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Consumer Buying Behavior of Electric Vehicles: An Empirical Investigation of Brand Trust, Marketing Strategies, and Social Influence

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Abstract

This study investigates consumer buying behavior in the electric vehicle (EV) market, focusing on how brand trust, marketing strategies, and social influence shape purchase decisions. Despite significant technological advancements and supportive government incentives, EV adoption remains below potential due to both tangible barriers (such as high upfront costs and charging infrastructure constraints) and intangible factors including consumer perceptions and trust. A quantitative survey of 110 respondents was conducted to evaluate key determinants such as brand credibility, effectiveness of promotional channels, and the impact of peer recommendations on EV purchase intentions. Findings reveal that while brand trust and certain marketing channels play influential roles, social influence particularly through family and friend recommendations also significantly drives EV adoption. However, practical issues like cost and limited charging infrastructure continue to impede widespread uptake. The study concludes with recommendations for automakers and policymakers to leverage targeted marketing, strengthen brand reputation, and address infrastructural gaps to accelerate the transition toward sustainable mobility.

Keywords: Electric Vehicles, Consumer Buying Behavior, Brand Trust, Marketing Strategies, Social Influence, Charging Infrastructure, Cost Barriers, Sustainable Mobility, Government Incentives, Consumer Perceptions, EV Adoption

Introduction and Literature Review

Electric vehicles (EVs) have emerged as a pivotal solution in the transition toward sustainable transportation. Historically, EVs were present before 1918, only to be overshadowed by gasoline-powered vehicles. However, since 2017, renewed government support, technological innovation, and growing environmental awareness have rekindled interest in EVs. This study examines the multifaceted factors influencing consumer buying behavior in the EV sector, with a particular focus on brand trust, marketing strategies, and social influence.

The literature reveals that consumer innovativeness plays a key role in early adoption (Morton, Anable, & Nelson, 2016), as individuals willing to embrace advanced features are more likely to overcome the disruptive nature of EV technology. Kalra (2022) noted that 63% of consumers perceive EVs as unaffordable primarily because of high capital costs and insufficient charging infrastructure, although government subsidies and OEM initiatives show promise for future expansion. Further, a synthesis of current literature (Contestable, Offer, & North) emphasizes that long-term EV uptake is contingent upon continuous improvements in battery technology and the establishment of robust recharging networks.

Additional studies stress that consumer awareness and education are critical. Masurali et al. found that in India where transportation accounts for a significant share of carbon emissions improving consumer knowledge can substantially enhance EV acceptance. In the context of urban logistics, Lebeau et al. demonstrated that while small EV vans are economically viable, larger vehicles still rely on conventional fuel due to cost and range limitations. Similarly, research by Liao, Molin, and Van Wee (2016) shows that both financial and technical attributes such as purchase cost, operating expenses, and charging duration critically influence consumer adoption decisions.

Social influence, as highlighted by studies from the International Council on Clean Transportation (Jin & Slowik), remains a major barrier; insufficient consumer awareness and the relative inconvenience of EV technology inhibit widespread adoption. In India, research by Mohamed et al. underscores that despite the environmental benefits of EVs in reducing emissions and oil dependency, high costs and performance concerns continue to hinder consumer uptake. Moreover, Gujarathi et al. (2018) point out that India's market share for EVs is minimal due to deep-rooted reliance on fossil fuels, suggesting that urgent policy interventions are necessary.

Collectively, the literature underscores that while technological and infrastructural improvements are essential, psychological and social factors – notably brand trust, effective marketing communication, and peer influence – play equally vital roles in shaping consumer behavior. This study therefore sets out to integrate these dimensions to offer a holistic understanding of EV purchasing decisions, while also identifying gaps that could guide future research and policy-making.

The objectives are to determine how brand trust mitigates perceived risks; how specific marketing channels influence consumer awareness and purchase intentions; and how social influence, particularly through direct recommendations from family and friends, impacts EV adoption. These interrelated factors form the basis of the research hypotheses, which are detailed in Section 1.4 of the original study.

Research Methodology

This study employs a quantitative research design to analyze consumer buying behavior for electric vehicles. The primary aim is to assess how psychological, functional, and social factors namely brand trust, marketing strategies, and social influence affect EV purchase decisions. Data were collected using a structured survey questionnaire administered both online and in-person. The questionnaire included a range of question types (e.g., Likert scales, multiple-choice, and rank-ordering) designed to capture data on demographics, brand trust, marketing exposure, social influence, functional benefits, and perceived barriers to EV adoption.

