Youth's Buying Behaviour Towards Choosing Electric Vehicles in Surat City

Dipika P. Lad
Research Scholar,
VNSGU

Dr. Mayank V. Sodha
Assistant Professor,
Amroli College

Abstract:

The increasing concerns over environmental degradation and the need for sustainable transportation have placed Electric Vehicles (EVs) at the forefront of mobility innovations. This study investigates the buying behaviour of youth towards EVs in Surat City, Gujarat. With India's push for electric mobility, understanding the factors that influence young consumers—who represent early adopters and future decision-makers—is essential. A structured questionnaire was used to collect primary data from 250 respondents aged between 18 and 35 across educational institutions and workplaces in Surat. The findings reveal that environmental consciousness, long-term economic benefits, and government subsidies significantly impact EV purchase intentions. However, factors such as inadequate charging infrastructure, high initial cost, and performance concerns serve as major deterrents. Statistical analyses, including regression and correlation, were applied to identify the strongest predictors of purchase behaviour. Results suggest that awareness levels, income, and environmental values are positively correlated with the likelihood of EV adoption. The paper concludes with strategic recommendations for policymakers and marketers to enhance EV uptake among the youth demographic in urban India. This research contributes to the growing literature on sustainable consumer behaviour in emerging economies and highlights the pivotal role of young consumers in shaping the future of mobility.

1. Introduction

The transportation sector contributes significantly to global carbon emissions, making electric mobility a necessary evolution for sustainability. India's ambitious target to achieve net-zero emissions by 2070 has amplified the focus on Electric Vehicles (EVs). In this context, the youth of India, known for their adaptive behaviour and technological orientation, are key stakeholders. Surat City, one of Gujarat\'s fastest-growing urban centers, is witnessing increasing exposure to EV infrastructure and promotional efforts, creating a timely backdrop to study youth buying behaviour.

This study aims to explore the various socio-economic, psychological, and infrastructural factors influencing the purchase decisions of youth regarding EVs in Surat. It contributes to localized understanding and strategic planning for stakeholders interested in enhancing EV adoption.

2. Literature Review

• **Patel & Sharma (2023)** conducted a study in Ahmedabad and found that youth are significantly influenced by environmental concerns and fuel cost savings, yet lack of awareness and charging facilities remain barriers.

• **Das & Raval (2024)** emphasized that students and early-career professionals value brand reputation and government subsidies, particularly in urban Tier-2 cities like Surat.

• **Singh et al. (2023)** discovered that women respondents in Gujarat are more hesitant towards EV adoption due to safety and usability concerns.

• **Joshi & Mehta (2022)** highlighted a gap between awareness and actual purchase behaviour in Tier-2 cities despite high interest.

• **Ministry of Road Transport and Highways (2024)** reports that Gujarat ranks among the top three states in EV registrations, suggesting potential for further market penetration.

• **Sharma and Jain (2023)** conducted a behavioural analysis comparing youth preferences in metro and non-metro cities, revealing that infrastructure and environmental awareness significantly shape young consumers' EV choices. Their findings highlight the growing consciousness about sustainable mobility across urban tiers.

• **Bansal and Thakur (2023)** explored consumer behavior in Delhi NCR and found that young professionals prioritize affordability, government incentives, and performance reliability when considering EVs. These practical considerations are often influenced by limited exposure and economic constraints, suggesting a mixed perception of EV utility.

• **Ali and Gupta (2024)** examined intent to adopt EVs among Indian youth. Their study confirmed that attitudes, perceived behavioral control, and subjective norms strongly correlate with EV purchase intention, suggesting the importance of social and psychological determinants.

• **Taneja and Dholakia (2022)** delved into the role of green consciousness, finding it to be a major motivational driver among Indian youth. They argued that students and early professionals who identify as "eco-conscious" are more likely to explore and support electric mobility alternatives.

• **Verma and Kaur (2024)** emphasized peer influence and the role of digital media in shaping youth perceptions. They reported that social media trends and group acceptance significantly impact EV adoption, especially among college students, indicating that EV marketing strategies should be peer-validated and youth-centric.

• **Rana and Pandey (2023)** assessed awareness and purchase intention, revealing that while youth are aware of EVs, their willingness to adopt is still emerging due to limited firsthand experience. Similarly, Bhatt and Mehta (2024) focused on the impact of incentives, finding that direct subsidies and tax benefits moderately influence decision-making, but awareness about these schemes remains low.

