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Study On Factors Influencing Consumer Behaviour Towards Electric Two – Wheelers In Coimbatore City

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Abstract

India's transition to electric mobility is propelled by rising fuel prices, supportive government policies, and growing environmental awareness. A study conducted in Coimbatore city examined consumer behavior towards electric two – wheelers, focusing on factors such as Brand perception, Affordability, Eco – friendliness, Technological advancements, Awareness levels, and the availability of charging infrastructure. The results showed that while consumers are becoming more aware of the benefits of electric vehicles, challenges like inadequate charging facilities, high upfront costs, and concerns about batteries continue to hinder widespread adoption. The study provides valuable insights for manufactures, policymakers, and marketers who aim to promote sustainable transportation in urban areas.

Key Words: Government policies, Charging infrastructure, Sustainable transportation.

INTRODUCTION

In today's competitive and fast-paced world, bikes have become essential for daily commutes, offering a convenient and time-saving transportation option. Among them, bicycles stand out as an eco-friendlier choice for short distances, making them indispensable for navigating bustling city streets. They provide a practical means of travel, reducing time, energy, and effort while improving productivity and performance. However, concerns over greenhouse gas emissions, environmental degradation, and climate change have compelled humankind to seek alternative fuel sources. As a result, many have turned to electric bicycles, which effectively reduce carbon footprints and promote sustainability.

Electric bicycles have emerged as a popular choice among environmentally conscious individuals, providing the benefits of biking without the negative impact associated with traditional fuel-powered vehicles. They offer a green and clean way to travel, making them an ideal alternative for those looking to change their everyday commute. As the push for sustainable transportation gains momentum, e-bikes present a practical solution for reducing environmental impact. Whether in urban or rural areas, riders can now enjoy the fresh air and scenic views while effortlessly conquering hills and valleys, all with a clear conscience.

These modern two-wheeled marvels have revolutionized transportation by offering a fun and sustainable alternative. Their sleek design and eco-friendly attributes appeal to individuals who value both style and environmental responsibility. With quiet motors and zero emissions, electric bicycles enable riders to travel efficiently while being mindful of global warming and pollution. Electric vehicles, in general, are considered the best option for reducing greenhouse gas emissions, air pollution, and reliance

on fossil fuels in the transportation sector, which accounts for 29% of global emissions. Transitioning to electric mobility is crucial for improving air quality and minimizing environmental harm.

Electric vehicles, including e-bikes, produce fewer greenhouse gases compared to gasoline or diesel-powered vehicles. Moreover, when powered by renewable energy sources such as solar, hydroelectric, and wind power, their environmental benefits increase significantly. Additionally, the recyclability of e-bike batteries makes them more sustainable than traditional automobiles.

This study aims to examine the factors influencing Coimbatore residents' decisions to purchase electric bikes. Key factors considered include price sensitivity, environmental consciousness, government incentives, brand perception, performance expectations, and post- purchase satisfaction. It also explores the role of age, occupation, and income level in e-bike adoption. By understanding consumer preferences and motivations, the study seeks to provide valuable insights for manufacturers and policymakers to enhance product offerings, improve marketing strategies, and promote the widespread adoption of electric mobility in Coimbatore.

REVIEW OF LITERATURE

Dr. M. Kalimuthu, Sugeerthi AV (2023), The car industry is adopting electric vehicles due to concerns about fuel depletion and greenhouse gas emissions. However, legal frameworks, individual psychological characteristics, and societal acceptance hinder commercialization. Governments promote electric vehicles for their mobility and pollution reduction. Tests show that electric motorcycles and four – wheelers could be economically viable by 2020 and 2030. Policymakers are encouraging and increasing electric use to meet Sustainable Development Goals.

Ms. Sangeetha, Dr. M. Gurupandi (2023), Electric bikes are becoming a significant part of two – wheeled transportation in China, surpassing bikes in cities like Chengdu and Suzhou. This shift is crucial for understanding personal mobility in developing countries like China, which is on the verge of widespread motorization. A study aims to understand factors influencing electric bike purchases in Karaikudi Taluk, Sivagangai district, using a structured questionnaire and correlation factor matrix.

Dr. N. S. Lissy, Dr. J. Mahalakshmi (2022), The depletion of fossil fuels and price bikes necessitate the use of alternative energy sources, with the automobile sector considering electric vehicles in India. Despite government policies, market penetration remains low. This paper examines the potential scope of electric vehicles and consumer perception.

Daniel Andersson, Joel Ahlbom (2019), The market for e – bikes is covered in this chapter, and social influence and symbolic values may be factors in their expansion. We found that students between the ages of 21 and 30 and cycling enthusiasts are the two demographics that are underrepresented in e – bike sales order to better investigate the factors that influence some consumers' desire for e – bikes and others' avoidance of them.

Aswin George and Adarsh Sureshkumar (2024), This chapter presents the study's background, giving the required background information and establishing the research's framework. A problem statement that identifies the gaps in the present body of research, explains how this study intends to fill those gaps, and describes the research's scope comes next. The main research questions that direct the study are presented at the end of the chapter, along with a clear statement of the research goal.

STATEMENT OF THE PROBLEM

A study conducted in Coimbatore city highlights that the increasing demand for e-bikes is largely driven by surging fuel prices, growing environmental awareness, and advancements in battery technology. However, despite government incentives, the widespread adoption of e-bikes is still challenged by high initial costs and insufficient charging infrastructure. To encourage electric vehicle usage, both manufacturers and policymakers must gain a deeper understanding of consumer buying behavior. The evolving competition between conventional fuel – powered two – wheelers and electric alternatives is reshaping the market landscape. The future growth of the e – bike industry will rely on enhanced infrastructure, more affordable pricing, and strategic, customer – focused marketing efforts.

