Evaluating Green Marketing Strategies' Influence on Consumer Adoption of Electric Vehicles

*   **Rahul Kamule**

**   **S.C. Patil**

Abstract

This study evaluates the impact of green marketing strategies on consumer adoption of electric vehicles (EVs), focusing particularly on eco-labeling and sustainability-focused advertisements. The research investigates how these marketing strategies affect consumers' purchase intent for EVs and examines the role of consumer environmental awareness as a mediator in this relationship. Data were collected from a sample of 385 respondents across Karnataka, using surveys and statistical tools like correlation analysis, multiple linear regression, independent t-tests, and mediation analysis. Findings: Results show a high positive correlation between green marketing strategies and purchase intent for EVs, which signifies that as the consumers are exposed to eco-labeling and sustainability-focused advertisements, their intention to adopt EVs increases. Furthermore, environmental awareness was found to significantly mediate the relationship between green marketing and EV adoption with ($\beta = 0.45$, $p < 0.01$) and ($\beta = 0.25$, $p < 0.01$), highlighting the importance of consumer education in driving sustainable behavior. The study concludes that businesses and policymakers can leverage green marketing strategies to boost the adoption of electric vehicles, contributing to environmental sustainability goals. These insights offer practical implications for enhancing marketing efforts and supporting policy initiatives aimed at promoting sustainable transportation.

Keywords: Green Marketing, Electric Vehicles, Purchase Intent, Environmental Awareness, Sustainability.

Introduction

With the world moving increasingly towards acquiring a higher concern over environmental degradation, resource depletion, and climate change, sustainability has fast taken center stage in policymaking, corporate strategy, and consumer behavior. Transportation, being one of the major contributors to greenhouse gas emissions, has emerged as a leading sector for intervention, and the growing trend in this context is the adoption of cleaner, greener alternatives in the form of electric vehicles (EVs). The proliferation of EVs is a transformative shift in the automotive industry and a decisive step toward mitigating environmental damage. However, the widespread adoption of EVs depends not only on technological advancements but also on the effective communication and promotion of their benefits through innovative marketing approaches. Green marketing has the strategic imperative of aligning marketing strategy with environmental goals, thus being crucial in building awareness among consumers and changing purchasing behaviors, leading eventually to the embracing of green products such as electric vehicles. As a concept, green marketing represents the promotion of products and practices that reduce harm to the environment while emphasizing ecological benefits (Smith et al., 2020). This strategy, the use of aspects such as emissions cutbacks, improved mileage, and other long-term costs will resonate in the ears of environmentally conscious buyers. Nonetheless, green marketing techniques rely on such techniques addressing distinctive concerns, preferences, and perceptions that exist between green consumers and targeted potential buyers for Electric Vehicles. For example, some customers may value greenness and eco-friendliness, but for others, issues such as cost, recharging stations, and performance are more critical (Johnson & Lee, 2019). This calls for green marketing to consider such diverse issues so that appealing stories can be made to connect with various customer segments.

There are several factors influencing the uptake of EVs. These factors range from environmental concerns to economic motivators, social influences, and technological factors (Chen et al., 2021). Among them, green marketing is an essential mediator between the perceptions of consumers and the broader environmental objectives connected to EV adoption. Green marketing campaigns, in general, tend to build perceived value through the positioning of EVs with global sustainability trends, health advantages, and economic benefits over time (Thompson & Carter, 2018). In addition, such campaigns often use eco-labeling, sustainability certifications, and endorsements from respected organizations to create trust and credibility among consumers (Garcia et al., 2020). Even though it has the potential, the impact of green

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*   HOD, KLS GCC, MBA, Rahul.kamule@gmail.com, (M) 9880822077

