07	0.052	0.031	0.136	-0.02	0.003	-0.18	0.138	-0.16	-0.14	0.092	0.063	-0.13	0.063	-0.17	-0.04	.937[a]	-0.21	-0.3
VAR0025	-0.03	0.027	-0.09	-0.18	0.077	-0.04	-0.04	-0.04	0.016	-0.1	0.091	-0.04	0.238	-0.09	-0.1	0.031	-0.06	-0.11	0.076	-0.02	-0.06	-0.25	-0.21	.957[a]	-0.15
VAR0026	0.027	0.011	0.111	-0.01	-0.09	0.092	-0.08	-0.11	-0.11	-0.02	-0.05	-0.04	0.002	-0.04	0.147	-0.06	-0.16	-0.09	-0.1	0.046	-0.04	-0.01	-0.3	-0.15	.962[a]

3.4.6 Tools

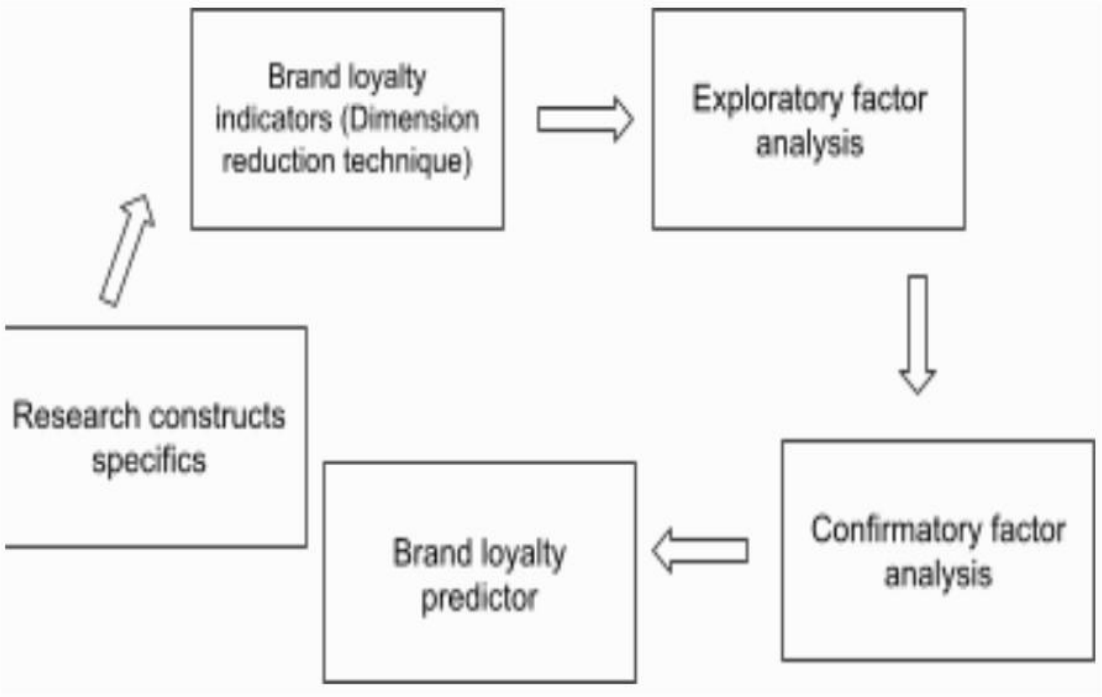
for Analysis

To collect data, the Survey Questionnaire Method is employed.

Using the greatest sample size that is practical, great care is taken to prevent sampling error. Additionally, proper and precise data entry is ensured to prevent "systematic bias." Throughout the data analysis process, "Exploratory Factor analysis" is used.

IBM SPSS Statistics is used for data analysis and statistics throughout.

4. **Data analysis**



4.1 Collection and analysis of the data

Businesses are aware of how electric vehicles affect consumer choices, but many aspects of how electric vehicles affect consumer behaviour are still poorly understood. Despite a substantial amount of research analysing this link, there is a clear gap in the measuring of the relationship between dependent and independent factors.

It is crucial to determine which elements are the most crucial and demand immediate attention in order to make an accurate prediction about which ones will have the greatest influence on consumer behaviour. Determining the present status of many factors connected to EV customer behaviour sales is crucial.

4.2 Multivariate Outlier analysis

Multivariate analysis is done for the study when 2-3 variables are present and considered in the study. This is important to consider all. As per, (Kar, 2021).

