Exploring the Legal Dimensions of Data Rights in AI-Powered FinTech Services in Tanzania

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ABSTRACT

This study examines the legal dimensions of data rights in AI-powered Financial Technology (FinTech) services in Tanzania. The integration of AI in FinTech enhances operational efficiency, drives innovation, and improves customer experience through advanced data processing and intelligent decision-making. However, the swift adoption of AI introduces critical concerns, including data protection and cyber security. While Tanzania's legal framework grounded in constitutional rights and the Personal Data Protection Act of 2022 offers a foundation for addressing these issues, it lacks provisions tailored specifically to the unique challenges posed by AI technologies. Employing doctrinal legal research and comparative analysis with global benchmarks such as the GDPR and the EU AI Act, the study advocates for adaptive and forward-looking governance. Drawing on theoretical frameworks, it proposes legal reforms to promote a secure, inclusive, and ethically governed AI ecosystem in Tanzania's FinTech sector.

INTRODUCTION

The rapid pace of global technological innovation has fundamentally reshaped socio-economic structures across jurisdictions, delivering remarkable gains in productivity while at the same time giving rise to complex legal and regulatory challenges (Ally, 2025). The widespread adoption of emerging technologies particularly Artificial Intelligence (AI), machine learning, blockchain systems, and Financial Technology (FinTech) has not only enhanced efficiency across various sectors but has also transformed the nature of economic and social interactions. While these technologies are widely celebrated for their transformative potential, they have also prompted renewed legal debate, compelling lawmakers, regulators, and scholars to reassess the suitability of existing legal frameworks in governing increasingly innovation-driven societies (Akpobome, 2024). In the employment sector, the increasing deployment of AI-driven systems and robotics has substantially improved efficiency, accuracy, and cost-effectiveness in production and service delivery. Automation has reshaped traditional labour markets by altering job structures, redefining skill

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requirements, and, in some cases, displacing human labour. These developments have triggered renewed legal discourse on the adequacy of existing labour and employment laws, particularly with respect to job security, workplace surveillance, algorithmic decision-making, occupational safety, and the protection of workers' rights in increasingly automated environments (Erigbe, 2025).

Similarly, in the education sector, AI technologies have emerged as transformative tools in teaching, learning, assessment, and educational administration. Adaptive learning platforms, intelligent tutoring systems, and automated evaluation mechanisms have enhanced access to education and personalized learning experiences. Nonetheless, the adoption of AI in education has raised critical legal and ethical questions concerning data protection, privacy rights of learners, cybersecurity, intellectual property, algorithmic bias, and the ethical governance of educational technologies. These concerns underscore the need for robust regulatory frameworks that balance innovation with the protection of fundamental rights (Bit, et al 2024).

In the commercial and business sectors, the integration of AI and machine learning has significantly enhanced operational efficiency, market responsiveness, and decision-making accuracy. The use of digital agents and automated systems has streamlined business processes, reduced transaction costs, and dismantled traditional barriers to market entry. While these advancements promote competitiveness and innovation, they also necessitate legal scrutiny regarding consumer protection, accountability, competition law, and transparency in algorithm-driven commercial practices (Mohammed et al 2025).

Within the financial sector, the integration of Artificial Intelligence (AI) and Machine Learning (ML) has emerged as a central pillar of contemporary digital transformation strategies. Financial institutions increasingly deploy these technologies across a wide spectrum of functions, including credit assessment, fraud detection, risk management, customer profiling, regulatory compliance, and automated financial advisory services. Beyond modernising internal operations, AI-driven systems are fundamentally reshaping the nature of engagement between financial service providers and consumers, altering how financial products are designed, delivered, and regulated (Viswanathan, 2025). While these developments promise significant efficiency gains and enhanced service delivery, they simultaneously raise complex regulatory concerns relating to algorithmic transparency, data governance, consumer protection, financial inclusion, and systemic risk. As such, they necessitate adaptive and forward-looking legal frameworks capable of balancing innovation with regulatory oversight.

Viswanathan (2025, p. 338) observes that the infusion of AI into banking and finance has profoundly restructured both the operational and strategic foundations of financial institutions, giving rise to an advanced digital ecosystem that supports improved decision-making, operational efficiency, and personalised customer-centric services. AI-driven solutions are now embedded across core financial functions from customer service interfaces and financial advisory platforms to credit scoring models, fraud prevention mechanisms, and compliance monitoring systems signaling a structural shift in how financial services are conceptualised, delivered, and governed. This transformation underscores the growing reliance on algorithmic systems as key intermediaries within the financial marketplace.

At the heart of these innovations are machine learning algorithms, which constitute the functional backbone of AI applications in finance. Through their capacity to continuously learn from historical and real-time data, these algorithms enable financial institutions to generate predictive insights, anticipate market trends, and deliver highly customised financial services with unprecedented speed and precision (Muhammad et al., 2024). The emergence of automated advisory platforms (robo-advisors), advanced risk analytics, and AI-enabled regulatory technologies (RegTech) further illustrates the sector's shift towards data-driven and automated decision-making processes (Abbas, 2024).

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