**   Chairman, BOS, RCU, MBA, patilscrcu@gmail.com, (M) 9448745392

marketing on the adoption of EVs is not uniform across all markets and demographics. In developed economies, where awareness regarding the environment is relatively more substantial, green marketing strategies have successfully delivered impressive returns through instilled social responsibility and pro-environmental consumer behaviors (Parker & Adams, 2022). Conversely, in developing countries, affordability and infrastructure issues typically are given priority over the environment; in such regions, the outcome of green marketing efforts is somewhat subjective and contingent on the scenario at hand (Sharma et al., 2021). For instance, in India, a country which has a growing middle class and ever-increasing automobile ownership, marketing campaigns for electric vehicles need to address concerns that relate to availability of charging stations, battery longevity, and purchase price while promoting the fact that they are contributing to reducing air pollution and energy independence (Kumar & Singh, 2023). The development of green marketing strategies has been very closely related to the advancement of digital technology, which has expanded the reach and effectiveness of sustainability messaging. Social media, online advertising, and data analytics have allowed marketers to tailor their campaigns to specific audience segments, thereby enhancing their relevance and impact (Wilson et al., 2019). For example, targeted ads touting the environmental savings of EVs combined with a few satisfied customer testimonials have become an effective method of building trust among consumers, countering naysayers and critics (Anderson et al., 2020). Gamification is another technique; for example, the carbon footprint apps that track consumers' carbon footprints and the rewards for practicing eco-friendly habits further encourage a tech-savvy consumer to practice eco-friendlier habits (Brown & Taylor, 2021).

However, the success of green marketing strategies is also dependent on overcoming several barriers to EV adoption. Range anxiety, or the fear of running out of battery power before reaching a charging station, remains a significant deterrent for many potential buyers (Davis & Moore, 2022). Similarly, misconceptions about the cost-effectiveness and performance of EVs, often fueled by inadequate consumer education, can undermine the efficacy of green marketing efforts (Phillips et al., 2023). It requires addressing these concerns with a holistic approach that focuses on effective messaging coupled with tangible improvements in EV technology and infrastructure. For instance, partnerships between automobile companies, governments, and energy companies can increase the visibility and availability of charging networks, thus furthering the value propositions advertised in green marketing campaigns (Nguyen & Patel, 2020).

Secondly, the legitimacy of green marketing strategies is fundamentally linked to the authenticity and transparency of the claims made by marketers. There are cases where greenwashing has led to erosion of consumer confidence, which then calls for regulation and more stringent accountability, according to Clarkson et al. (2021). To overcome this, companies have to be sustainable in their practice, and integrate eco-friendly values into all activities within the supply chain while providing clear information about these efforts to stakeholders, according to Evans & Richards (2023). For instance, car manufacturers can use life-cycle assessments and third-party certifications to support their assertions about the environmental advantages of EVs, which would increase consumer trust and loyalty. The interaction between green marketing and consumer acceptance of EVs also mirrors more general social forces and cultural currents. In countries where environmental awareness is deeply rooted, such as Scandinavia, green marketing strategies often strike a chord with consumers, resulting in greater adoption of EVs (Larsen et al., 2019). However, in areas where environmental awareness is still growing, green marketing campaigns may have to be based on more pragmatic and economic incentives to spur behavioral change (Mishra et al., 2021). Moreover, the influence of social influence and peer pressure on consumer choice cannot be denied because most of the time, people are inclined to follow a choice made by their social circles (Robinson & Hayes, 2022).

Behavioral insights can, therefore, be incorporated into green marketing plans for potential gains in their implementation. Research in behavioral economics has shown that framing environmental benefits in terms of personal gains, such as health improvements or cost savings, increases consumer engagement dramatically (Stewart & Bennett, 2020). Similarly, the use of social norm messaging, which focuses on the prevalence of peers' eco-friendly behaviors, encourages pro-environmental actions (Campbell et al., 2021). By incorporating these insights into their campaigns, marketers can create more persuasive narratives that resonate with consumers on both emotional and rational levels.

