

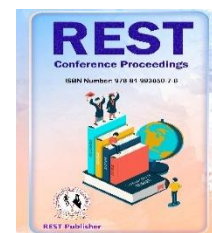


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# A Study on Customer Attitude towards E - Bike in Amravati City

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**Abstract:** The electric two-wheeler market in India is rapidly growing, with cities like Amravati showing increased interest due to environmental concerns and affordability. This study analyses consumer perceptions of leading electric two-wheeler brands—Ola, TVS iQube, Bajaj Chetak, and Green Invicta—in Amravati City. It aims to evaluate customer awareness, assess factors like brand image, pricing, and features, and compare brand preferences. A mixed-methods approach was used, combining primary data from surveys and interviews with secondary sources, based on a sample of 100 respondents. Findings reveal high awareness and ownership among a predominantly young demographic, with preferences driven by environmental benefits, low running costs, and social influence. Ola emerged as the most preferred brand. However, concerns like limited range, long charging times, and distrust in technology remain significant barriers. The Chi-square test showed brand awareness, product features, and pricing significantly influence consumer attitudes. Advertisements and word-of-mouth were key information sources, while poor after-sales service and lack of charging infrastructure were major deterrents. The study concludes that strategic digital marketing, infrastructure development, and government support are crucial for wider adoption. It highlights the need for collaboration between manufacturers and local dealers to promote sustainable urban mobility in tier-2 cities like Amravati.

**Keywords:** Electric Two-Wheeler, Consumer Perceptions, Brand Awareness, Sustainable Transportation, Amravati City.

## 1. INTRODUCTION

India's electric two-wheeler market is experiencing significant growth, driven by heightened environmental awareness, rising fuel prices, and worsening traffic conditions in urban areas. This surge is especially evident in tier-2 cities like Amravati, where consumers are increasingly inclined toward affordable and sustainable transportation options. Electric two-wheelers have emerged as a practical solution, offering a balance between eco-friendliness and everyday commuting convenience. The market features a diverse range of models catering to different user preferences. The Bajaj Chetak, with its vintage-inspired design and modern smart features, appeals to tech-savvy youth seeking both style and substance. TVS iQube is favored for its reliability and environmentally friendly performance, making it ideal for routine urban travel. In the premium segment, Ola S1 and S1 Pro stand out with their powerful engines, sleek aesthetics, and cutting-edge technology, capturing the attention of trend-conscious riders. Meanwhile, the Green Invicta serves the needs of budget-minded customers by offering an energy-efficient, low-maintenance option. This variety reflects the evolving maturity and adaptability of the market, positioning electric two-wheelers as a strong alternative to conventional petrol vehicles. Key adoption factors include cost savings, zero emissions, ease of navigation in congested areas, and reduced operating costs. As consumer interest grows, attention is shifting towards enhancing charging infrastructure, advancing battery technologies, expanding awareness campaigns, and strengthening after-sales service. These strategic efforts are crucial for accelerating the adoption of green mobility and ensuring the long-term viability of electric two-wheelers in cities like Amravati and across the country.

## 2. PROBLEM DEFINITION

Defining research problem allows the researchers to focus on the how, what, which, why, who, when, where question needed to guide the formulation of research objectives and clarify the pertinent information requirements. All the efforts, time and money execute research will be wasted if the research problem will be misunderstood. This study analyses customer attitudes towards e-bikes in Amravati, focusing on perceptions, usage, satisfaction, adoption barriers, and comparisons with other transport options. It aims to provide actionable insights for OLA and stakeholders to improve e-bike services, promote sustainable mobility, and meet the evolving needs of customers in Amravati.

### 3. REVIEW OF LITRATURE

Several studies have examined the growing adoption of electric bikes in Amravati, shedding light on consumer behavior and key influencing factors. Kumar et al. (2019) revealed that eco-friendly values play a significant role in shaping consumer attitudes toward electric vehicles (EVs), with sustainability emerging as a strong motivator for purchases, particularly of budget-friendly models like the Green Invicta. Kumar and Rani (2020) observed a rising interest in e-bikes driven by environmental consciousness and cost-effectiveness, though they noted persistent challenges such as limited awareness about battery longevity and the lack of robust charging infrastructure. Further, Desai and Shah (2021) emphasized the impact of technological advancements—such as extended battery life and reduced charging times—in mitigating consumer concerns like range anxiety. Vikram and Yadav (2022) highlighted inadequate charging infrastructure as a primary barrier to widespread EV adoption, recommending investment in more public and private charging stations. Finally, Dhanraj et al. (2022) pointed out consumer skepticism regarding EV reliability, especially battery performance, and stressed the importance of enhancing local dealership presence and after-sales service to build confidence in tier-2 cities like Amravati.