As this data has multiple variables, the researcher chose to follow the Mahalanobis Distance Test for multivariate analysis for outlier determination.

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	24.0684	223.9576	125.5000	28.83269	250
Std. Predicted Value	-3.518	3.415	.000	1.000	250
Standard Error of Predicted Value	5.654	42.653	20.949	8.358	250
Adjusted Predicted Value	8.0893	221.5192	125.7229	30.76123	250
Residual	-137.65150	147.84218	.00000	66.31623	250
Std. Residual	-1.969	2.114	.000	.948	250
Stud. Residual	-2.086	2.243	-.002	1.002	250
Deleted Residual	-157.75713	166.35809	-.22293	74.24272	250
Stud. Deleted Residual	-2.102	2.264	-.001	1.004	250
Mahal. Distance	.632	91.666	24.900	19.039	250
Cook's Distance	.000	.061	.005	.008	250
Centered Leverage Value	.003	.368	.100	.076	250

Data was assessed using SPSS and no outliers were identified.

4.3 Multicollinearity

Multicollinearity is a phenomenon where any individual variable possesses very strong relationship in between them. This happens if the correlation value is >0.90. This becomes very difficult for data analysis and is reason for bias and thus needs to be eliminated. Researcher didn't find any correlation more than >0.90 among two any two indicators. There does not exist any Multicollinearity in data.

4.4 (Multivariate) Normality analysis

Normality analysis is important to check before the main data analysis part of research. It gives idea about nature of collected data and how research data analysis should be performed. However, researchers' final aim is to do factor analysis and we are good to consider normal data.

Table 4.1 Descriptive statistic

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
VAR00002	250	1.00	5.00	4.3360	.85910	-1.358
VAR00003	250	1.00	5.00	4.1800	.91595	-1.092
VAR00004	250	1.00	5.00	4.1280	.92685	-.990
VAR00005	250	1.00	5.00	4.2880	.92979	-1.420
VAR00006	250	1.00	5.00	4.0200	1.00780	-1.037
VAR00007	250	1.00	5.00	3.7000	1.14510	-.718
VAR00008	250	1.00	5.00	3.9840	1.00588	-.875
VAR00009	250	1.00	5.00	4.1440	.96696	-1.125
VAR00010	250	1.00	5.00	4.0120	1.05466	-1.080
VAR00011	250	1.00	5.00	4.1240	.95092	-1.013
VAR00012	250	1.00	5.00	4.0240	1.02549	-.972
VAR00013	250	1.00	5.00	3.9760	1.08634	-1.089
VAR00014	250	1.00	5.00	3.9040	1.12242	-.909
VAR00015	250	1.00	5.00	3.9400	1.00621	-.809
VAR00016	250	1.00	5.00	3.9160	.98020	-.707
VAR00017	250	1.00	5.00	4.1080	1.01016	-1.067
VAR00018	250	1.00	5.00	4.0280	1.01555	-.891
VAR00019	250	1.00	5.00	4.1000	.91507	-.897
VAR00020	250	1.00	5.00	4.1480	.87702	-.905
VAR00021	250	1.00	5.00	4.0840	.98020	-1.124
VAR00022	250	1.00	5.00	3.9560	1.03069	-.932

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VAR00023	250	1.00	5.00	4.0320	.95637	-.842
VAR00024	250	1.00	5.00	4.1000	1.00301	-1.141
VAR00025	250	1.00	5.00	4.0560	.91225	-.847
VAR00026	250	1.00	5.00	4.1880	.90106	-.911
DV	250	1.00	250.00	125.5000	72.31298	.000
Mahalanobis Distance	250	.63247	91.66594	24.900000 0	19.0390727 6	1.042
Valid N (listwise)	250					

