

Demystifying the barriers for electric vehicle acceptance: Multiple stakeholders' perspective, 2024

Pratima Verma, Bhawana Rathore, Vimal Kumar, Konstantinos P Tagarakis, Rohit Gupta & Surajit Bag

Abstract

Increasing awareness about global warming, and the unsteadiness of oil prices has increased interest in sustainable transportation among consumers as well as researchers. Electric vehicles (EVs) are considered as one of the sustainable road transportations for coping with these challenges. This paper presents a study of the economical, technical, social & attitudinal, infrastructural, and policy and regulatory barriers to the adoption of EVs within an Indian context. Additionally, the study also considered different stakeholders' perspectives on adopting EVs. Various stakeholders viz. consumers/public, businesses, governments, and the scientific community will boost the supply and demand of EVs. All stakeholders' coordinated efforts are creating the groundwork for a stronger EV environment, which will result in increasing acceptability. This study aims to identify the significant barriers to EV adoption. Based on an extensive literature review first, we identified the various barriers, and after that, we prioritized the identified barriers through the Fuzzy Analytical Hierarchy Process (FAHP). FAHP is employed to study the relevance and prioritize the barriers with the help of expert opinions from different stakeholders. The results strongly suggest that a technical barrier is the most critical one among all the stakeholders. The ranking of EV barriers provides a decision-making framework for managers and experts to pay more attention to the critical barriers/sub-barriers in order to eradicate them from the system for the successful adoption of EVs. It recognizes the value of a robust theoretical contribution to the area and intends to investigate theories or models that might offer a more solid foundation for the study in order to support the theoretical framework of this research. The study provides a stronger rationale for the research's importance and potential impact by introducing a comprehensive theoretical framework.

Journal Name: Research in Transportation Business & Management-

Year: 2024

Keywords: Adoption; Barriers; Electric vehicle; Electric transportation; Fuzzy-AHP; Stakeholders

DOI: <https://doi.org/10.1177/23939575231214136>