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A Theoretical Framework for Low-Cost, Mobile Spectrometry in Rapid Soil Organic Carbon Mapping across Smallholder Farms in Ibadan

C, h, i, n, e, l, o, O, k, o, n, k, w, o

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Abstract

This study addresses a current research gap in Computer Science concerning Calibrating a low-cost spectrometer mounted on a motorcycle taxi for rapid mapping of soil organic carbon across 1000 farms in Ibadan, Nigeria in Nigeria. The objective is to clarify key debates, identify practical implications, and outline a focused agenda for scholarship and policy. A qualitative approach was used, drawing on recent literature and policy sources to frame the analysis. This abstract is primarily indicative, outlining the scope and conceptual framing rather than reporting empirical results. The paper argues for context-specific approaches and stronger empirical foundations in future research. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Calibrating a low-cost spectrometer mounted on a motorcycle taxi for rapid mapping of soil organic carbon across 1000 farms in Ibadan, Nigeria, Nigeria, Africa, Computer Science, theoretical This structured abstract provides a standardised summary to support rapid screening, indexing, and assessment of scholarly contribution.