

An Analytical Study on Consumer Perception towards Purchase Intentions of an Electric Vehicle (EV)

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Abstract: *The third-largest road network in the world is found in India. Over 60% of people commuted by road in their own or shared vehicles, suggesting that road travel was the favoured mode of transportation. (2020, Statista) Air pollution and global warming are largely caused by conventional automobiles. Brakes, tires, and road wear all contribute to the production of dust in automobiles. Compared to typical gasoline vehicles, average diesel vehicles have a worse impact on air quality. Nonetheless, compared to electric vehicles, both gasoline and diesel vehicles pollute more. (EEA, 2018).*

With the increased use of renewable energy, Electric Vehicles (EVs) are viewed as one of the most important ways to reduce air pollution and greenhouse gas emissions in the transportation sector globally. Modern environmental concerns are driving the production and marketing of electric vehicles. In India, the notion that electric cars are the superior option to fuel cars—that is, cars with conventional diesel or gasoline combustion engines—has completely changed by the year 2018. Researching the elements that are driving buyer acceptance of these vehicles is crucial to understand Indians' intentions to purchase fully electric cars. Numerous situational factors, including the regulatory environment, individual psychological aspects like attitude and perception, and the acceptance and consideration levels of society, have an impact on consumers' decisions to buy cars. A small number of national governments have updated their innovation development targets successfully, and electric vehicles are considered a possible mode of transportation. Indigenous governments are eager to promote electric vehicles as a sensible way to reduce pollution in cities and as an environmentally friendly mode of transportation.

The study unearthed several key findings shaping consumer perception towards electric vehicles in Mumbai City. Positive perceptions towards EVs were prevalent, driven by a strong belief in their environmental benefits. Economic factors, such as the perceived cost of ownership, and societal influences, including the status associated with EVs, emerged as influential determinants. Environmental concerns, local relevance, and the alignment of purchase decisions with sustainability further underscored the complexity of consumer perception.

The positive shift in perception, coupled with identified influencers, provides a roadmap for stakeholders to strategically address challenges and leverage opportunities for sustainable and widespread EV adoption. Continuous monitoring, policy refinement, educational initiatives, and collaborative efforts are recommended for a holistic and effective approach

Keywords: Consumer perception, electric vehicle (EV), environmental concern, buyer behaviour, purchase intentions

I. INTRODUCTION

Electric Vehicle or EV is referred to a vehicle that can be powered by an electric motor that runs on battery power and can be charged externally is referred to as an electric vehicle. Vehicles that run entirely or partially on electricity. Electricity is the primary fuel for electric vehicles, or they can be used to increase the efficiency of conventional vehicle designs. Plug-in hybrid electric vehicles and all-electric vehicles, also known as battery electric vehicles, are examples of EVs. Even while some of these vehicles still combine electricity and liquid fuels, they are commonly referred to as electric vehicles, or simply EVs. EVs are renowned for their silent operation and immediate torque. There has been a noticeable trend in the automobile industry towards electric vehicles, or EVs. Electric vehicles (EVs) have become

more and more popular as a substitute for conventional gasoline-powered vehicles due to technological developments and increased concerns about environmental sustainability. The way that consumers view electric vehicles is a major factor in how widely this new kind of transportation is adopted. Automakers, legislators, and other stakeholders must comprehend customer attitudes, desires, and concerns about electric vehicles (EVs) in order to effectively promote and support the shift to a sustainable transportation system.

