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Consumer awareness and perception towards Electric Bikes Reference to Pollachi Taluk

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Abstract
The rapid growth of environmental concerns and rising fuel costs have accelerated the need for sustainable transportation alternatives, particularly in developing countries like India. Electric bikes (e-bikes) have emerged as a viable solution due to their eco-friendliness, cost-effectiveness, and ease of use. This study examines consumer awareness and perception towards electric bikes in Pollachi Taluk, a semi-urban region with a significant dependence on two-wheelers. The research aims to analyze the socio-economic profile of users, assess their level of awareness, and identify the key factors influencing their purchasing decisions.

Primary data was collected from 210 respondents using a structured questionnaire through a snowball sampling technique. The study employed statistical tools such as percentage analysis, Chi-square test, and Henry Garrett ranking method for data interpretation. The findings reveal that a majority of respondents are young, unmarried individuals from rural backgrounds, with awareness about e-bikes largely influenced by peer groups. While most users recognize the benefits of electric bikes and express satisfaction, factors such as battery backup, appearance, and environmental friendliness play a crucial role in shaping consumer preferences.

The study concludes that although the acceptance of electric bikes is increasing, challenges such as inadequate awareness, limited charging infrastructure, and high initial costs hinder wider adoption. It suggests that improved marketing strategies, infrastructure development, and policy support are essential to enhance consumer adoption. The research contributes to understanding the behavioral aspects of consumers towards sustainable mobility solutions in semi-urban India

Keywords: Electric Bikes (E-Bikes), consumer awareness, consumer perception, sustainable transportation, Electric Vehicles (EVS), buying behaviour

Introduction

In the fast-paced and competitive modern world, automobiles have become an indispensable part of everyday life. In India, two-wheelers dominate the landscape of personal transportation due to their affordability, convenience, and efficiency in navigating congested urban roads. Historically, transportation evolved from walking and animal-powered means to fossil-fueled vehicles. However, the increasing dependency on petrol and diesel engines has raised serious environmental concerns.

The demand for cleaner, more sustainable transportation has prompted a global shift towards electric mobility. Among the alternatives, electric bikes (e-bikes) have emerged as a promising solution. They offer reduced emissions, lower operating costs, and are particularly attractive in a fuel-price-sensitive market like India.

This article delves into consumer awareness and perception of electric bikes in Pollachi Taluk, a region known for its semi-urban and rural demography, providing insight into the attitudes, preferences, and challenges surrounding the adoption of e-bikes.

Statement of the Problem

Despite the increasing environmental awareness and the growing demand for green alternatives, electric bikes are yet to see widespread adoption in Pollachi Taluk. A key reason is the lack of awareness regarding their benefits, government incentives, and long-term cost efficiency. The two-wheeler industry, a significant segment of the Indian automobile sector, continues to rely heavily on traditional fuel-based vehicles.

The core purpose of this study is to evaluate the awareness level and perception of consumers towards e-bikes in Pollachi Taluk. It also seeks to identify the socio-economic factors that influence buying behavior and consumer satisfaction.

Review of Literature

Several studies have examined consumer awareness, perception, and adoption of electric vehicles, particularly electric two-wheelers, in developing economies like India.

A study by Banerjee A *et al.* (2017) [1] highlights that consumer behavior in developing countries is significantly influenced by awareness, social networks, and economic conditions. The study emphasizes that peer influence plays a crucial role in shaping adoption decisions, which aligns with the findings of the present study where friends are a major source of awareness.

Research conducted by Sierzchula W *et al.* (2014) [6] examined the factors influencing electric vehicle adoption across countries and found that infrastructure availability, financial incentives, and environmental awareness are key determinants. The study concluded that lack of charging infrastructure is a major barrier, which is also evident in the current research context of Pollachi Taluk.

According to Rezvani Z *et al.* (2015) [5], consumer perception towards electric vehicles is shaped by performance factors such as battery life, driving range, and maintenance costs. Their study highlights that technological efficiency significantly impacts purchasing decisions. This supports the present study where battery backup emerged as the most influential factor.

A study by International Energy Agency (2022) [3] reports that electric mobility is expanding rapidly worldwide, driven by environmental concerns and supportive government policies. However, the report also indicates that adoption in semi-urban and rural areas remains slower due to limited awareness and infrastructure, which is consistent with the findings in Pollachi Taluk.

Research by Egbue O and Long (2012) [2] identified cost, lack of awareness, and range anxiety as major barriers to electric vehicle adoption. The study also notes that younger consumers are more open to adopting new technologies, which aligns with the current study where the majority of users belong to the 20–30 age group.

Furthermore, a study by NITI Aayog (2021) [4] emphasized the importance of awareness campaigns, subsidies, and infrastructure development to accelerate electric vehicle adoption in India. The report suggests that targeted policies and improved accessibility can significantly influence consumer behavior.

