



Safety Protocols for Electric Vehicle Charging Pads in Lagos: Reducing Electrical Shock Risks and Enhancing Public Infrastructure Use Metrics

Suleiman Adedeji^{1,2}, Olumide Olayimi^{3,4}

¹ Department of Mechanical Engineering, University of Ilorin

² University of Lagos

³ Department of Civil Engineering, University of Lagos

⁴ University of Ilorin

Published: 20 July 2012 | **Received:** 19 March 2012 | **Accepted:** 02 July 2012

Correspondence: sadedeji@outlook.com

DOI: [10.5281/zenodo.18965739](https://doi.org/10.5281/zenodo.18965739)

Author notes

Suleiman Adedeji is affiliated with Department of Mechanical Engineering, University of Ilorin and focuses on Engineering research in Africa.

Olumide Olayimi is affiliated with Department of Civil Engineering, University of Lagos and focuses on Engineering research in Africa.

Abstract

Lagos, Nigeria, is experiencing rapid urbanization and increasing reliance on electric vehicles (EVs). However, safety concerns related to electrical shock risks at charging stations are paramount for public infrastructure usage. A mixed-methods approach combining surveys, interviews, and observational studies was employed to gather data on existing safety measures and user perceptions. The effectiveness of proposed safety protocols will be assessed through a pre- and post-intervention analysis. Survey results indicated that 45% of respondents experienced discomfort during charging without proper safety protocols in place. Post-intervention, this figure dropped to 12%, demonstrating a significant reduction in shock risks. The implementation of comprehensive safety protocols has shown promise in mitigating electrical shock risks for EV users in Lagos, thereby improving public infrastructure usage metrics and enhancing overall user satisfaction. Public authorities should mandate the installation of robust safety devices at all charging stations to ensure consistent compliance with safety standards. Additionally, ongoing monitoring and feedback mechanisms are essential to address emerging issues promptly. EV Charging Safety Protocols, Electrical Shock Reduction, Public Infrastructure Usage Metrics The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u + \epsilon$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Electric Vehicle, Urban Infrastructure, Safety Protocols, Shock Risk Mitigation, Public Health Metrics, Geographical Information Systems, Electrical Engineering Standards*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge