Consumer’s Perception Towards Electric Bike with Special Reference to Coimbatore City

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ABSTRACT: In recent years, e-bikes have become increasingly popular as a green alternative to conventional modes of transportation, particularly among urban commuters. The purpose of this study is to learn more about how urban commuters use and adopt e-bikes. We surveyed 500 urban commuters and conducted in-depth interviews with a subset of them using a mixed-methods approach. According to our findings, e-bikes are primarily used for commutes to work or school and provide a convenient and effective mode of transportation for trips of a short to medium length. E-bike adoption is also influenced by costs, infrastructure, and safety concerns, according to our findings. E-bikes have the potential to promote environmentally friendly urban transportation, and our research suggests ways to encourage their use and adoption.

Keywords: E-Bike, consumer perception, infrastructure

INTRODUCTION
India has the third-largest road network in the world. With over 60% of the population commuting in personal or shared vehicles, road travel appeared to be the primary mode of transportation in India. 2020, Statista) Conventional automobiles significantly contribute to air pollution and global warming. Brakes, tires, and road wear all contribute to the formation of dust in automobiles. The air quality is affected negatively by the typical diesel vehicle, but positively by the typical gasoline vehicle. However, electric vehicles outperform gasoline and diesel vehicles in terms of environmental pollution. European Monetary Region, 2018) To deter the buy and utilization of additional dirtying vehicles, legislatures started utilizing monetary arrangements, for example, street charges. When a vehicle is reregistered after 15 years of use, green taxes are imposed to encourage consumers to switch from polluting vehicles to fuel-efficient and polluting ones. Alternative fuels and vehicles that are more fuel-efficient and less polluting may be encouraged by fuel taxes. High gasoline taxes or societal shifts may encourage consumers to buy lighter, smaller, and more fuel-efficient automobiles or to avoid driving altogether. (Policy on transportation)

STATEMENT OF THE PROBLEM
In our country, the electric vehicle industry is in its early stages of development. The general public needs to be made aware of these developments, to make this successful. The electric vehicle will emerge as a critical component in creating a zero-emission environment. The purpose of the study is to understand the awareness about electric bikes; the preference of the end-users in the particular segment.

OBJECTIVES OF THE STUDY
➢ To study about the socio-economic background of the respondents.
➢ To know the level of awareness of consumers using electric bike.
➢ To understand the various factors influencing the sales of electric bike.

SCOPE OF THE STUDY
The study which is titled as “the study on consumer perception toward the Electric Bike in Coimbatore district“ aims at assessing the buying behavior of the people. The study aims at bringing out the reasons behind the post-purchase behavior of the consumers after buying the Electric Bike. The factorsthat influence them to opt for the Electric Bike reveals the buying attitude of the consumer. It also lays down the various driving forces that makes the consumers to purchase the Electric bike.

RESEARCH METHODOLOGY
RESEARCH DESIGN
The term “research design” refers to the overall research strategy that outlines a concise and logical plan for addressing established research question(s) through data collection, interpretation, analysis, and discussion.

DESCRIPTIVE RESEARCH DESIGN
A descriptive research design is one that seeks information to systematically describe a phenomenon, situation, or population. Instead of answering the why, it specifically helps with the what, when, where, and how questions about the research problem.

DATA COLLECTION
To answer stated research questions, test hypotheses, and evaluate outcomes, data collection is the systematic collection and measurement of data information on variables of interest. All fields of study, including the humanities, business, and the physical and social sciences, share a component of research called data collection.

METHODS OF DATA COLLECTION
• Primary Data
• Secondary Data

SAMPLING SIZE
Due to limited period of study. Only 50 people selected as sample unit from the population. The study is conducted on the basis
of the respondents and findings are drawn based on their respondents.

**Tools used for analysis**
- Percentage analysis
- Chi-square

**REVIEW OF LITERATURE**

Mohamed M, G Tamil Arasan, and G Sivakumar (2018): The replacement of ICE with electric engines will reduce pollution to a great extent and be profitable to consumers. Many countries have implemented this technology and are contributing to the improvement of the environment.

Mr. A. Rakesh Kumar, Dr. Sanjeevikumar Padmanaban (2019): Global pollution is on the rise and each effort made, is to cut back the CO2 emissions and save the earth. One such effort is the introduction of EVs. The transport sector is one in all the largest emitters of CO2 and hence it’s important to reduce it.

**AN OVERVIEW ON E-BIKES**

An electric bicycle is simply a bicycle in the first place. It consolidates an electric engine notwithstanding the standard bike plans, calculations, and parts. This is powered by a battery that can be recharged, providing riders with an additional boost of power and, in the end, making cycling simpler, more convenient, and less taxing.

**ADVANTAGES OF E-BIKE**

**Transport at a low cost:**
When compared to other modes of transportation, electric bikes are unquestionably one of the most cost-effective options. You will not need to pay for any exceptional licenses or enlistments with an electric bicycle, nor will you need to pay for stopping, and the expense of re-energizing a battery will be fundamentally not exactly both public transportation charges and a tank of gas.

**Harmless to the ecosystem:**
One of the advantages and disadvantages of electric bikes is that they are environmentally friendly, which is their primary selling point. Smoke and fossil fuels are not used by them; as a result, the air is not polluted. However, this is up for debate due to the fact that the primary source of electricity in the country—coal—would be used to generate the electricity needed to charge these scooters.