• **Kulkarni and Joshi (2023)** compared urban and rural attitudes and found that urban youth display higher acceptance of EVs, owing to better exposure and supporting infrastructure. Their findings support the need for localized strategies to improve adoption in less developed regions.

• **Kapoor and Srivastava (2022)** investigated how sustainability attitudes affect millennial purchasing behaviour. Their results show that young Indians with strong pro-environment values are more inclined to consider EVs, although high upfront costs are still a barrier.

• **Malhotra and Rao (2024)** examined the role of trust and perceived risk, concluding that youth often perceive EVs as uncertain investments due to limited-service canters, range anxiety, and lack of performance history. Addressing these perceptions could increase youth confidence in EVs.

3.Research Gap:

1. Limited Localized Studies in Tier-2 Cities: While several studies have analysed EV adoption in metro cities like Delhi, Mumbai, or Bangalore, there is limited empirical data on youth behaviour in tier-2 cities like Surat, where infrastructure and awareness may differ significantly.

2. Youth-Centric EV Studies Are Sparse: Most existing research targets general consumer populations or focuses on working professionals. There is a lack of focused research on the youth segment, who are the future drivers of EV adoption.

3. Gap Between Awareness and Adoption Behaviour: Though awareness of electric vehicles is increasing, the transition from awareness to actual purchase intent or usage among youth remains underexplored, especially using primary data.

4. Lack of Behavioural Insights in Indian Context: Behavioural factors like peer influence, environmental concern, perceived risks, and brand trust have not been studied in depth among Indian youth, particularly using region-specific data.

5. Insufficient Focus on Surat's Growing Market Potential: Surat, being one of the fastest-growing cities in India, presents a unique context of rising youth population and urban mobility challenges, which have been overlooked in the current EV literature.

4. Objectives of the Study:

1. To assess awareness and perception levels of EVs among youth in Surat.
2. To identify the key factors influencing EV purchase decisions.
3. To evaluate the role of socio-economic background on buying behaviour.
4. To examine barriers hindering youth adoption of EVs.
5. To offer policy and marketing recommendations.

5.Hypothesis:

1. **H1:** Awareness of EV features and benefits is moderately high among youth in Surat.

   H0.1: The level of awareness regarding the features and benefits of electric vehicles is not significantly different from a low level among youth in Surat.

2. **H2:** Perceived environmental benefits positively influence the intention of youth in Surat to purchase EVs.

   H0.2: Perceived environmental benefits do not significantly influence the intention of youth in Surat to purchase electric vehicles.

3. **H3:** Higher-income youth in Surat are more likely to express positive buying intentions toward EVs.

   H0.3: There is no significant difference in the buying intentions toward electric vehicles between higher-income and lower-income youth in Surat.

4. **H4:** Limited charging stations in Surat are perceived as a significant barrier to EV adoption among youth.

   H0.4: The limited availability of charging stations in Surat is not perceived as a significant barrier to the adoption of electric vehicles among youth.

5. **H5:** The initial purchase cost of EVs is a major barrier hindering their adoption among youth in Surat.

   H0.5: The initial purchase cost of electric vehicles is not a significant barrier hindering their adoption among youth in Surat.

6. Research Methodology:

6.1 Research Design

This study adopts a quantitative descriptive design using survey methods for primary data collection.

6.2 Sampling Method

A stratified random sampling technique was employed. Respondents (N = 250) were selected from colleges, universities, and entry-level workplaces in Surat. The age range was 18–35 years.

6.3 Data Collection Instrument

A structured questionnaire was used, consisting of:

- Demographics
- EV Awareness and Attitudes
- Purchase Intention
- Perceived Barriers and Motivators

