

**Effect Of Internet Banking On Transaction Efficiency In Uganda. A Case Study Of Entebbe Municipality,
Wakiso District**

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Abstract

The study examined the effect of Internet banking on transaction efficiency in Uganda, focusing on Entebbe Municipality, Wakiso District. A cross-sectional research design was adopted, using a mixed-methods approach to collect both quantitative and qualitative data. The study population comprised administrators, financial and procurement officers, e-payment service providers, transaction processing staff, and e-payment system users, totaling 333 respondents. A sample of 244 respondents was selected using purposive and simple random sampling techniques. Data were collected through structured questionnaires, semi-structured interviews, and document review, and analyzed using SPSS. Descriptive statistics summarized the data, while regression analysis examined the relationship between Internet banking usage and transaction efficiency. The results indicated a strong positive relationship between Internet banking and transaction efficiency, with a correlation coefficient of 0.758 and a coefficient of determination (R^2) of 0.574. Regression analysis revealed that Internet banking significantly influenced transaction efficiency ($B = 0.786$, $t = 18.057$, $p < 0.05$), implying that a unit increase in Internet banking usage improved transaction efficiency by 0.786 units. The findings confirmed that Internet banking substantially enhanced the speed, accuracy, and overall effectiveness of financial transactions. The study concluded that Internet banking played a significant role in improving transaction efficiency in Entebbe Municipality. It was recommended that banks and policymakers promote wider adoption of Internet banking by improving internet infrastructure, enhancing system reliability, providing user training, and ensuring secure, accessible online platforms.

Keywords: Internet banking, transaction efficiency, e-payments, Wakiso District

Background of the study

At the global level, internet banking emerged as a critical component of digital financial transformation, enabling banks to deliver services such as online fund transfers, bill payments, account management, and business transactions without physical branch visits (A. G. Kazaara et al., 2024). The widespread adoption of internet banking was driven by advances in information and communication technologies, increased internet penetration, and growing demand for faster and more convenient financial services (A. I. Kazaara & Nancy, 2025). Empirical studies showed that internet banking significantly improved transaction efficiency by reducing processing time, lowering transaction costs, minimizing human errors, and enhancing transparency and record-keeping (Demirgüç-Kunt et al., 2022; OECD, 2023). However, global evidence also indicated that efficiency gains depended on system reliability, cybersecurity safeguards, user digital literacy, and supportive regulatory frameworks, meaning that the benefits of internet banking were not uniformly experienced across countries and regions (World Bank, 2022).

In Africa, internet banking developed alongside mobile money, particularly within urban and peri-urban areas where internet access and formal banking penetration were relatively higher (Irumba et al., 2024). African banking systems increasingly adopted internet banking platforms to enhance service delivery, reduce congestion in banking halls, and improve transaction turnaround time for corporate and retail customers (AfDB, 2021). Studies across the continent demonstrated that internet banking improved transaction efficiency for businesses and salaried individuals by facilitating real-time payments, online settlements, and faster reconciliation processes (Boateng et al., 2020). Nevertheless, challenges such as uneven internet infrastructure, high data costs, cybersecurity concerns, and limited digital skills constrained the full realization of transaction efficiency benefits in many African countries (GSMA, 2022).

In Uganda, internet banking gained prominence as part of broader financial sector digitization reforms aimed at promoting efficiency, transparency, and financial inclusion (Racheal et al., 2023). Commercial banks invested heavily in online banking platforms to offer services such as electronic fund transfers, online bill payments, tax payments, and business transactions (Julius et al., 2024). Evidence from Uganda indicated that internet banking reduced transaction delays, lowered operational costs for businesses, and improved convenience for customers by minimizing the need for physical bank visits (Bank of Uganda, 2022). Despite these improvements, studies highlighted persistent challenges including intermittent internet connectivity, system downtimes, cybersecurity risks, and varying levels of customer awareness and trust, which continued to affect transaction efficiency outcomes (Munyegera & Matsumoto, 2021). As a result, while internet banking usage increased, its efficiency impacts varied across user groups and locations.

Within Wakiso District, particularly Entebbe Municipality, the relevance of internet banking to transaction efficiency was increasingly evident due to the municipality's peri-urban nature, concentration of businesses, tourism-related activities, and proximity to major government and transport services (Alex & Moses, 2024). Entebbe Municipality experienced growing demand for efficient, reliable, and secure transaction platforms to support commercial operations, service payments, and personal financial management (Ivan et al., 2023). Internet banking enabled businesses and residents to conduct transactions remotely, reducing time spent travelling to bank branches and improving payment speed and accuracy (Lydia et al., 2023). However, local observations suggested that transaction efficiency gains were influenced by factors such as the stability of internet connectivity, the level of digital literacy among small business operators, and the degree of trust in online banking platforms (Julius & Matovu, 2025). Despite the growing use of internet banking in Entebbe Municipality, limited empirical studies had examined its specific effect on transaction efficiency at the municipal level (Promise et al., 2024). This gap justified the need for a localized investigation into how internet banking affected transaction efficiency in Entebbe Municipality, Wakiso District, to inform banking practices, policy formulation, and digital infrastructure development.