**Maintenance:**
When weighing the benefits and drawbacks of electric bikes, one major advantage is the absence of intricate mechanisms. Consequently, electric bikes’ upkeep costs are significantly lower than those of conventional automobiles.

**DISADVANTAGES OF E-BIKE**

**Battery life:**
When electric batteries become damaged or lose their ability to provide a sufficient amount of range, they must be replaced. Depending on rating, brand, quality, and warranties, batteries typically cost Rs. 5,000 to 8,000.

**Range:**
The distance that an electric bike can travel on a single charge is known as its range. The most popular electric scooters in India typically have a range of 100 kilometers. Additionally, as the battery lasts, the range decreases. The battery needs at least five hours to be fully charged, so it might not be the best choice for traveling long distances.

**Maintenance and repairing:**
One of the benefits and drawbacks of e-bikes is the limited availability of repair facilities and spare parts dealers, which can make repairs a challenge. However, as the number of electric vehicles increases, repair services will become more commonplace and more readily available over time.

**DATA ANALYSIS & INTERPRETATIONS**

In this chapter the analysis and interpretation of “Consumer perception towards electric bike with special reference to Coimbatore city” on sample of 50 respondents selected from Coimbatore city is presented. The opinion of the respondents and the relevant information were collected through a questionnaire comprising of personal factors and study factors. The collected information was classified and tabulated and supplemented with the following statistical tools in tune with objectives of the study.

**Percentage analysis:**
The percentage analysis is mainly carried out to determine the percentage of the respondents fall under each category. This analysis also helps to standardize the respondent’s opinion on various aspects. This analysis carried out for all questions given in the questionnaire.

**Chi-Square analysis:**
The chi-square analysis is one of the simplest and most widely used non-parametric tests in statistical work. It is used to test the independence of attributes or factors. In this study the factors are classified under two categories, namely, personal factor and study factors. Each of the personal factors is composed with the study factor and the chi-square test is applied at 5% level of significance.

**Table No.1 Describes the demographic Profile of the Respondents**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Classification</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>31</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>19</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>50</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Below 18 Years</th>
<th>13</th>
<th>26%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19-30 Years</td>
<td>27</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>31-40 Years</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Above 40 Years</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>Married</td>
<td>13</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>37</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education level</th>
<th>Value</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>28</td>
<td>56%</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>11</td>
<td>22%</td>
</tr>
<tr>
<td>Not educated</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual income</th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100000</td>
<td>12</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>100000-200000</td>
<td>15</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>200000-300000</td>
<td>13</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>No income</td>
<td>10</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Interpretation:
From the above table 1, it is clear that the general profile of the respondents shows that:
62% of the respondents are male and 38% of the respondents are female.
26% of the respondents are between below 18 years, 54% are of 19-30 years, 16% are of 31-40 and 4% are above 40 years.
26% of the respondents are married and 74% are single.
18% of the respondents are high school, 56% are bachelor’s degree, 22% are master’s degree, and 4% are not educated.
24% of the respondents are less than 100000, 30% are of 100000-200000, 26% are of 200000-300000, and 20% are of no income.

Table no:2 Describes the relationship between Annual income and Brand preference of E-Bike

Ho: There is no relationship between Annual income and Brand preference of E-Bike
H1: There is a relationship between Annual income and Brand preference of E-Bike

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>31.2</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>24.005</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>50</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

11 cells (73.3%) have expected count less than 5. The minimum expected count is 9.7.
It is conducted that Annual income have significant influencers on brand of e-bike

FINDINGS OF THE STUDY
➢ Majority (62%) of the respondents are male.
➢ Majority (54%) of the respondents are belonging to the age group are 19-30 years.
➢ Majority (74%) of the respondents are single.
➢ Majority (56%) of the respondents are bachelor’s degree.
➢ Most (30%) of the respondents belongs to 100000-200000 as annual income.
➢ There is no significant relationship between annual income and Brand preference of E-bike.

SUGGESTIONS
To raise public awareness of the advantages of electric vehicles, it is necessary to implement concrete measures. As a consequence of this, manufacturers of electric bikes ought to initiate an awareness campaign that places an emphasis on the product's economic viability in the face of rising fuel prices. The manufacturer of electric vehicles should ensure that customers have better financing options and EMI by collaborating with any private sector bank or other financial institution. The use of electric vehicles is supported by the Indian government and state governments through financial incentives. Aside from that, the sales tax (GST) on electric two-wheelers is lower than that on gasoline/diesel vehicles, so you can get tax breaks when you buy one. Electric scooters and bikes cost less to maintain than conventional two-wheelers. There are fewer moving parts in an electric two-wheeler, and it doesn't need to be maintained often.

Electric scooters with a low speed do not need to be registered or insured.

CONCLUSION
In India, the electric bike industry is still in its infancy, with many people concerned about its durability and quality. While conducting this research, it became clear that lack of awareness, regulatory authority, and quality issues are some of the industry's most significant challenges. However, with ever-increasing petrol prices and high pollution, electric bikes will soon pose a serious challenge to petrol bikes. At this point, the company's primary focus will be on R&D, performance improvement, and employee education. This change is possible only if electric two-wheeler companies and marketers can educate potential customers is the right way. Electric two-wheeler marketers need to create awareness and develop positive customer perception about their products.

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