Pearls Journal

Pearls Open Journal
Vol. 3 (Iss. 1) 2026 | https://pearlsjournal.com

Technology Adoption, Innovation and Financial Performance among Commercial Banks in Kampala, Uganda

[1] Tukahirwa Clidias, clidias.tukahirwa@studmc.kiu.ac.ug ORCID:0009-0004-2614-6910

[2] Okinyi Lennox Oguma,

[3]Ahabwe Jackline, jackline.ahabwe.57345@studmc.kiu.ac.ug

[4]Ayebare Dickson, dickson.ayebare@studmc.kiu.ac.ug

[5]Asiimwe Spechioza, specioza.asiimwe@kiu.ac.ug**ORCID: /0009-0007-1672-5806**

[6] Onapa Moses Wawah, Wawah.onapa@studmc.kiu.ac.ug

[1,2,3,4, 6] - College of Economics and Management, Kampala International University, Uganda

[5]- College of Education Open and Distance Learning, Kampala International University, Uganda

Abstract

This study examined the effect of technology adoption and innovation on the financial performance of selected commercial banks in Kampala, Uganda. Utilizing a quantitative approach, data were collected through structured questionnaires distributed to 161 bank employees and management staff. The analysis revealed a strong positive correlation ($r = 0.696$, $p < 0.01$) between technology adoption and innovation and the financial performance of these banks. The findings indicated that the adoption of new technologies significantly improved financial outcomes, with an average mean score of 3.88 reflecting general satisfaction among respondents regarding the impact of technological strategies. Specifically, the statement "The adoption of new technologies has improved our bank's financial performance" received the highest mean score of 4.11, affirming the direct benefits of technological integration. Regression analysis further confirmed that technology adoption and innovation explained 48.4% of the variance in financial performance, leading to the rejection of the null hypothesis that posited no significant relationship between these factors. The findings revealed that technology adoption and innovation significantly improve financial performance by enhancing operational efficiency, service delivery, customer satisfaction, and competitiveness. The study concludes that commercial banks should continuously invest in digital technologies and innovative banking solutions to sustain growth and improve profitability in an increasingly competitive banking environment.

DOI: https://doi.org/10.5281/zenodo.24135988 · © 2026 The authors · CC BY 4.0 · PJ-2026-0232

Key words: Technology adoption, innovation, financial performance, commercial banks, Kampala, Uganda.

Introduction:

The banking sector worldwide has undergone profound transformation over the past four decades, driven by regulatory reforms, globalization, and technological innovation. In the United States, deregulation in the 1980s encouraged diversification strategies, while the 1990s ushered in globalization and the rise of internet-based financial services (Johnson, 2021; Liu, 2021). Following the 2008 financial crisis, emphasis shifted toward risk management, transparency, and regulatory compliance (Miller, 2022). Similarly, in Europe, the introduction of the Euro in 1999 and subsequent FinTech innovations reshaped corporate strategies, compelling banks to adopt cross-border integration and advanced digital platforms (Smith & Jones, 2021; Miller, 2023). In Asia, rapid economic growth in countries such as China and Japan influenced banks to align strategies with national economic policies, with China's gradual financial liberalization and Japan's technological leadership reinforcing the role of innovation in sustaining competitiveness (Chen, 2022; Takashi, 2021).

African banking institutions have also adapted to dynamic economic reforms and regulatory changes. In North Africa, Egypt's 2016 currency flotation and Morocco's 2018 exchange rate reforms prompted banks to adopt risk management and flexible market-based strategies (El-Masry, 2021; Benali & Ahmed, 2022). In West Africa, banks in Nigeria and Ghana responded to inflationary pressures and currency volatility by implementing hedging strategies and enhancing customer service to retain market share (Aidoo, 2021; Kumah, 2022). South Africa's advanced financial sector has emphasized FinTech adoption and strict regulatory compliance, with the South African Reserve Bank imposing rigorous controls to mitigate risks in volatile global markets (Dlamini, 2023; Johnson & Singh, 2022).