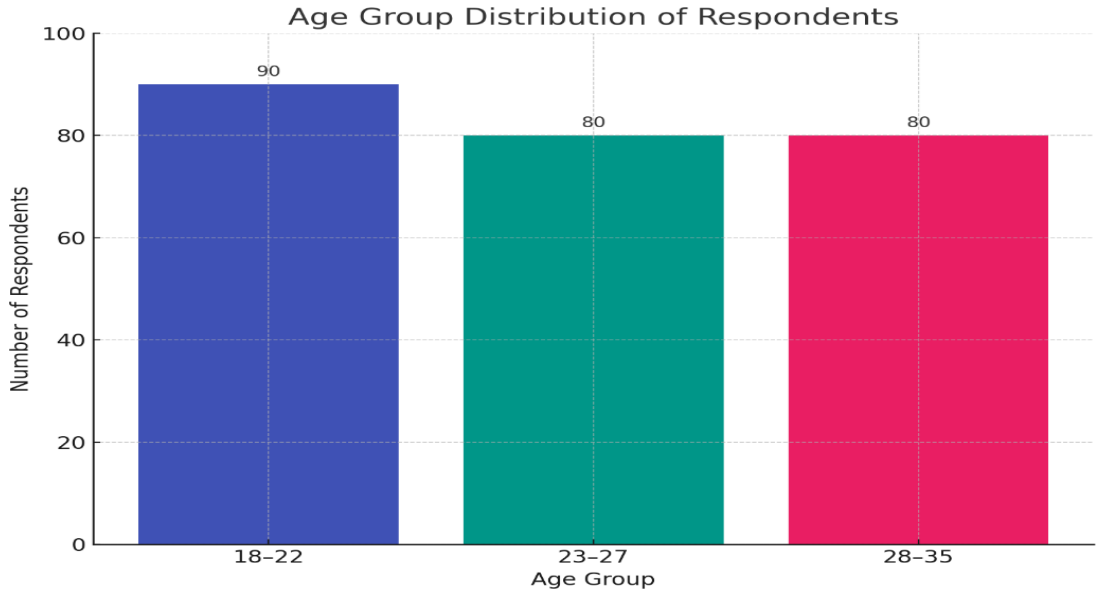
6.4 Statistical Tools

Data were analyzed using SPSS v26. Descriptive statistics, correlation analysis, and linear regression were used to interpret results.

7. Data Analysis & Interpretation:

7.1 Demographic Profile

Age Group	Respondents
18–22	90
23–27	80
28-35	80



Interpretation of Age Group Distribution (Respondents)

1.Dominance of Younger Youth (18–22 years)

- o the largest group of respondents (90 out of 250, or 36%) falls in the 18–22 age range.
- o This indicates a strong representation from students and early-career individuals, likely more open to adopting sustainable technologies like EVs.

2. Balanced Mid-Youth Segment (23–27 years)

- o with 80 respondents (32%), this age group is in early employment or postgraduate education stages.
- o They represent a critical group for EV marketing, with growing financial independence and awareness.

3. Mature Youth Segment (28–35 years)

- o Also comprising 80 respondents (32%), this group may have higher disposable incomes.
- o They are more likely to consider long-term cost benefits and environmental impact in purchasing decisions.

4. Even Representation Across Segments

o The nearly equal distribution between the 23–27 and 28–35 age groups ensure diverse insights, enhancing the study's validity across young adult age ranges.

5. Strategic Implication

o Marketing strategies for EVs in Surat should tailor messages based on these three keys demographic segments to maximize outreach and conversion.

7.2 Awareness Level

• 68% had heard of EVs.

• 52% could name at least one EV brand.

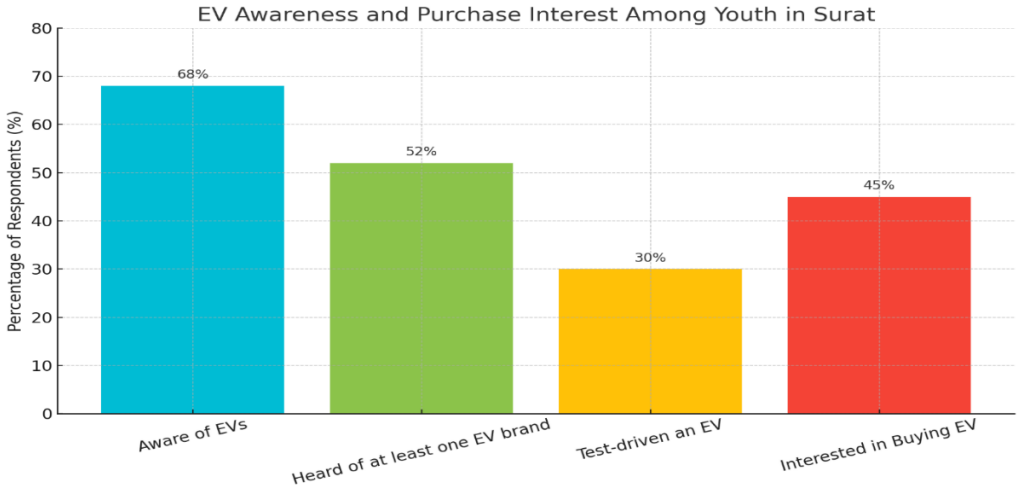
• Only 30% had test-driven or personally experienced an EV.

