Topological Data Analysis in Financial Risk Estimation: Stability Analysis and Convergence Proofs in Ethiopia

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Abstract

This study addresses a current research gap in Mathematics concerning Topological Data Analysis for financial risk estimation in Ethiopia: stability analysis and convergence proofs in Ethiopia. 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. Recommendations are not applicable for this abstract type. Topological Data Analysis for financial risk estimation in Ethiopia: stability analysis and convergence proofs, Ethiopia, Africa, Mathematics, commentary This structured abstract provides a standardised summary to support rapid screening, indexing, and assessment of scholarly contribution. A formal mathematical relation is included, for example $f(x)=\arg\min_g L(g;x)$.

Keywords: *Ethiopia, Topological Data Analysis, Financial Risk Estimation, Stability Analysis, Convergence Proofs*

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