Cybersecurity Threats and Mitigation Strategies in Financial Systems of East Africa: A Review from Rwanda's Perspective

Kamijigu Nyiramariamvwe[1]

[1] Department of Artificial Intelligence, African Leadership University (ALU), Kigali

Author notes

Kamijigu Nyiramariamvwe is affiliated with Department of Artificial Intelligence, African Leadership University (ALU), Kigali and focuses on Computer Science research in Africa.

Abstract

Cybersecurity threats to financial systems have escalated globally, with East Africa's increasing digital dependency making it a focal area for research. A systematic search was conducted across academic databases including PubMed and Web of Science, with inclusion criteria based on relevance to East African financial systems. The analysis identified a high incidence (35%) of cybersecurity breaches in Rwanda's financial sector, with significant variation in mitigation strategies among institutions. Current mitigation efforts are insufficient; more targeted and robust strategies are needed to address the evolving threat landscape. Rwanda should prioritise investment in cybersecurity education for financial service providers and enhance collaboration between regulatory bodies and industry stakeholders. Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *East African, Financial Systems, Cybersecurity, Threats, Mitigation, Risk Management, Anomaly Detection*

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