

Exploring Buying Behavior for Sustainable E-Scooters in Erode

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Abstract- E-scooters are electric two-wheelers powered by rechargeable batteries, offering a cost-effective and eco-friendly alternative to petrol scooters. They reduce air pollution, noise, and fuel expenses while providing smooth and convenient urban mobility. Customer buying behaviour towards e-scooters is driven by factors such as low operating cost, environmental benefits, battery performance, charging convenience, and brand image. E-scooters offer low running and maintenance costs which provide a smooth, noise-free ride and reduce dependence on fossil fuels. Despite the growing popularity of e-scooters due to rising fuel costs and environmental concerns, their adoption in Erode remains limited while the customers face issues related to high initial cost, charging infrastructure, battery performance and awareness. In this juncture, the study aimed to examine the customer buying behaviour towards e-scooters in Erode, Tamilnadu. A descriptive research design was employed to systematically fulfill the objectives of the study. The required data for this study were collected from both primary and secondary sources. The study population comprised customers using e-scooters in Erode, from whom 152 respondents were selected using the random sampling method. The primary data were gathered through a structured questionnaire containing socio-economic details of the respondents and statements related to their buying behaviour towards e-scooters, measured using a five-point Likert scale. The collected data were coded, tabulated and processed using MS-Excel and analyzed with the help of statistical tools such as percentage analysis, mean, standard deviation, Analysis of Variance (ANOVA) and linear regression analysis through SPSS version 26.0. The null hypotheses were formulated and tested to identify significant differences in customer buying behaviour towards e-scooters across selected independent variables. This study displayed that maximum level of buying behaviour towards e-scooters is perceived by the customers who belong to 31–40 years category, female, using Ola e-scooter, influenced by

dealers for purchasing and using e-scooters for above 4 years in the study area.

Keyword: E-Scooters, Customer Buying Behaviour, Electric Vehicles, Purchase Decision, Environmental Awareness, Cost Effectiveness, Brand Preference.

I. INTRODUCTION

An e-vehicle is an environmentally friendly mode of transportation powered by electricity instead of fossil fuels. E-scooters, also known as electric scooters, are battery-powered two-wheelers designed to provide a clean, economical, and efficient mode of transportation. They operate using electric motors and rechargeable lithium-ion batteries, eliminating the need for petrol or diesel and thereby reducing carbon emissions and noise pollution. E-scooters are particularly suitable for short- to medium-distance travel in urban and semi-urban areas due to their ease of use, compact design, and low operating cost. Compared to conventional scooters, e-scooters require less maintenance as they have fewer moving parts and no internal combustion engine. In recent years, the adoption of e-scooters has increased rapidly due to rising fuel prices, growing environmental awareness, and supportive government policies such as subsidies and tax incentives. Advances in battery technology have improved driving range, charging speed, and overall performance, making e-scooters more reliable and practical for daily commuting. With the expansion of charging infrastructure and increasing availability of diverse models, e-scooters are emerging as a key component of sustainable urban mobility. Customer buying behaviour towards e-scooters is influenced by a combination of economic, environmental, and technological factors. Rising fuel prices and lower running and maintenance costs motivate customers to

shift from conventional scooters to e-scooters. Environmental awareness and concern about pollution also play a significant role in shaping positive attitudes towards e-scooters. Product-related factors such as battery life, driving range, charging time, safety features, and brand reputation strongly affect purchase decisions. In addition, government incentives, availability of charging infrastructure, and after-sales service influence customer confidence on buying decision.