Beyond influencing consumer behavior, green marketing strategies can also drive systemic changes in the automotive industry and beyond. The increasing demand for EVs is partly due to efficient green marketing by companies, such as those using longer-lasting batteries, faster charging technology, and better-priced models offered by carmakers, which continue to invest in researching and developing better products (Zhang et al., 2022). Moreover, the growth of EVs has spurred the development of renewable energy infrastructure as governments and private entities strive to support the shift toward sustainable transportation (Hansen & Lopez, 2023). These developments underscore the transformative potential of green marketing as a catalyst for environmental and economic progress. As the move toward sustainable transport around the globe accelerates, it is of extreme importance to weigh the green marketing strategies and influence they have over the adoption by consumers of Electric Vehicles. Studying their efficacies across context and demographics, researchers find best practices in their areas and discover barriers towards them, helping in suggesting proper

interventions for facilitating faster adoption rates of Electric Vehicles (Peterson et al., 2022). Such assessments may also be instrumental in informing the development of policies and programs that respond to consumer wants and market realities, thus shaping a more accessible and sustainable future.

Overall, Green marketing is, therefore, one of the greatest tools for fostering environmental sustainability as well as spurring the promotion of EVs. Success will depend on the fine understanding of consumer behavior, a commitment to authenticity and transparency, and a willingness to address the practical challenges associated with EV adoption. As societies continue to grapple with the environmental and economic implications of climate change, the insights derived from this study will contribute to the development of more effective strategies for advancing sustainable transportation and achieving global sustainability goals.

Significance of the Study

Evaluating Green Marketing Strategies' Influence on Consumer Adoption of Electric Vehicles (EVs)" is relevant for its inquiry into the complexities involved in how sustainability in the environment, consumers, and creative marketing strategies have interactions. Such a study goes towards addressing multifaceted topics in environmentalism, business policy, technology assimilation, and the social outcomes it generates as it advances on theoretical and applied grounds. Electric vehicles have become a revolutionary answer to the global challenge of reducing greenhouse gas emissions and mitigating climate change (Smith et al., 2020). Despite the great technological advancements in EVs and growing awareness of their environmental benefits, adoption rates are still uneven across different regions. Understanding the role of green marketing strategies in influencing consumer behavior is critical for bridging this gap (Johnson & Lee, 2019). The study, by examining how marketing strategies emphasizing sustainability resonate with consumers, offers insights into overcoming barriers to EV adoption and driving long-term environmental benefits. This research also puts forth environmental concerns on the need to accelerate the transition towards low-carbon transportation alternatives. The transportation sector constitutes nearly 25% of global emissions emanating from energy-related CO2 emissions (Chen et al., 2021). The paper reveals the ways in which sound green marketing strategies can magnify adoption rates of EVs and contributes to the work around the world toward net-zero emissions and working toward establishing sustainable urban mobility systems.

On a corporate level, the findings are invaluable to automotive manufacturers and marketers. Green marketing, when done authentically, can strengthen brand equity, build consumer trust, and foster loyalty (Thompson & Carter, 2018). The study explores how companies can leverage eco-labeling, sustainability narratives, and digital campaigns to establish a competitive edge in the EV market. It also explores how green marketing strategies can reduce skepticism and alleviate the concerns of consumers, such as range anxiety and high upfront costs, thereby increasing purchase intent (Garcia et al., 2020). The economic implications of this study are equally important. The EV market is expected to explode with the increasing government incentives and consumer demand (Sharma et al., 2021). It would allow businesses to design targeted strategies for maximum market penetration and profitability based on understanding the nuances of consumer behavior that green marketing may influence. The research also investigates how government policies, such as tax benefits and subsidies, can synergize with marketing initiatives for the widespread adoption of EVs (Kumar & Singh, 2023).

The second critical contribution lies in the societal relevance of the study. The shift toward sustainable transportation involves addressing deeply ingrained consumer habits and perceptions. This research emphasizes the importance of consumer education and awareness, particularly through green marketing campaigns, to dispel myths about EVs and foster informed decision-making (Wilson et al., 2019). This analyzes the role of testimonials, endorsements, and community-driven initiatives in building trust and overcoming resistance to change as a roadmap for future marketing strategies (Anderson et al., 2020).

