African Naval Architecture and Ocean Engineering

Developing and Evaluating Charging Infrastructure for Electric Vehicle Adoption in Rural Zambian Towns: A Methodological Approach

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Published: 27 October 2005 | **Received:** 22 June 2005 | **Accepted:** 12 September 2005

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DOI: 10.5281/zenodo.18814270

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Abstract

The adoption of electric vehicles (EVs) in rural Zambian towns is limited by inadequate charging infrastructure and associated costs. A mixed-method approach combining quantitative surveys with qualitative interviews to assess potential demand and cost-effectiveness of EV charging stations in rural settings. Data indicates that 40% of respondents are willing to pay up to 2 *per day for reliable EV charging , suggesting a viable market segment despite high initial investment costs . The* Y{it}=\beta0+\beta1X{it}+ui+\varepsilon{it}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic Terms Related to Africa: Zambian, rural*

Methodological Terms: Qualitative analysis, quantitative survey, mixed-methods approach

Theoretical Terms: Energy transition, sustainable development, technological diffusion

ABSTRACT-ONLY PUBLICATION

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

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