A customer's views, attitudes, opinions, and behaviors toward a certain good or service are all included in their perception of that good or service. Regarding electric vehicles, it concerns how buyers view EVs in terms of its functionality, range, accessibility to charging stations, price, effect on the environment, and general appeal as a form of transportation. Numerous things, such as individual experiences, societal influences, marketing campaigns, and governmental regulations, might have an impact on these impressions. There's been a noticeable change in how consumers view electric vehicles during the last ten years. At first, EVs were frequently linked to drawbacks including a short range, a lengthy charging time, and a high initial cost. But public perceptions have begun to shift as a result of advances in technology and the introduction of more practical and reasonably priced electric vehicles by automakers. From being viewed as futuristic or niche, EVs are now acknowledged as a practical and sustainable mode of transportation. Concern over environmental issues like air pollution and climate change is one of the main factors influencing consumers' favorable opinion of electric vehicles. Consumers who care about the environment find EVs appealing because they emit no exhaust emissions. Additionally, doubts regarding the viability of EVs for daily usage have been allayed by the advancement of renewable energy sources and the expansion of the infrastructure for charging them. Technological developments in batteries have a major impact on consumer perception as they enhance the performance and range of electric vehicles. The range and acceleration of contemporary EVs may now match that of their gasoline-powered counterparts, allaying worries about their short driving range and slow performance. There are still issues with consumer perception, though. Common worries include the cost of purchasing electric vehicles up front, the availability of infrastructure for charging, the length of time needed for charging, and the possibility of battery deterioration over time. Building consumer confidence in electric vehicles requires addressing these issues and giving them accurate information.

In recent years, the global automotive landscape has witnessed a transformative shift towards sustainable and eco-friendly transportation solutions. Amidst concerns over environmental degradation and the urgent need to reduce carbon emissions, electric vehicles (EVs) have emerged as a promising alternative, heralding a new era in the automotive industry. This transition towards EV adoption, however, is not merely technological; it is deeply intertwined with consumer perceptions and intentions. Understanding the dynamics of consumer attitudes towards electric vehicles and the factors influencing their purchase decisions is paramount in shaping the trajectory of sustainable mobility.

This paper delves into the intricate web of consumer perceptions towards electric vehicles in Mumbai and explores how these perceptions shape purchase intentions. As the automotive industry grapples with the dual challenges of technological innovation and environmental sustainability, understanding the nuanced preferences and concerns of consumers becomes pivotal. By examining the key factors influencing consumer perceptions, analysing the impact of socio-economic variables, and evaluating the role of environmental awareness, this study aims to provide valuable insights that can inform policy decisions and industry strategies.

The pursuit of this understanding employs a descriptive research approach, combining both qualitative and quantitative methodologies. The rationale for this choice lies in the richness of insights offered by qualitative methods and the statistical rigor afforded by quantitative analysis. Through the distribution of a structured questionnaire, primary data will be gathered from 100 customers in Mumbai, selected through convenient sampling.

In conjunction with primary data, secondary data will be collected from existing sources, including scholarly articles, industry reports, and relevant literature. This secondary data will serve as the theoretical framework for the study, providing context and depth to the analysis. The data, once collected, will be subjected to percentage analysis, SPSS-24 statistical analysis, and graphical representations such as tables and pie charts for a comprehensive interpretation of findings.

As a guiding theoretical framework, the Theory of Planned Behaviour (TPB) will be employed to unravel the intricate connections between consumer attitudes, subjective norms, and perceived behavioural control in the context of electric

vehicle adoption. This theoretical lens promises a nuanced understanding of the psychological and social factors that influence consumer intentions to embrace sustainable mobility solutions.

1.1. Conceptual Background of the Study:

1.1.1. Consumer perception:

Consumer perception refers to the way individuals interpret and make sense of information about a product, service, brand, or any stimuli in the marketplace. It is a subjective process influenced by personal experiences, attitudes, beliefs, and cultural factors. Consumer perception plays a crucial role in shaping purchasing decisions, as it directly affects how individuals evaluate and respond to offerings in the market.

1.1.2. Purchase Intention:

Purchase intention refers to the predisposition or inclination of a consumer to buy a particular product or service in the near future. It reflects the individual's plan or willingness to make a purchase based on various factors, including attitudes, preferences, perceptions, and external influences. Purchase intention is a crucial concept in consumer behavior and marketing, as it provides insights into the likelihood of a consumer converting their interest into an actual purchase.

1.1.3. Overview of the electric vehicle market in India:

The global automotive landscape is undergoing a paradigm shift driven by the imperative for sustainable and eco-friendly transportation solutions. As urban centres grapple with escalating environmental concerns and the need for reduced carbon emissions, electric vehicles (EVs) have emerged as a pivotal component of this transformative journey. In the context of Mumbai, one of India's most densely populated and dynamic metropolitan areas, the integration of EVs into the transportation fabric holds particular significance.

The increasing levels of air pollution in Indian cities were a source of worry for manufacturers. Among the top 100 most polluted urban areas in the nation, World-Nation, are over 25 major Indian cities. Although there are many different sources that contribute to air pollution in cities, transportation infrastructure plays a critical role. Transport discharges are crucial when there is little division. Because of the well-established negative effects of poor air quality on both human health and the economy, producers are hoping to lessen their environmental impact in a few ways. In addition to being viewed as a viable option for transportation, a few national governments have effectively updated their plans for innovation development. Indigenous governments are moving quickly to promote electric vehicles as a viable and environmentally friendly option for transportation, as well as a workable way to reduce air pollution in cities.

1.1.4 Government Initiatives:

Since vehicles are the primary source of significant pollution, there is a need to find solution. But why do vehicles contribute to pollution? Smoke is mostly produced by fuel burning in engines, particularly in diesel vehicles. There is nitrogen (N₂) and carbon dioxide (CO₂) in this smoke. The government made the need for all automobiles to have a pollution-free certificate an attempt to reduce emissions. latter requiring engines from the Euro IV series. The aforementioned events forced the government to take action in this area. The government now believes that the greatest way to reduce pollution is through electric vehicles, or EVs. Pollution from electric vehicles is completely non-existent. Therefore, 50–75% less pollution is produced in a nation when all vehicles are electric.

That would be an incredible achievement. As a result, the government is gradually pushing the auto industry to develop electric automobiles. Additionally, providing financial assistance and incentives for electric vehicle purchases.

The state Industrial Policy, which covers Bangalore district, runs from 2014 to 2019. Rajshekhar Puranik, the environment officer for the Karnataka Pollution Control Board, recently pointed out the electric vehicle in MRPL. After driving it, MRPL Kumar, the Managing Director, stated that officials and employees from different departments would utilize the EV to navigate about the refinery complex. TATA Motors has been given a notice to show cause by the Indian government in order to cancel their bulk order for electric vehicles. TATA unable to release the 5,000 vehicles that were scheduled for the first phase. It was viewed as a significant blow to the government's plan to switch from gasoline and diesel to electric vehicles. Suzuki has proposed to establish an Indian battery plant. its 50% ownership stake. By 2020, Maruti Suzuki intends to introduce its first electric vehicle. This will come in the wagonR shape, and Suzuki will thereafter produce a number of electric vehicles. By 2030, it wants to sell 50 lakh vehicles.

II. LITERATURE REVIEW

Mr. ChannabasavHiremath, Dr. Rajeshwari B. Tapashetti, Dr. Rashmi R. Hunnur (2022) "A Study on Consumer Buying Behaviour towards Electric Vehicles in Bagalkot."

A study of Consumer Purchasing Behaviour toward Electric Vehicles (EVs) in Bagalkot was the name of the project. It set out to investigate how consumer preferences and worries about things like rising fuel costs and pollution have prompted a shift in the automobile industry away from conventional cars and towards EVs. It was expected that the two resurgences of EVs in a little over a decade would have a major effect on people's driving habits and the automotive and electric power sectors. The automotive industry had lofty goals, including the yearly production of hundreds of thousands of electric automobiles. Internal and external customer interactions had a role in shaping consumer's final purchasing choices. Primary data were acquired using structured questionnaires during conversations with consumers in Bagalkot city who expressed an interest in purchasing EVs in the future, yielding the empirical results. Secondary sources, such as online databases and scholarly articles, were also mined for additional details. Positive environmental impacts and trend-following were cited as reasons boosting the purchase of electric vehicles, and the survey named the Hero and the Ather as two of the most recognisable vehicle types. According to the study's demographic data, the majority of respondents were between the ages of 36 and 45.

Adhikary, S., Jalan, N., & Anute, N. (2022) "Customers Perception about Electric Vehicles"

These researchers carried out research on consumers' attitudes toward electric automobiles, their awareness of them in the Indian market, and the barriers that keep people from purchasing them. A survey was conducted with one hundred customers. According to the report, buyers are increasingly seeking for sustainable and environmentally friendly items. Additionally, the government started working to provide the infrastructure and services needed to legitimize the sale of electric automobiles in India.

Ishika Ranjan, Sawan Kumar Jha, Shuvam Mondal (2022) "A study on Consumer Buying Behaviour towards Electric Vehicle."

The study focuses on investigating customer demand for electric cars by assessing the influence of consumer innovation and concerns on the functional capabilities of electric vehicles compared to their preferences. A conceptual framework was designed and executed, encompassing measurements of innovativeness at an adoption level, comprising an examination of technology ownership and an array of psychological and social aspects. For both economic and environmental reasons, the automobile industry in India has turned to electric cars as a response to the increasing depletion of fossil resources and rising costs. Despite government initiatives to increase the sale of electric cars, just a small fraction of drivers actually owns one. Using a mix of primary and secondary sources, this article investigated Indian consumers' purchase habits and attitudes about electric automobiles. Two-wheeler original equipment manufacturer (OEM) dealers, students, and employed people were the targets of a questionnaire and a limited market survey used to gather data. Tier 1 and 2 city dwellers were the intended audience.

Vibhuti Pareek (2022) "Perception towards electric vehicles in the Indian market"

In order to foster a favourable view of electric vehicles in the Indian market, the researcher found that EV makers needed to focus on their research and development in order to improve the pricing range, cost of the product, design, style, and branding.

Silvana Secinaro, Davide Calandra, Federico Lanzalunga, Alberto Ferraris(2022) "Electric vehicles' consumer behaviours: Mapping the field and providing a research agenda."

Studies of electric car buyer's motivations and decision-making processes have been suggested as a promising subject for future study. International organisations have generally supported this idea, although a synthesis of the relevant research has so far been insufficient. Using a bibliometric and thematic analysis of 254 publications on customer behaviour in the electric vehicle industry, the study sought to fill this void by methodically organising different lines of inquiry. The study identified the key co-citation network among worldwide journals and writers, mapped the top research centres in this sector, and defined the dimensions covered by experts. The research also provided a useful consumer identikit for businesses to use, expanding on the principle of planned behaviour. Drawing on the data, the study proposed various research topics aimed at adding to the scholarly discourse on this issue.

Deep Mehta (2021) "The E-vehicle industry in India: A policy analysis"

To guarantee the successful introduction and widespread use of electric vehicles in the nation, the Indian government has undertaken a number of initiatives. For example, it has been reported that the sale of electric two-wheelers would become necessary from 2025, the use of e-rickshaws from 2023, and the sale of electric vehicles will undoubtedly become mandatory from 2030. Finance Minister Nirmala Sitharaman presented a number of measures in the 2019 budget with the goal of positioning India as a global leader in EV manufacturing. According to Sitharaman, customers can receive income tax rebates of up to 1.5 lakh on interest paid on loans used to buy electric vehicles, for a total exemption benefit of 2.5 lakh over the course of the loan. Additionally, she said that there would be no customs charges on lithium-ion cells, which would help to lower the price of lithium-ion batteries. But the infrastructure for charging them is inadequate, and current battery technology is inadequate. Nirmala Sitharaman introduced the new scrappage policy in the 2021 Budget, stating that personal automobiles must be used for 20 years and commercial vehicles for 15 years. In addition to a few additional incentives, INR 18,000 crores was made available for the purchase of 20,000 buses; regrettably, no explicit statements regarding EVs were made. Experts in the field anticipated a cut in GST and an update on FAME II regulations.

According to Ajaysinh Parmar and Prof. Tushar Pradhan (2021) in the paper "A study on consumers perception towards electric vehicles in Vadodara city": Customers don't seem to be really drawn toward electric automobiles, according to the study.

Ajex Thomas Varghese, V.S. Abhilash, and Sini V. Pillai (2021) A study on consumer perception and purchase intention of electric vehicles in India: The researchers noted that building infrastructure for electric vehicles (EVs) requires a significant participation from the government.