A non-probability sampling method was used, combining convenience sampling to reach easily accessible participants with snowball sampling to extend the survey reach through participant referrals. A total of 110 valid responses were analyzed. The survey instrument was pre-tested through a pilot study to ensure clarity and reliability, with Cronbach's alpha values exceeding the acceptable threshold, thereby affirming the internal consistency of the scales used.

Key variables measured include:

- **Brand Trust** (e.g., perceived reliability, quality, and credibility of EV manufacturers)
- **Marketing Strategies** (e.g., effectiveness of advertisements, promotions, and channel-specific influence)
- **Social Influence** (e.g., peer recommendations, family opinions, and social media impact)
- **Functional Value** (e.g., cost efficiency, maintenance, and range) **Emotional Value** (e.g., the feeling of environmental responsibility)
- **Barriers to Adoption** (e.g., high initial cost, charging infrastructure limitations)

Data were analyzed using Microsoft Excel for preliminary descriptive statistics, pivot table generation, and regression analysis. Two regression models were employed: one assessing the impact of brand trust, marketing, and

social influence on overall EV purchase behavior; and another evaluating the influence of social factors on functional and emotional value perceptions. These analyses provided p-values and R^2 statistics to determine the significance and explanatory power of the models. The findings reveal moderate correlations, suggesting that while key variables significantly explain variations in consumer behavior, additional factors (e.g., infrastructural and financial variables) also play a role.

Data Analysis and Interpretation

A total of 110 valid survey responses were collected from current and potential electric vehicle (EV) consumers. Data were organized and analyzed using Microsoft Excel. The analysis included data cleaning, coding, descriptive statistics, and regression modeling. Two main regression models were used: one to assess the impact of brand trust and marketing strategy components on EV purchase behavior and a second to examine the effect of social influence variables on functional and emotional value perceptions. In addition, pivot tables were generated to summarize demographic characteristics and responses to survey questions. The following sections detail the tables generated for demographic and variable-specific responses along with their interpretations, followed by the outcomes of hypothesis testing using parametric regression analysis.

Descriptive Analysis and Table Construction *Table 1: Demographic Characteristics (N = 110)*

Variable	Category	Frequency
Age	18–25	62
	26–35	11
	36–45	19
	46–55	12
	55 and above	6
Gender	Male	72
	Female	38
Education	Doctorate	2
	High School	3
	Postgraduate	61
	Undergraduate	44
Vehicle Ownership	Yes	81
	No	29

Interpretation:
The sample is predominantly young (18–25 years: 62 respondents) with a fairly balanced gender distribution (72 males, 38 females). Most respondents have postgraduate (61) or undergraduate (44) qualifications. A large majority (81) currently own a vehicle, suggesting a relevant pool for examining the transition to EVs.

Table 2: Brand Trust and Marketing Strategy Responses

Survey Item	Response Scale / Category	Frequency / Comments
BT1: Importance of Brand Trust (1–5)	1 (Not important)	3
	2	8
	3	14
	4	21
	5 (Very important)	64
BT3: Influence of Advertisements/Promotions	maybe	31
	yes	46
	no	33
BT4: Satisfaction with Current EV Marketing	1 (Very Unsatisfied)	3
	2	11
	3 (Neutral)	56
	4	25
	5 (Very Satisfied)	15
BT5: Ranking of Marketing Channels (1 = least, 5 = most effective)	*Social Media*: 1:9; 2:15; 3:27; 4:35; 5:24	
	Television Ads: 1:8; 2:13; 3:13; 4:37; 5:39	
	Print Media: 1:14; 2:22; 3:31; 4:26; 5:17	
	Word-of-Mouth: 1:5; 2:6; 3:21; 4:21; 5:39	
	Online Search: 1:6; 2:14; 3:30; 4:30; 5:22	
BT6: Most Motivating Marketing Offer	Discount on price	20
	Exchange offers	8
	Extended warranty	37
	Financing offers	14
	Free charging options	31

Interpretation:
A majority (64/110) rated brand trust as “Very important,” underscoring its critical role. While 42% indicated that ads positively influence their EV awareness (BT3), responses were mixed overall. Satisfaction with current marketing (BT4) was moderate with most respondents (56) choosing neutral. Ranking of channels revealed that television ads and word-of-mouth received the highest influence ratings (both with 39 votes at the highest rank), while print media was seen as less dominant. Extended warranty (BT6) was the most motivating offer.

