



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

The Impact Of Price Sensitivity On Electric Two-Wheelers On Consumer Purchasing Decisions In Coimbatore City

Ms.N.Arshiya Taj, Mrs.T.Maheswari, Dr.E.Karthika, Mr.D.G.Vijay Mourish

III Year, Department of Commerce Accounting and Taxation, Dr.N.G.P.Arts and Science College, Coimbatore, Tamilnadu-641048, India.

Assistant Professor, Department of Commerce Accounting and Taxation, Dr.N.G.P.Arts and Science College, Coimbatore, Tamilnadu-641048, India.

Professor, Department of Commerce Accounting and Taxation, Dr.N.G.P.Arts and Science College, Coimbatore, Tamilnadu-641048, India.

I Year, MBA (Business Analytics), CMS Business School, Jain University Bangalore, Karnataka-560009, India.

ABSTRACT

This study examines the adoption of electric two-wheelers (E2Ws) in Coimbatore, focusing on the impact of price sensitivity on consumer decisions. Although E2Ws offer long-term savings on fuel and maintenance, their high initial cost remains a significant barrier, especially for price-conscious buyers. The research is based on primary data collected from 146 respondents and employs statistical tools such as chi-square analysis, ANOVA and simple percentage analysis to evaluate the relationship between demographics and purchasing behavior. Findings suggest that government subsidies, flexible financing options like EMI plans and lease-to-own models, and improved charging infrastructure can help mitigate price sensitivity. However, concerns about battery life, resale value, and the availability of charging stations also influence purchasing decisions. The study reveals that younger consumers and those with higher disposable incomes are more inclined to invest in E2Ws, while a lack of awareness about government incentives hinders broader adoption. To boost market penetration, policymakers and manufacturers must focus on transparent pricing, expanding charging infrastructure, and enhancing financial incentives. Addressing these economic and infrastructural challenges is essential for increasing E2W adoption in Coimbatore and promoting sustainable urban mobility solutions.

KEYWORDS: Price Sensitivity, Electric Two-Wheelers (E2Ws), Consumer Purchasing Behavior, Government Incentives, Charging Infrastructure.

INTRODUCTION OF THE STUDY

The global transition to sustainable transportation is accelerating the adoption of electric vehicles (EVs), particularly electric two-wheelers (E2Ws), as a greener alternative to conventional petrol-powered bikes. In India, where two-wheelers make up a large portion of the vehicle market, E2Ws offer the potential to cut carbon emissions and enhance air quality. As a rapidly developing industrial city, Coimbatore presents a valuable case for studying E2W adoption trends. While government policies and growing environmental awareness have contributed to their rising popularity, affordability remains a major concern. The high initial cost, primarily due to expensive battery technology, discourages middle-class consumers, even though E2Ws provide significant long-term savings on fuel and maintenance. To counter this, government initiatives such as subsidies and tax incentives seek to make E2Ws more financially viable and expand charging infrastructure. However, the effectiveness of these measures in overcoming consumer doubts is still being assessed. Potential buyers also consider factors like reliability, battery life, range, and after-sales service, with limited charging options further influencing their decisions. A deeper understanding of price sensitivity in Coimbatore can help manufacturers optimize pricing models and enable policymakers to develop more effective incentives. Enhancing affordability through competitive pricing and better infrastructure is crucial to driving E2W adoption and supporting India's sustainable mobility goals.

OBJECTIVES OF THE STUDY

1. To know the level of awareness on price sensitivity among consumers in Coimbatore regarding Electric two-wheelers.
2. To investigate the impact of government incentives and subsidies on price sensitivity on Electric two-wheelers.
3. To explore the factors influencing the purchase of electric two-wheelers among price sensitive consumers.
4. To analyze the level of customer satisfaction regarding price sensitivity towards Electric two-wheelers in Coimbatore.
5. To identify the challenges faced by consumer in making price based decisions for Electric two-wheelers.

STATEMENT OF THE PROBLEM

The growing popularity of electric two-wheelers (E2Ws) in Coimbatore is hindered by price sensitivity. Although they offer long-term savings on fuel and maintenance, the high initial cost, largely due to battery technology, discourages buyers. Consumers assess expenses alongside benefits, considering factors like range, battery lifespan, and charging availability. While government incentives aim to ease financial burdens, their effectiveness is uncertain. This study explores price sensitivity in E2W adoption, providing insights for market expansion.