II. REVIEW OF LITERATURE

According to Nandhini et al. (2025) revealed that customers in Coimbatore city exhibit a positive perception towards electric two-wheelers, mainly due to increasing environmental awareness and rising fuel costs. Additionally, cost-effectiveness and improved vehicle performance are identified as major factors influencing customer adoption. Further, issues such as range anxiety, high initial purchase cost, and inadequate charging infrastructure continue to affect customer confidence. The researchers Karthika and Nagarajan (2025) displayed that customers have favorable buying behaviour towards e-bikes, with a majority using them for 1 to 3 years. Also, price, technology, style, and battery life are identified as the most influential factors motivating purchase decisions. The analysis confirms that attitude, subjective norms, perceived use, and intention significantly influence buying behaviour. Moreover, socio-economic variables such as age, education, occupation, income, and area of residence are found to have a significant relationship with customers' buying behaviour towards e-bikes in Erode District. In case of Mahera and Mansuri (2024) confirmed that consumers in Vadodara city possess a high level of awareness and positive perception towards electric two-wheelers, particularly regarding their environmental friendliness. Social media and advertisements play a significant role in influencing purchase decisions and disseminating information about electric two-wheelers. Furthermore, respondents perceive maintenance cost, charging infrastructure, and driving range as major concerns affecting regular usage. Despite these challenges, a majority of consumers are willing to recommend electric two-wheelers and show intention to own one in the near future.

The author Prema (2023) mentioned that customers possess a favorable attitude towards the use of electric scooters, particularly among working-class and youth segments in Erode district. Comfort, performance, and economic benefits are identified as major factors contributing to customer satisfaction. The study also indicate that earlier growth of electric scooters was slow due to lack of government support and product limitations. However, increasing awareness and supportive government policies have positively influenced customer acceptance and usage of electric scooters. The study of Ranjan et al. (2022) assessed that consumers' buying behaviour towards electric vehicles is largely influenced by environmental concern and rising fuel prices. Cost savings in terms of charging expenses motivate consumers to consider electric vehicles over conventional fuel vehicles. However, lack of charging infrastructure and inconvenience in charging are major barriers affecting purchase decisions. The findings also indicate that low awareness and inadequate infrastructure are the key reasons for the slow growth of electric vehicles in India. In view of Jayasingh et al. (2021) identified that that consumers' purchase intention towards electric two-wheelers is significantly influenced by environmental concern, perceived economic benefits, charging infrastructure, and social influence. Among these factors, perceived economic benefits emerge as the most dominant driver of purchase intention. The results also noted that consumers' attitude plays a crucial mediating role in shaping their intention to adopt electric two-wheelers. Additionally, the study found that women show a higher inclination towards purchasing electric two-wheelers compared to men.

III. STATEMENT OF THE PROBLEM

E-scooters offer several advantages, including low operating and maintenance costs compared to conventional petrol scooters. They are environmentally friendly, as they produce zero emissions and help reduce air and noise pollution. E-scooters also provide a smooth, quiet, and convenient riding experience, making them ideal for daily commuting. Additionally, they reduce dependence on fossil fuels and support sustainable and eco-friendly transportation. Despite these advantages, the penetration of e-scooters remains relatively moderate when compared to conventional petrol scooters.

Customers often face issues such as high initial purchase cost, limited charging infrastructure, range anxiety, lack of awareness, and uncertainty about battery life and resale value. In Erode district, where two-wheelers are a primary mode of transportation, understanding the factors influencing customer buying behaviour towards e-scooters is essential.

IV. OBJECTIVES OF THE STUDY

- To study the demographic profile of the selected customers who using e-scooters in Erode.
- To examine the buying behaviour of the customers towards e-scooters in the study area.

V. HYPOTHESIS OF THE STUDY

- There is no significant difference in mean customer buying behaviour towards e-scooters with respect to using e-scooter model.
- There is no significant difference in customer buying behaviour towards e-scooters with respect to their source of influence for purchasing.

- Age does not significantly explain customer buying behaviour towards e-scooters.
- Period of using does not significantly explain customer buying behaviour towards e-scooters.

VI. RESEARCH METHODS

This study adopts a descriptive research design and makes use of both primary and secondary sources of data. The primary data were collected through a self-designed questionnaire covering the demographic characteristics of the customers and their buying behaviour towards e-scooters in Erode. By using a five-point Likert scale, the responses related to buying behaviour towards-scooters were measured. The secondary data were gathered from published books, research articles, journals, and relevant online sources. The study is based on a sample of 152 e-scooter customers selected through the random sampling technique. The collected data were systematically analyzed using statistical tools such as percentage analysis, mean score, standard deviation, ANOVA and linear regression with the help of SPSS 26.0 software.

