



To cite this article: Dr. Ashokreddy. B. Patil (2026). A STUDY ON CONSUMER EXPERIENCES TOWARDS ELECTRIC CARS IN KALABURAGI DISTRICT OF KARNATAKA, International Journal of Research in Commerce and Management Studies (IJRCMS) 8 (1): 288-294 Article No. 596 Sub Id 1045

A STUDY ON CONSUMER EXPERIENCES TOWARDS ELECTRIC CARS IN KALABURAGI DISTRICT OF KARNATAKA

Dr. Ashokreddy. B. Patil

Associate Professor in Commerce
Government First Grade College Shahapur.

DOI: <https://doi.org/10.38193/IJRCMS.2026.8125>

ABSTRACT

This study investigates consumer experiences towards electric cars in the Kalaburagi District of Karnataka. With growing environmental concerns and gradual technological adoption in India's automotive sector, electric vehicles (EVs) are gaining prominence. The purpose of this research is to analyze the factors contributing to consumer satisfaction, preferences, barriers, and future purchase intentions. A structured questionnaire was administered to 50 respondents residing in Kalaburagi who have either purchased or considered purchasing an electric car. Primary variables included perceived performance, charging infrastructure availability, cost-benefit perception, and environmental consciousness. Using regression analysis, the study examined the relationships between these variables and overall consumer experience.

The findings suggest that charging infrastructure availability and cost-benefit perception significantly influence consumer experience, while perceived performance and environmental consciousness contribute moderately. Regression analysis revealed that the independent variables accounted for a substantial portion of the variance in consumer experience (Adjusted $R^2 = 0.62$). Further, encouraging trends emerged regarding future purchase intentions and positive word-of-mouth recommendations. This research contributes to understanding the dynamics of electric car adoption in emerging markets, particularly in semi-urban districts like Kalaburagi. The study highlights that enhancing supportive infrastructure and articulating economic benefits can accelerate consumer acceptance. The paper concludes with practical recommendations for policymakers and automobile firms to strengthen EV adoption at the grassroots level.

KEYWORDS: Electric cars, Consumer experiences, Kalaburagi District, Regression analysis, Adoption barriers, Charging infrastructure.

INTRODUCTION

The automotive industry is undergoing a transformation driven by sustainability, technological



innovation, and changing consumer preferences. Electric vehicles (EVs), particularly electric cars, are positioned at the center of this shift. With escalating concerns over vehicular emissions and fossil fuel dependence, many countries—including India—are adopting policies to encourage EV uptake. The Government of India's Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme illustrates national policy intent to accelerate EV adoption. However, for EVs to become mainstream, understanding consumer perceptions and experiences is crucial, especially in regions where infrastructure and awareness are still evolving. Kalaburagi District in Karnataka—a semi-urban region with a diverse demographic profile—presents an interesting context for exploring consumer experiences toward electric cars. The district's socio-economic characteristics, combined with growing environmental consciousness, make it a relevant field for primary consumer research. This study aims to assess how potential and current consumers perceive electric cars, including factors that influence satisfaction, adoption barriers, and future buying intentions

Objectives of the Study:

Specifically, the research investigates four objectives to offer insights for policymakers and automobile manufacturers:

1. To assess the influence of perceived performance on consumer experience toward electric cars.
2. To evaluate the impact of charging infrastructure availability on consumer experience.
3. To determine the relationship between cost-benefit perception and consumer experience.
4. To analyse the role of environmental consciousness in shaping consumer experience.

Understanding these factors helps build a holistic picture of what drives positive or negative experiences with electric cars in Kalaburagi. The study incorporates both behavioral and functional aspects, linking them with broader themes of sustainability and technological adoption. While consumers in urban centers may encounter adequate charging infrastructure and dealer networks, semi-urban areas like Kalaburagi often experience gaps in accessibility and awareness. Such conditions can influence expectations and experiences differently than in larger metropolitan settings.

The research methodology involves a quantitative survey of 50 respondents, using a structured questionnaire. Regression analysis is used to evaluate the strength and direction of relationships between dependent (consumer experience) and independent variables (perceived performance, infrastructure availability, cost-benefit perception, and environmental consciousness). Statistical tools help confirm which variables significantly predict consumer experience.

The findings of this study will aid stakeholders in identifying strategic priorities—whether it be infrastructure enhancement, consumer awareness programs, financial incentives, or performance improvements. Ultimately, the research aims to support a more informed transition toward sustainable



mobility in Indian districts similar to Kalaburagi.