Gupta, A., & Sharma, R. (2021) "The Dynamics of Consumer Perceptions and Purchase Intentions: A Longitudinal Study of Electric Vehicle Markets."

Gupta and Sharma contribute a longitudinal perspective to the understanding of consumer perceptions and purchase intentions in the electric vehicle market. The research spans multiple years, tracking changes in consumer sentiments over time. Utilizing a combination of surveys and market data analysis, the study identifies evolving trends and patterns. Key findings indicate a positive shift in consumer attitudes towards electric vehicles, attributed to advancements in technology and increased awareness. The longitudinal approach adds a valuable temporal dimension, offering insights into the dynamic nature of consumer perceptions in the electric vehicle market.

Miguel A. Gomez and Amir H. B. Nasution (2021) "The role of environmental concerns, social norms, and product attributes in influencing consumer intentions to purchase electric vehicles"

This study looks at how consumer intentions to buy electric vehicles (EVs) are influenced by social norms, product qualities, and environmental concerns. It finds that product attributes and environmental concerns have the most effects. It also looks at how business tactics and government regulations interact to encourage the adoption of EVs, concluding that government initiatives can encourage industry investment in EV technologies.

Wang, Y., & Lee, L. (2020) "Green is the New Cool: The Role of Environmental Concerns in Shaping Electric Vehicle Purchase Intentions."

Wang and Lee explore the role of environmental concerns in influencing consumer purchase intentions for electric vehicles. The study employs a combination of focus group discussions and surveys to understand the depth of consumers' environmental awareness. The findings underscore a growing consciousness about ecological issues, indicating that consumers increasingly view electric vehicles as a sustainable choice. The study concludes that leveraging environmental messaging in marketing strategies can significantly enhance purchase intentions and contribute to the green mobility movement.

Ismail, Zameel, Al-Saeedy, Aly (2020) "Consumer Behaviour Towards the Purchase and Usage of Electric Vehicles by Swedish Millennials."

A clear pattern appeared among the Swedish Millennials once the survey was finished, correlating with the study's starting assumption that this generation places a premium on protecting the natural world. The vast majority of respondents said they would consider buying an electric car rather than one powered by fossil fuels. They seemed convinced of the benefits of electricity and worried about the rise of dangerous gases in the atmosphere. Furthermore, it was generally accepted that the car industry is working hard to cut down on harmful pollutants.

Tornekar K. (2020) "Impact of government incentives on the market penetration of electric vehicles. Researcher listed the eight potential causes of the poor EV growth in India."

He listed the following factors as barriers to the rise of EVs in India: charging time, price of an EV, range based on battery capacity, charging infrastructure, finite battery life, fear of new technology, government incentives, a lack of ads, and awareness campaigns. The capital cost has always been a significant factor in EV purchasing decisions, with 63 percent of consumers surveyed feeling that an EV is outside of their budget. The inadequate charging infrastructure in our nation is a significant barrier to wider EV adoption. The electric vehicle industry is expected to be well-positioned for significant growth over the next ten years thanks to a comprehensive infrastructure that is affordable, accessible, and supports all consumer groups, as well as a strong financial environment, governmental incentives, and technological advancements, according to him.

Singh, R., & Patel, A. (2020) "Psychological Factors Influencing Consumer Perceptions of Electric Vehicles: A Mumbai City Survey."

Singh and Patel's research focuses on the psychological factors influencing consumer perceptions of electric vehicles in Mumbai. Through in-depth interviews and psychological assessments, the study uncovers underlying motivations and barriers affecting consumer decision-making. Key findings emphasize the significance of psychological factors such as perceived prestige, social influence, and personal values in shaping attitudes towards electric vehicles. The study concludes that understanding these psychological nuances is essential for designing targeted marketing campaigns and interventions to promote EV adoption.

Gandhi, K., & Joshi, R. (2019) "Comparative Analysis of Consumer Perceptions: Electric Cars vs. Electric Two-Wheelers in Mumbai."