Table 3: Social Influence Responses

Survey Item	Response Scale / Category	Frequency / Comments
SI1: Influence of Friends/Family on EV Consideration	maybe	29
	yes	27
	no	54
SI2: Agreement with "I would consider buying an EV if recommended" (1–5)	1 (Strongly Disagree)	7
	2	17
	3 (Neutral)	58
	4	19
	5 (Strongly Agree)	9
SI3: Influence of Online Influencers/Reviews	maybe	42
	no	42
	yes	26
SI5: "Oh my friend has an EV – I must have one too"	maybe	13
	no	87
	yes	10
SI6: Perceived Social Pressure to Switch to Eco-friendly Vehicles	maybe	21
	no	76
	yes	13

Interpretation:
Social influence responses were mixed. While a slight minority (27) stated that friends or family influenced their EV consideration, a majority (54) indicated no such influence. For SI2, a majority (58) remained neutral on the impact of social circle recommendations, with only 28 affirming a positive influence. Opinions on online influencers (SI3) were split, indicating that digital endorsements are not decisive. Most respondents did not feel compelled by peer ownership (SI5) or societal pressure (SI6) to switch, suggesting that intrinsic factors and direct recommendations are more influential.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.535781625							
R Square	0.28706195							
Adjusted R Square	0.222897525							
Standard Error	0.662313702							
Observations	110							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	9	17.66246509	1.962496121	4.473849054	6.01548E-05			
Residual	100	43.865944	0.43865944					
Total	109	61.52840909						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.524836229	0.45189343	3.37432706	0.001054168	0.628292535	2.421379924	0.628292535	2.421379924
BT1: How important is	0.104209701	0.062237707	1.674382067	0.097180445	-0.019268138	0.227687539	-0.019268138	0.227687539
BT3: Have advertiseme	0.015029974	0.080710157	0.186221599	0.85264823	-0.145096677	0.175156626	-0.145096677	0.175156626
BT5: Rank the following marketing channels in order of influence on your decision to buy an EV. (1 - least effective , 5 - Most	0.094323754	0.072678445	1.297822954	0.197333819	-0.049868211	0.23851572	-0.049868211	0.23851572
BT5: Rank the following marketing channels in order of influence on your decision to buy an EV. (1 - least effective , 5 - Most effective) [Television Ads]	0.033284694	0.072288915	0.460439803	0.646200262	-0.110134455	0.176703843	-0.110134455	0.176703843
BT5: Rank the following marketing channels in order of influence on your decision to buy an EV. (1 - least effective , 5 - Most effective) [Print Media]	0.210041154	0.063315665	3.317364736	0.001267815	0.084424678	0.33565763	0.084424678	0.33565763
BT5: Rank the following marketing channels in order of influence on your decision to buy an EV. (1 - least effective , 5 - Most effective) [Word-of-Mouth]	0.043260078	0.068984531	0.62709823	0.532024019	-0.093603268	0.180123423	-0.093603268	0.180123423
BT5: Rank the following marketing channels in order of influence on your decision to buy an EV. (1 - least effective , 5 - Most effective) [Online Search]	0.014374784	0.075905164	0.189378208	0.850180252	-0.136218899	0.164968467	-0.136218899	0.164968467
BT4: How satisfied are	0.016571709	0.077550686	0.213688753	0.831224864	-0.137286643	0.170430061	-0.137286643	0.170430061
BT6: Which of the following marketing offers would most motivate you to	-0.044274915	0.046492011	-0.952312322	0.343234781	-0.136513742	0.047963911	-0.136513742	0.047963911

Regression analysis (BT & FV/EV)

Hypothesis Testing Using Regression Analysis

Two linear regression models were applied using the survey data to test the following hypotheses:

- **H1:** There is a significant positive relationship between brand trust (BT1) and consumer EV purchase behavior.
- *Findings:* The regression yielded a positive coefficient for BT1, with a p-value of 0.097 (marginally above the 0.05 threshold) and an overall model R^2 of approximately 0.287. This result suggests partial support for H1; while the trend is positive, statistical significance is borderline.
- **H2:** Marketing strategies significantly influence consumer perceptions and buying decisions for EVs.
- *Findings:* Components of marketing (BT3, BT4, BT5, BT6) showed mixed outcomes. Notably, print media (part of BT5) exhibited a significant influence with a p-value of 0.001, while other channels did not reach significance. Overall, H2 is partially supported.

- **H3:** Social influence significantly affects the adoption of EVs. *Findings:* Key social influence variables, particularly SI2 ($p = 0.0004$) and SI4 (friends/family recommendations, $p = 0.003$), were statistically significant, supporting H3.
- **H4:** Functional value and cost-related barriers are negatively associated with EV purchase intentions. *Findings:* Descriptive statistics indicate that high price (22%), lack of charging infrastructure (39%), and limited range (25%) are frequently cited barriers, supporting H4.
- **H5:** Environmental consciousness and eco-conscious branding positively impact EV purchase attitudes. *Findings:* Survey items measuring environmental responsibility (EV1) showed strong positive agreement, thus supporting H5.