Table 4.2 Correlation Matrix

	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014	VAR00015	VAR00016	VAR00017	VAR00018	VAR00019	VAR00020	VAR00021	VAR00022	VAR00023	VAR00024	VAR00025	VAR00026
Sales Prediction	1	0.449	0.405	0.487	0.396	0.405	0.364	0.435	0.448	0.485	0.324	0.37	0.442	0.33	0.444	0.416	0.565	0.463	0.472	0.424	0.398	0.441	0.441	0.478	0.447
EV priorities	0.449	1	0.399	0.58	0.414	0.442	0.47	0.519	0.468	0.56	0.384	0.509	0.458	0.482	0.478	0.469	0.418	0.496	0.472	0.524	0.498	0.521	0.365	0.497	0.445
Choice of vehicle	0.405	0.399	1	0.54	0.457	0.381	0.399	0.441	0.454	0.46	0.44	0.43	0.521	0.452	0.538	0.423	0.303	0.444	0.451	0.452	0.325	0.367	0.474	0.462	0.37
Expectations of customers	0.487	0.58	0.54	1	0.358	0.379	0.379	0.557	0.484	0.568	0.464	0.412	0.427	0.426	0.538	0.484	0.387	0.462	0.509	0.436	0.378	0.437	0.348	0.54	0.424
Conventional vehicle	0.396	0.414	0.457	0.358	1	0.569	0.535	0.504	0.499	0.458	0.45	0.492	0.506	0.366	0.526	0.353	0.353	0.394	0.419	0.454	0.403	0.454	0.479	0.409	0.465
Electric Vehicle	0.405	0.442	0.381	0.379	0.569	1	0.602	0.493	0.518	0.484	0.502	0.679	0.615	0.451	0.518	0.379	0.532	0.385	0.396	0.455	0.452	0.497	0.47	0.458	0.452
customer preference	0.364	0.47	0.399	0.379	0.535	0.602	1	0.506	0.568	0.464	0.6	0.58	0.6	0.436	0.544	0.377	0.445	0.447	0.485	0.417	0.367	0.443	0.507	0.443	0.526
Government policies	0.435	0.519	0.441	0.557	0.504	0.493	0.506	1	0.589	0.609	0.572	0.504	0.516	0.562	0.593	0.482	0.462	0.574	0.505	0.462	0.405	0.525	0.428	0.546	0.554
Battery	0.448	0.468	0.454	0.484	0.499	0.518	0.568	0.589	1	0.555	0.557	0.459	0.591	0.447	0.588	0.5	0.472	0.473	0.493	0.477	0.418	0.485	0.481	0.475	0.543
Battery Charger	0.485	0.56	0.46	0.568	0.458	0.484	0.464	0.609	0.555	1	0.503	0.485	0.553	0.566	0.602	0.58	0.529	0.567	0.594	0.519	0.415	0.534	0.412	0.561	0.521
Sustainability	0.324	0.384	0.44	0.464	0.45	0.502	0.6	0.572	0.557	0.503	1	0.592	0.56	0.472	0.661	0.474	0.501	0.455	0.496	0.437	0.362	0.491	0.486	0.454	0.517
Environmentally friendly	0.37	0.509	0.43	0.412	0.492	0.679	0.58	0.504	0.459	0.485	0.592	1	0.598	0.583	0.579	0.383	0.47	0.499	0.455	0.556	0.483	0.6	0.481	0.528	0.497
Energy saving	0.442	0.458	0.521	0.427	0.506	0.615	0.6	0.516	0.591	0.553	0.56	0.598	1	0.564	0.639	0.413	0.531	0.486	0.557	0.573	0.583	0.549	0.594	0.448	0.526
Government strategy	0.33	0.482	0.452	0.426	0.366	0.451	0.436	0.562	0.447	0.566	0.472	0.583	0.564	1	0.622	0.54	0.434	0.569	0.493	0.526	0.478	0.545	0.412	0.542	0.482
client impression	0.444	0.478	0.538	0.538	0.526	0.518	0.544	0.593	0.588	0.602	0.661	0.579	0.639	0.622	1	0.532	0.567	0.569	0.631	0.522	0.477	0.573	0.589	0.594	0.536
Difficulties	0.416	0.469	0.423	0.484	0.353	0.379	0.377	0.482	0.5	0.58	0.474	0.383	0.413	0.54	0.532	1	0.42	0.562	0.58	0.482	0.294	0.545	0.465	0.512	0.507
Electric Vehicle Acceptance	0.565	0.418	0.303	0.387	0.353	0.532	0.445	0.462	0.472	0.529	0.501	0.47	0.531	0.434	0.567	0.42	1	0.563	0.527	0.502	0.515	0.475	0.451	0.514	0.556
PEV adoption	0.463	0.496	0.444	0.462	0.394	0.385	0.447	0.574	0.473	0.567	0.455	0.499	0.486	0.569	0.569	0.562	0.563	1	0.607	0.649	0.448	0.662	0.466	0.628	0.581
Policy levers for PEV adoption	0.472	0.472	0.451	0.509	0.419	0.396	0.485	0.505	0.493	0.594	0.496	0.455	0.557	0.493	0.631	0.58	0.527	0.607	1	0.565	0.496	0.578	0.572	0.542	0.585
Purchase decision	0.424	0.524	0.452	0.436	0.454	0.455	0.417	0.462	0.477	0.519	0.437	0.556	0.573	0.526	0.522	0.482	0.502	0.649	0.565	1	0.548	0.661	0.457	0.547	0.491
Transition	0.398	0.498	0.325	0.378	0.403	0.452	0.367	0.405	0.418	0.415	0.362	0.483	0.583	0.478	0.477	0.294	0.515	0.448	0.496	0.548	1	0.621	0.533	0.519	0.502
Stakeholders	0.441	0.521	0.367	0.437	0.454	0.497	0.443	0.525	0.485	0.534	0.491	0.6	0.549	0.545	0.573	0.545	0.475	0.662	0.578	0.661	0.621	1	0.558	0.675	0.576
Consumer	0.441	0.365	0.474	0.348	0.479	0.47	0.507	0.428	0.481	0.412	0.486	0.481	0.594	0.412	0.589	0.465	0.451	0.466	0.572	0.457	0.533	0.558	1	0.586	0.646
Market Analysis	0.478	0.497	0.462	0.54	0.409	0.458	0.443	0.546	0.475	0.561	0.454	0.528	0.448	0.542	0.594	0.512	0.514	0.628	0.542	0.547	0.519	0.675	0.586	1	0.617
Policy	0.447	0.445	0.37	0.424	0.465	0.452	0.526	0.554	0.543	0.521	0.517	0.497	0.526	0.482	0.536	0.507	0.556	0.581	0.585	0.491	0.502	0.576	0.646	0.617	1

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Table 4.3 ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206999.696	25	8280	1.694	.025[b]
	Residual	1095062.804	224	4888.7		
	Total	1302062.5	249			

4.4 Reliability Test

For factor analysis we need to do reliability test so we can consider reliable items for factor analysis.

Table 4.5 Reliability Statistics	
Cronbach's Alpha	N of Items
0.96	25

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
VAR00002	97.1400	292.442	.595	.959
VAR00003	97.2960	289.414	.655	.959
VAR00004	97.3480	290.830	.600	.959
VAR00005	97.1880	289.752	.633	.959
VAR00006	97.4560	288.345	.623	.959
VAR00007	97.7760	283.403	.673	.959
VAR00008	97.4920	286.765	.672	.959
VAR00009	97.3320	286.255	.718	.958
VAR00010	97.4640	284.611	.701	.958
VAR00011	97.3520	286.237	.731	.958

VAR00012	97.4520	285.839	.686	.959
VAR00013	97.5000	283.335	.715	.958
VAR00014	97.5720	281.081	.753	.958
VAR00015	97.5360	286.338	.685	.959
VAR00016	97.5600	283.717	.787	.958
VAR00017	97.3680	287.607	.643	.959
VAR00018	97.4480	286.722	.666	.959
VAR00019	97.3760	287.456	.721	.958
VAR00020	97.3280	288.326	.724	.958
VAR00021	97.3920	286.320	.705	.958
VAR00022	97.5200	287.496	.633	.959
VAR00023	97.4440	285.637	.746	.958
VAR00024	97.3760	286.589	.679	.959
VAR00025	97.4200	287.281	.729	.958
VAR00026	97.2880	287.869	.719	.958

Factor Analysis

Factor analysis is a technique for condensing a large number of variables into a small number of factors.

In order to identify underlying theoretical phenomena, a large number of variables can be reduced to a smaller number of sets of recognized variables using the process of exploratory factor analysis.

Given that the KMO value (.953) is greater than 0.70 and the correlation matrix determinant is +ve (0.001) reliable, the sample size is adequate. For each variable in the factor analysis, the sample size is enough because each anti-image value is more than 0.5. Additionally, Bartlett's test of sphericity indicates that it is significant (0.001).

KMO and Bartett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	4203.585
	D F	300
	Sig.	<.001

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*KMO>=0.7 is accepted reference value.

Interpretation of Total Variance explained

- It shows total 03 factors have emerged (whose eigen value is >1.0)
- Now, from 'cumulative %' column it shows 03 factors contributes variance of 59.085%, this is massive. Any value > 50% is good and if it goes to 70% and more that is excellent.
- From 'Scree plot" (Fig) you can see from 4th. Factor the graph is flattened. Hence, we can derive 4-1=3 are the meaningful factors.