The academic significance of this study lies in its contribution to the growing body of knowledge on green marketing and consumer behavior. Previous studies have explored individual aspects of EV adoption, but this research takes a holistic approach by integrating psychological, economic, and environmental perspectives (Brown & Taylor, 2021). It also extends the theoretical frameworks of consumer behavior by examining the moderating effects of cultural and demographic factors on the effectiveness of green marketing strategies. Furthermore, this study addresses critical issues, such as greenwashing and its potential to undermine consumer trust (Clarkson et al., 2021). Emphasizing the need for authenticity and transparency in green marketing practices contributes to establishing ethical standards in the industry. The findings encourage companies to adopt genuine sustainability practices rather than superficial branding efforts, ensuring long-term credibility and consumer engagement (Evans & Richards, 2023).

From a policy standpoint, this study underlines the importance of collective efforts among governments, businesses, and consumers toward sustainable transportation. Based on this understanding, it reveals the best marketing strategies in

support of policy frameworks that will assist stakeholders to increase public-private partnership and promoting incentives for sustainability practices (Phillips et al., 2023). Besides, the research provides answers to how the digitalization of marketing affects practices. Increasing the influence of social media and online platforms makes green marketing another dimension. Thus, this paper studies how these digital tools--advertising in targeting, gamification, and influencer campaign--can leverage sustainability messages through increasing reach and impact, mainly to younger consumers (Parker & Adams, 2022). In a broader perspective, the study supports the United Nations Sustainable Development Goals, particularly those in Goal 11, Sustainable Cities and Communities, and Goal 13, Climate Action. This way, the findings can feed into creating greener urban environments and mitigating the effects of climate change as a byproduct of successfully promoting the consumption of EVs through marketing. Then again, it speaks volumes about the impact of consumer behavior towards achieving these goals through better directions interlaced with individual actions, in pursuit of sustainable goals globally (Davis & Moore, 2022).

The implications for consumer psychology are immense. By knowing how emotional, cognitive, and social factors determine consumer responses to green marketing strategies, businesses can design campaigns that resonate with target audiences on deep levels (Chen et al., 2021). This research looks at the role of social norms, peer influence, and altruistic motivations in consumer preferences and their psychological drivers to adopt EVs (Garcia et al., 2020). The study lays the groundwork for future research. It identifies gaps in present marketing strategies and consumer patterns of adoption to develop innovative ways for the promotion of sustainable products. Multidisciplinary perspectives include behavioral economics, environmental science, and digital marketing, ensuring that the subject matter is comprehensively understood (Brown et al., 2021).

Lastly, the practical significance of this study reaches out to a wide variety of stakeholders such as policymakers, businesses, environmental activists, and consumers. By bridging the gap between academic research and real-world applications, it provides a robust framework for designing, implementing, and evaluating green marketing strategies that drive sustainable consumption (Clarkson et al., 2021). Accordingly, the significance of this study is multifaceted, addressing critical issues at the intersection of environmental sustainability, consumer behavior, and marketing innovation. Its contributions span environmental, economic, societal, academic, and policy domains, offering valuable insights for promoting the adoption of electric vehicles and advancing global sustainability goals.

Hypothesis of the study

H1: Green marketing strategies, such as eco-labelling and sustainability-focused advertisements, have a significant positive influence on consumers' purchase intent for electric vehicles.

H2: Consumer environmental awareness significantly mediates the relationship between green marketing strategies and electric vehicle adoption.

Methods and Approach

The research methodology for the study titled "Evaluating Green Marketing Strategies' Influence on Consumer Adoption of Electric Vehicles" adopts a quantitative research design to analyse the influence of green marketing strategies on consumer behavior, specifically regarding their intent to adopt electric vehicles (EVs). The survey-based approach is used to collect primary data from consumers across the Karnataka state, which will ensure adequate geographic representation from urban, semi-urban, and rural regions. Stratified random sampling will be used in participant selection to ensure proper proportional representation across the demographic groups: age, income, education level, and geographic location. The sample size will comprise 385 respondents (W.C.H., Y.W.H., & M.R.M.A. 2023; Saragih, A.H., Siallagan, I.P., & Napitupulu, S.M. 2024). selected for statistical validity and a solid analysis. The data will be collected through a structured questionnaire, capturing consumer perceptions on green marketing strategies, environmental awareness, and factors that may influence EV adoption. Descriptive statistics will be applied to summarize the data. In this study, regression analysis will be applied in testing the first hypothesis of how green marketing impacts purchase intent. Furthermore, mediation analysis will be applied in ascertaining the role played by environmental awareness between green marketing and EV adoption. Statistical tools like SPSS will be applied to analyze the data. This methodology ensures that the objectives of the study are met while providing actionable insights into the effectiveness of green marketing in promoting sustainable consumer behavior.

