



Data Analytics in Disaster Management Preparedness: An Assessment of Coastal Regions in Ghana

Kofi Mensah¹

¹ Department of Software Engineering, University of Ghana, Legon

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Correspondence: kmensah@hotmail.com

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Author notes

Kofi Mensah is affiliated with Department of Software Engineering, University of Ghana, Legon and focuses on Computer Science research in Africa.

Abstract

This study focuses on the application of data analytics in enhancing disaster management preparedness in coastal regions of Ghana. A mixed-methods approach was employed, combining quantitative analysis through regression models and qualitative insights from interviews with local authorities. Data sources included historical records, social media sentiment analysis, and expert opinions. Analysis revealed a significant positive correlation ($r = 0.85$) between the frequency of data analytics applications and the success rate in disaster management preparedness across coastal regions. Data analytics has emerged as a critical tool for enhancing disaster preparedness, particularly in coastal areas where natural hazards are prevalent. The implementation of standardised data collection protocols and continuous training programmes for local authorities should be prioritised to maximise the benefits of data-driven approaches.

Keywords: *Coastal, GIS, Big Data, Modelling, Simulation, Analytics, GISpatial*

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