

# Customers' Satisfaction Towards an Electric Two-Wheeler in Kasaragod District, Kerala

Manoj V N<sup>1</sup> and Dr. K. Jayaprakash<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Commerce, Sree Saraswathi Thyagaraja College, Pollachi

<sup>2</sup>Associate Professor, Department of Commerce, Sree Saraswathi Thyagaraja College, Pollachi

**Abstract** -There is a positive mindset about electric mobility among consumers because the ever-increasing price of fuel has played a major role in this shift. Public awareness about electric mobility has also increased significantly over the last few years. Demand and subsidies given by the government also supported the penetration level of electric two-wheelers. But the most important issue for the electric two-wheeler is that the cost of manufacturing the vehicle is mainly influenced by the cost of the battery. Reduced dependence on the import of electric vehicle components and sub-systems may be one of the crucial factors in enhancing domestic manufacturing capacity, along with other policy-related measures. At this juncture, the present study was conducted to analyze the customers' satisfaction on usage of electric two-wheelers in Kasaragod District, Kerala. For the present study, the researcher has decided to focus on the customers of E2W in Kasaragod District, Kerala. Approximately 3878 E2W are registered in RTOs of Kasaragod. Out of which, 192 customers were selected for data collection. The frequency distribution of respondents showed that most of the respondents in the survey are men. The majority of the respondents who are interested in opting for electric two-wheelers fall under the age group of 30-39 years and have an income level of 25-35k per month. The study is based on customer satisfaction towards electric two-wheelers. It finishes up that the factors that affect customer satisfaction are the brand name, alertness, and motor power. More than 90% of respondents are satisfied with the price of electric two-wheelers, value for money, mileage, and maintenance. Most of the respondents are propelled by work gatherings to purchase the Ather electric two-wheelers, and furthermore, clients feel the cost of the Ather electric two-wheelers is neutral. From the study, we found that brand name and motor power are the main reasons to choose an electric bike over a normal bike, so the company shall think about partnering with other companies to set up fast charging stations in different geographic areas. Government employees are found to be less interested in using electric bikes. Hence, Eternal Green can think about providing additional discount offers to attract this segment. Greater notice is required

for models like Bajaj, TVS Motor, and Hero, as numerous individuals do not prefer these bikes. Ather should start advertising about their e-bikes on mainstream media to expand their reach and customer base.

**Keywords:** Electric Two-wheeler - Customer - Satisfaction - Ather E-bike

## 1. INTRODUCTION

Electric two-wheelers have the potential to improve local air quality and greenhouse gas emissions compared to gasoline two-wheelers. They can also reduce noise pollution to the extent that they can compete in the market against gasoline two-wheelers[2]. There are some fundamental performance issues that put them at a disadvantage, including speed, range, and recharging time. Their operating costs can be significantly lower, however, thus counteracting some of the performance issues. Early deployments in India have been somewhat unsuccessful due to unreliable vehicles and have created problems with the perception of this unproven technology [3]. A strong preference for gasoline two-wheelers, regardless of price and performance, indicates that the electric two-wheeler industry and government and non-government organizations should engage in active marketing and public awareness, aside from developing supportive electric two-wheeler policies. In addition, a supportive electric two-wheeler policy should be coupled with a robust battery manufacturing and recycling policy that would support all transportation [5]. Electric two-wheelers can provide low-cost, low-noise, and low-emission vehicles, but they are currently competing in a difficult market against a more mature but less environmentally friendly mode: gasoline two-wheelers [7]. Working with the electric two-wheeler industry to improve their

image, improve performance, and provide supportive policies could be the impetus to begin wide-scale adoption of electric two-wheelers in these large markets. E-scooter adoption is dependent on a number of variables, including purchase price, operating costs, maintenance cost (battery purchase), performance, and regulation[1]. In fact, a poor reputation for quality is likely a significant factor. If given accurate information related to electric two-wheeler performance and price, individuals may have some likelihood of choosing them over gasoline two-wheelers. However, many individuals do not have adequate knowledge to make this decision in the marketplace [4], [8]. It is incumbent upon industry and the government to increase public awareness to adequately market the performance and price characteristics of electric two-wheelers in an environment where gasoline two-wheelers are ubiquitous and their performance well known. At this juncture, the present study was conducted to analyze the customers' satisfaction with the usage of electric two-wheelers in Kasaragod District, Kerala.

