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# **A Study on Customer Perception towards Electric Two-Wheelers in Chennai**

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## **ABSTRACT**

Global warming has become the primary concern all around, and so there is a necessity to adopt regulations to contain the ever-increasing emission of greenhouse gases. With the contemporary technology in place, transportation and communication have undergone an exemplar change. The automobile companies have felt the need to innovate vehicles that will not depend on fossil fuels. As a result, many companies have invested in R&D to bring forth electric bikes. The study focuses on understanding the customer perception towards the electric two-wheelers across Chennai city. Responses were collected from around 120 bike users to analyze the essential factors relevant to the purchase of electric bikes. The data was analyzed using Univariate and bivariate tools such as chi-square and one-way ANOVA.

**Keywords:** global warming, electric bikes, customer perception.

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## **1. INTRODUCTION**

### **1.1 Customer Perception**

Diverse customers perceive the same product or service in different ways. A customer's perception often deviates from what the producer or service provider had intended to say. Everyone is used to more diverse information than ever before. It is difficult for an offering to get a potential customer's attention. If the customer's perception of the product or service is unfavorable, then it will seldom get a second chance to make a better impression

### **1.2 Electric bikes**

Electric bikes are mostly emission-free bikes, and the unique proposition of the manufactures is being eco-friendly. Electric bikes are different from conventional two-wheelers in certain areas such as four-stroke engines are replaced by batteries; fuel is substituted by electric power.

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## **2. STATEMENT OF THE PROBLEM**

The electric vehicle industry is in the early growth phase in our country. The general public needs to be made aware of these developments, to make this successful. The electric vehicle will be emerging as a critical component in making an emission-free environment. The purpose of the study is to understand the awareness about electric bikes; the preference of the end-users in the particular segment.

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## **3. OBJECTIVES OF THE STUDY**

- To determine the various factors influencing purchase of electric bikes

- To analyze the key attributes of electric bike
- To find out the awareness level towards electric bikes at Chennai city

#### 4. REVIEW OF LITERATURE

**Kunal Dalvi (2020)** evaluated that we have seen the proposed system using a hub motor at the front wheel is best as compared to the existing systems. The system introduced is an innovative step to increase the mileage of electric bikes. As, the cycle of charging and discharging continues, it helps in increasing the battery life. Due to extended battery life, the vehicle battery can run more than that of the existing system.

**Deekshu (2018)** found that most of the customers were satisfied with the mileage of the Electric bikes and are convinced about the electric bike benefits and were willing to refer it to their friends. It was found that most of the customers are not satisfied with after-sales service. It shows that customers are dissatisfied with the sale service. It was found that a maximum number of the customers feel the speed of the electric bikes to be very low and were not satisfied with the current speed of the bikes. It was found that the non-availability of Electric bikes is also a reason for lower market share and consumers not purchasing them.

**Pretty Bhalla (2018)** analyzed electric vehicle manufacturers and the Government of India have to invest more in social acceptance of the vehicle by creating more infrastructural facilities, that the population is well aware of the environmental benefits. Moreover, the responsibility lies on the shoulders of the Government and manufacturers and by investing in the R&D of vehicles; studying the perception of customers towards the use of electric vehicles.

#### 5. RESEARCH METHODOLOGY

##### 5.1. Research and Sampling Methods

The study adopted descriptive research and convenience sampling technique.

##### 5.2. Sampling Size

Sample size used for the study is 120. Online survey was carried out using a structured questionnaire using Google forms among two wheeler users around Chennai city.

##### 5.3. Statistical Tools Used

The primary data collected was analysed using Chi-square test and one way ANOVA.

**The chi-square independence test** is a procedure for testing if two categorical / nominal variables are related in some population. It is the predominantly used non-parametric test in statistical work. The quality  $\chi^2$  describes the magnitude of discrepancy between theory and observation. The greater value of Chi square the greater would be the discrepancy between observed and expected frequencies.

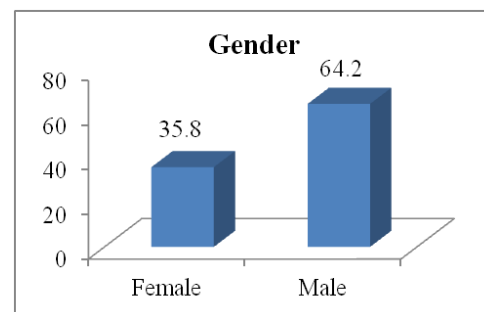
**The one-way analysis of variance (ANOVA)** is a technique used to compare means of three or more samples The ANOVA tests the null hypothesis that samples in two or more categories are drawn from populations with the similar mean values.

