International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 08 Issue: 05 | May - 2024 SJIF Rating: 8.448 ISSN: 2582-3930

Exploring Consumer Behavior and Attitudes towards E-Bikes in Sangli City

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Abstract - The objective of this research is to explore the diverse influences on consumer attitudes toward E-Bikes. By grasping these influences, businesses can refine their marketing tactics to resonate with consumers, thereby boosting adoption rates. Additionally, policymakers can leverage these insights to develop infrastructure and awareness initiatives that tackle consumer apprehensions and advocate for E-Bikes as an eco-friendly and economical transportation alternative. Further, understanding how consumers perceive and feel about E-Bikes allows manufacturers and retailers to customize their marketing strategies, resonating more effectively with their intended audience.

***Key Words*:** E-bike, Charging stations, Electric Vehicles, Mileage

1. INTRODUCTION

E-Bikes are gaining significant traction in India as a promising solution to the country's urban transportation challenges. According to a recent research report, India becoming the third-largest market for electric vehicles in the world within 5 years (Navigant, 2014) while interest in the bicycle's role within Western urban transport systems is increasing, as evidenced by studies by Fishman (2014) and Handy et al. (2014). Researchers (Ji et al., 2013; Xu et al., 2013) have voiced their views on the environmentally efficient design of e-bikes. They contend that e-bikes emit fewer greenhouse gases per person compared to cars, public transport, taxis, and two-wheelers. A comparative (Cherry, Cervero 2007) analysis were made within two cities in China for examine the motive behind the usage of electric vehicles.

Capitalizing on substantial market potential, the industry is adapting its e-bike models to suit the needs of female users. Calfee (1985) conducted a survey aimed at discerning consumer preferences concerning attributes of electric vehicles such as price, operating costs, and comfort. Alamelu (2025) have studied about the preference of E-bike by the women.

Farhat et al. (2020) center their attention on evaluating brand image, experience, attributes, and influence as factors influencing brand engagement. The aim of this study is to enhance customer relationship management and bolster user brand equity. Das (2020) pointed out that awareness regarding electric vehicles is significantly low, indicating the need for marketers to cultivate a positive perception. Given that electric vehicles hold potential as substantial solutions to global warming and pollution, it's essential for both governments and marketers to educate the public about their benefits and encourage adoption. Furthermore, Rajiv and Kavitha (2016) found that numerous customers perceive electric bikes as costly, and many are unaware of their advantages. Factors such as extended charging times, limited battery life, reduced mileage, and lower speeds are considered influential in customers' purchase decisions, while advertisements appear to have minimal impact.

Motive of current study is to know the interest of people towards purchasing E-Bikes and to find out the reasons behind it. Objectives of the study are:

- To identify the main reason of E-Bike lower sales in market according to users.
- To find out the factor influencing the sales of E-Bike.
- To study the customer review towards E-Bike

Hypothesis:

H_{01}: Expected mileage and mileage observed by customers are not significantly different.

H_{02}: Expected charging time & observed charging time are not significantly different.

2. METHODOLOGY

In this study the survey is conducted to get primary data in Sangli city of Maharashtra. The data is collected using online surveys and direct interviews of E-bike customers. In the current study we have observed that there are 66% respondents prefer to buy RTO passing E-Bike and 34% respondents prefer to buy RTO non-passing E-bike. Moreover, Okinawa boasts substantial market demand, with Blix and Jitendra also commanding their share of the market demand.

3. DATA ANALYSIS AND RESULTS

Table 1: Frequency Distribution

Classifications	Options	Percentage (%)
Company Name	OKINAWA	42
	BLIX	16
	JITENDRA	13
	EXER	8
	Other	21
RTO Passing	Yes	66
	No	34
Availability of public Charging Station	Yes	7
	No	93
Purpose of daily use	Job	26.11
	Commercial	10.44
	Regular	56.71
	Other	6.71

Table 1 shows that, in Sangli district, OKINAWA e-bikes dominate the market with 42% usage among users, followed by BLIX at 16%, JITENDRA at 13%, and EXER at 8%. The remaining 21% represents other e-bike brands. This data suggests a clear preference for OKINAWA e-bikes among users in the district, potentially due to factors such as brand reputation, product features, or marketing strategies. However, the presence of a significant percentage of other brands indicates a diverse market landscape, offering consumers a range of options to suit their preferences and needs.