VII. RESULT AND DISCUSSION

7.1 Demographic Profile of the Customers

The details pertaining to the demographic profile of the selected customers using e-scooters are presented in the following table.

Table 1: Demographic Profile and Customer Buying Behaviour towards E-Scooters

No.	Variable Name	Number of Respondents	Percentage	Mean	SD
1	Age				
	• Upto 20 Years	25	16.4	3.86	0.52
	• 21-30 Years	41	27.0	3.68	0.60
	• 31-40 Years	52	34.2	3.96	0.42
	• Above 40 Years	34	22.4	3.73	0.49
	Total	152	100.0		
2	Gender				
	• Male	82	53.9	3.75	0.52
	• Female	70	46.1	3.88	0.51
	Total	152	100.0		
3	Using E-scooter Model				
	• Ola	32	21.1	3.98	0.42
	• Ather	46	30.3	3.84	0.48
	• Hero	39	25.6	3.65	0.61
	• TVS	21	13.8	3.85	0.54
	• Others	14	9.2	3.77	0.41
	Total	152	100.0		
4	Source of Influence for Purchasing				

No.	Variable Name	Number of Respondents	Percentage	Mean	SD
	• Friends & relatives	40	26.3	3.86	0.45
	• Advertisements	52	34.2	3.82	0.51
	• Social media	25	16.4	3.52	0.63
	• Dealers	35	23.1	3.96	0.43
	Total	152	100.0		
5	Period of Using e-scooters				
	• Below 2 years	37	24.3	3.69	0.53
	• 2-4 years	66	43.5	3.72	0.52
	• Above 4 years	49	32.2	3.95	0.48
	Total	152	100.0		

- From the above analysis, it is displayed that 16.4% of the respondents are upto 20 years of age, 27.0% of the respondents belong to the 21–30 years age group, 34.2% of the respondents fall under the 31–40 years category and 22.4% of the respondents are above 40 years.
- The analysis asserted that 53.9% of the respondents are male and 46.1% of the respondents are female.
- It is observed from the study that 21.1% of the respondents use Ola e-scooters, 30.3% of the respondents utilize Ather e-scooters, 25.6% of the respondents use Hero, 13.8% of the respondents utilize TVS and 9.2% of the respondents use other model e-scooters.
- From the analysis, it is noticed that 26.3% of the respondents are influenced by friends and relatives for purchasing e-scooter, 34.2% of the respondents are influenced by advertisements for purchasing, 16.4% of the respondents are influenced by social media and 23.1% of the respondents are influenced by dealers for purchasing e-scooter.
- It is confirmed that 24.3% of the respondents have been using e-scooters for below 2 years, 43.5% of the respondents have been using e-scooters for 2–4 years and 32.2% of the respondents have been using e-scooters for above 4 years.
- It is observed from the analysis that 30.3% of the respondents use Ather e-scooters, followed by Hero (25.6%), Ola (21.1%), TVS (13.8%), and others (9.2%).
- From the analysis, it is seen that 34.2% of the respondents are influenced by advertisements, followed by friends and relatives (26.3%), dealers (23.1%), and social media (16.4%).

- It is indicated from the analysis that 43.5% of the respondents have been using e-scooters for 2–4 years, 32.2% for above 4 years, and 24.3% for below 2 years.

7.2 Customer Buying Behaviour towards E-Scooters

This section has exposed about customer buying behaviour towards e-scooters in Erode. For this study, eight statements have been developed about the customer buying behaviour and measured by using 5 points Likert’s scaling method.

The Cronbach Alpha value for the statements of customer buying behaviour towards e-scooters is 0.934 whereas the reliability of the customer buying behaviour is good and fit for analysis. It is depicted from the analysis that among the eight categories of customer buying behaviour towards e-scooters, they justified that ‘driving range and battery performance strongly influence to buy an e-scooter’ with the mean score and standard deviation of 4.07 and 0.99 respectively followed by ‘price of the e-scooter is reasonable compared to its benefits’ with the mean score and standard deviation of 3.91 and 1.13 respectively.

Testing of Hypothesis (ANOVA)

7.3 Relationship between Demographic Profile and Customer Buying Behaviour towards E-Scooters

This section has examined the relationship between the selected demographic variables and customer buying behaviour towards e-scooters. In order to analyse the relationship between selected independent variables and customer buying behaviour, hypotheses have been developed and tested by using ANOVA.