### 4. RESEARCH METHODOLOGY

The present study is carried out to know Perception analysis regarding an analytical study of customer attitude toward OLA, Chetak, TVs, Green Invicta, and e bike in Amravati city. Methodology of the research includes primary and secondary data through interview, observation, and online information. A sample size of 100 respondents will be chosen to ensure statistical significance and diverse representation of customers.

### 5. OBJECTIVES

- To evaluate customer awareness of e-bikes.
- To identify factors influencing customer attitudes toward different e-bike brands.
- To analyze the role of brand image and product features in decision-making.
- To compare customer perceptions of the four e-bike brands.
- To recommend strategies to enhance e-bike adoption in Amravati City.

#### Scope of the Study

Electric bikes are gaining popularity in Amravati for their eco-friendliness and affordability. Studying public attitudes will help understand adoption drivers and challenges for better integration into the city's transport system.

#### Limitations

Results may not represent the broader population of Amravati, as certain groups (e.g., tech- savvy) may be overrepresented. Responses may be influenced by social desirability or inaccurate self-assessments, leading to biased results. The focus on brand awareness and price may overlook other factors, like infrastructure or government policies, affecting e-bike adoption. Limited language options may exclude non-English/Hindi speakers, affecting response rates. Variations in individual perceptions could result in inconsistent data, especially on abstract concepts like affordability

### 6. HYPOTHESES OF THE STUDY

**Null Hypotheses (H0):** Customer attitude towards e-bikes (Ola, TVS, Green Invicta, and Chetak) in Amravati City is not significantly influenced by factors such as brand awareness, product features, and price sensitivity.

**Alternative Hypotheses (H1):** Customer attitude towards e-bikes (Ola, TVS, Green Invicta, and Chetak) in Amravati City is significantly influenced by factors such as brand awareness, product features, and price sensitivity.

## 7. HYPOTHESIS TESTING

**TABLE 1.** Observed Frequency Table

| Brand Satisfaction | Highly Satisfied | Satisfied | Neutral | Dissatisfied | Highly Dissatisfied | Row Total |
|--------------------|------------------|-----------|---------|--------------|---------------------|-----------|
| Brand              |                  |           |         |              |                     |           |
| Ola                | 8                | 10        | 10      | 9            | 3                   | 40        |
| Chetak             | 6                | 6         | 6       | 5            | 2                   | 25        |
| TVS                | 3                | 3         | 4       | 3            | 2                   | 15        |
| Green Invicta      | 2                | 3         | 3       | 5            | 2                   | 15        |
| Other              | 1                | 1         | 2       | 0            | 1                   | 5         |
| Total              | 20               | 23        | 25      | 22           | 10                  | 100       |

**TABLE 2.** Expected Frequency Table

| Brand Satisfaction | Highly Satisfied | Satisfied | Neutral | Dissatisfied | Highly Dissatisfied |
|--------------------|------------------|-----------|---------|--------------|---------------------|
| Brand              |                  |           |         |              |                     |
| Ola                | 8                | 9.2       | 10      | 8.8          | 4                   |
| Chetak             | 5                | 5.75      | 6.25    | 5.5          | 2.5                 |
| TVS                | 3                | 3.45      | 3.75    | 3.3          | 1.5                 |
| Green Invicta      | 0.3              | 3.45      | 3.75    | 3.3          | 1.5                 |
| Other              | 1                | 1.15      | 1.25    | 1.1          | 0.5                 |