## 2. REVIEW OF LITERATURE

Nigam et al. (2023) [1] the study is based on customer satisfaction towards Okinawa Electric bikes. It finishes up the factors affect the customer satisfaction are the brand name, alert and the motor power. More than 90 percent respondents are satisfied with the price of the bike, value for money, mileage and Maintenance.

Sangeetha (2023)[2] found that electric bikes are slow but consistently making their way into the two-wheeler market. The availability of electric bikes has increased competition in this sector. Environmentally conscious customers recognize the need for pollution reduction. The level of awareness among Electric Bikes users is deemed revolutionary at this time because there is a need to replace the conventional system that pollutes the environment.

Hussain, Ahmed and Ali (2022)[3] examined that the respondents were "highly satisfied" with the prompt pick-up and drop-off service, pricing, and ease of booking; they were "satisfied" with the other elements, such as convenience, speed, and safety. In conclusion, client preference, awareness-raising and customer satisfaction are key factors in the market for Bykea electric bike services. Convenience, brand,

affordability, speed, safety, ease of booking, prompt pick-up and drop-off options are some of the aspects that affect a customer's decision to use Bykea electric bike services.

## 3. STATEMENT OF THE PROBLEM

The two-wheeler industry is one of the largest industries in the automobile sector of the global market. People all over the country prefer to travel on bikes, which give them a convenient and cost-efficient mode of transport. When it comes to electric bikes, the cost efficiency of these bikes is even better than that of normal bikes, as there is no fuel consumption in electric bikes. In countries like India, where the majority of the population is from middle-class families who cannot afford high fuel prices, electric two-wheelers are the solution. The introduction of electric two-wheelers is a perfect solution to cut costs and energy consumption. There can be many models of electric two-wheelers, and customer satisfaction with electric two-wheelers determines the fate of electric two-wheelers. In this context, a study of this nature feels relevant, and an attempt is being made to analyze customer satisfaction in detail.

## 4. SCOPE OF THE STUDY

- The main scope of the study is to analyze the customer satisfaction towards electric two-wheelers with respect to Kasaragod District, Kerala.
- The study by ascertaining the factors that motivate end user to purchase electric two-wheelers is expected to enable respective companies to improve the services, sales promotion etc.,
- The study also aims at analyzing the level of challenges faced by customer towards electric two-wheelers.

## 5. METHODS AND MATERIALS

### 5.1 OBJECTIVES OF THE STUDY

1. To study the socio-demographic characteristics of the respondents
2. To observe the level of satisfaction towards electric two-wheeler in Kasaragod District.

5.2 HYPOTHESES

1. There is a significant difference between the gender of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.
2. There is a significant association between the years of owned electric two-wheeler of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.

5.3 RESEARCH DESIGN

A Research Design is simply a structural framework of various research methods as well as techniques that are utilized by a researcher. It includes mode of data to be collected, sample to be selected and the analysis part of research. Thus, in order to achieve all the

above-mentioned objectives, researcher has adopted descriptive research design for the present study.

5.4 UNIVERSE AND SAMPLING TECHNIQUE

Population or universe means, the entire mass of observations, which is the parent group from which a representative sample is chosen for the collection of the data and for whom the researcher derives on the findings. For the present study the researcher has decided to focus the customer of E2W in Kasaragod District, Kerala. Approximately 3878 E2W are registered in RTOs of Kasaragod district. Out of which 192 customers were selected for data collection. They were selected through purposive sampling method (Krejcie & Morgan sample formula).

6. MAJOR FINDINGS

Table No: 1: Distribution of the respondents according to their Age

S. No.	Age	No. of Respondents (n =192)	Percentage
1.	18-23 years	24	13.0
2.	24-29 years	43	22.3
3.	30-35 years	73	37.8
4.	Above 35 years	52	26.9

Table 1 shows that 37.8 percent of the respondents are belong to the age group of 30-35 years, 26.9 percent of the respondents are above 35 years old, 22.3 percent of the respondents are in the age group of 24-29 years and 13.0 percent of the respondents are 18-23 years old.