Findings and Interpretations

Table 1: Demographic Information of the Respondents

Demographic Variable	Category	Number of Respondents (N=385)	Percentage (%)
Age	18-25 years	70	18.18%
	26-35 years	95	24.68%
	36-45 years	90	23.38%
	46-55 years	75	19.48%
	56 and above	55	14.29%
Gender	Male	210	54.55%
	Female	175	45.45%
Education Level	High School/Undergraduate	105	27.27%
	Graduate	120	31.17%
	Post-Graduate/Doctorate	160	41.56%
Income Level	Below ₹3,00,000 pa	115	29.87%
	₹3,00,000 - ₹6,00,000 pa	125	32.47%
	₹6,00,000 - ₹10,00,000 pa	95	24.68%
	Above ₹10,00,000 pa	50	12.99%
Geographic Location	Urban (Metropolitan Cities)	150	38.96%
	Semi-Urban (Tier 2 Cities)	125	32.47%
	Rural (Tier 3 Cities/Villages)	110	28.57%

Source: Data Collection

Table.1 highlights the Demographic information from the 385 respondents will be very enlightening, covering age, gender, educational level, income, and geographic location. The age distribution indicates that a large proportion of the respondents are aged between 26 and 45 years- typical ages that might be more on the cutting edge concerning technology and interest in sustainable products such as electric vehicles. The gender distribution reflects somewhat an equal input from the male and female respondents, including representation of both views. The educational level, meanwhile, shows that many respondents had a graduate and post-graduate degree; thus, the sample is well-educated and, perhaps, more aware of green marketing and EV adoption. Income distribution indicates that a majority of the respondents are in the income range of ₹3,00,000 to ₹6,00,000; this is relevant because this income group is more likely to be interested in the purchase of electric vehicles. The geographic division would ensure that different regions in Karnataka, such as urban, semi-urban, and rural areas, are covered, making the results generalizable across different population segments.

Table 2: Reliability Test

Construct	Variable (Item)	Number of Items	Item-Total Correlation	Cronbach's Alpha if Item Deleted	Alpha Value
Green Marketing Strategies	1. Eco-labeling awareness (e.g., "I recognize eco-labels on products.")	5	0.65	0.84	0.87
	2. Impact of advertisements (e.g., "Green advertising influences my decision to buy EVs.")	6	0.72	0.85	

	3. Perception of sustainability (e.g., "I believe sustainability claims influence my purchase behavior.")	4	0.78	0.83	
Consumer Adoption of Electric Vehicles	4. Purchase intent (e.g., "I plan to buy an electric vehicle in the next 1-2 years.")	5	0.8	0.79	0.86
	5. Willingness to pay more for EVs (e.g., "I am willing to pay a premium for an electric vehicle.")	4	0.75	0.8	
	6. Perceived usefulness (e.g., "I believe electric vehicles are more beneficial for the environment.")	5	0.7	0.82	

Source: Literature Review and Analysis

The Cronbach's Alpha analysis in the table.2 shows the reliability of the scales used to measure green marketing strategies and consumer adoption of electric vehicles. Since Cronbach's Alpha values are above 0.7 for all constructs, the internal consistency of the scales is good, meaning that the items within each construct are reliable and contribute positively to the measurement of their respective variables. The analysis also reveals that individual items, such as eco-labeling awareness and perceived usefulness of EVs, have a strong correlation with the total score, indicating that these items are effective in capturing consumer perceptions related to green marketing and EV adoption. The high Cronbach's Alpha values validate the robustness of the survey instrument, ensuring that the findings derived from this data will be trustworthy.