**TABLE 3:** Chi square test

| Observed Value (O) | Expected Value (E) | (O - E) | (O - E) <sup>2</sup> | (O - E) <sup>2</sup> / E |
|--------------------|--------------------|---------|----------------------|--------------------------|
| 8                  | 8                  | 0       | 0                    | 0                        |
| 10                 | 9.2                | 0.8     | 0.64                 | 0.0696                   |
| 10                 | 10                 | 0       | 0                    | 0                        |
| 9                  | 8.8                | 0.2     | 0.04                 | 0.0045                   |
| 3                  | 4                  | -1      | 1                    | 0.25                     |
| 6                  | 5                  | 1       | 1                    | 0.2                      |
| 6                  | 5.75               | 0.25    | 0.0625               | 0.0109                   |
| 6                  | 6.25               | -0.25   | 0.0625               | 0.01                     |
| 5                  | 5.5                | -0.5    | 0.25                 | 0.0455                   |
| 2                  | 2.5                | -0.5    | 0.25                 | 0.1                      |
| 3                  | 3                  | 0       | 0                    | 0                        |
| 3                  | 3.45               | -0.45   | 0.2025               | 0.0587                   |
| 4                  | 3.75               | 0.25    | 0.0625               | 0.0167                   |
| 3                  | 3.3                | -0.3    | 0.09                 | 0.0273                   |
| 2                  | 1.5                | 0.5     | 0.25                 | 0.1667                   |
| 2                  | 0.3                | 1.7     | 2.89                 | 9.6333                   |
| 3                  | 3.45               | -0.45   | 0.2025               | 0.0587                   |
| 3                  | 3.75               | -0.75   | 0.5625               | 0.15                     |
| 5                  | 3.3                | 1.7     | 2.89                 | 0.8756                   |
| 2                  | 1.5                | 0.5     | 0.25                 | 0.1667                   |
| 1                  | 1                  | 0       | 0                    | 0                        |
| 1                  | 1.15               | -0.15   | 0.0225               | 0.0196                   |
| 2                  | 1.25               | 0.75    | 0.5625               | 0.45                     |
| 0                  | 1.1                | -1.1    | 1.21                 | 1.1                      |
| 1                  | 0.5                | 0.5     | 0.25                 | 0.5                      |
| Chi Square Test    |                    |         |                      | 13.673                   |

Degrees of Freedom:  $(5-1)(5-1) = 16$

Critical value: @ 0.05 = 26.296

Chi - Square = 26.296 > 13.673

## 8. RESULT

Accept Alternative Hypothesis (H1) i.e. Customer attitude towards e-bikes (Ola, TVS, Green Invicta, and Chetak) in Amravati City is significantly influenced by factors such as brand awareness, product features, and price sensitivity.

### Finding

The study found that most respondents were aged 21–29, indicating strong interest in e-bikes among younger, tech-savvy users, while older age groups were less represented. Awareness and ownership of e-bikes were high, driven by environmental concerns, cost-effectiveness, and modern appeal. Key barriers included high cost, limited battery range, and performance issues. Information sources were mainly outdoor ads and word-of-mouth. Despite challenges, future purchase intent remained strong, with Ola being the most preferred brand for its features and reputation.

### Suggestion

The study found that although awareness and ownership of e-bikes in Amravati are relatively high, many consumers still lack a comprehensive understanding of their full benefits. This knowledge gap underscores the need for stronger promotional efforts from manufacturers and dealers. Targeted awareness campaigns focusing on environmental and health benefits can effectively educate potential buyers. Digital marketing and social media platforms offer powerful tools to reach a broader, tech-savvy audience. Enhanced coordination between manufacturers and dealers is also necessary to ensure consistent messaging and build consumer trust. Additionally, government support is vital—especially in the form of incentives and infrastructure development. The lack of sufficient charging stations remains a major barrier, contributing to range anxiety and limiting user confidence in longer commutes. Expanding the charging network would directly address this concern and encourage more widespread adoption. By combining educational campaigns, digital outreach, and robust policy support, stakeholders can cultivate a better-informed and more confident consumer base. These efforts are essential for accelerating the transition to electric mobility in tier-2 cities like Amravati, ultimately contributing to a more sustainable and eco-friendly urban transport ecosystem.

## 9. CONCLUSION

The study revealed that awareness and ownership of e-bikes in Amravati are notably high, with many respondents acknowledging their environmental benefits and role in mitigating global warming. Key factors driving e-bike purchases include eco-friendliness, affordability, and peer influence. However, several barriers continue to hinder broader adoption. These include limited battery range, long charging times, high initial costs, and concerns about the reliability of newer electric vehicle technology. Despite the growing interest, issues such as inadequate charging infrastructure, safety concerns, and operational costs impact consumer confidence and future purchase intentions. While many respondents view e-bikes as a positive step towards sustainable transportation and would recommend them to others, hesitations remain due to practical limitations. To foster greater adoption, the study recommends investments in charging infrastructure, battery improvements, and government incentives to reduce costs. Awareness campaigns highlighting health, environmental, and long-term financial benefits could also enhance consumer understanding. Addressing these challenges through coordinated efforts between manufacturers, dealers, and policymakers can help make e-bikes a viable and attractive mobility option, especially in tier-2 cities like Amravati, ultimately accelerating the transition towards cleaner and greener urban transportation.

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