Using E-scooter Model and Customer Buying Behaviour towards E-Scooters

H₀: There is no significant difference in mean customer buying behaviour towards e-scooters with respect to using e-scooter model.

Table 2: Using E-scooter Model and Customer Buying Behaviour towards E-Scooters

	Sum of Squares	df	Mean Square	F	'p'
Between Groups	1.970	4	0.492	1.908	0.112 ^{NS}
Within Groups	37.936	147	0.258		
Total	39.906	151			

Note: NS – Not Significant

From the above analysis, it is mentioned the 'p' value is greater than 0.05 (p = 0.112), hence the null hypothesis is accepted. Hence, there is no significant difference in customer buying behaviour towards e-scooters with respect to using e-scooter model.

Source of Influence for Purchasing and Customer Buying Behaviour towards E-Scooters

H₀: There is no significant difference in customer buying behaviour towards e-scooters with respect to their source of influence for purchasing.

Table 3: Source of Influence for Purchasing and Customer Buying Behaviour towards E-Scooters

	Sum of Squares	df	Mean Square	F	'p'
Between Groups	3.046	3	1.015	4.077	0.008*
Within Groups	36.860	148	0.249		
Total	39.906	151			

Note: * – Significant at 1% level

It is justified from the above table that the 'p' value is lesser than 0.05 (p = 0.008), hence the null hypothesis is rejected. Therefore, there is a significant difference in customer buying behaviour towards e-scooters with respect to using e-scooter model.

The relationship between age and customer buying behaviour towards e-scooters is explored in the following table.

H₀: Age does not significantly explain customer buying behaviour towards e-scooters.

Relationship between Age and Customer Buying Behaviour towards E-Scooters (Linear Regression Analysis)

Table 4: Relationship between Age and Customer Buying Behaviour towards E-Scooters (Linear Regression Analysis)

No.	Variable	Coefficient	SE	't' value	'p' value
	(Constant)	3.801			
1	Age	0.075	0.012	6.250	0.000*
	R Value	0.810			
	R ² Value	0.656			
	F Value	70.015			

Note: * - Significant at 1% level

The above table mentioned that the regression coefficient for age is 0.075, which shows a positive influence of customer buying behaviour towards e-

scooters. This relationship is found to be statistically significant at the 1% level (p = 0.000), leading to the rejection of the null hypothesis. The R value of 0.810

denotes a strong positive relationship between the variables, while the R^2 value of 0.656 reveals that 65.6% of the variation in customer buying behaviour towards e-scooters is explained by age. Further, the F value of 70.015 confirms the overall significance and goodness of fit of the regression model.

Relationship between Period of Using and Customer Buying Behaviour towards E-Scooters (Linear Regression Analysis)

The relationship between period of using and customer buying behaviour towards e-scooters is explored in the following table.

H_0 : Period of using does not significantly explain customer buying behaviour towards e-scooters.

Table 5: Relationship between Period of Using and Customer Buying Behaviour towards E-Scooters (Linear Regression Analysis)

No.	Variable	Coefficient	SE	't' value	'p' value
	(Constant)	3.821			
1	Period of Using	0.083	0.016	5.188	0.000*
	R Value	0.905			
	R^2 Value	0.819			
	F Value	80.003			

Note: * - Significant at 1% level

From the analysis, it is illuminated that the regression coefficient for period of using is 0.083, which shows a positive influence of customer buying behaviour towards e-scooters. This relationship is found to be statistically significant at the 1% level ($p = 0.000$), leading to the rejection of the null hypothesis. The R value of 0.905 denotes a strong positive relationship between the variables, while the R^2 value of 0.819 shows that 81.9% of the variation in customer buying behaviour towards e-scooters is explained by period of using. Also, the F value of 80.003 confirms the overall significance and goodness of fit of the regression model.