Problem Statement

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Despite increased investment in internet banking by commercial banks in Uganda, transaction inefficiencies persist, particularly at the local government and municipal level (Denis & Richard, 2023). In Entebbe Municipality, Wakiso District, businesses, public institutions, and individual customers increasingly rely on internet banking for fund transfers, bill payments, tax payments, and business transactions (Victor et al., 2022). However, users continue to experience challenges such as system downtimes, slow transaction processing, failed transfers, cybersecurity concerns, and inconsistent internet connectivity, which undermine the reliability and efficiency of internet banking services (Christopher et al., 2022). While national studies generally suggest that internet banking improves service delivery and reduces transaction costs, there is limited empirical evidence examining its actual effect on transaction efficiency within peri-urban municipalities such as Entebbe (Ronet et al., 2023). Moreover, most existing studies focus on adoption and customer satisfaction rather than operational efficiency indicators such as transaction speed, accuracy, cost, and accessibility (Faridah et al., 2023). The absence of localized, evidence-based findings constrains banks, regulators, and municipal authorities from designing targeted interventions to improve digital banking performance (Ramadhan et al., 2023). This study therefore sought to examine the effect of internet banking on transaction efficiency in Entebbe Municipality, Wakiso District.

Main Objective

To establish the effect of internet banking on transaction efficiency in Uganda

Methodology

This study examined the effect of e-payment methods on transaction efficiency in Wakiso District, Entebbe Municipality. A cross-sectional research design was adopted as it enabled the collection of data at a single point in time, providing a clear snapshot of how e-payment methods, particularly internet and mobile banking, were used and how they influenced transaction efficiency (Creswell & Creswell, 2018). This design facilitated the examination of patterns, variations, and relationships between mobile money usage and transaction speed, reliability, and effectiveness across different user categories and service providers (Saunders, Lewis, & Thornhill, 2019). A mixed-methods approach was employed, integrating both quantitative and qualitative methods. Quantitative data allowed measurement of the effect of e-payment methods on transaction efficiency and supported statistical analysis and generalization, while qualitative data provided in-depth insights into users' experiences, perceptions, and challenges, enriching the quantitative findings (Bryman, 2016).

The study population consisted of administrators (10), financial and procurement officers (8), e-payment service providers (15), transaction processing staff (100), and e-payment system users (200), giving a total population of 333 respondents. A sample size of 244 respondents was determined using the Krejcie and Morgan (1970) table. Simple random sampling was applied to select transaction processing staff and e-payment system users, ensuring that each individual had an equal chance of selection and reducing sampling bias. Purposive sampling was used to select

administrators, financial and procurement officers, and e-payment service providers based on their technical knowledge and involvement in e-payment systems, allowing for the collection of rich qualitative data.

Data were collected using structured questionnaires, semi-structured interviews, and document review. Questionnaires were administered to transaction processing staff and e-payment system users to collect quantitative data on transaction frequency, speed, reliability, cost, convenience, and user satisfaction. Interviews were conducted with administrators, financial and procurement officers, and service providers to explore operational challenges, regulatory issues, and opportunities for improving transaction efficiency. Secondary data were obtained from policy reports, regulatory documents, financial institution records, mobile money transaction reports, and previous research studies to provide context and support primary data findings.

Structured questionnaires included closed-ended, multiple-choice, and Likert-scale items measuring key aspects of transaction efficiency. Semi-structured interview guides contained open-ended questions that allowed respondents to provide detailed perspectives on system challenges, regulatory frameworks, and technology adoption. A document review checklist was used to systematically extract relevant information from secondary sources, ensuring consistency and focus.

Data quality was ensured through pre-testing of instruments, expert review for content validity, and assessment of reliability using Cronbach's Alpha. The Content Validity Index (CVI) was calculated, with a threshold of 0.7 considered acceptable (Polit & Beck, 2006). Cronbach's Alpha coefficients above 0.7 confirmed internal consistency of the questionnaire items (Field, 2013). Data collection followed ethical procedures, including obtaining informed consent, ensuring confidentiality, and storing data securely.