In terms of RTO passing, 66% of e-bikes in Sangli district have successfully obtained RTO passing, while the remaining 34% have not. This indicates a majority of e-bike users in the district have complied with the necessary regulations and formalities required by the Regional Transport Office (RTO), ensuring their vehicles meet the legal requirements for operation. However, the significant percentage of e-bikes without RTO passing underscores the importance of raising awareness and adherence to regulatory procedures among users to ensure safe and lawful usage of e-bikes within the district.

In Sangli district, the availability of public charging stations for e-bikes is notably limited, with only 7% of users indicating access to such facilities. This starkly contrasts with the majority of users, comprising 93%, who do not have access to public charging stations. The scarcity of these charging facilities poses a significant challenge for e-bike users, potentially hindering the widespread adoption and convenient usage of electric vehicles within the district. Addressing this issue by expanding the infrastructure for public charging stations could play a crucial role in promoting the accessibility and sustainability of e-bikes as a viable transportation option in Sangli district. The majority of e-bike usage in Sangli district serves regular purposes, accounting for 56.71% of daily use. Following this, 26.11% of users utilize e-bikes for commuting to their jobs, while 10.44% employ them for commercial purposes. Additionally, 6.71% of users have cited other reasons for their daily e-bike use. This distribution underscores the diverse array of functions e-bikes serve in the daily lives of individuals within the district, ranging from commuting to work to engaging in commercial activities, while also accommodating various other needs. Understanding these usage patterns can inform policies and initiatives aimed at enhancing the role of e-bikes in promoting sustainable transportation practices and meeting the diverse mobility needs of Sangli district residents.