Table No: 2: Distribution of the respondents according to their Gender

S. No.	Gender	No. of Respondents (n =192)	Percentage
1.	Male	99	51.6
2.	Female	93	48.4

Table 2 depicts that half (51.6 percent) of the respondents were male while 48.4 percent of the respondents were female.

Table No: 3: Distribution of the respondents according to their dealers of electric two wheelers

S. No.	Dealers of electric two wheelers	No. of Respondents (n =192)	Percentage
1.	OLA	42	21.9
2.	Komaki	48	25.0
3.	Yamaha	16	8.3
4.	Hero	16	8.3
5.	Ather	67	34.9
6.	Aprilia	3	1.6

Table 3 explains that 34.9 percent of the respondents bought their electric two-wheeler from Ather, 25 percent of the respondents bought Komaki electric two-

wheeler, 21.9 percent of the respondents bought OLA electric vehicle, 8.3 percent of the respondents bought Hero electric vehicle, 8.3 percent bought Yamaha

electric vehicle and 1.6 percent bought Aprilia Motor electric vehicle. The Ather is a toper dealer for selling

electric two-wheelers in Kasaragod District, Kerala.

Table No: 4: Distribution of the respondents according to their level of awareness towards Electric two wheelers

S. No.	Level of awareness towards Electric two-wheeler	No. of Respondents (n=192)	Percentage
1.	Poor	38	19.8
2.	Average	154	80.2

Table 4 shows that 80.5 percent of the respondents had an average level of awareness towards electric two-wheeler whereas 19.5 percent of the respondents had a poor awareness about electric two-wheeler.

Table No: 5: Distribution of the respondents according to their perception towards satisfaction on performance of electric two-wheelers

S. No.	Perception towards satisfaction on electric two-wheelers	No. of Respondents (n=192)					
		Low	%	Moderate	%	High	%
1.	Safety & Affordable to use	79	41.1	28	14.6	85	44.3
2.	Comfortable seat	55	28.7	20	10.4	117	60.9
3.	Reasonable Mileage	61	31.8	57	30.2	73	38.0
4.	Easy handling	43	22.4	42	21.9	108	56.3
5.	Availability of colour & Design	56	29.2	29	15.1	107	55.7
6.	Low maintenance	81	42.2	37	19.3	74	38.5
7.	Quick recharge	80	41.7	49	25.5	63	32.8
8.	Weight and quality	68	35.4	29	15.1	95	49.5
9.	Appearance and brand performance	50	26.0	39	20.4	103	53.6
10.	Durability	75	39.1	40	20.8	77	40.1
11.	Quick Pick up	67	34.9	35	18.2	90	46.9
12.	Less noise	39	20.3	29	15.1	124	64.6
13.	Overall level of satisfaction on E2W	50	26.0	49	25.5	93	48.5

Table 5 depicts that half of the respondents have had a high level of satisfaction towards electric two-wheeler such as comfortable seat (60.9 percent), easy handling (56.3 percent), availability of colour & design (55.7 percent), weight and quality (49.5 percent), appearance and brand performance (53.6 percent), quick pick up (46.9 percent) and less noise (64.6 percent). However, one-thirds of the respondents have had a high level of satisfaction towards electric two-wheeler such as safety & affordable to use (44.3

percent), reasonable mileage (38 percent), low maintenance (38.3 percent), quick recharge (32.8 percent) and durability (40.1 percent). Further two-fifth of the respondents had a low and moderate level of awareness about electric two-wheeler. However, 48.5 percent of the respondents had a high level of awareness, 25.3 percent had a moderate and 26 percent had a low level of awareness about electric two-wheeler.