SCOPE OF THE STUDY

This study examines the impact of price sensitivity on electric two-wheeler adoption in Coimbatore, focusing on cost-benefit analysis, perceived value, affordability, and financial incentives. It considers factors like financing options, government subsidies, and operating costs. Data will be collected through surveys and interviews with dealers, owners, and potential buyers. The findings aim to assist marketers, manufacturers, and policymakers in refining pricing and marketing strategies to boost E2W adoption in the city.

RESEARCH METHODOLOGY

DATA COLLECTION

Primary Data Collection - The method of collecting data was to Google forms by using structured questionnaire.

Secondary Data Collection - The secondary data was gathered from the journals, magazines and websites.

AREA OF THE STUDY

This study covers Coimbatore City.

SAMPLE SIZE

The sample size used for the study was 146 respondents.

SAMPLING METHOD

The method of sampling used is Snowball sampling for the research purpose.

TOOLS USED FOR ANALYSIS

The statistical tools used for the analysis of the study are

- Simple Percentage Analysis
- Chi-Square
- One-way ANOVA
- Correlation

RESEARCH GAP

A research gap exists due to the scarcity of studies on how price sensitivity effects customer purchasing decisions for electric two-wheelers in Coimbatore. Understanding price sensitivity in the Coimbatore market is critical for producers and policymakers looking to increase adoption rates and devise policies that boost electric two-wheeler purchases. Although electric vehicles are becoming increasingly popular as a sustainable option, there is a scarcity of specific study on how government incentives, such as subsidies and plans, affect consumer pricing perceptions and purchasing decisions. This study addresses these gaps by providing a localized understanding of how price sensitivity impacts the adoption of electric two-wheelers in urban markets.

LIMITATION OF THE STUDY

1. The research was carried out within a restricted timeframe. Because of time limitations, comprehensive data collection was not feasible.
2. The survey only included a certain amount of respondent, not the entire population.
3. The study primarily focuses on potential consumers, excluding the data gathered from consumers who reject electric two-wheelers because of pricing concerns.

REVIEW OF LITERATURE

Kumar and Mehta (2024) discovered that government subsidies and tax incentives help lower the perceived cost of electric two-wheelers (E2Ws), making them more accessible. They suggested that ensuring subsidies are efficiently distributed and clearly communicated would enhance consumer trust. Additionally, they recommended policies aimed at reducing manufacturing costs to maintain long-term affordability.

Ravi and Kapoor (2024) identified psychological pricing strategies—such as perceived discounts, bundling, and installment plans—as effective in minimizing the initial financial burden on buyers. They encouraged manufacturers to implement these strategies to better appeal to the price-sensitive consumers in Coimbatore.

Patel and Gupta (2024) underscored the significance of region-specific pricing, arguing that uniform pricing models do not work effectively across all areas. Their research showed that adjusting prices based on local economic conditions and income levels leads to higher adoption rates. They recommended tailoring pricing strategies to improve affordability and accessibility in Coimbatore.

ELECTRIC TWO-WHEELERS IN INDIA

Electric two-wheelers (E2Ws) play a vital role in India's transition to sustainable mobility, driven by rapid economic expansion and environmental commitments. The market has witnessed significant growth, with major players such as Ola Electric, Ather Energy, Hero Electric, and TVS spearheading the shift. E2Ws provide cost advantages, lessen reliance on imported oil, and support India's goal of achieving net-zero emissions by 2070. Government programs like FAME II and various state-level incentives encourage adoption, though hurdles like charging infrastructure and high initial costs remain. Nonetheless, advancements in battery technology and policy backing are expected to accelerate E2W adoption, reshaping India's transport sector.

CONSUMER'S PRICE SENSITIVITY ON ELECTRIC TWO-WHEELERS IN COIMBATORE

Electric two-wheelers (E2Ws) are becoming increasingly popular in Coimbatore, driven by government incentives, environmental awareness, and rising fuel costs. However, price sensitivity remains a crucial factor influencing consumer choices. Despite their lower long-term expenses, many buyers perceive E2Ws as costly compared to traditional petrol bikes. High upfront prices, expensive battery replacements, and insufficient charging infrastructure hinder widespread adoption. While affordability is a priority for middle- and lower-income consumers, financing options like EMI plans are improving accessibility. Increasing awareness of cost savings and environmental advantages is boosting demand for budget-friendly models. To enhance adoption, manufacturers and policymakers must strengthen incentives, expand charging networks, and implement creative pricing strategies. As production costs decline, E2Ws are expected to become more economical, fostering greater adoption in Coimbatore.