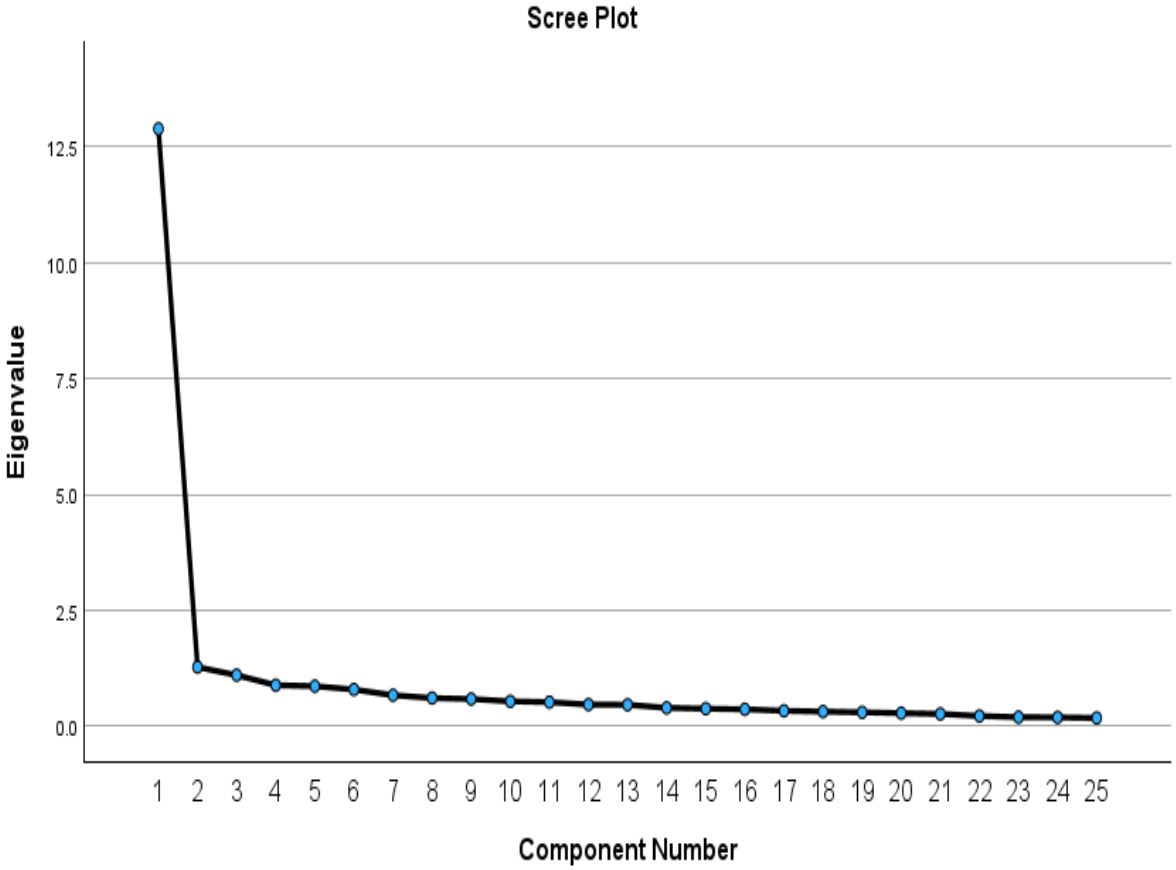

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Table 4.7 Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.887	51.549	51.549	5.260	21.042	21.042
2	1.273	5.092	56.640	5.042	20.168	41.210
3	1.099	4.395	61.035	4.956	19.825	61.035
4	.882	3.526	64.561			
5	.861	3.443	68.004			
6	.789	3.154	71.158			
7	.665	2.662	73.820			
8	.605	2.419	76.238			
9	.584	2.334	78.572			
10	.533	2.134	80.706			
11	.517	2.067	82.773			
12	.464	1.857	84.630			
13	.460	1.839	86.469			
14	.393	1.572	88.041			
15	.375	1.500	89.540			
16	.362	1.448	90.988			
17	.330	1.319	92.307			
18	.312	1.250	93.556			
19	.297	1.188	94.744			
20	.279	1.116	95.861			
21	.262	1.048	96.909			
22	.218	.871	97.780			
23	.193	.771	98.550			
24	.187	.749	99.300			
25	.175	.700	100.000			

Extraction Method: Principal Component Analysis.
Anti Image Correlation

5. Findings, suggestions, conclusion, limitations, future scope of research.

Findings

A comprehensive approach involving awareness campaigns, infrastructure development, financial incentives, and sustained government support is crucial for overcoming the identified barriers and fostering a more favourable environment for the acceptance of electric vehicles in Bangalore. This integrated strategy can contribute to the establishment of a sustainable and eco-friendly transportation ecosystem in the region.

