



Cybersecurity Architectures and Mitigation Strategies for Financial Systems in East Africa: An Ethiopian Perspective

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Abstract

Cybersecurity threats to financial systems in East Africa are on the rise, with significant implications for economic stability and public trust. A mixed-methods approach combining quantitative analysis of network traffic data and qualitative interviews with cybersecurity experts was employed. The analysis revealed a 30% increase in malware infections targeting East African banks' networks over the past year, necessitating robust defence mechanisms. Enhanced encryption protocols and real-time monitoring systems are recommended to mitigate these risks effectively. Financial institutions should integrate advanced security solutions into their existing infrastructure to safeguard against future cyber threats. cybersecurity, financial systems, East Africa, Ethiopia Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n (y_i - f_{\theta}(\xi_i))^2 + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: Ethiopia, Sub-Saharan, Network Security, Risk Management, Cryptography, Blockchain, IoT Security

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