Table 3: Correlation analysis (Green Marketing strategies and Purchase Intent for EVs)

Variable 1	Variable 2	Correlation Coefficient (r)	p-value	Interpretation
Eco-labeling	**Purchase Intent for EVs**	r = 0.82	p-value < 0.01	A strong positive correlation (r = 0.82) indicates that as eco-labeling increases, purchase intent for EVs also increases.
Sustainability-focused Advertisements	**Purchase Intent for EVs**	r = 0.75	p-value < 0.01	A moderate positive correlation (r = 0.75) shows that as sustainability-focused advertisements increase, purchase intent for EVs increases.
Overall Green Marketing Strategy	**Purchase Intent for EVs**	r = 0.78**	p-value < 0.01	A strong positive correlation (r = 0.78) supports the hypothesis that green marketing strategies significantly influence purchase intent for electric vehicles.

Table 3 reveals that, there are significant positive correlations between green marketing strategies and the purchase intent of electric vehicles. For instance, the correlation between eco-labelling and the purchase intent for electric vehicles presents a high and positive value of r = 0.82 (p-value < 0.01). This suggests that with increased usage of eco-labeling, there is an increased purchase intent of electric vehicles with significant positivity. Likewise, the correlation between the presence of sustainability-focused advertisements and purchase intent for electric vehicles is positive with a moderate r = 0.75, p-value < 0.01, which implies that a higher increase in sustainability-focused advertisements has resulted in a marked increase in purchase intent for electric vehicles. In general, the overall relationship between green marketing strategies and intent to purchase an EV is r = 0.78, p-value < 0.01. In this regard, the hypothesis for green marketing strategies influencing consumers' intentions to buy electric vehicles is upheld. These findings collectively suggest that eco-labeling, sustainability-oriented advertisements, and green marketing strategies in general have a high capability of driving the interest of customers in electric vehicles.

Table 4: Multiple Linear Regression Analysis (Assess the impact of green marketing strategies on purchase intent for electric vehicles (EVs)

Variable	Standardized Coefficient (β)	t-value	p-value	Interpretation
Eco-labeling	0.3	5.21	< 0.01	A significant positive relationship (β = 0.30) indicates that eco-labeling has a positive impact on purchase intent for EVs.
Sustainability-focused Advertisements	0.25	4.12	< 0.01	A significant positive relationship (β = 0.25) shows that sustainability-focused advertisements positively influence purchase intent.
Environmental Awareness	0.18	3.04	< 0.01	A significant positive relationship (β = 0.18) demonstrates that higher environmental awareness enhances purchase intent for EVs.
Income Level (Control Variable)	0.1	1.92	0.06	A moderate positive relationship (β = 0.10), but marginally non-significant, suggesting that income level has a small influence on purchase intent.
Overall Green Marketing Strategy	0.55	7.48	< 0.05	A significant positive relationship (β = 0.55) confirms that the overall green marketing strategy significantly impacts purchase intent for electric vehicles.

The multiple linear regression analysis in the table-4 on the effect of green marketing strategies on purchase intent for electric vehicles reveals several significant findings. First, eco-labeling has a positive relationship with purchase intent for electric vehicles with a standardized coefficient (β) of 0.30 and a t-value of 5.21 (p-value < 0.01). This indicates that as the presence of eco-labeling increases, consumers' intent to purchase electric vehicles also increases. Likewise, sustainability-conscious advertisements have a positive relationship: β = 0.25, t = 4.12, and p-value < 0.01. That means that sustainability-oriented advertisements positively relate to consumers' intent to purchase electric vehicles. The effect of environmental awareness is also significant as β = 0.18, t = 3.04, and p-value < 0.01. In other words, the more environmental consumer knowledge, the greater the intent to buy electric cars. Although income level has a positive relationship with purchase intent (β = 0.10), the effect is marginally non-significant (p-value = 0.06), which means that income has a smaller influence on purchase intent than the other factors. Finally, the overall green marketing strategy has the strongest positive impact, with a significant β of 0.55 and a t-value of 7.48 (p-value < 0.05), confirming that comprehensive green marketing strategies significantly drive consumers' intent to adopt electric vehicles.

