

Secure and Efficient Teller Desk Transactions Through Biometric and RFID Technology

Pacifique Niyongabire, Kisangiri Michael, Judith Leo & Martine Lyimo

To access the full article, click that link

DOI: https://doi.org/10.1007/978-3-031-99219-3_4

Abstract

This paper introduces a biometric banking system, a technological innovation that is set to transform cash withdrawals at CRDB Bank Burundi by eliminating paper-based transactions. The system's key features include biometric authentication methods, such as fingerprint and RFID card scanning, integrated with advanced encryption protocols for robust data security. It effectively addresses common banking inefficiencies, such as lengthy transaction times and security vulnerabilities associated with manual processes. Additionally, the system offers real-time transaction notifications via SMS, WhatsApp, or email, enhancing transparency, and customer satisfaction. Extensive testing with CRDB staff, customers, and other interested individuals has demonstrated the system's efficiency, reliability, and user acceptance. A statistical survey conducted with CRDB staff, customers, and other stakeholders revealed an 85% reduction in transaction times, a 90% increase in operational efficiency, and a significant improvement in security measures. The findings highlight significant reductions in transaction times, increased operational efficiency, and heightened security measures. This paper discusses the system's design, implementation, and testing phases, emphasizing its potential to revolutionize banking operations and set a precedent for digital transformation in the banking sector.

Keywords

Biometric banking; Paperless transactions; Bank teller desk transactions