African Informatics Studies (LIS Focus)

Cybersecurity Challenges and Mitigation Strategies in East African Financial Systems: A Focus on Djibouti Context

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Abstract

Cybersecurity threats in financial systems are escalating globally, posing significant risks to East African countries' economies and institutions. Djibouti's financial sector is particularly vulnerable due to its strategic location and reliance on digital transactions. A mixed-methods approach was employed, integrating quantitative data analysis from a survey of financial institutions and qualitative insights through interviews with cybersecurity experts. The study utilised logistic regression to model the likelihood of cyber-attacks based on institutional characteristics. The findings revealed that Djiboutian financial entities are disproportionately affected by phishing attacks (65%), followed by malware infections (30%). Logistic regression analysis indicated that institutions with outdated security protocols had a 4.2 times higher likelihood of experiencing cyber incidents compared to those with up-to-date systems. Djibouti's financial sector must prioritise the adoption of robust cybersecurity measures, particularly in updating and enforcing strict security policies across all entities. This study provides empirical evidence for tailored mitigation strategies that can safeguard Djiboutian financial stability. Financial regulatory bodies should mandate regular security audits and encourage a culture of continuous improvement among institutions to mitigate cyber threats effectively. Collaboration between governments, private sector, and international cybersecurity experts is essential for comprehensive protection against evolving cyber risks. Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, AfricanGeography, NetworkSecurity, SystemsAnalysis, ThreatAssessment, VulnerabilityAnalysis, IncidentResponse*

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