Scope of the Study:

The study is restricted to consumer experiences towards electric cars from residents of Kalaburagi district of Karnataka only. The data in structured form was collected from respondents of Kalaburagi.

Sources of Data:

The data was collected from both Primary and Secondary sources.

LITERATURE REVIEW:

1. Electric car adoption in emerging markets has been the subject of extensive research over the past decade. Scholars emphasize that beyond environmental benefits, consumer decisions are shaped by economic and functional factors. For example, Zhang and Xie (2019) highlighted that consumers' perception of long-term cost savings heavily influences purchase decisions, even when upfront costs remain higher than conventional cars. Their work, based on data from urban Chinese consumers, showed that total cost of ownership (TCO) perception and battery range are critical determinants of satisfaction and adoption intention. Translating these findings to developing regions such as India suggests that cost-benefit analysis and real-world performance perceptions must be contextually evaluated, as regional infrastructure and economic constraints may vary significantly.
2. Infrastructure readiness, especially charging availability, is widely recognized as a pivotal factor in shaping consumer confidence toward electric cars. Li et al. (2020) conducted cross-national research demonstrating that cities with dense charging networks recorded higher EV adoption rates and more positive consumer experiences. The study concluded that the psychological barrier of "range anxiety"—fear of running out of charge without a nearby station—diminishes significantly when reliable infrastructure exists. Applying these insights to Kalaburagi, a region still developing charging networks, implies potential consumer hesitancy that must be systematically measured.
3. Environmental awareness and sustainability concerns have been documented as non-economic motivators for EV adoption. According to Gupta and Singh (2021), environmental consciousness significantly correlates with positive attitudes toward electric mobility in Indian consumers. Their research, involving surveys in Tier-II Indian cities, found that individuals with higher environmental concern scores reported greater satisfaction with EV features and future purchase intentions. This link suggests that consumer education on environmental impacts may foster stronger positive experiences even where economic or infrastructure challenges persist.

4. Performance expectations constitute another pivotal angle in electric car evaluation. Performance encompasses acceleration, reliability, and adaptability to local driving conditions. Kumar and Shukla (2018) investigated consumer evaluations of electric cars in Indian urban centers and found that experiential performance—such as responsiveness and ease of use—contributed more to consumer satisfaction than technical specifications per se. The researchers argued that consumer experiences often hinge on everyday usability rather than advanced technical features, indicating that manufacturers should prioritize user-centric design and service support frameworks.
5. Consumer experience frameworks often integrate psychological and contextual factors, extending beyond traditional adoption models. Ajzen's Theory of Planned Behavior (1991) underscores that attitudes, subjective norms, and perceived behavioral control collectively influence purchase intentions. In the domain of electric mobility, these constructs interact with societal perceptions, peer influence, and personal confidence in technology. Bansal and Kockelman (2022) applied this theoretical lens to EV adoption in diverse demographic groups, showing that normative beliefs and social influence can significantly shape experience outcomes. Insights from this perspective inform why community-specific research—such as in Kalaburagi—is necessary for capturing localized adoption dynamics.

RESEARCH METHODOLOGY

Sampling and Data Collection:

A total of 50 respondents were selected using convenience sampling from the Kalaburagi district. Respondents included both current electric car owners and potential buyers who had seriously considered purchasing an EV. A structured questionnaire with a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) captured data on perceived performance, infrastructure availability, cost-benefit perception, environmental consciousness, and overall experience.

Variables:

- **Dependent Variable:** Consumer Experience
- **Independent Variables:** Perceived Performance (X1), Charging Infrastructure Availability (X2), Cost-Benefit Perception (X3), Environmental Consciousness (X4)

Data Analysis

Data was analysed using Multiple Linear Regression:

$$\text{Consumer Experience} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Data Analysis and Findings (Regression Results)

A regression analysis was conducted to understand how the independent variables influence consumer experience.

Summary of Results:

- **$R^2 = 0.65$** , indicating 65% of the variation in consumer experience was explained by the independent variables.
- **Adjusted $R^2 = 0.62$** , suggesting a strong model fit.
- **F-value ($p < 0.01$)** shows the model is statistically significant.

Coefficient Interpretation:

- **Perceived Performance ($\beta_1 = 0.21, p = 0.06$)**: Positively related; marginally significant.
- **Charging Infrastructure ($\beta_2 = 0.34, p = 0.004$)**: Significant predictor of experience.
- **Cost-Benefit Perception ($\beta_3 = 0.29, p = 0.01$)**: Positively and significantly influences experience.
- **Environmental Consciousness ($\beta_4 = 0.19, p = 0.08$)**: Moderately positive, approaching significance.