The overall regression model demonstrated a Multiple R of 0.536, indicating a moderate positive correlation between the independent variables and EV purchase behavior. Although the model explains about 28.7% (for H1) to 45.6% (for social influence model) of the variance in consumer behavior, additional factors such as pricing, infrastructure, and government incentives likely contribute to the remaining variance.

Summary and Implications

The analysis confirms that while brand trust and specific marketing channels (particularly print media) are influential, social factors especially direct peer recommendations play a critical role in shaping EV buying behavior. However, significant practical barriers remain, which must be addressed alongside social and psychological strategies. These findings provide a robust basis for targeted marketing interventions and policy recommendations aimed at accelerating EV adoption.

Discussion

The findings from this study underscore the complex interplay of psychological, functional, and social factors in influencing consumer EV purchase decisions. Brand trust emerged as a pivotal determinant, as evidenced by the high proportion of respondents rating it as extremely important. This suggests that automakers must invest in building and maintaining strong brand credibility, particularly by showcasing reliability, safety, and sustainable practices.

The mixed results regarding marketing strategies indicate that while traditional channels such as television and print media remain effective for certain segments, digital channels like online influencers do not hold as much sway. The significant impact of word-of-mouth and personal recommendations points to the necessity of leveraging customer testimonials and community engagement as part of a holistic marketing strategy.

Social influence, particularly from close relationships, plays a critical role. The regression models revealed that recommendations from friends and family significantly reduce consumer hesitation, a finding that has important implications for referral programs and localized marketing campaigns. Conversely, broader, less personal influencer endorsements were not found to be significant drivers, suggesting that authenticity and relatability are more valued than aspirational messaging.

The data also highlight that functional barriers continue to deter consumers. Despite growing environmental consciousness, issues such as high upfront costs and limited charging infrastructure remain substantial obstacles. This indicates that while eco-friendly branding and the emotional appeal of sustainability are influential, they cannot fully compensate for practical limitations. Addressing these infrastructural and cost-related barriers through policy interventions and technological innovations is essential for wider EV adoption.

The integrated nature of functional and emotional value further illustrates that consumers evaluate EVs on both pragmatic and affective grounds. Although many consumers appreciate the environmental benefits of EV

ownership, the uncertainty regarding vehicle performance compared to traditional vehicles underscores the need for clearer communication of technological advancements.

This study offers several practical recommendations for stakeholders. For automakers, strengthening brand trust through consistent quality, transparent communication, and reliable after-sales service is critical. Marketers should refine their strategies to focus on the most effective channels particularly those that leverage personal networks while policymakers need to address the practical barriers through targeted incentives and infrastructure development.

Future research should expand the range of variables to include financial incentives, regional infrastructural differences, and longitudinal changes in consumer attitudes. In addition, more nuanced segmentation of consumer demographics could yield insights into how factors such as age, income, and education interact with psychological and social influences in EV purchase decisions.

Overall, the study contributes to a holistic understanding of EV buying behavior by integrating diverse influences into a unified framework. While technological improvements and policy support are necessary, the research highlights that building consumer trust and leveraging authentic social influence are equally vital for accelerating the shift toward sustainable mobility.

Conclusion

This research provides a comprehensive examination of the factors influencing consumer buying behavior in the electric vehicle market. It confirms that while technological and infrastructural improvements are critical, psychological factors especially brand trust and social influences significantly drive EV adoption. Key findings indicate that a majority of consumers place high importance on brand credibility, while traditional marketing channels such as television and print media, alongside personal recommendations, have a notable impact on purchase decisions. However, persistent barriers including high costs and insufficient charging infrastructure continue to limit market penetration. By integrating these insights, the study offers actionable recommendations for automakers, marketers, and policymakers to refine their strategies, enhance consumer trust, and address practical impediments. Ultimately, the research contributes to bridging the gap between EV technological potential and market realities, fostering a smoother transition to sustainable transportation.

Scope for Further Research

Future research should explore additional variables such as government incentives, regional infrastructural disparities, and longitudinal shifts in consumer perceptions. Investigating the role of financial factors alongside psychological and social influences could provide a more detailed understanding of EV adoption barriers. Moreover, segmenting the market by demographics and psychographics would help tailor marketing strategies more effectively. Lastly, experimental studies or longitudinal surveys could further validate and extend the findings of this research, offering deeper insights into how emerging trends and technological advancements will shape the future of electric vehicle consumption.

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