A Study On Customer Preference Towards Electric Bikes (E-Bikes) With Special Reference To Coimbatore City

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Abstract: The growing concern over environmental degradation and rising fuel prices has accelerated the demand for sustainable transportation alternatives, with electric bikes (e-bikes) emerging as a popular choice. This study focuses on understanding customer preferences towards electric bikes, with special reference to Coimbatore city. It aims to identify the key factors influencing consumer decisions, including price, battery life, performance, brand reputation, environmental consciousness, and government incentives. The study is based on primary data collected through surveys conducted among residents of Coimbatore. The results reveal the level of awareness, interest, and potential barriers faced by consumers in adopting e-bikes. The findings are expected to assist manufacturers, marketers, and policymakers in framing strategies to enhance e-bike adoption in urban markets like Coimbatore**.**

Keywords :E-Bikes, Eco-friendly, Transportation, Customer preference, Price, Environment, Market trend

INTRODUCTION:

India is the second-largest producer and market for two-wheelers in the world, following Japan and China. With the growing concerns about environmental pollution, rising fuel costs, and urban traffic congestion, there has been a noticeable shift in consumer preference towards more sustainable modes of transportation. Among these, electric bikes (e-bikes) have emerged as a promising alternative to conventional fuel-powered two-wheelers. Electric bikes offer several advantages such as lower running and maintenance costs, zero emissions, and increasing technological advancements like improved battery life and smart features. However, the transition to e-bikes also presents challenges related to price, performance, charging infrastructure, and consumer awareness. This study focuses on analyzing customer preferences towards electric bikes in Coimbatore city, aiming to identify the factors that influence consumer choices and assess the opportunities and barriers in the adoption of e-bikes in the region.

OBJECTIVES OF THE STUDY

➢ To identify the factors influencing customers' decision to purchase E-Bikes.

➢ To find out the reasons for customer preference towards E-Bikes.

➢ To determine the impact of price, Financing options & government subsidies on purchasing decisions.

➢ To assess the level of awareness and knowledge about Electric bikes.

➢ To explore the impact of social media marketing and online reviews on buying decisions.

➢ To analyse customer satisfaction and experience with electric bikes in terms of performance, comfort, and maintenance.

SCOPE OF THE STUDY

The study aims at finding the customer preference towards electric bikes with respect to Coimbatore city. The study mainly aims to identify the buying behavior the consumers in purchasing the Electric bikes and various factors that influence the consumers to purchase the same. It also deals with analyzing the level of customer preference with respect to e-bikes and their dealers. It is intended to provide with information about customers perception in decision making process, which can be used for developing marketing plans to acquire and retain the customers. This effort is made to know the customer perception with regard to electric bikes, It primarily concentrates on assessing the opinions of the customers in the usage of E- Bikes. The factors that influence them to opt for the E- bikes reveals the buying attitude of the consumers. It also lays down the various driving forces that makes the customers to purchase the Ebike.

STATEMENT OF PROBLEM

The two-wheeler industry is one of the largest industries in the automobile sector of the global market. Being the leader in product and process technologies in the manufacturing sector, it has been recognized as one of the drivers of economic growth. An average two-wheeler customer is at an active stage in the development of the organization. The difference that exists in income, literacy, and culture make it a difficult task to point out the two-wheeler customers and their choice of preference. We are living in an active environment, our needs will be getting changed. With high traffic and not so well-built roads, bikes are the most convenient, efficient, and cost-effective mode of transportation in India. People all over the country prefer to travel on bikes. When it comes to electric bikes, the are costlier, and at the same time, electric bike users do not find a bank for charging their bikes. This makes consumers to prefer electric bikes. In this context, a study of this nature is felt relevan,t and an attempt is being made to analyze the customer preference in detail.

LIMITATIONS OF THE STUDY
➢ The study is based on the convenient random respondents chosen from Coimbatore city. Hence the results of the study cannot be generalized.
➢ Time taken for this study is also Limited.
➢ The Findings of the study may not be generalizable to other contexts such as different cities .
➢ The respondent's views and opinions may hold good for time being and may vary in future.
➢ The study is based upon the primary data, so any wrong information given by the respondents may mislead the findings.

RESEARCH METHODOLOGY
The research methodology outlines the systematic approach adopted to study the customer preference towards Electric bikes in Coimbatore City. It includes the research design, sampling method, data collection techniques, and data analysis procedures.

Research Design:
The research design of the project is descriptive as it describes data and characteristics associated with the consumer preference towards electric bikes. Descriptive research is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables in a given situation.

Sampling Method:
● **Sampling Technique**: The sampling technique used in this study is 'convenience sampling'. Respondents from Coimbatore were selected on the basis of convenience and comfort of the researcher to the information for this study.

- **Sample Size**: The sample size is certified to its nature of data collection. Data collection is based on the primary data. 120 respondents are selected from coimbatore district for the purpose of the study. Direct questionnaires are used to survey the respondents.
- **Area of the Study:** This study has been considered only in Coimbatore.