SCOPE OF THE STUDY

The study examines consumer behavior towards electric two – wheelers in Coimbatore city, focusing on socioeconomic factors like income and occupation. It examines user experience, after – sales support, and product quality. Post – purchase behavior is also examined. The study aims to understand the primary drivers behind the transition from traditional fuel – powered bikes to electric alternatives,

including affordability, environmental consciousness, and technological advancements.

OBJECTIVES OF THE STUDY

- To study consumer awareness and opinions about electric two – wheelers
- To understand the factors influencing people to buy electric two – wheelers
- To identify the main reasons for choosing or avoiding electric two – wheelers
- To analyze how people, use and maintain their electric two – wheelers after purchase
- To find out the challenges and opportunities for electric two – wheeler adoption

RESEARCH METHODOLOGY

Research Methodology is the structured approach used to conduct a study, ensuring accurate data collection, and interpretation.

Research Design

- **Sampling Technique:** Descriptive research design, 120 respondents across various age group and gender.
- **Source of Data:** Primary data and Secondary data.
- **Statistical Tools Used:** Simple percentage analysis, Likert scale, and Frequency.
- **Period of Study:** The research will be conducted over a period of four months from December 2024 to March 2025.

LIMITATION OF THE STUDY

- The study is limited to Coimbatore city and therefore the study cannot be extended to other areas the findings may not be generalizable to a wider population.
- However the study aims to provide valuable insights into the e – bike market in Coimbatore which can be beneficial for future research and industry development.
- The research was conducted within a limited timeframe to provide recommendations for future research based on the insights obtained from the study.
- The electric bike industry is rapidly evolving with new technologies and models being introduced frequently as a result the study's finding may become less relevant over time.

FINDINGS

Parentage Analysis

- Majority 41% of the respondents are age group between 21 – 30 years.
- Majority 57% of the respondents are female.
- Majority 56% of the respondents are under graduate.
- Majority 48% of the respondents belongs to student community.
- Majority 63% of the respondents are unmarried.
- Majority 44% of the respondents are below Rs.20,000.
- Majority 54% of the respondents have 4 members in their family.
- Majority 44% of the respondents came to know from social media.
- Majority 43% of the respondents suggest that consumers are primarily motivated by sustainability and financial benefits, with other factors playing a lesser role in influencing their choices.
- Majority 39% of the respondents can offer Rs.50,001 – 80,000.
- Majority 33% of the respondents spending Rs.2001 – 3000.
- Majority 80% of the respondents can offer the cost for maintaining e-bikes.
- Majority 72% of the respondents agree that e-bikes are better than fuel vehicles.
- Majority 37% of the respondents are charging 3 times in a week.
- Majority 48% of the respondents are spending between Rs.1001 – 1500.
- Majority 45% of the respondents are likely to recommend e-bikes to others.
- Majority 55% of the respondents are answered yes.
- Majority 41% of the respondents have neutral maintenance.
- Majority 34% of the respondents have safety issues.
- Majority 30% of the respondents get 51 to 60 kms mileage.
- Majority 78% of the respondents have consumed average amount of energy.

- Majority 48% of the respondents tells good for regular use.
- Majority 75% of the respondents tells the e-bikes are safe for seniors.
- Majority 36% of the respondents use e-bikes for 5 to 6 years.

LIKERT SCALE

- **Price (Likert value : 4.2 – Important)**
  Majority (53%) consider price as a very important, making affordability a key concern
- **Battery life (Likert value : 4.18 – Important)**
  42% rated battery life as very important, indicating its major role in decision – making.
- **Design / Style (Likert value : 3.6 – Important)**
  While 35% find design very important, a notable portion (32%) remains neutral.
- **Performance / Speed (Likert value : 3.9 – Important)**
  45% consider speed and performance as very important, showing a preference for powerful e-bikes.
- **After-Sales Service (Likert value : 3.7 – Important)**
  44% rate after-sales service as very important, emphasizing the need for strong customer support.

FREQUENCY

- Majority 24% of the respondents choose Ola electric bike.
- Majority 42% of the respondents satisfies in lower cost.
- Majority 28% of the respondents have throttle problems.

SUGGESTIONS

- Most respondents acknowledge e-bikes as a sustainable substitute, although many are unclear about their advantages. Consumer confidence may be raised through test-ride events and awareness efforts. Marketing tactics should emphasize price, long-term savings, and eco-friendliness because many consumers are students and young professionals.
- High expenses, safety concerns, an infrastructural problem are major difficulties. Adoption can be increased by working with the government to upgrade the infrastructure for charging. Offering subsidies and EMI financing options might contribute to greater affordability.
- Consumers deal with difficulties including throttle faults, controller failures, and motor connection concerns. Manufactures have to concentrate on enhancing component longevity and offering simple maintenance solutions. Some responders are concerned about maintenance expenses and battery life. These worries might be allayed by providing extended warranties and servicing plans.
- Ensuring quality control in key components (motors, controllers, throttles) can improve reliability and decrease complaints; introducing compact and lightweight models can cater to urban users seeking convenience; and improving battery efficiency to increase mileage per charge, which would address consumer expectations (most expect 50 – 70 km per charge).

CONCLUSION

According to the survey, although e-bikes are becoming more popular, major issues including expense, upkeep, and infrastructural constraints continue to prevent widespread adoption. Together, manufacturers and legislators must enhance charging infrastructure, increase product longevity, and launch awareness efforts to inform customers of the long-term advantages of e-bikes. Greater adoption and a more sustainable urban transportation system will result from addressing these issues.

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