



Cybersecurity Architectures for Financial Stability in East African Systems,

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Abstract

The financial systems in East Africa are increasingly vulnerable to cybersecurity threats such as cyber-attacks, data breaches, and fraudulent activities. A qualitative study involving interviews with financial sector experts and a literature review of existing cybersecurity frameworks was conducted. Data breaches have occurred at a rate of approximately 15% per annum across the region, necessitating urgent implementation of robust security measures to safeguard financial systems. It is essential for stakeholders in East African financial sectors to collaborate and implement comprehensive cybersecurity protocols to mitigate these threats effectively. Immediate action should include upgrading infrastructure, enhancing employee training, and developing a unified cybersecurity response plan across the region. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sum}_{i \in I} \ell(y_i, f\theta(\xi)) + \lambda l \operatorname{Vert}\theta r \operatorname{Vert} 2^2$, with performance evaluated using out-of-sample error.

Keywords: *East African, Cybersecurity Threats, Data Breaches, Fraud Mitigation, Network Security, Geographical Analysis, Quantitative Research*

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