ADVANTAGES OF ADOPTING ELECTRIC TWO-WHEELERS

Savings on Fuel and Maintenance

Electric two-wheelers (E2Ws) are more economical than traditional vehicles due to lower fuel consumption and maintenance costs. With fewer mechanical parts, they require minimal repairs, making them a budget-friendly option for daily use.

Environmental Advantages

E2Ws generate no emissions, helping to reduce air pollution and carbon footprints. Their widespread adoption contributes to cleaner urban environments and a more sustainable future.

Government Support and Incentives

Initiatives like FAME offer subsidies, tax exemptions, and low-interest loans to lower the cost of E2Ws. These measures encourage adoption and promote eco-friendly transportation.

Decreased Dependence on Fossil Fuels

By reducing reliance on petrol and diesel, E2Ws help lower oil imports and improve energy security. They support the transition to renewable energy sources for a sustainable future.

Reduction in Noise Pollution

E2Ws produce significantly less noise than conventional motorbikes, decreasing urban noise pollution. This creates a quieter, more pleasant commuting experience for riders and pedestrians.

Easy Home Charging

E2Ws can be conveniently charged at home, eliminating the need for frequent fuel station visits. Features like fast-charging and removable batteries enhance user convenience.

Advanced Technology and Smart Features

Modern E2Ws are equipped with smart features such as GPS tracking, digital displays, and regenerative braking. These innovations enhance safety, efficiency, and overall riding experience.

FACTORS INFLUENCING THE PURCHASE OF ELECTRIC TWO-WHEELERS AMONG CONSUMERS IN COIMBATORE

1. **Initial Cost** – Despite government subsidies under FAME-II, the high upfront price of electric two-wheelers (E2Ws) remains a major concern. While financing options like low-interest loans and EMI plans enhance affordability, many buyers remain uncertain about long-term financial benefits.
2. **Charging Infrastructure** – The accessibility of charging stations plays a crucial role in E2W adoption. Limited fast-charging facilities in Coimbatore contribute to range anxiety, especially among apartment dwellers. Expanding charging networks is essential to encourage wider usage.
3. **Battery Performance and Range** – Key purchasing factors include battery efficiency, charging speed, and lifespan. Lithium-ion batteries are preferred for their durability, though extreme weather conditions may impact performance. Extended warranties and cost-effective replacements increase buyer confidence.
4. **Resale Market Value** – The second-hand market for E2Ws is still emerging, with battery degradation affecting long-term value. Concerns about depreciation and evolving technology make trade-in programs and battery-swapping schemes attractive solutions.
5. **Government Incentives and Policies** – Financial benefits such as tax exemptions, subsidies, and reduced registration fees help make E2Ws more affordable. Tamil Nadu's green mobility initiatives further promote electric vehicle adoption by lowering cost barriers for consumers.

DATA ANALYSIS AND INTERPRETATION**SIMPLE PERCENTAGE ANALYSIS****GENDER OF THE RESPONDENTS**

Gender	No. of Respondents	Percentage
Female	43	29.5
Male	103	70.5
Total	146	100.0

(Source: Primary Data)**INTERPRETATION**

The above table exhibits that out of 146 respondents, 70.5% of the respondents are male, and remaining 29.5% of the respondents are female.

AGE OF THE RESPONDENTS

Age	No. of Respondents	Percentage
18-25 years	25	17.1
26-35 years	60	41.1
36-45 years	40	27.4
46-50 years	12	8.2
Above 50 years	9	6.2
Total	146	100.0

(Source: Primary Data)**INTERPRETATION**

The above table shows that out of 146 respondents, 17.1% of the respondents belong to the age group of 18-25 years, 41.1% belong to the age group of 26-35 years, and 27.4% belong to the age group of 36-45 years old. Meanwhile, 8.2% of the respondents are between 46-50 years, and 6.2% are above 50 years.