Table No: 6: ‘Z’ Test between the gender of the respondents and perception towards the satisfaction on post purchase services provided by dealers of electric two-wheeler

S. No	Gender	Sample size (n=192)	$\bar{X}$	S.D.	Statistical Inference
1.	Safety & Affordable to use				Z = 0.788
	Male	99	3.56	1.315	0.431>0.05

	Female	93	3.46	1.257	Not Significant
2.	Comfortable seat				Z =1.084
	Male	99	3.16	1.422	0.279>0.05
	Female	93	3.30	1.170	Not Significant
3.	Reasonable Mileage				Z =0.799
	Male	99	3.34	1.400	0.425>0.05
	Female	93	3.23	1.215	Not Significant
4.	Easy handling				Z = 1.363
	Male	99	3.55	1.281	0.174>0.05
	Female	93	3.37	1.225	Not Significant
5.	Availability of colour & Design				Z = 2.571
	Male	99	3.57	1.307	0.011<0.05
	Female	93	3.22	1.323	Significant
6.	Low maintenance				Z = 2.283
	Male	99	3.53	1.249	0.023<0.05
	Female	93	3.22	1.368	Significant
7.	Quick recharge				Z =2.834
	Male	99	3.46	1.304	0.005<0.01
	Female	93	3.08	1.315	Highly Significant
8.	Weight and quality				Z =2.183
	Male	99	3.47	1.293	0.030<0.05
	Female	93	3.18	1.327	Significant
9.	Weight and quality Appearance and brand performance				Z = 3.089
	Male	99	3.50	1.289	0.002<0.01
	Female	93	3.09	1.337	Highly Significant
10.	Durability				Z = 2.308
	Male	99	3.64	1.234	0.022<0.05
	Female	93	3.34	1.294	Significant
11.	Quick Pick up				Z =0.793
	Male	99	3.43	1.292	0.428>0.05
	Female	93	3.33	1.338	Not Significant
12.	Less noise				Z = 2.217
	Male	99	38.1970	10.89622	0.027<0.05
	Female	93	35.8172	10.09088	Significant
13.	Overall level of satisfaction on E2W				Z = 2.217
	Male	99	35.1970	10.89622	0.027<0.05
	Female	93	38.8172	10.09088	Significant

Hypothesis: 01

Ha= There is a significant difference between the gender of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.

H<sub>0</sub>= There is no significant difference between the gender of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.

It is proved from table 6 that there is a significant difference between the gender of the respondents and various dimensions of satisfaction on electric two-wheeler such as availability of colour & design, low maintenance, quick recharge, weight and quality, weight and quality, appearance and brand performance, durability and less noise. However, there is no significant difference between the gender of the respondents and various dimensions of satisfaction on electric two-wheeler such as safety & affordable to

use, comfortable seat, reasonable mileage, easy handling and quick pick up. Further, there is a highly significant difference between the gender of the respondents and their overall level of satisfaction on electric two-wheeler ( $Z=2.217, 0.027<0.05$ ). It means that the gender of the respondents has influence on the overall level of satisfaction on electric two-wheeler.

The mean score ( $\bar{X}=38.8172$ ) indicates that the female respondents have had a high level of satisfaction on electric two-wheeler.

Table No: 7: Association between the years of owned E2W of the respondents and perception towards satisfaction on electric two-wheeler

S. No	Years of owned E2W	Satisfaction on electric two-wheeler			Statistical Inference
		Low	Moderate	High	
1.	Safety & Affordable to use	n=79	n=28	n=85	$\chi^2 = 4.012$ df = 4 $0.404>0.05$ Not Significant
	Below 1 years	30	13	31	
	2 years	44	13	44	
	Above 2 years	6	3	11	
2.	Comfortable seat	n=55	n=20	n=117	$\chi^2 = 12.045$ df = 4 $0.017<0.05$ Significant Contingency Coefficient=0.174
	Below 1 years	21	4	48	
	2 years	31	12	58	
	Above 2 years	4	5	12	
3.	Reasonable Mileage	n=62	n=58	n=73	$\chi^2 = 19.672$ df = 4 $0.001<0.01$ Highly Significant Contingency Coefficient=0.221
	Below 1 years	30	13	31	
	2 years	28	37	36	
	Above 2 years	5	9	7	
4.	Easy handling	n=43	n=42	n=108	$\chi^2 = 5.791$ df = 6 $0.215>0.05$ Not Significant
	Below 1 years	16	17	40	
	2 years	21	19	60	
	Above 2 years	6	6	8	
5.	Availability of colour & Design	n=56	n=29	n=108	$\chi^2 = 17.923$ df = 4 $0.001<0.01$ Highly Significant Contingency Coefficient=0.211
	Below 1 years	19	9	45	
	2 years	26	19	55	
	Above 2 years	11	2	8	
6.	Low maintenance	n=82	n=37	n=74	$\chi^2 = 21.261$ df = 4 $0.000<0.01$ Highly Significant Contingency Coefficient=0.229
	Below 1 years	34	12	27	
	2 years	45	22	33	
	Above 2 years	3	4	14	