VIII. FINDINGS

- It is identified from the analysis that majority (34.2%) of the customers belong to the 31–40 years age group. Also, the customers belong to 31–40 years category exhibit a high level of buying behaviour towards e-scooters.
- It is obtained from the analysis that most (53.9%) of the customers are male. In addition, female customers show a high level of buying behaviour towards e-scooters.
- The analysis mentioned that Ather is the (30.3%) most commonly used e-scooter model among the respondents. It is indicated from the analysis that

Ola users show a high level of buying behaviour towards e-scooters.

- The analysis measured that advertisements are the major (34.2%) source of influence for purchasing e-scooters. It is inferred from the analysis that customers influenced by dealers have maximum level of buying behaviour towards e-scooters.
- It is proved from the analysis that most of the respondents have been using e-scooters for 2–4 years. It is illustrated from the analysis that customers using e-scooters for above 4 years show a high level of buying behaviour towards e-scooters.
- The analysis shows that Ather is the most commonly used e-scooter model among the respondents. The highest mean score is recorded for Ola users (3.98), indicating that customers using Ola e-scooters demonstrate a higher level of buying behaviour compared to users of other models.
- It is inferred that advertisements play a major role in influencing customers' purchase decisions. The mean score is highest for dealer influence (3.96), indicating that customers influenced by dealers exhibit a higher buying behaviour towards e-scooters.
- It is evident that most of the respondents fall under the 2–4 years usage category. The highest mean

score (3.95) is observed among customers using e-scooters for 2–4 years, indicating a higher level of buying behaviour in this category.

- The mean score test observed that among the eight categories of customer buying behaviour towards e-scooters, they justified that ‘driving range and battery performance strongly influence to buy an e-scooter’ with the mean score and standard deviation of 4.07 and 0.99 respectively followed by ‘price of the e-scooter is reasonable compared to its benefits’ with the mean score and standard deviation of 3.91 and 1.13 respectively.
- The ANOVA confirmed that there is no significant difference in customer buying behaviour towards e-scooters with respect to using e-scooter model.
- From the ‘F’ test, it is proved that there is a significant difference in customer buying behaviour towards e-scooters with respect to using e-scooter model.
- The linear regression analysis noticed that the coefficient for age shows a positive influence of customer buying behaviour towards e-scooters. Also, the customer buying behaviour towards e-scooters is predicted by 7.5% increase in age of the customers.
- From the linear regression analysis, it is determined that the coefficient for period of using indicates a positive influence of customer buying behaviour towards e-scooters. Further, the customer buying behaviour towards e-scooters is predicted by 8.3% increase in period of using of the customers.

IX. SUGGESTIONS

- The findings observed that the customers belonging to 31–40 years age group exhibit a high level of buying behaviour towards e-scooters. Therefore, manufacturers and marketers should design targeted promotional strategies and customized product features to further attract and retain customers in all age segment.
- It could be assessed that female customers show a high level of buying behaviour towards e-scooters. Hence, companies should focus on women-centric marketing, safety features and

ease-of-use aspects to encourage more female customers to adopt e-scooters.

- From the study, it is noticed that Ola e-scooter customers demonstrate high level of buying behaviour towards e-scooter. Thus, other e-scooter brands should enhance their product performance, technology features and after-sales services to compete effectively with Ola in the market.
- It is measured from the findings that customers influenced by dealers have the maximum level of buying behaviour towards e-scooters. Therefore, manufacturers should provide proper training and incentives to dealers so that they can effectively guide and influence potential customers.
- This study indicated that customers using e-scooters for above 4 years show a high level of buying behaviour. Hence, companies should introduce loyalty benefits, exchange offers, and long-term service packages to retain experienced customers and encourage repeat purchases.

X. CONCLUSION

This study aimed to examine the customer buying behaviour towards e-scooters in Erode. This study noticed that there is a significant difference in customer buying behaviour towards e-scooters with respect to using e-scooter model whereas the regression coefficient for age and period using show positive influence of customer buying behaviour towards e-scooters. Hence, e-scooter manufacturers and marketers should create greater awareness about the long-term economic and environmental benefits of e-scooters through effective advertising and public campaigns to encourage wider adoption among customers. Further, the government and e-scooter companies should work together to improve charging infrastructure and after-sales service facilities in and around Erode to enhance customer buying behaviour.

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