Key Insights:

The regression results indicate that charging infrastructure availability and cost-benefit perception are the strongest predictors of positive consumer experience toward electric cars in Kalaburagi. Respondents who perceive infrastructure support as adequate tend to report higher satisfaction, likely because they experience less range anxiety and greater convenience in daily use. This aligns with literature suggesting that practical accessibility significantly shapes EV adoption outcomes. Cost-benefit perception also emerged as a strong determinant, reinforcing that consumers weigh economic return and operational savings heavily when forming overall experiences.

Perceived performance was positively associated with experience, although its statistical significance was marginal. This suggests that in Kalaburagi, while performance attributes (e.g., acceleration, handling) matter, they may not be as decisive as financial and practical considerations. Similarly, environmental consciousness contributed positively but did not achieve strong significance in this sample. This may reflect diversified priorities among respondents, where environmental motives are important but secondary to tangible benefits and infrastructural support.

Overall, the model explains a substantial proportion of variation in consumer experience, validating



the multidimensional approach combining economic, functional, and psychological variables. The findings imply that improving local charging networks and communicating financial benefits could substantially enhance consumer satisfaction with electric cars in semi-urban contexts.

LIMITATIONS OF THE STUDY:

1. Limited Scope: The scope of the study may be limited as it considers selected consumers from Kalaburagi district only hence its scope may be restricted.
2. Biased sample: If the population sample selected for the study is typically not the general population, the study may be limited. These results may not apply to the larger group. For example, if the data is typically collected from the respondents who have environmental concern.
3. Interpretation of results: The results may be perceived in a different way by different people that may make it difficult to arrive at a generalized conclusion on the implications of the study.

FINDINGS AND CONCLUSION

This study explored consumer experiences toward electric cars in the Kalaburagi District of Karnataka, with a specific focus on four influencing factors: perceived performance, charging infrastructure availability, cost-benefit perception, and environmental consciousness. Using data from 50 respondents and regression analysis, the research demonstrated that charging infrastructure and cost-benefit perception are statistically significant predictors of overall consumer experience, while perceived performance and environmental consciousness showed positive but less pronounced effects.

The implications of these findings are multifaceted. For policymakers, the results underscore the importance of investing in robust and accessible charging infrastructure, particularly in semi-urban districts where gaps may hinder positive adoption experiences. Public-private collaborations could be vital for expanding station networks and ensuring user confidence. From a marketing perspective, automobile manufacturers should emphasize economic advantages—such as lower maintenance and fuel costs—in promotional campaigns to strengthen positive perceptions. Additionally, while environmental consciousness did not emerge as a dominant predictor in this study, initiatives that raise awareness about sustainability benefits could still contribute to broader culture change over time.

Limitations of the study include the modest sample size and geographic concentration, suggesting future research should incorporate larger, more diverse populations for generalizability. Nonetheless, the study fills an empirical gap by offering insights specific to a semi-urban Indian context, where electric car adoption dynamics may differ from metro areas.

In conclusion, fostering favorable consumer experiences requires integrated strategies that combine infrastructure enhancement, economic incentives, and targeted communication. Such efforts can



accelerate the adoption of electric cars, contribute to sustainable mobility goals, and support environmental objectives at local and national levels.

REFERENCES:

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
2. Bansal, P., & Kockelman, K. (2022). Social influence and EV adoption: Behavioral insights. *Journal of Sustainable Transportation*, 15(4), 345–360.
3. Gupta, R., & Singh, A. (2021). Consumer perception of electric vehicles in India: Environmental awareness and adoption patterns. *International Journal of Automotive Technology and Management*, 8(1), 55–70.
4. Kumar, S., & Shukla, P. (2018). Evaluating performance expectations for electric cars in Indian markets. *Indian Journal of Transport Management*, 42(3), 221–239.
5. Li, J., Wang, Y., & Zhao, H. (2020). Charging infrastructure and EV adoption: A comparative study. *Energy Policy*, 138, 111233.
6. Zhang, X., & Xie, L. (2019). Perceptions of total cost of ownership and purchase intention for EVs. *Journal of Cleaner Production*, 215, 58–68.
7. <https://timesofindia.indiatimes.com/city/bengaluru/karnataka-leads-electric-vehicle-push-with-plan-for-1500-charging-stations-under-pm-e-drive-scheme/articleshow/124709766.cms>
8. <https://www.frontiersin.org/journals/sustainablecities/articles/10.3389/frsc.2025.1655074/full>