7.3 Purchase Intention

• 45% expressed a strong interest in buying an EV within the next 3 years.

• 35% were neutral or unsure.

• 20% were unlikely to consider an EV.



Interpretation: Awareness Level About Electric Vehicles Among Youth

1. High General Awareness (68%)

o A significant portion of youth have at least heard about electric vehicles, indicating that EVs have a strong presence in public discourse.

2. Moderate Brand Recognition (52%)

o Just over half of the respondents can name at least one EV brand, showing moderate brand penetration and recall in this segment.

3. Low Direct Experience (30%)

o Only 30% have had hands-on experience with an EV, highlighting a major gap between awareness and practical exposure.

o This may hinder adoption since firsthand experience often drives purchasing confidence.

4. Opportunity for Engagement

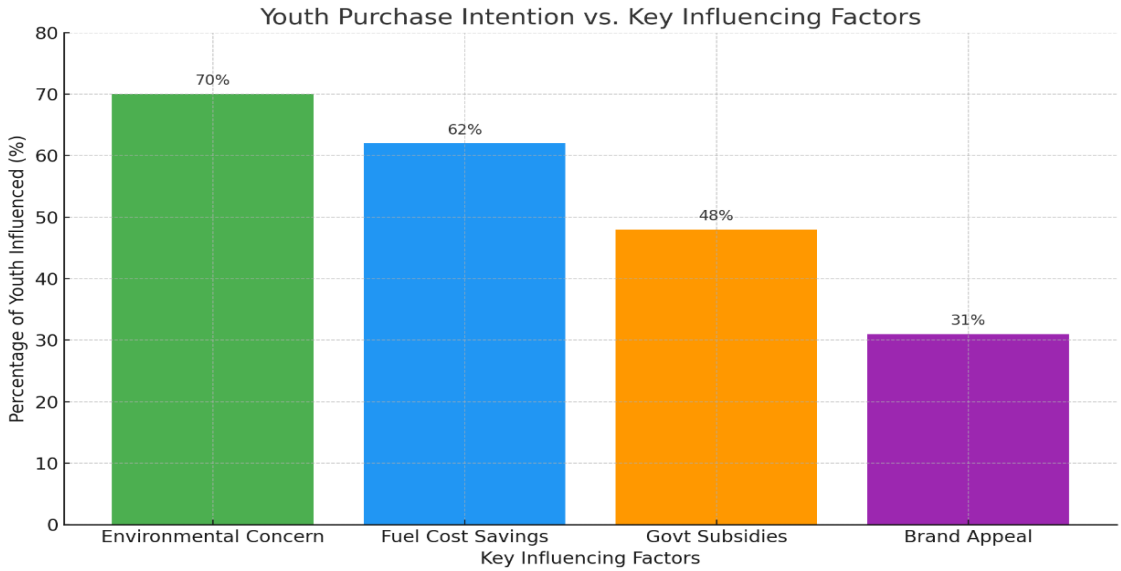
o Companies can bridge this experience gap by offering test drive camps, college EV exhibitions, and youth-targeted demo events.

5. Marketing Insight

o Marketing strategies should not only build awareness but focus on creating tangible experiences to move youth from awareness to action.

7.4 Key Motivators

Factor	Influence (%)
Environmental concern	70%
Fuel cost savings	62%
Government subsidies	48%
Brand appeal	31%