Suggestions

In a coordinated manner can create a conducive environment for the acceptance of electric vehicles in Bangalore. By combining public awareness, infrastructure development, financial incentives, and collaboration with the private sector, the region can pave the way for a sustainable and eco-friendly transportation ecosystem. This holistic approach addresses the identified barriers and sets the stage for a successful transition to electric mobility in Bangalore.

Future scope of the research findings

The identified future scope of research underscores the need for ongoing exploration and adaptation in the realm of electric vehicle acceptance. By continually assessing the evolving landscape through longitudinal studies, technological analysis, policy evaluations, and consumer behaviour studies, stakeholders can refine strategies to overcome barriers and pave the way for a sustainable and widely embraced electric mobility future in Bangalore.

Conclusion

The study concludes that the acceptance of electric vehicles in Bangalore is influenced by a combination of factors, including awareness, infrastructure, cost considerations, range anxiety, and government support. A multi-faceted approach involving public awareness campaigns, infrastructure development, financial incentives, and collaboration with the private sector is crucial for fostering greater acceptance of electric vehicles in the region.

Limitations

1.Recognizing and addressing these limitations is crucial for refining and strengthening the understanding of EV acceptance in Bangalore.

2.By addressing these constraints in future research endeavours, scholars and policymakers can obtain a more accurate and nuanced perspective, facilitating the development of more targeted and effective strategies for promoting electric vehicle adoption in the region.

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ANNEXURE

QUESTIONNAIRE

Related to switching cost and brand loyalty.

This is to understand how the switching cost affects customers' loyalty towards the brand. In this questionnaire, a few questions are used to check the authenticity of the response. Please share the exact information. The researcher assures to keep the individual responses confidential. It will be used for data analysis purposes, and reported in aggregate only.

Gender	Male Female Prefer Not To Say
Do you purchase electric vehicles	Yes

Name:

Email ID:

1= Strongly Agree 2= Agree 3= Neutral 4= Disagree 5= Strongly Disagree

Variables	Questions	5 SA	4 D	3 N	2 A	1 SD
Sales Prediction	**T**he future sales of Electric Vehicles (EVs) are likely to increase in the next five years.					
EV priorities	Charging infrastructure availability significantly influences my preference for an Electric Vehicle.					
Choice of vehicle	Brand reputation plays a significant role in influencing my choice of a vehicle					
Expectations of customers	Customers expect modern vehicles to have advanced technological features					
Conventional vehicle	The environmental impact of traditional vehicles is a concern for me.					
Electric Vehicle	I am willing to pay a premium for an electric vehicle due to its environmental benefits.					
customer preference	I have a preference for vehicles with eco-friendly features.					

Government policies	I believe government policies play a crucial role in promoting sustainable transportation.					
Battery	I am concerned about the environmental impact of battery production and disposal.					
Battery Charger	The availability of convenient and fast battery charging facilities affects my consideration of electric vehicles.					
Sustainability	The concept of sustainable transportation is important to me when choosing a vehicle					
Environmentally friendly	I actively seek vehicles that are marketed as environmentally friendly.					
Energy saving	I believe electric vehicles contribute to energy conservation.					
Government strategy	I am aware of the government's strategies and initiatives to promote electric vehicle adoption.					
client impression	The image of a company's commitment to sustainable practices affects my purchasing decisions.					
Difficulties	I perceive difficulties in finding charging stations as a significant drawback of electric vehicles.					
Electric Vehicle Acceptance	I believe society is becoming more accepting of electric vehicles.					
PEV adoption	The availability of charging infrastructure is a key factor in promoting PEV adoption.					
Policy levers for PEV adoption	Policy measures, like the development of charging infrastructure, play a crucial role in promoting PEV adoption.					

Purchase decision	The availability of government incentives influences my decision to purchase an electric vehicle.					
Transition	The transition from conventional vehicles to electric vehicles is inevitable					
Stakeholders	The automotive industry stakeholders need to collaborate for a successful transition to sustainable practices.					
Consumer	As a consumer, I feel a responsibility to choose environmentally friendly transportation options					
Market Analysis	Market trends and consumer behavior analysis are crucial for informed decision-making in the automotive sector.					
Policy	Government policies should prioritize the promotion of environmentally friendly vehicles					

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