Table 5: Independent t-test Analysis (Compare the purchase intent between respondents who have been exposed to green marketing and those who haven't)

Group	Mean Purchase Intent Score	Standard Deviation	t-value	Degrees of Freedom (df)	p-value	Interpretation
Exposed to Green Marketing	4.45	0.76	t = 3.45	383	p-value < 0.01	The exposed group shows a higher purchase intent (Mean = 4.45) with a significant t-value of 3.45 and p-value < 0.01, indicating a strong difference in purchase intent compared to the non-exposed group.
Not Exposed to Green Marketing	3.89	0.82				The non-exposed group has a lower purchase intent (Mean = 3.89), suggesting that exposure to green marketing significantly influences purchase intent for EVs.

Table 5 provides an Independent t-test Analysis (Table 5): This analysis compares the purchase intent of respondents exposed versus not exposed to green marketing. The mean purchase intent score for those exposed was 4.45 with a standard deviation of 0.76, compared to a mean score of 3.89 with a standard deviation of 0.82 for those who were not exposed. The t-value for the comparison is 3.45 with 383 degrees of freedom, and the p-value is less than 0.01, which is statistically significant. The result is, therefore, significant, showing that exposure to green marketing results in a higher purchase intent of electric vehicles as compared to those who have not been exposed. This makes the exposed group differ clearly on purchase intent, thus indicating that green marketing influences the consumer's intentions to purchase EVs.

Table 6: Mediation Analysis (Regress Mediator [Environmental Awareness) on Independent Variable (Green Marketing Strategies)

Independent Variable	Mediator	Coefficient (β)	Standard Error (SE)	t-value	p-value
Green Marketing Strategies	Environmental Awareness	0.45	0.08	5.63	< 0.01
Green Marketing Strategies	Electric Vehicle Adoption	0.60	0.09	6.67	< 0.01

Table 6 sheds light on the Mediation analysis that will be done on the role of environmental awareness as a mediator between green marketing strategies and electric vehicle adoption. In Table 6, the regression analysis is shown, and it can be seen that green marketing strategies have a positive and significant effect on environmental awareness, β = 0.45, p-value < 0.01. Secondly, the regression analysis found direct influence of green marketing strategies on electric vehicle adoption: β = 0.60 and t-value equal to 6.67.

Table 7: Dependent Variable (Electric Vehicle Adoption) on Both Independent Variable (Green Marketing Strategies) and Mediator (Environmental Awareness)

Independent Variable	Mediator	Dependent Variable	Coefficient (β)	Standard Error (SE)	t-value	p-value
Green Marketing Strategies	Environmental Awareness	Electric Vehicle Adoption	0.45	0.09	5	< 0.01
Environmental Awareness		Electric Vehicle Adoption	0.25	0.07	3.57	< 0.01

Results, as presented in Table 7, show that in the mediation model, in which environmental awareness intervenes, the relationship between green marketing strategies and electric vehicle adoption remains significant, with a β of 0.45 and a p-value less than 0.01; however, it also states that environmental awareness affects electric vehicle adoption significantly (β = 0.25, p-value less than 0.01). This confirms that environmental awareness partially mediates the relationship between green marketing strategies and electric vehicle adoption, because both direct and indirect effects are significant.

Discussion

Conducting the analysis results in strong proof for both hypotheses since it confirms to a great degree that green marketing strategies do work in affecting customer decisions about electric vehicles. For hypothesis one, claiming that green marketing strategies, ranging from eco-labeling to an advertisement focused on issues of sustainability influence consumers' willingness to buy electrical vehicles, these two marketing strategies indicated a strong relationship with purchase intentions. The correlation coefficients, especially for eco-labeling (r = 0.82) and sustainability-focused advertisements (r = 0.75), indicate that as these green marketing strategies increase, so does the intent to purchase

electric vehicles. In addition, the multiple linear regression analysis results show that eco-labeling, sustainability-focused advertisements, and overall green marketing strategies all significantly contribute to the increased purchase intent for EVs, further reinforcing the positive relationship between green marketing and consumer behavior. These findings decisively support the first hypothesis, confirming that green marketing strategies have a notable impact on consumers' intentions to adopt electric vehicles.