Quantitative data were coded, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) (Nelson et al., 2022). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data, while inferential statistics, including Pearson correlation and regression analysis, were employed to examine the relationship between e-payment methods and transaction efficiency (Nelson et al., 2023). Qualitative data from interviews and document reviews were analyzed thematically, with coding used to identify recurring patterns and themes across different respondent groups. This approach ensured a comprehensive understanding of how e-payment methods influenced transaction efficiency in Entebbe Municipality, combining both breadth and depth of analysis while maintaining methodological rigor.

Results

Table 1: Descriptive statistics on Internet banking

Internet banking	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	STD
Internet banking allows for faster processing of financial transactions.	2 (0.8%)	3 (1.2%)	8 (3.3%)	180 (73.8%)	51 (20.9%)	4.13	0.592
Internet banking platforms are user-friendly and accessible.	4 (1.6%)	25 (10.2%)	18 (7.4%)	65 (26.6%)	132 (54.1%)	4.21	1.064
Internet banking reduces the need for physical visits to the bank.	20 (8.2%)	28 (11.5%)	8 (3.3%)	84 (34.4%)	104 (42.6%)	3.92	1.287
Internet banking has reduced queue times and congestion in bank branches.	24 (9.8%)	3 (1.2%)	29 (11.9%)	43 (17.6%)	145 (59.4%)	4.16	1.277

Source: Primary Data, 2025

Starting with the statement, “Internet banking allows for faster processing of financial transactions,” the results indicate that the majority of respondents perceive Internet banking as a tool that significantly enhances the speed of financial transactions. Specifically, 180 respondents (73.8%) agreed and 51 respondents (20.9%) strongly agreed, totaling 231 respondents or 94.7% of the sample who positively rated Internet banking for fast processing. Only a very small minority expressed disagreement, with 3 respondents (1.2%) disagreeing and 2 respondents (0.8%) strongly disagreeing, while 8 respondents (3.3%) remained neutral. The mean score of 4.13 and a low standard deviation of 0.592 indicate a strong consensus among participants regarding the efficiency of Internet banking in processing financial transactions. This suggests that Internet banking effectively meets user expectations for rapid transaction processing, thereby enhancing convenience for both personal and business financial activities. An Administrator shared that, “My experience with internet banking has been largely positive, especially when it comes to executing bulk payments such as salaries. The system allows me to upload payment schedules and process them simultaneously, which saves hours compared to manual transfers. However, the efficiency is sometimes hindered by scheduled maintenance or unexpected downtime, which requires us to postpone critical transactions until systems are restored” (Source: KM004/12/08/2025).

Regarding the statement, “Internet banking platforms are user-friendly and accessible,” the findings reveal that a majority of respondents view Internet banking as convenient and easy to navigate. A total of 197 respondents (65

agreed, 26.6%, and 132 strongly agreed, 54.1%) representing 80.7% of the sample, affirmed that Internet banking platforms are accessible and user-friendly. Conversely, 25 respondents (10.2%) disagreed and 4 respondents (1.6%) strongly disagreed, making up 11.8% of the sample, while 18 respondents (7.4%) were neutral. The mean score of 4.21, accompanied by a standard deviation of 1.064, reflects a generally positive perception, though the relatively higher standard deviation compared to the first statement suggests some variability in individual experiences, likely due to differences in digital literacy, device accessibility, or occasional platform navigation challenges. A Financial & Procurement Officer highlighted that, “Features such as instant account balance updates, transaction history downloads, and the ability to initiate transfers outside banking hours have greatly improved my work efficiency. On the downside, the system’s complexity sometimes confuses less tech-savvy staff, leading to delays in completing urgent transfers. Internet banking has reduced my need to physically visit branches by almost 90%, except for special services like bank drafts or large cash withdrawals” (Source: KM005/12/08/2025).

For the statement, “Internet banking reduces the need for physical visits to the bank,” the responses indicate a strong but slightly more varied perception. A combined 188 respondents (84 agreed, 34.4%, and 104 strongly agreed, 42.6%) representing 77.0% of the sample, agreed that Internet banking reduces in-person visits. However, a significant portion of the sample, 28 respondents (11.5%) disagreed and 20 respondents (8.2%) strongly disagreed, totaling 48 respondents or 19.7% who were less convinced of this benefit, while 8 respondents (3.3%) were neutral. The mean score of 3.92 and standard deviation of 1.287 indicate moderate consensus, with some variation likely stemming from either limited Internet access, occasional system downtime, or the need for certain transactions that still require physical verification. An E-payment Service Provider remarked, “Internet banking provides a competitive advantage for banks because it enables customers to transact without geographical restrictions. The ability to approve transactions remotely has been especially useful for corporate clients who travel frequently. However, cyber-security threats remain a concern, and this requires continuous investment in encryption and user awareness training to maintain trust and transaction speed” (Source: KM006/12/08/2025).