#### 6. DATA ANALYSIS AND INTERPRETATION

##### 6.1 Descriptive Statistics

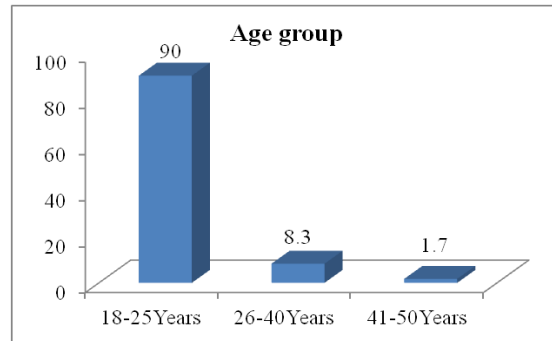
**Table 6.1 Gender**

Gender	Frequency	Percent
Female	43	35.8
Male	77	64.2
Total	120	100.0

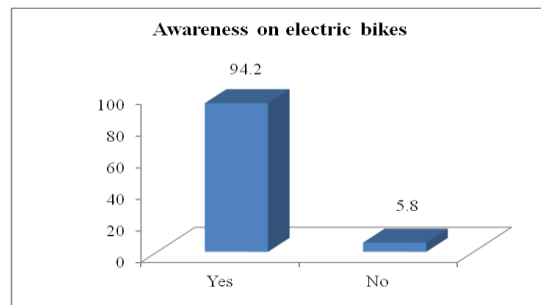


**Table 6.2 Age group**

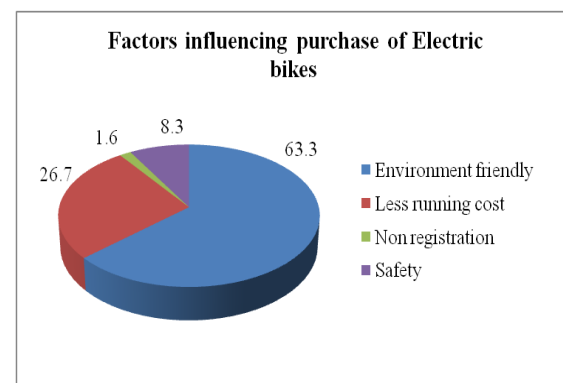
Age group	Frequency	Percent
18-25Years	108	90.0
26-40Years	10	8.3
41-50Years	2	1.7
Total	120	100.0

**Table 6.3 Awareness on electric bikes**

Awareness on electric bikes	Frequency	Percent
No	7	5.8
Yes	113	94.2
Total	120	100.0

**Table 6.4 Factors influencing purchase of electric bikes**

Factors influencing purchase of Electric bikes	Number of respondents	Percent
Environment friendly	76	63.3
Less running cost	32	26.7
Non registration	2	1.6
Safety	10	8.3
Total	120	100.0



## 6.2 Inferential Statistics

### 6.2.1 Chi Square Test

#### Age and Features of Electric bikes

Null Hypothesis ( $H_0$ ): There is no significant association between age of the respondents and feature of electric bikes

Alternative Hypothesis ( $H_1$ ): There is significant association between age of the respondents and feature of electric bikes

**Table 6.5 - Cross-tabulation**

Age	What are the features that you know about electric bikes?				Total
	Low cost	Low weight	None of these	Registration not required	
18-25years	23	40	29	16	108
26-40years	3	0	2	5	10
41-50years	1	0	1	0	2
Total	27	40	32	21	120

Table 6.6 - Chi-square test

	Value	df	Asymptotic Significant(2-sided)
Pearson Chi-Square	12.843 <sup>a</sup>	6	.046
Likelihood Ratio	14.899	6	.021
Linear-by-Linear	.722	1	.396
N of Valid Cases	120		

Since p value is < 0.05 reject null hypothesis

**Inference:** There is association between age group and feature of electric bikes

**Interpretation:** Respondents of different age groups have difference in preference towards the various features of electric bikes.

### 6.2.2 One Way Anova

#### Age group and Attributes of Electric Bikes

**Null Hypothesis (H<sub>0</sub>):** There is no significant difference between respondent's age group and their perception towards the attributes of electric bikes

**Alternative Hypothesis (H<sub>1</sub>):** There is significant difference between respondent's age group and their perception towards the attributes of electric bikes

Table 6.7 - ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	4.104	2	2.052	4.227	.017
	Linear Term					
	Unweighted	.000	1	.000	.000	.982
	Weighted	2.103	1	2.103	4.332	.040
	Deviation	2.001	1	2.001	4.122	.045
Within Groups		56.803	117	.485		
Total		60.907	119			

Since p value is <0.05, reject null hypothesis

**Inference:** There is significant difference between respondent's age group and their perception towards the attributes of electric bikes.

**Interpretation:** Respondents of various age groups have different perception towards various attributes of electric bikes.

## 7 DISCUSSIONS

### 7.1 FINDINGS

- 63.3% of the respondents are influenced by eco friendly aspect of electric bikes
- Around 33.3% of the respondents are agree that electric vehicle is less powerful
- 50.0% of the respondents agree that electric vehicle will be the future.
- Around 46.7% of the respondents agree that electric vehicle will be reliable
- 41.7% of the respondents are not sure that electric vehicle will be able meet the expectations of consumers.
- Around 85.8% of the respondents are willing to buy electric bike in future.

### 7.2 SUGGESTIONS

It is necessary is to take concrete steps to improve the level of awareness on the benefits of electric vehicles among the people. Therefore, the electric bike manufacturers should initiate awareness campaign by highlighting the economic viability of the product against the rising fuel price. The electric vehicle manufacturer should ensure that the customers avail better finance options and EMI by collaborating with any private sector bank or financial Institution.

### 7.3 CONCLUSION

The Electric Bike industry is in a nascent stage still in India, with lots of apprehension about its durability and quality being delivered. While doing this study, it became more clear that lack of awareness, regulatory authority, quality issues are some of the biggest challenges in the industry. But with ever-increasing petrol prices and high pollution, sooner electric bikes will put a serious challenge to the Petrol Bikes. At this stage, the primary focus of the company shall lie in R&D, improving quality, and educating people.

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