In East Africa, commercial banks have embraced digital innovation to support regional integration and financial inclusion. Kenya's M-Pesa mobile money platform revolutionized cross-border payments and customer service, while Tanzania's regulatory reforms under the National Payment Systems Act of 2020 encouraged digital payment adoption (Mugambi, 2021; Ochieng, 2022; Mwita, 2021). Uganda's banking sector, particularly in Kampala, has similarly evolved since the liberalization of the financial sector in the 1990s. The Foreign Exchange Act of 1993 marked a turning point, introducing regulatory compliance requirements that enabled banks to serve tourists and cross-border traders (Tumusiime, 2021).

Over time, Ugandan banks have adopted cost leadership strategies, digital platforms, and customer-centric approaches to remain competitive in a dynamic market (Ssekandi, 2022; Nakayiza, 2023; Mugisha, 2022).

Technology adoption and innovation have become central to Uganda's banking strategies, especially in Kampala, where competition is intense and customer expectations are rising. Innovations such as mobile banking, automated systems, and secure online platforms have enhanced operational efficiency, reduced costs, and improved customer satisfaction (Mugambi, 2021; Nakayiza, 2023). However, challenges remain. High implementation costs, cybersecurity risks, and integration with legacy systems continue to hinder smaller banks from fully embracing digital transformation (Mugerwa & Wanyama, 2021). Moreover, regulatory compliance requirements set by the Bank of Uganda and the Financial Intelligence Authority add complexity to strategic alignment, demanding that banks balance innovation with adherence to strict legal frameworks (Owino, 2023).

Against this backdrop, the study investigates the effect of technology adoption and innovation on the financial performance of commercial banks in Kampala. While global and regional evidence confirms that technological innovation enhances efficiency and profitability (Zhao, Sun & Liu, 2020; Wang, Li & Zhang, 2021; Okeke & Njoroge, 2022; Owusu & Boakye, 2023), localized empirical studies remain limited. This research therefore seeks to bridge the gap by providing evidence from Kampala's banking sector, examining how digital transformation strategies influence profitability, customer retention, and operational efficiency. By situating Uganda's experience within global and regional contexts, the study contributes to understanding how technology adoption can serve as a cornerstone for sustainable financial performance in emerging markets. Although technology adoption has attracted substantial attention globally, there is limited empirical evidence on how technology adoption and innovation affect the financial performance of commercial banks operating in Kampala, Uganda. Existing studies largely focus on developed economies who's technological and market conditions differ from those of developing countries. This knowledge gap necessitated the present study.

Problem Statement

Commercial banks play a significant role in economic development through financial intermediation, credit provision, savings mobilization, and facilitation of business transactions. To improve efficiency and competitiveness, many commercial banks have increasingly invested in technological innovations such as

mobile banking, internet banking, automated teller machines (ATMs), electronic payment systems, and digital customer service platforms. Technology adoption has been recognized as an important driver of organizational growth, operational efficiency, customer satisfaction, and profitability (Barney, 1991; Dinu et al., 2021).

Despite these investments, several commercial banks continue to experience challenges related to operational inefficiencies, increasing costs, customer retention, cybersecurity risks, and fluctuating financial performance. This situation raises concerns regarding whether the technologies being adopted are generating the expected financial benefits. Previous studies have reported a positive relationship between technological innovation and financial performance (Babirye et al., 2020; Kiganda et al., 2022). However, most of these studies were conducted in different contexts, making it difficult to generalize their findings to commercial banks operating in Kampala, Uganda. Furthermore, empirical evidence on the extent to which technology adoption and innovation influence financial performance in the Ugandan banking sector remains limited. Therefore, this study sought to examine the effect of technology adoption and innovation on the financial performance of selected commercial banks in Kampala, Uganda.

Objectives of the Study

General Objective

To examine the effect of technology adoption and innovation on the financial performance of selected commercial banks in Kampala, Uganda.

Specific Objectives

i. To assess the level of technology adoption and innovation among selected commercial banks in Kampala.
ii. To determine the relationship between technology adoption and innovation and financial performance.
iii. To establish the effect of technology adoption and innovation on the financial performance of commercial banks in Kampala, Uganda.

Research Hypothesis

i. **H0:** Technology adoption and innovation have no statistically significant effect on the financial performance of commercial banks in Kampala, Uganda.
ii. **H1:** Technology adoption and innovation have a statistically significant effect on the financial performance of commercial banks in Kampala, Uganda.