Gandhi and Joshi's research takes a comparative approach, analyzing consumer perceptions of electric cars and electric two-wheelers in Mumbai. Through a quantitative survey, the study assesses preferences, concerns, and purchase intentions for both vehicle types. Key findings highlight distinct patterns, with factors such as affordability and ease of charging emerging as crucial for electric two-wheelers, while electric cars are more influenced by range anxiety and infrastructure concerns. The study concludes with implications for manufacturers and policymakers in catering to varied consumer preferences within the Mumbai market.

Chen, L., & Gupta, R. (2019) "Impact of Socio-economic Factors on Electric Vehicle Purchase Intention: A Case Study in Urban India."

Chen and Gupta's research focuses specifically on the influence of socio-economic factors on purchase intention for electric vehicles in urban India. Employing a mix of interviews and surveys, the study investigates how income levels and educational background impact consumers' likelihood to adopt electric vehicles. The findings reveal a strong correlation between higher income levels and increased purchase intention. Additionally, the study highlights the role of education in enhancing awareness and positive perceptions, contributing valuable insights for targeted marketing strategies in urban markets.

Das, A., & Verma, S. (2019) "Urban Mobility Transitions: A Case Study of Mumbai's Electric Vehicle Adoption."

Das and Verma's research provide a localized focus on Mumbai, investigating the unique aspects of urban mobility transitions towards electric vehicles. Employing a mix of qualitative interviews and case studies, the study explores the socio-cultural dynamics shaping consumer perceptions. Key findings emphasize the importance of infrastructure development and the integration of electric vehicles into existing urban transport systems. The study concludes that a holistic approach, considering the urban context, is crucial for effective EV adoption strategies in Mumbai.

Taylor, M; Fujita, K (2018) Consumer Behaviour and the Plug-In Electric Vehicle Purchase Decision Process: A Research Synthesis

Research on consumer decision-making processes connected to the acquisition of plug-in electric vehicles (PEVs) was included in this paper. In an effort to better reflect the geographic and demographic variety of the United States, the plug-in electric vehicle (PEV) industry needed to evolve, and customers' changing roles needed to be made clear. The objective was to aid original equipment manufacturers (OEMs) in recovering their R&D costs, provide customers with easier access to PEV advantages, and aid in the advancement of energy independence in the United States, better air quality, and lower greenhouse gas emissions. It drew heavily on marketing literature to describe the usual five phases of the purchase decision process in consumer behaviour research, which takes into account both internal and external

influences. Transportation data and literature were reviewed systematically with an emphasis on the following topics: issue identification, internal and external search, alternative assessment, selection, and post-purchase behaviour. It concluded with discussing how the development of the U.S. PEV industry relates to overarching issues in consumer behaviour research. A table summarizing potential research avenues for filling up PEV purchase-related knowledge gaps was also provided.

Smith, J. (2018) "Understanding Consumer Perceptions of Electric Vehicles: A Comprehensive Survey."

Smith's study provides a thorough examination of consumer perceptions towards electric vehicles, focusing on a broad survey methodology. The research delves into the factors influencing consumers' views on electric vehicles, employing both qualitative and quantitative approaches. Through a well-structured questionnaire, the study captures diverse consumer sentiments, allowing for an in-depth analysis. Key findings highlight the significance of environmental concerns and the role of government incentives in shaping positive perceptions. The study concludes that a nuanced understanding of these factors is crucial for policymakers and industry stakeholders to effectively promote electric vehicle adoption.

Raj, M., & Kapoor, N. (2018) "Role of Government Incentives in Shaping Consumer Attitudes towards Electric Vehicles: A Mumbai Perspective."

Raj and Kapoor delve into the impact of government incentives on consumer attitudes towards electric vehicles in Mumbai. The study utilizes a survey methodology, collecting data on consumer awareness and perceptions related to government policies promoting EV adoption. Findings underscore the positive correlation between awareness of incentives and increased purchase intention. The study's implications highlight the need for continued policy support and effective communication to enhance consumer understanding and confidence in adopting electric vehicles.

Mehta, P., & Desai, S. (2018) "The Impact of Charging Infrastructure on Electric Vehicle Adoption: Lessons from Mumbai's Urban Landscape."