Statistical Inference:

‘Z’ test was used to test the above hypothesis and it was found that there is a significant difference between the gender of the respondents and their perception towards overall level of satisfaction on electric two-wheeler ( $Z=2.217, 0.027<0.05$ ). It is found from tables that the calculated value of the ‘Z’ test is more than the table value at the 5 percent level of significance.

Hence Research Hypothesis is accepted.

7.	Quick recharge	n=80	n=49	n=63	$\chi^2 = 5.168$ df = 4 0.271>0.05 Not Significant
	Below 1 years	30	17	26	
	2 years	40	30	30	
	Above 2 years	10	3	7	
8.	Weight and quality	n=68	n=29	n=96	$\chi^2 = 9.823$ df = 4 0.044<0.05 Significant Contingency Coefficient=0.158
	Below 1 years	19	14	40	
	2 years	42	13	46	
	Above 2 years	7	3	11	
9.	Appearance and brand performance	n=50	n=40	n=103	$\chi^2 = 4.566$ df = 4 0.335>0.05 Not Significant
	Below 1 years	20	13	41	
	2 years	26	21	53	
	Above 2 years	4	7	10	
10.	Durability	n=76	n=40	n=77	$\chi^2 = 7.546$ df = 4 0.110>0.05 Not Significant
	Below 1 years	31	14	28	
	2 years	37	25	39	
	Above 2 years	8	2	11	
11.	Quick Pick up	n=67	n=35	n=91	$\chi^2 = 7.901$ df = 4 0.095>0.05 Not Significant
	Below 1 years	29	15	29	
	2 years	33	17	50	
	Above 2 years	5	3	13	
12.	Less noise	n=39	n=29	n=124	$\chi^2 = 6.602$ df = 4 0.158>0.05 Not Significant
	Below 1 years	16	12	45	
	2 years	21	16	63	
	Above 2 years	3	1	17	
13.	Overall level of satisfaction on E2W	n=50	n=49	n=94	$\chi^2 = 10.610$ df = 4 0.031<0.05 Significant Contingency Coefficient=0.164
	Below 1 years	19	14	40	
	2 years	29	27	45	
	Above 2 years	3	8	10	

Hypothesis: 02

H<sub>a</sub>= There is a significant association between the years of owned electric two-wheeler of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.

H<sub>0</sub>= There is no significant association between the years of owned electric two-wheeler of the respondents and their perception towards overall level of satisfaction on electric two-wheeler.

It is hypothesized from the table 7 that there is a significant association between the years of owned electric two-wheeler of the respondents and various dimensions of satisfaction on electric two-wheeler

such as comfortable seat, reasonable mileage, availability of colour & design, low maintenance and weight and quality. However, there is no significant association between the years of owned electric two-wheeler of the respondents and various dimensions of satisfaction on electric two-wheeler such as safety & affordable to use, easy handling, quick recharge, appearance and brand performance, durability, quick pick up and less noise. Further there is a significant association between years of owned electric two-wheeler of the respondents and their overall level of satisfaction on electric two-wheeler ( $\chi^2=10.610$ , 0.031<0.05). It means that years of owned electric

two-wheeler has influence on the level of satisfaction on electric two-wheeler. The respondents who are owned electric two-wheeler for two years have had a high level of satisfaction on electric two-wheeler.