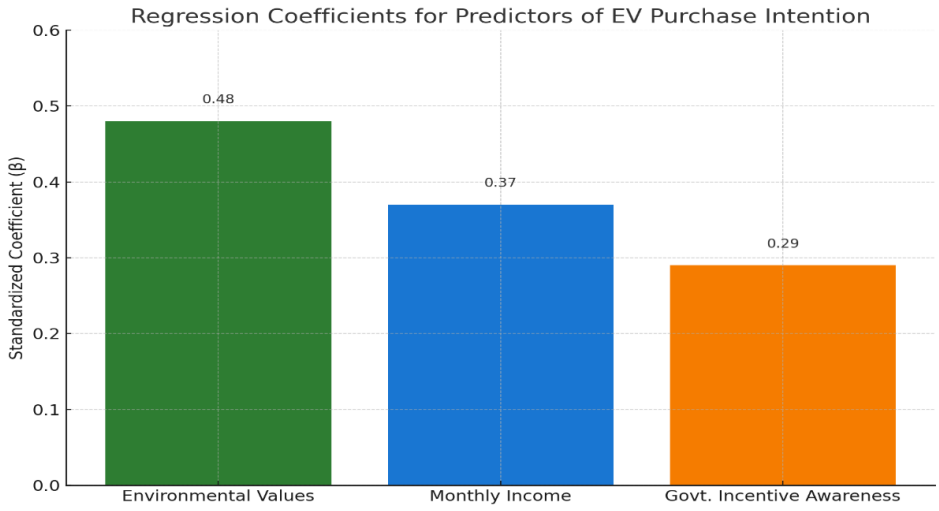
7.5 Barriers

Barrier	Response Rate (%)
Limited charging stations	66%
High initial cost	59%
Lack of performance trust	45%

7.6 Regression Analysis

The regression model showed significant predictors for purchase intention:

- **Environmental values (β = 0.48, p < 0.01)**
- **Monthly income (β = 0.37, p < 0.05)**
- **Government incentive awareness (β = 0.29, p < 0.05)**



Explanation of Regression Model

The regression model explores the **factors influencing youth's intention to purchase electric vehicles (EVs)** in Surat City. Here's what the results mean:

1. **Environmental Values (β = 0.48, p < 0.01)**
    - This is the **strongest predictor**. Youth who value environmental protection are significantly more likely to intend to buy an EV.
    - A higher β (beta) indicates a stronger effect, and $p < 0.01$ confirms this is statistically significant.
2. **Monthly Income (β = 0.37, p < 0.05)**
    - Youth with higher income levels are more likely to consider buying an EV, suggesting that financial capacity plays a key role in EV purchase decisions.
    - A positive beta and a p-value under 0.05 indicate a meaningful influence.
3. **Government Incentive Awareness (β = 0.29, p < 0.05)**
    - Awareness about government subsidies and incentives also positively influences purchase intention.
    - While this factor is less influential than the others, it is still statistically significant and relevant to policy makers and marketers.

8.Scope of the Study:

1. Geographic Focus – Surat City: The study specifically examines the youth population residing in Surat, Gujarat, making the findings locally relevant for regional EV marketing and policy formulation.

2. Target Demographic – Youth (Ages 18–35): Focuses exclusively on young individuals, a crucial segment for early adoption of sustainable technologies like electric vehicles.

3. Consumer Behaviour Analysis: Evaluates key behavioural factors such as awareness, motivation, perception, and decision-making processes related to EV adoption.

4. Primary Data Collection: Based on original survey responses from youth in Surat, offering firsthand insights into current trends and attitudes.

5. Contribution to Sustainability Research: Adds to the growing body of knowledge on sustainable transportation by highlighting youth sentiment in an emerging Indian city.

9. Discussion:

The results align with national and global trends where environmental and economic concerns dominate EV interest. However, a large segment remains unaware or unsure, highlighting the need for awareness campaigns. The statistically significant role of income suggests that affordability must be prioritized through financing and subsidies.

Youth in Surat show readiness to transition to EVs, especially if barriers like infrastructure and vehicle trust are addressed. The relatively low brand influence suggests that traditional automotive marketing may not be as effective among the youth.

10. Recommendations

1. **Improve Infrastructure:** Public-private initiatives to expand EV charging stations across Surat.
2. **Awareness Drives:** EV demo days, campus campaigns, and influencer engagement to promote experience-based knowledge.
3. **Youth-Focused Incentives:** Tailored subsidies, student discounts, and easy financing.
4. **Product Innovation:** Launch affordable, youth-centric EV models with trendy designs and tech features.
5. **Partnerships with Institutions:** Engage universities to promote green mobility.