Chart 1

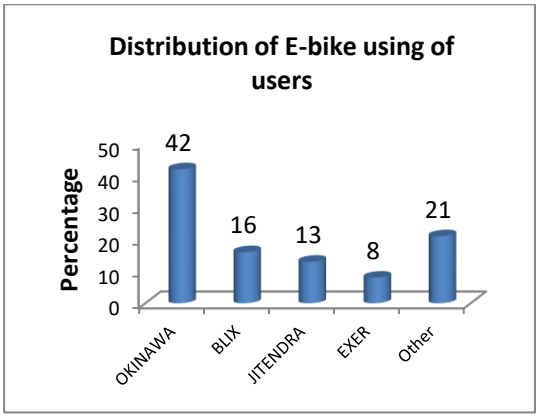


Chart 2

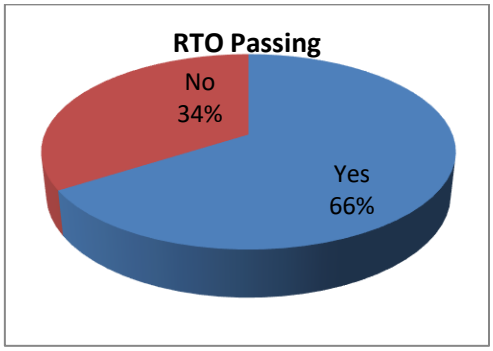


Chart 3

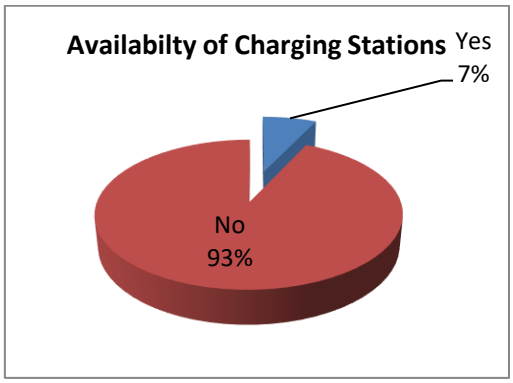


Chart 4

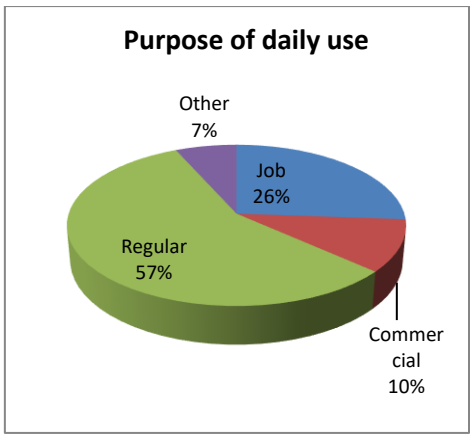
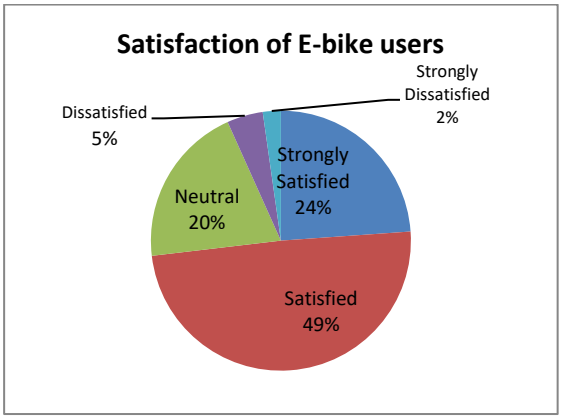


Table 2: Satisfaction of E-bike users

Rating	No. of Respondents
Strongly Satisfied	32
Satisfied	66
Neutral	27
Dissatisfied	6
Strongly Dissatisfied	3

Table 2 display the rating of satisfaction towards E-Bike. The majority of respondents, constituting 66, expressed satisfaction, while 32 indicated being strongly satisfied. Additionally, 27 respondents remained neutral in their assessment. However, a smaller proportion reported dissatisfaction, with 6 expressing dissatisfaction and 3 indicating strong dissatisfaction. This data highlights a generally positive sentiment towards e-bike usage, with a notable segment of respondents expressing high levels of satisfaction. Nonetheless, addressing the concerns of dissatisfied users could be crucial in further enhancing the overall experience and acceptance of e-bikes within the district.

Chart 5



Hypothesis testing about the claim of company:

The E-bike production companies are made a claim on the average charging time required to full charge a battery and the average distance (in km) covered by bike in single full change (Mileage). Table 3 shows the test about the claims.

Table 3: Z-tests

Claim	Test used	Sample average	P-value	Decision
The average charging time required to full charge a battery is 3.55 hours	Z test	3.57	0.78	Do not reject
the average distance (in km) covered by bike in	Z test	79.36	<0.01	Reject

single full charge is 95 km				

From the Table 3 it is observed that the p-value of the test average charging time required to full charge a battery is 3.55 hours is 0.78. It indicates that whatever claim made by company regarding charging time is true.

Also, it is observed that the average distance covered by E-bike in single charge is 79.36 km while the company claim is 95 km. From the Table 3 it is clear that P-value for the claim is less than 0.01 and concludes that E-bikes are not travelled distance 95 km in single charge.

4. CONCLUSIONS

Based on our comprehensive study of E-Bike usage and preferences, several key conclusions have emerged. Firstly, Okinawa companies' E-Bikes stand out as particularly popular among E-Bike users, indicating a strong market presence. Additionally, a significant majority, approximately 66%, of E-Bike users exhibit a preference for passing E-Bikes. However, the availability of charging stations remains notably low, with only 7% present in their areas, presenting a substantial opportunity for new startups to address this gap in the market. The majority of users, accounting for 56.71%, utilize E-Bikes for regular use, showcasing their integration into daily routines. With an average satisfaction level of 4, it's evident that the majority of E-Bike users find satisfaction with their E-Bikes. The company's assertion regarding charging time holds true however E-bikes do not travel a distance claimed by corresponding companies on a single charge.

ACKNOWLEDGEMENT

We extend our sincere gratitude to the students who generously contributed their time and efforts to assist with our survey.

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