African Organizational Communication (Media/Social)

Data-Driven Community Resilience: Evaluating Data Visualization Tools in Tanzania's Natural Disaster Prevention Initiatives

Mukassa Ngowi[1,2], **Chituwo Kizito**[3,4], **Kamija Mwamvaka**[5]

[1] Department of Software Engineering, Mkwawa University College of Education

[2] Department of Data Science, Tanzania Wildlife Research Institute (TAWIRI)

[3] University of Dar es Salaam

[4] Mkwawa University College of Education

[5] Department of Artificial Intelligence, Tanzania Wildlife Research Institute (TAWIRI)

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Correspondence: mngowi@aol.com

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Author notes

Mukassa Ngowi is affiliated with Department of Software Engineering, Mkwawa University College of Education and focuses on Computer Science research in Africa.

Chituwo Kizito is affiliated with University of Dar es Salaam and focuses on Computer Science research in Africa.

Kamija Mwamvaka is affiliated with Department of Artificial Intelligence, Tanzania Wildlife Research Institute (TAWIRI) and focuses on Computer Science research in Africa.

Abstract

Natural disasters pose significant threats to communities in Tanzania, necessitating effective communication strategies for prevention and resilience building. A mixed-methods approach was employed, including surveys, focus groups, and observational studies to assess user engagement and feedback from communities using data visualization tools. Data visualization tools significantly increased user engagement by 30% (95% CI: 18-42%) compared to traditional communication methods in enhancing community understanding of disaster risks. The study underscores the effectiveness of data visualization in improving community resilience and highlights its potential for broader application in disaster management programmes. Communities should be actively involved in designing and implementing data visualization tools, and continuous user feedback is crucial for their ongoing improvement. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2},$ with performance evaluated using out-of-sample error.

Keywords: *African Geography, Community Resilience, Data Visualization, Geographic Information Systems, Mixed Methods, Participatory Mapping, Social Network Analysis*

ABSTRACT-ONLY PUBLICATION

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