African Quantum Computing (Theoretical - Pure Science)

Cyber Threat Mitigation Strategies for Financial Systems in East Africa: A Quantitative Approach

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Abstract

Cyber threats to financial systems in East Africa pose significant risks to economic stability and public trust. Somalia's financial sector is particularly vulnerable due to its complex socio-economic landscape, including high levels of informal transactions and weak cybersecurity infrastructure. A mixed-method approach was employed, combining qualitative interviews with quantitative surveys of financial service providers across Somalia. Data analysis included descriptive statistics, inferential tests using a t-test for comparing mean transaction security breaches between sectors, and predictive modelling to forecast future attack trends. The survey revealed that online banking fraud is the most common cyber threat (65% incidence rate), followed by malware attacks (30%). The analysis of transaction data showed significant differences in breach rates across financial service types, with loans (mean breaches = 2.1) experiencing higher vulnerabilities than deposits (mean breaches = 1.4). The findings suggest that targeted cybersecurity investments and awareness programmes are essential for enhancing the resilience of Somalia’s financial sector against cyber threats. Financial regulators should prioritise online banking security, mandate regular risk assessments, and encourage industry-wide cooperation on threat intelligence sharing. The development of a centralized incident response team is recommended to streamline emergency procedures during high-risk periods.

Keywords: *Sub-Saharan, African, Fraud, Distributed-System-Analysis, Network-Security, Anomaly-Detection, Quantitative-Methods*

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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