For the statement, “Internet banking has reduced queue times and congestion in bank branches,” the results show that respondents strongly perceive a reduction in branch congestion due to Internet banking. A total of 188 respondents (43 agreed, 17.6%, and 145 strongly agreed, 59.4%) representing 77.0% of the sample, affirmed this statement. On the other hand, 3 respondents (1.2%) disagreed and 24 respondents (9.8%) strongly disagreed, totaling 27 respondents or 11.0%, while 29 respondents (11.9%) were neutral. The mean score of 4.16 and standard deviation of 1.277 reflect a positive perception overall, but also some variability, suggesting that while Internet banking has eased congestion for many users, certain limitations such as network issues or complex transactions may still occasionally necessitate branch visits.

Table 2: Regression analysis between Internet banking and transaction efficiency in Uganda

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758 ^a	.574	.572	2.215

a. Predictors: (Constant), Internet banking

Source: Primary Data, 2025

The model summary showed a correlation coefficient (R) of 0.758, indicating a strong positive association between Internet banking and transaction efficiency. The coefficient of determination (R²) was 0.574, suggesting that approximately 57.4% of the variability in transaction efficiency was explained by Internet banking. The adjusted R² of 0.572 confirmed that the model maintained high explanatory power while accounting for the sample size, and the standard error of the estimate was 2.215, indicating the average deviation of the observed transaction efficiency scores from the predicted values.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.869	.539		10.897	.000
	Internet banking	.786	.044	.758	18.057	.000

A. Dependent Variable: Transaction efficiency

Source: Primary Data, 2025

The regression coefficients further clarified the effect of Internet banking on transaction efficiency. The constant (intercept) was 5.869 (t = 10.897, p = 0.000), indicating the predicted transaction efficiency when Internet banking usage was zero. The unstandardized coefficient for Internet banking (B = 0.786, t = 18.057, p = 0.000) was positive and statistically significant at the 0.05 level, suggesting that a one-unit increase in Internet banking usage led to a 0.786 increase in transaction efficiency. The standardized coefficient (Beta = 0.758) reinforced that Internet banking had a strong and positive influence on transaction efficiency relative to other variables in the model. In the context of hypothesis testing, the null hypothesis, which stated that Internet banking had no significant effect on transaction efficiency in Uganda, was rejected. The statistically significant coefficient (p < 0.05) demonstrated that Internet banking usage had a substantial positive effect on improving transaction efficiency. This indicated that as individuals and organizations increasingly used Internet banking, the speed, accuracy, and overall effectiveness of financial transactions improved considerably.

Conclusions

The study established that Internet banking enables faster processing of financial transactions, reduces the need for physical visits to bank branches, minimizes queue times, and enhances overall convenience for both individual and business users. These benefits make Internet banking a critical tool for improving operational efficiency and financial management, particularly in urban and semi-urban areas like Wakiso District where internet access and digital device penetration are high.

It was also concluded that the adoption and effectiveness of Internet banking are strongly influenced by its perceived usefulness and ease of use, consistent with the Technology Acceptance Model (TAM). Users are more likely to adopt Internet banking because it saves time, lowers transaction costs, and provides flexible, convenient access to financial services.

However, it was further concluded that challenges such as intermittent internet connectivity, occasional system downtime, and power outages can limit the efficiency gains of Internet banking, particularly in semi-urban and rural areas. Despite these limitations, the overall conclusion is that Internet banking substantially improves transaction efficiency in Uganda, offering a reliable and effective alternative to traditional banking methods and supporting more streamlined financial operations for both individuals and businesses.

Recommendations

Internet service providers and relevant authorities should invest in expanding and stabilizing internet connectivity, especially in semi-urban and rural areas. Reliable internet access is crucial to ensure uninterrupted use of Internet banking services and to maximize transaction efficiency.

Banks should strengthen the resilience of their Internet banking platforms by reducing system downtimes, ensuring regular maintenance, and implementing backup systems to prevent disruptions. This will increase user confidence in the platform's dependability.

Continuous improvements in security protocols, including encryption, multi-factor authentication, and real-time monitoring of suspicious activities, should be implemented. Banks should also educate users on safe online banking practices to minimize fraud and build trust in the system.

Banks should provide training, tutorials, and customer support to help users navigate Internet banking platforms effectively. This will reduce the barriers posed by limited digital literacy and improve the perceived ease of use.

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