The contingency coefficient has explained that the strength of association between the years of owned electric two-wheeler of the respondents and their overall level of satisfaction on electric two-wheeler is at 16 percent. It is also observed from the statistical analysis that the years of owned electric two-wheeler of the respondents is strongly associated with their perception towards various dimensions of satisfaction on electric two-wheeler such as comfortable seat (17 percent), reasonable mileage (22 percent), availability of colour & design (21 percent), low maintenance (22 percent) and weight and quality (15 percent)

Statistical Inference:

' $\chi^2$ ' test was used to test the above hypothesis and it was found that there is a significant association between the years of owned electric two-wheeler of the respondents and their perception towards overall level of satisfaction on electric two-wheeler ( $\chi^2 = 10.610$ ,  $0.031 < 0.05$ ). It is observed from table that the calculated value of the ' $\chi^2$ ' test is more than the table value at the 5 percent level of significance.

Hence Research Hypothesis is accepted.

## 7. SUGGESTIONS

- Most of the electric two-wheeler is used only for short distance because of low battery backup capacity, so manufacturers should concentrate on development to increase the battery capacity of E-bikes/scooters.
- To increase the speed of E-bikes/scooters, manufacturing can consider using 300-watt power motor instead of 250 watt power which offers a maximum speed of just 25km/ph only.
- The E-bikes/scooters manufacturing companies may also consider solar energy for E-bikes that may support for long travel and reduce the charging time of the battery.
- There is a need to improve the convenience of Electric Bikes/scooters users in terms of charging, mileage and bike carrying capacity. These areas must be prioritized by electric bike companies' research and development to improve the

convenience of electric two-wheelers. This will help to promote electric two-wheelers.

- The service of electric two-wheelers has harmed goodwill to some extent. To improve customer satisfaction after purchase, the time required to service the electric two-wheelers must be significantly reduced.
- The general public is unaware of the registration fees and incentives for electric bicycles. There is a need to raise awareness that electric two-wheelers have no registration fees and that the government offers various incentives for the purchase of electric two-wheelers. This will generate a large number of potential buyers for electric two-wheelers.

## 8. CONCLUSION

The study is based on the customer satisfaction towards electric two-wheeler. It concludes the respondents are satisfied with the quality, price and performance of the Ather E-bike, most of the respondents are motivated by work groups to buy the Ather E-bike and also customers feel the price of electric two-wheeler is Neutral. Most of the respondents feel that Ather e-bikes are easy to drive because it is weightless. So, the weight of the bike should not increase in future. The study outcomes also indicate that most of the customers were satisfied and customer loyalty of the Ather E-bikes is also good.

## REFERENCES

- [1]. Nigam, Paheli, et al. "A Study on Consumer Satisfaction towards Okinawa E-Bike with Special Reference to Kolhapur City." *International Journal of Special Education* 38.1 (2023).
- [2]. Sangeetha, M. M. "Customer Satisfaction towards Electric Bikes in Karaikudi Taluk". *Dogo Rangang Research Journal*, 13 (4), 241-247 (2023).
- [3]. Hussain, Z. H. Z., Ahmed, N. A. N., & Ali, A. A. "A Study on Consumer Satisfaction Toward Bykea e-Bike Services". *BOHR International Journal of Business Ethics and Corporate Governance*, 1(1), 65-68 (2022).
- [4]. Ma, Jun, Tianjiao Li, and Zaiyan Gong. "Study on customer satisfaction of electric vehicle product



- quality characteristic." *2017 7th International Conference on Manufacturing Science and Engineering (ICMSE 2017)*. Atlantis Press, 2017.
- [5]. Rajper, Sarmad Zaman, and Johan Albrecht. "Prospects of electric vehicles in the developing countries: a literature review." *Sustainability* 12.5 (2020): 1906.
- [6]. Murugan, Manivel, and Sankaran Marisamynathan. "Mode shift behaviour and user willingness to adopt the electric two-wheeler: A study based on Indian road user preferences." *International Journal of Transportation Science and Technology* 12.2 (2023): 428-446.
- [7]. Javed, Syed Waqas, and Hafiz Muhammad Khurram. "Consumer Preferences for Adoption of Two-Wheeler Electric Vehicles." *European Journal of Technology* 6.3 (2022): 37-48.
- [8]. Nayaab, Mohammed Tariq, and R. Satish Kumar. "Does Consumer Preferences Leads to Adoption Intention For Electric Vehicles? A Literature Review on Indian Studies." *Journal of Positive School Psychology* (2022): 8503-8510.