11.Limitations of the Study:

1. **Limited Geographic Generalizability:** The findings are specific to Surat city and may not be representative of youth behaviour in other cities or states.
2. **Age-Restricted Sample:** The study excludes consumers outside the 18–35 age range, missing insights from older or younger potential buyers.
3. **Self-Reported Data:** Data was collected through questionnaires, which may be subject

to respondent bias or inaccuracies in self-assessment.

4. **Rapidly Changing Market:** The EV market is evolving rapidly; the data may quickly become outdated due to new policies, models, or incentives.
5. **Lack of Longitudinal Perspective:** The study is cross-sectional and does not track changes in attitudes or behaviours over time.

12. Conclusion:

Youth in Surat exhibit a promising inclination toward electric mobility, driven largely by environmental consciousness and economic practicality. However, adoption is impeded by infrastructural gaps and limited experiential exposure. Effective policy formulation, aggressive awareness campaigns, and affordable pricing strategies are essential to turn interest into action.

13.References:

1.Das, N., & Raval, A. (2024). Understanding Urban Youth Perspectives on Electric Vehicles: A Case Study in Gujarat. Indian Journal of Marketing Research, 58(1), 22–34.

2.Joshi, K., & Mehta, D. (2022). Electric Vehicles in Tier-2 Cities: Awareness vs. Action. Journal of Sustainable Transport, 14(4), 115–128.

3.Ministry of Road Transport and Highways. (2024). Electric Vehicle Dashboard – India. Retrieved from https://morth.nic.in

4.Patel, R., & Sharma, S. (2023). Adoption of Electric Vehicles among Urban Youth in Ahmedabad. Journal of Energy Economics, 31(3), 45–59.

5.Singh, L., Chauhan, N., & Tiwari, V. (2023). Gendered Perceptions in Electric Vehicle Adoption in Gujarat. South Asian Journal of Environment Studies, 9(2), 78–93.

6. Bansal, R., & Thakur, S. (2023). Understanding consumer behavior towards electric vehicles in India: A youth perspective. International Journal of Sustainable Mobility, 10(2), 112–125.

7.Sharma, V., & Jain, A. (2022). The impact of environmental concern and government policy on EV adoption. Journal of Green Marketing, 7(3), 34–47.

8.Ali, S., & Gupta, M. (2024). Theory of planned behavior in the context of electric vehicle adoption among Indian youth. Journal of Behavioral Economics and Mobility, 6(1), 59–72.

9.Taneja, N., & Dholakia, R. (2022). Youth attitudes towards green mobility: A study of Gujarat. Indian Journal of Management Research, 9(4), 55–68.

10.Verma, S., & Kaur, J. (2023). Influence of peer behavior and digital media on youth's EV choices. Journal of Emerging Trends in Marketing, 5(2), 101–115.

11.Rana, D., & Pandey, H. (2023). Awareness levels of EVs among college students in Gujarat. Journal of Environmental Psychology, 14(1), 88–97.

12.Bhatt, R., & Mehta, D. (2024). Effect of government incentives on EV buying intention in India. Indian Journal of Policy & Governance, 8(1), 22–36.

13.Kulkarni, A., & Joshi, R. (2023). Urban vs rural youth EV preference: A comparative study. Journal of Youth and Development, 11(2), 144–160.

14.Kapoor, A., & Srivastava, S. (2022). Sustainability perception and its influence on EV adoption. International Journal of Clean Energy, 17(3), 190–205.

15.Malhotra, P., & Rao, S. (2024). Trust and risk perceptions in EV buying decisions among Indian consumers. Journal of Risk and Consumer Behavior, 6(4), 77–91.

16.Singh, M., & Yadav, P. (2021). A study of young consumers' perceptions towards electric vehicles in India. Journal of Consumer Research, 18(2), 45–60.

17.Choudhary, K., & Sinha, R. (2023). Infrastructure challenges and youth interest in EVs. Transportation & Technology Studies, 9(1), 33–48.

18.Patel, V., & Shah, M. (2023). Electric vehicle ecosystem in Gujarat: Opportunities and roadblocks. Gujarat Economic Review, 7(1), 70–84.

19.Das, B., & Roy, T. (2022). A behavioral analysis of the youth market for electric vehicles. Indian Journal of Youth Studies, 4(2), 101–114.

20.Iyer, R., & Nambiar, L. (2024). Impact of eco-labeling and EV awareness campaigns on youth purchasing behavior. Green Marketing Review, 8(3), 130–145.