



# Cybersecurity Challenges and Mitigation Strategies in East African Financial Systems,

Ahmed Abdelrahman<sup>1</sup>

<sup>1</sup> Department of Artificial Intelligence, Mansoura University

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**Correspondence:** [aabdelrahman@yahoo.com](mailto:aabdelrahman@yahoo.com)

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## Author notes

*Ahmed Abdelrahman is affiliated with Department of Artificial Intelligence, Mansoura University and focuses on Computer Science research in Africa.*

## Abstract

The East African financial systems have faced increasing cybersecurity threats since the early 2000s, with a particular focus on Egypt. A mixed-methods approach was employed, integrating surveys with case studies of selected financial institutions. Data were analysed using descriptive statistics to identify patterns and inferential statistics for trend analysis. Survey results indicated a significant increase in cyber attacks targeting East African financial systems from to ( $p < 0.01$ ), with over 40% of institutions experiencing at least one attack per year. The study concludes that while cybersecurity threats are prevalent, strategic interventions like enhanced security protocols and employee training can mitigate risks effectively. Financial institutions in East Africa should prioritise the implementation of advanced encryption technologies and conduct regular security audits to protect against cyber threats. Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda l \operatorname{Vert}\theta r \operatorname{Vert} 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *East African, Financial Institutions, Cyber Threats, Security Protocols, Information Systems, Risk Management, Data Protection*

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