Data Collection Methods:

- **Primary Data**

  The data which is collected through a structured questionnaire from customers in Coimbatore. It has been collected through questionnaires filled by 120 respondents using or preferring electric bikes, Direct Interviews and field surveys

- **Secondary Data**:

  Collected from Industry Publications, company websites, Journals and internet websites related to Customer preference towards E- Bikes.

Tools for Analysis:

The tools used under for the study are

- Simple percentage
- Chi square

1. SIMPLE PERCENTAGE

The percentage refers to a special kind of ratio in making comparisons between two or more data and describing relationships. Percentage age can also be used to compare the relation terms in the distribution of two or more sources of data.

Simple percentage = Number of Respondents / Total Respondents X 100

2. CHI-SQUARE TEST

The chi-squared test is done to check if there is any difference between the observed value and expected value.

The formula applied for Chi-square $X^2 = \sum (O_i - E_i)^2 / E_i$

Oi-Observed Frequency
E-Expected frequency

REVIEW OF LITERATURE:

1. Subramanian & Singh (2025) focused on consumer satisfaction with electric bikes. Their study found that while a significant portion of customers were satisfied with the low maintenance costs and environmental benefits, many were still dissatisfied with the range and speed of the bikes. Customers using electric bikes for commuting expressed higher satisfaction compared to those using them for leisure, as the former group found the bikes more practical for short trips within the city.

2. **Meena & Ramesh (2024)** conducted a study in South India and concluded that lack of awareness regarding the benefits of electric bikes and the availability of government incentives were significant barriers to adoption. Their study highlighted the necessity for more targeted educational campaigns to improve public understanding and perception of electric bikes.

3. Srinivasan & Nair (2023) explored the specific role of policy interventions in promoting electric mobility. Their research concluded that India's focus on developing charging infrastructure and offering tax exemptions has created a favorable environment for electric bike adoption. The study also suggested that governments should address the issue of electric vehicle repair costs and access to spare parts, which are often seen as barriers to adoption.

OVERVIEW OF THE STUDY:

This study provides a comprehensive insight into the rising adoption and development of electric bikes (e-bikes), focusing on their role as a sustainable and efficient alternative to traditional transportation. It explores the history, features, and major manufacturers of e-bikes, with particular emphasis on their growing popularity in India, especially in Coimbatore. The study also examines government policies supporting the EV sector and highlights key factors contributing to the growth of the e-bike industry, such as technological

advancements, environmental awareness, urbanization, and economic viability. It ultimately underscores the potential of e-bikes to transform urban mobility while promoting eco-friendly transportation solutions.

Table 1
SIMPLE PERCENTAGE ANALYSIS
Table 1 Shows the Demographic profiles

S.No	Demographic		No of Respondents	Percentage
1.	Age	18-25 years	78	65
		26-35 years	23	19.2
		36-45 years	9	7.5
		Above 45 years	10	8.3
2.	Gender	Male	45	37.5
		Female	75	62.5
		Prefer Not to say	0	0
3.	Monthly Income	Rs 10000 - 25000	63	52.5
		Rs 26000 - 40000	22	18.3
		Rs 41000 - 55000	16	13.3
		Above Rs 55000	19	15.8
4.	Educational Qualification	HSLC	19	15.8
		UG	51	42.5
		PG	40	33.3
		Diploma	10	8.3
5	Occupation	Student	44	36.7
		Professional	24	20
		Employee	44	36.7
		Business	8	6.7

Interpretation:

The majority of respondents are young individuals aged between 18 to 25 years, making up 65% of the total sample. Females constitute a larger portion of the respondents at 62.5%, indicating higher female participation in the study. In terms of income, over half of the respondents (52.5%) earn between Rs 10,000 to 25,000, suggesting that many belong to the lower-income group. Educationally, most of the participants are well-qualified, with a significant number holding undergraduate (42.5%) and postgraduate (33.3%) degrees. When it comes to occupation, the responses are dominated by students and employees, each accounting for 36.7%, reflecting a blend of individuals currently studying and those already part of the workforce.

CHI-SQUARE TEST:

Table 2.1

Gender	What is the most important factor for choosing an Electric bikes?				
	Battery life & Charging time	Design & Style	Price and Affordability	Speed and performance	Grand Total
Female	20	22	24	8	74
Male	10	16	11	9	46
Grand Total	30	38	35	17	120

Interpretation :

The two variables are gender and the count of what is the most important factor for choosing an Electric bikes. Degree of Freedom =(r-1)*(c-1). H1=H1 is the alternative hypothesis. There is a relationship between the independent variable and the dependent variable.

Table 2.2

Variable	Degree of freedom	Table value	Calculated value	Accepted/ Rejected
Gender and What is the most important factor for choosing an Electric bike?	4	9.488	2.786	Accepted

Level of significance 5%

RESULT: The calculated value is 2.786, which is less than the table value of 9.488. (H1 hypothesis) There is a significant relationship between gender and what is the most important factor for choosing an Electric bikes.

TABLE 3.1

Which electric bike feature do you consider most innovative?					
Monthly Income	Fast charging	Regenerative braking	Removable battery	Smart Connectivity features	Grand Total
Above Rs 55,000	7	2	1	9	19
Rs 10,000 to 25,000	20	4	9	30	63
Rs 26,000 to 40,000	9	3	6	4	22
Rs 41,000 to 55,000	7	1	6	2	16
Grand Total	43	10	22	45	120

Interpretation:

The two variables are Monthly Income and the count of which electric bike features are considered most in it of the respondents. Degree of Freedom =(r-1)*(c-1). H1=H1 is the alternative hypothesis. There is a relationship between the independent variable and the dependent variable.

TABLE 3.2

Variable	Degree of freedom	Table value	Calculated value	Accepted/ Rejected
WHICH ELECTRIC BIKE FEATURES DO YOU CONSIDER MOST INNOVATIVE	9	16.919	15.53829184	Accepted

Level of significance 5%

RESULT: The calculated value is 15.53829184, which is less than the table value of 16.919. (H1 hypothesis). There is a significant relationship between Monthly income and he count which electric bike features consider most.

FINDINGS:

- The majority 65 % of the respondents are in the age group of 18-25 years.
- The majority 62.5 % of the respondents are Female .
- The Majority42.5% of the respondents, have studied UG.
- The majority of the respondents of 52.5% earn between Rs. 10,000 to 25,000.
- The majority 36.7% of the respondents are equal in Student and Employee
- The majority 62.5 % of the respondents are living in Urban areas
- The majority 85 % of the respondents are Aware of E bikes.
- The majority 31.7 % of the respondents are choosing an E –bike in Design and style.
- The majority 70% of the respondents are Ridden an Electric bikes.
- The majority 35 % of the respondents are Hear about E bikes in Friends & Relatives.
- The majority 35.8 % of the respondents were the new technologies excite you the most of E e-bikes in High-speed models.
- The majority 42.5% of the respondents thought that the speed of e-bikes compared to traditional bikes is fast enough for their needs.
- The majority, 31.7 ,% of the respodents prefer the E bikes in Commuter bike.
- The majority 38.3% of the respondents are Ather Energy brand Prefer of E – Bikes.
- The majority 40% of the respondents are choosing a location for charging an electric bikes in cost of charging.
- The majority 38.3% of the respondents are less than 2 years expect the battery of E – bike to last before requiring a replacement.
- The majority 41.7 % of the respondents are High Initial cost of the primary reason have not yet purchased an E – Bikes.
- The majority 37.5 % of the respondents are Smart connectivity features of E bikes consider most innovative.
- The majority 43.3 % of the respondents are increased purchased subsidies of specfic government incentives or subsidies would make you more likely to purchase an Electric bike.
- The majority 41.7 % of the respondents are the most expensive thing you have heard about E – Bikes.
- The majority 35.8 % of the respondents are trouble had faced on finding parts
- The majority 32.5 % of the respondents are daily often use of E- Bikes.
- The majority 42.5 % of the respondents are Decreased interest in physical activity that the factors influences for increasing the sale of e bikes now a days.
- The majority 35.8 % of the respondents satisfaction level are Satisfied on E - bikes.

SUGGESTIONS:

- ❖ Mostly the e-bikes are used by the people at urban areas because of the availability of charging bunks. Hence the government has to take measures to install the e- bike charging bunks at all places which promote the usage of e-bikes at rural areas.

- ❖ The e- bikes are highly recommended by Female. Hence the manufacturers has to create e- bikes according to the taste and preference of the female to increase the usage and adoption of e-bikes in the society.

❖ The few respondents were trouble facing finding spare parts in regular auto parts, so the companies need to increase the spare parts available for faster repairs.

❖ They suggest to increase the charging stations and locations , it will motivate customer to purchase confidently e bikes in future.

❖ Most of the consumer have an opinion that the e- bike manufacturers should develop the battery backup. Hence the manufacturers can adopt the new technologies to develop the battery capacity of the e- bikes.

CONCLUSION:

In conclusion, a study on customer preference towards electric bikes highlights the growing demand for eco-friendly and sustainable transportation options. The findings suggest that customers prioritize factors such as range, speed, design, and environmental benefits when selecting an electric bike. Moreover, the study reveals that government incentives, charging infrastructure, and technological advancements play a significant role in shaping customer preferences. As the electric bike market continues to evolve, manufacturers and policymakers must prioritize customer needs, invest in infrastructure development, and promote sustainable transportation options to drive adoption and reduce environmental impact. By doing so, electric bikes can become a viable alternative to traditional gasoline-powered vehicles, contributing to a cleaner, healthier, and more sustainable transportation ecosystem for future generations. The findings of this study can inform product development, marketing, and sales strategies, enabling electric bike manufacturers to better meet the evolving needs of customers and stay competitive in the growing electric bike market.

REFERENCE :

● https://www.fortunebusinessinsights.com/electric-e-bike-market-102022

● https://voltbikes.co.uk/e-bike-shops/oxfordshire/oxford

● https://www.bikedekho.com/electric-bikes

● https://www.academia.edu/37106347/E_Bike_Project

● https://en.m.wikipedia.org/wiki/Electric_bicycle

● https://www.carandbike.com/new-bikes/electric-bikes