EDUCATIONAL QUALIFICATION OF THE RESPONDENTS

Educational Qualification	No. of Respondents	Percentage
Diploma	2	1.4
High School	4	2.7
Illiterate	1	0.7
Postgraduate degree	15	10.3
Professional degree	21	14.4
Undergraduate degree	103	70.5
Total	146	100.0

(Source: Primary Data)**INTERPRETATION**

The above table depicts that out of 146 respondents, 1.4% of the respondents holding diploma, 2.7% completed high school, 0.7% of the respondents being illiterate, 10.3% of the respondents hold a postgraduate degree, 14.4% have a professional degree and 70.5% of the respondents hold an undergraduate degree.

OCCUPATION OF THE RESPONDENTS

Occupation	No. of Respondents	Percentage
Private Employed	52	35.6
Public Employed	27	18.5
Retired	3	2.1
Self-employed	40	27.4
Student	22	15.1
Unemployed	2	1.4
Total	146	100.0

(Source: Primary Data)**INTERPRETATION**

The above table displays that out of 146 respondents, 35.6% of the respondents are private sector employees, 18.5% are public sector employees, 2.1% are retired employees, 27.5% of the respondents are self-employed, 15.1% of the respondents are students and 1.4% are unemployed.

INCOME OF THE RESPONDENTS

Monthly Income	Frequency	Percent
Below ₹20,000	8	5.5
₹20,001 - ₹40,000	40	27.4
₹40,001 - ₹60,000	34	23.3
₹60,001 - ₹80,000	31	21.2
₹80,001 - ₹1,00,000	33	22.6
Above ₹1,00,000	0	0
Total	146	100

(Source: Primary Data)**INTERPRETATION**

The above table highlights that out of 146 respondents, the monthly income distribution, 5.5% of the respondents earn income below ₹20,000, 27.4% of the respondents earn between the range of ₹20,001–₹40,000, 23.3% earn between the range of ₹40,001–₹60,000, 21.2% earn between the range of ₹60,001–₹80,000, 22.6% of the respondents have an income between ₹80,001–₹1,00,000 and no one receives income above ₹1,00,000.

BRAND OF E2W PURCHASED BY THE RESPONDENTS

Brand	No. of Respondents	Percentage
Ampere	20	13.7
Ather	33	22.6
Bajaj	23	15.8
Honda	6	4.1
Ola Electric	41	28.1
Others	1	0.7
TVS	22	15.1
Total	146	100

(Source: Primary Data)

INTERPRETATION

The above table represents that out of 146 respondents, 13.7% of the respondents prefer Ampere, 22.6% prefer Ather, 15.8% of the respondents chose Bajaj, 4.1% prefer Honda, 28.1% prefer Ola Electric, 15.1% of the respondents prefer TVS while 0.7% chose other brands of Electric Two-wheelers.

PRICE RANGE OF E2W PURCHASED BY THE RESPONDENTS

Price range	No. of Respondents	Percent
Below ₹75,000	32	21.9
₹75,001 - ₹1,00,000	21	14.4
₹1,00,001 - ₹1,25,000	20	13.7
₹1,25,001 - ₹1,50,000	58	39.7
Above ₹1,50,000	15	10.3
Total	146	100

(Source: Primary Data)

INTERPRETATION

The above table illustrates that out of 146 respondents, 21.9% of the respondents prefer vehicles priced below ₹75,000, 14.4% opt for the range of ₹75,000 - ₹1,00,000, 13.7% of the respondents prefer vehicles priced between the range of ₹1,00,001 - ₹1,25,000, 39.7% opt for the price range between ₹1,25,000 - ₹1,50,000 and 10.3% are willing to spend above ₹1,50,000.

CHI – SQUARE**AGE AND SATISFACTION LEVEL OF PRICE SPENT ON E2W**

H₀ - There is no significant relationship between Age of the respondents and satisfaction level of money spent on purchasing Electric Two-Wheelers.

H₁ - There is a significant relationship between Age of the respondents and satisfaction level of money spent on purchasing Electric Two-Wheelers.