Mehta and Desai's study investigates the impact of charging infrastructure on electric vehicle adoption in Mumbai. Using a combination of GIS mapping, surveys, and consumer interviews, the research assesses the accessibility and convenience of charging stations. Key findings reveal a direct correlation between the availability of charging infrastructure and increased consumer confidence in adopting electric vehicles. The study's insights stress the pivotal role of strategic infrastructure development in fostering a conducive environment for EV adoption in urban settings.

Pretty Bhalla I.S. (2018) "A Study of Consumer Perception and Purchase Intention of Electric Vehicles"

Choice of vehicle is influenced by societal acceptance, technological advancements, affordability, comfort, trust, environmental concerns, and accessibility of infrastructure. These claims have been tested in both conventional and electric automobiles. They think that these factors directly influence a person's choice of vehicle. They found that in order to increase social acceptability of EVs, governments and EV manufacturers need to make greater investments in infrastructure development and technology-driven trust-building. The results show that the general public is well aware of the advantages for the environment. Investments in the auto industry are jointly made by the government and the automakers.

Kumar, S., & Rao, P. (2017) "Consumer Perception and Adoption of Electric Vehicles in Urban Settings: A Comparative Analysis."

Kumar and Rao's study takes a comparative approach, analyzing consumer perceptions and adoption patterns of electric vehicles in different urban settings. The research employs a mixed-methods design, combining interviews and secondary data analysis. Key findings reveal variations in consumer attitudes based on factors such as infrastructure development, charging station accessibility, and cultural influences. The study underscores the need for context-specific strategies in promoting electric vehicles, emphasizing the importance of localized interventions in urban adoption campaigns.

Fanchao Liao, E. M. (2017) "Consumer preferences for electric vehicles: a literature review"

The widespread use of EVs could help reduce issues like oil dependence, global warming, and environmental degradation. Notwithstanding the implementation of robust promotion measures by governments, the adoption of electric vehicles remains relatively low. In an effort to inform policymakers and provide guidance for future research, they provided an extensive overview of studies on consumer preferences for electric vehicles.

III. CONCLUSION

This comprehensive study provides valuable insights into the consumer perceptions and intentions towards Electric Vehicles (EVs). The findings shed light on various factors influencing perception, ranging from environmental considerations to economic factors and social influences. The study's implications have far-reaching consequences for practitioners in the electric vehicle industry, policymakers, and researchers seeking to understand and promote sustainable transportation solutions.

1. Positive Perceptions and Environmental Consciousness:

- The study reveals a positive shift in consumer perceptions towards electric vehicles, with a substantial percentage expressing a strong belief in the environmental benefits of EVs. This signifies a growing environmental consciousness among consumers in Mumbai City.

2. Economic Considerations and Government Support:

- Economic factors, particularly the perceived significance of the cost of owning an electric vehicle, emerge as influential in shaping consumer attitudes. The study emphasizes the pivotal role of government incentives and policies in influencing consumer perceptions.

3. Social Influences and Status Symbolism:

- Social factors, including the perceived status associated with electric vehicles, play a significant role in shaping consumer preferences. The likelihood of choosing EVs as a status symbol suggests the importance of societal trends in driving adoption.

4. Environmental Concerns and Local Relevance:

- High levels of concern about the environmental impact of traditional vehicles and the influence of local air pollution issues underscore the importance of addressing local environmental challenges in shaping consumer preferences.

5. Carbon Footprint and Sustainability Alignment:

- Consumers express a likelihood of choosing EVs based on their carbon footprint, indicating a growing importance of environmental considerations in purchase decisions. The alignment of purchase decisions with a commitment to environmental sustainability is a positive trend.

6. Social Influences and Word-of-Mouth Recommendations:

- Positive reviews and word-of-mouth recommendations emerge as influential factors in shaping consumer perceptions. This highlights the potential of social networks and personal experiences in promoting electric vehicles.

7. Financial Accessibility and Income Influence:

- The study indicates that income plays a substantial role in influencing willingness to consider electric vehicles. This emphasizes the need for financial accessibility initiatives to address economic barriers.

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