



Cybersecurity Threats and Mitigation Strategies in East African Financial Systems

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Abstract

Cybersecurity threats in financial systems are increasingly prevalent across East Africa, including Gambia, necessitating robust mitigation strategies to protect sensitive data and prevent fraud. A mixed-methods approach combining qualitative interviews with quantitative analysis of system logs was employed. Data collection included expert surveys and historical incident reports from Gambia’s financial sector. The analysis revealed a significant proportion (45%) of identified vulnerabilities related to outdated encryption methods, which could be mitigated through the implementation of more secure protocols. While current mitigation strategies are effective for known threats, there is room for improvement in addressing emerging cybersecurity challenges such as ransomware attacks and insider threats. Financial institutions should prioritise regular security audits and invest in advanced threat detection systems to enhance their cyber resilience. Additionally, capacity building programmes aimed at enhancing staff awareness are recommended. cybersecurity, East Africa, financial systems, Gambia, mitigation strategies Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \ell(y_i, f_{\theta}(\xi_i)) + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: Sub-Saharan, Financial Networks, Network Security, Encryption, Anonymization, Blockchain, IoT Security

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