AGE	SATISFACTION LEVEL OF PRICE SPENT ON E2W				
	Dissatisfied	Neutral	Satisfied	Highly satisfied	Total
18-25 years	1	9	9	6	25
26-35 years	0	3	3	54	60
36-45 years	0	7	11	22	40
46-50 years	0	6	1	5	12
Above 50 years	1	2	2	4	9
Total	2	27	26	91	146

(Source: Primary Data)

CHI-SQUARE TEST

Calculated value	Table value	Degree of freedom	Level of significance	Results
55.75	21.03	12	0.05	Rejected

INTERPRETATION

The table deals with the calculated value of X^2 (55.75) is greater than the table value (21.03) so the null hypothesis is rejected and the alternative hypothesis is accepted. Hence it can be concluded that there is a significant relationship between age of the respondents and satisfaction level of money spent on purchasing electric two-wheelers.

CORRELATION**MONTHLY INCOME AND PRICE RANGE WILLING TO PAY MORE THAN CONVENTIONAL VEHICLES**

	PEARSON CORRELATION	SIGNIFICANCE (2-TAILED)
INTERPRETATION	0.282	0.001

(Source: Primary Data)

INTERPRETATION

The derived correlation result is **0.282** in Karl Pearson correlation with level of significance (2-tailed) is **0.001**. It can be concluded that there is **Weak to Moderate Positive** correlation between Monthly Income of the respondents and Price range willing to pay more than conventional vehicles.

EDUCATIONAL QUALIFICATION AND FREQUENCY OF MAKING COMPARISON OF PRICES OF E2W ACROSS DIFFERENT MANUFACTURERS

	PEARSON CORRELATION	SIGNIFICANCE (2-TAILED)
INTERPRETATION	0.056	0.500

(Source: Primary Data)

INTERPRETATION

The derived correlation result is **0.056** in Karl Pearson correlation with level of significance (2-tailed) is **0.500**. It can be concluded that there is **Very weak Positive** correlation between Educational Qualification of the respondents and Frequency of making comparison of prices of Electric Two-Wheeler across different manufacturers.

ONE-WAY ANOVA

RELATIONSHIP BETWEEN GENDER AND SIGNIFICANCE OF RESALE VALUE OF ELECTRIC TWO-WHEELER WHILE MAKING PURCHASE

H₀ - There is no significant relationship between Gender and Significance of resale value of Electric Two-Wheelers.

H₁ - There is significant relationship between Gender and Significance of resale value of Electric Two-Wheelers.

Source	Sum of Squares	df	Mean Square	F	Sig.
Between groups	2.374	1	2.374	2.993	0.086
Within groups	114.208	144	0.793		
Corrected Total	116.582	145			

(Source: Primary Data)

INTERPRETATION

The calculated value (0.086) is greater than the significant value (0.05), so the null hypothesis is accepted. Hence it can be concluded that there is no relationship between Gender and Significance of resale value of Electric Two-Wheelers.

SUGGESTIONS

- Introduce lower-cost electric two-wheeler models and provide more flexible EMI and financing options, including rent-to-own schemes.
- Conduct awareness campaigns to educate consumers about FAME II subsidies and tax benefits while simplifying the subsidy application process.
- Expand the number of charging stations in key locations such as workplaces and residential areas and promote battery-swapping stations to reduce charging time concerns.

CONCLUSION

This study highlights the significant role of price sensitivity in influencing electric two-wheeler adoption in Coimbatore. While environmental benefits and fuel savings attract buyers, financial constraints remain the main deciding factor. Purchasing behavior varies by age and income, with lower-income consumers relying on EMI plans and subsidies, while higher-income buyers consider premium features. Major obstacles include high initial costs, inadequate charging infrastructure, and uncertain resale value. To drive adoption, manufacturers and policymakers must reduce costs, expand charging facilities, and enhance after-sales support. Clear pricing, trade-in programs, and increased awareness of government incentives can further promote electric mobility.

REFERENCE

1. Kumar, A., & Mehta, S. (2024). Government policies and their impact on price sensitivity in electric vehicle markets. *Policy and Sustainability Journal*, 12(2), 102-115.
2. Ravi, M., & Kapoor, S. (2024). Psychological pricing strategies and electric vehicle adoption. *International Journal of Consumer Behavior*, 22(1), 85-100.
3. Patel, R., & Gupta, P. (2024). Localized pricing strategies for electric vehicle adoption in emerging markets. *Journal of Regional Economic Development*, 14(1), 130-145.