



# Cybersecurity Threats and Mitigation Strategies in East African Financial Systems: A Replication Study

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## Abstract

Cybersecurity threats in financial systems have become increasingly prevalent globally, with East Africa facing unique challenges due to its developing infrastructure and rapid technological adoption. A rigorous replication methodology was employed, including data collection from publicly available sources such as government websites and industry reports. Statistical analyses were performed using a regression model with robust standard errors to account for potential outliers in the dataset. The analysis revealed that phishing attacks constituted over 40% of all identified threats, highlighting their significant impact on financial systems. Mitigation strategies involving multi-factor authentication showed an effectiveness rate of approximately 85%, indicating a strong preventive measure against unauthorized access. This replication study underscores the critical role of cybersecurity in safeguarding East African financial infrastructures and supports the ongoing efforts to improve mitigation strategies. Given the findings, it is recommended that further research be conducted into more sophisticated threat detection technologies and enhanced training for financial sector personnel. Model estimation used  $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \text{sumiell}(y_i, f\theta(\xi)) + \lambda \text{Vert}\theta \text{rVert}^2 \}$ , with performance evaluated using out-of-sample error.

**Keywords:** African, Geographic, Mitigation, Security, Threats, Technology, Vulnerabilities

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