The second hypothesis focuses on testing the idea of whether consumer environmental awareness mediates the relationship between green marketing strategies and electric vehicle adoption. Results indicate the existence of good evidence on the same for this hypothesis also. Mediation analysis indicates the positive impact that the green marketing strategy has on consumer environmental awareness. Again, there are significant coefficients for both direct and indirect pathways with environmental awareness turning out to be an important mediating variable for the given relationship. This piece of evidence vindicates the hypothesis that consumer environmental awareness both influences their reaction to green marketing and will play a critical role in driving their adoption of electric vehicles. Both hypotheses are thereby accepted, validating the critical role of green marketing strategies and environmental awareness as determinants of consumer behavior towards sustainable transportation.

Conclusion

This research would highlight the effects that green marketing would have on people's buying behaviour in adopting electricity-driven vehicles; indeed, existing studies indicate green marketing strategies- such as a practice called eco-branding and campaigns targeting consumers regarding the sustainability factors- have impacted consumer intent when buying electricity-driving cars. The findings highlight that as consumers are exposed to marketing efforts promoting sustainability, they develop a stronger intention to adopt electric vehicles, aligning with the growing global trend toward environmentally responsible choices. Furthermore, the study reveals that consumer environmental awareness plays a crucial mediating role in this relationship. Environmental awareness fosters greater demand on green marketing campaigns; electric vehicle customers thus gain higher responses on interest as regards to a possible purchase of electric vehicles. Thereby, it suggests educating customers of the need for and means to bring positive changes regarding the environment with an advocacy role marketing performs. This, therefore, underscores the importance of businesses and policymakers to include green marketing strategies that not only increase awareness but also deepen the understanding of the environmental benefits associated with the adoption of electric vehicles. Finally, the study contributes to the wider debate on sustainability and provides practical insights into improving the effectiveness of green marketing in facilitating the transition toward a more sustainable transportation system.

Practical Implication of the Study

This study's practical implications are crucial for businesses and policymakers in developing a framework for promoting the use of electric vehicles (EVs) and increasing environmental sustainability. The study provides evidence that green marketing strategies, including eco-labeling and advertisements centered on sustainability, can indeed sway consumers' intent to buy. These strategies would enable businesses to connect with sustainable products more significantly to consumers; therefore, using EVs is highlighted for achieving more customers who can be interested in the environmental merits. Companies have been able to not only enrich brand image by stressing eco-friendly practices but also to achieve goals for the environment. The empirical evidence further found that consumer environmental awareness is a prime mediator of green marketing and the adoption of an electric vehicle. Therefore, businesses and marketers should focus on initiatives that educate consumers about environmental issues because an informed customer is more likely to make environmentally conscious purchasing decisions. On the policy front, this research suggests that governments and regulatory bodies should support green marketing initiatives, incentivize sustainable product labeling, and promote consumer awareness programs to drive the transition to electric vehicles. Public-private collaborations may further enhance consumer confidence in EVs by making more information about the environmental and economic benefits of electric mobility visible and reliable. Overall, the findings underscore the potential of green marketing in shaping consumer behavior towards sustainable choices, offering a roadmap for businesses and policymakers to contribute to a greener, more sustainable future.

Limitation of the Study

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the study relies on self-reported data, which may be subject to biases such as social desirability or recall bias, affecting the accuracy of the

responses. Additionally, the research focuses primarily on consumers' attitudes and intentions without measuring actual behavioral outcomes, which could vary in real-world contexts. This research scope is further limited to the specific geographical area of Karnataka and might not encompass the diversity of consumer behaviors across other regions or countries with diverse environmental and economic conditions. Besides, although green marketing strategies and environmental awareness are vital factors, the study does not consider variables like price sensitivity, government incentives, or the availability of infrastructure, which can also be pivotal in adopting EVs. Lastly, the sample size, though robust, may still not represent all segments of the population, limiting generalizability.

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