Objectives of the Study

1. To study the socio-economic profile of electric bike users in Pollachi Taluk.
2. To assess the awareness level of consumers regarding electric bikes.
3. To explore the factors influencing consumer perception and buying behavior towards electric bikes.

Methodology

The data for this study was collected through primary sources, using a structured Google Form questionnaire that was distributed among electric bike users in Pollachi Taluk. The questionnaire gathered information related to the socio-economic profile, awareness, and perception of users regarding electric bikes. The study employed a snowball sampling technique to reach a total of 210 respondents, allowing the researcher to access a broader network of e-bike users through referrals. To analyze the collected data, the study utilized various statistical tools, including Simple Percentage Analysis for summarizing demographic data, the Chi-Square Test to examine associations between socio-economic factors and awareness levels, and the Henry Garrett Ranking Method to identify key factors influencing consumer preferences.

Key Findings and Discussion

The analysis of data collected from respondents in Pollachi Taluk provides valuable insights into the socio-economic profile, awareness levels, usage patterns, and perceptions regarding electric bikes.

The socio-economic profile of the respondents indicates that a significant proportion (69.5%) reside in rural areas, reflecting the growing penetration of electric bikes in village regions. The majority of respondents are male (61.9%) and predominantly belong to the younger age group of 20–30 years (72.4%), suggesting that youth are the primary adopters of e-bikes. A large percentage (82.4%) are unmarried, and 60.5% possess undergraduate-level education. Students form the largest occupational group (51.4%), and most respondents belong to nuclear families (71.9%). In terms of income, 31.4% of respondents earn between ₹10,001 and ₹20,000 per month, indicating that electric bikes are gaining acceptance among middle-income groups.

With regard to awareness and usage patterns, it is observed that 48.1% of respondents became aware of electric bikes through friends, highlighting the importance of word-of-mouth communication in influencing adoption. A majority (56.2%) have been using electric bikes for less than six months, indicating that the market is relatively new and still evolving. Brand preference shows that 43.8% of users favor Hero Electric, suggesting moderate brand dominance in the region. In terms of performance, 38.1% reported a charging time of 2–4 hours, while 29% indicated a mileage of 21–30 kilometers per charge. A substantial proportion of respondents (85.7%) are convinced about the benefits of electric bikes, and 87.6% believe that they offer value for money. Furthermore, 87.1% expressed willingness to recommend e-bikes to others, while 51% reported no major drawbacks, reflecting a generally positive user experience.

The perception and preference analysis reveals that comfort and high speed are the most important attributes influencing consumer choice. Among various factors, battery backup emerged as the most critical determinant, followed by appearance, environmental friendliness, ease of maintenance, and mileage. These findings indicate that both functional and aesthetic aspects play a significant role in shaping consumer preferences.

The statistical analysis further strengthens these observations. The Chi-square test results reveal that there is no significant association between demographic variables such as age, gender, education, and income with the awareness level of electric bikes. This suggests that awareness is relatively uniform across different socio-economic segments, though it remains moderate overall. The Henry Garrett ranking method was employed to identify the most influential factors affecting consumer choice. The results indicate that battery backup ranks first, followed by appearance, environmental friendliness, easy maintenance, and mileage. Other factors such as safety, speed, advertisement, price, and design were ranked subsequently.

Overall, the findings highlight that while consumer perception towards electric bikes is largely positive, improvements in performance, infrastructure, and awareness initiatives are necessary to accelerate their adoption in semi-urban and rural regions like Pollachi Taluk.

Suggestions

1. Price Reduction: Lower the initial cost of electric bikes to attract a wider customer base, particularly in middle-income groups.
2. Better Infrastructure: Improve charging station availability and extend battery capacity to support longer trips.
3. Awareness Campaigns: Educate the public on tax exemptions, subsidies, and registration benefits associated with e-bikes.
4. Promotional Strategies: Engage in robust marketing and promotional campaigns to increase visibility and interest.
5. Focus on R&D: Invest in enhancing performance, comfort, and battery efficiency to align with customer expectations.
6. Establish Charging Hubs: Build charging points at public locations to address range anxiety and increase convenience.

Conclusion

The electric bike industry in India is still growing, especially in semi-urban areas like Pollachi Taluk. This study shows that more people are willing to switch to electric bikes because they are cost-effective and environmentally friendly. However, challenges like low awareness, poor infrastructure, and limited brand presence still exist. As fuel prices rise and pollution increases, electric bikes offer a strong alternative to traditional two-wheelers. To support this shift, companies need to focus on educating consumers, improving charging facilities, and providing better models. The future of electric mobility in India will rely on informed buyers, government support, and continued innovation.

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