Theoretical Framework

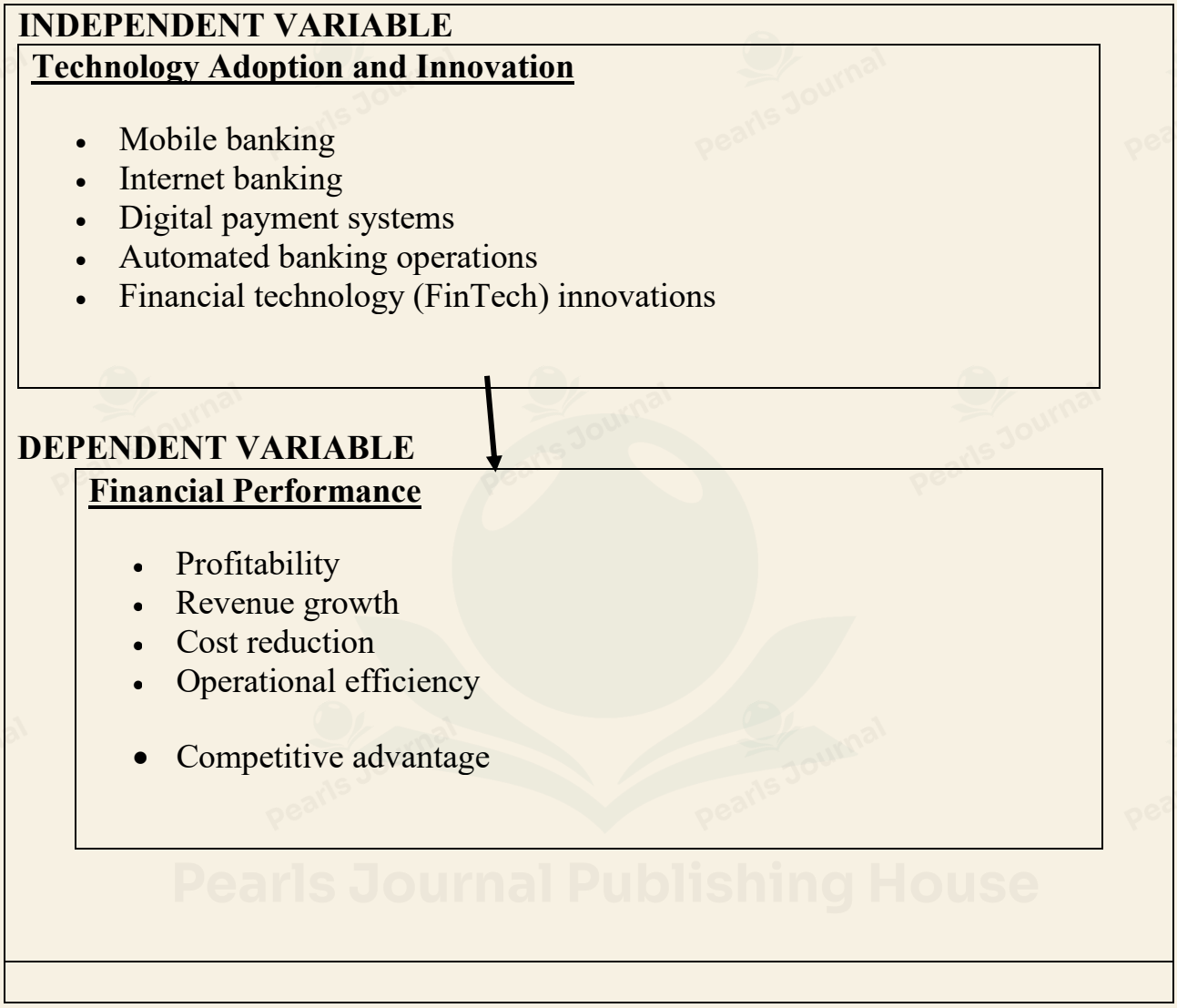
This study was guided by the Resource-Based View (RBV) Theory developed by Barney (1991). The theory argues that organizations achieve superior performance when they possess resources that are valuable, rare, inimitable, and non-substitutable. Such resources provide sustainable competitive advantages that enable firms to outperform competitors over time (Barney, 1991).

In the banking sector, technological resources such as digital banking systems, mobile banking applications, automated transaction platforms, and innovative service delivery channels constitute strategic assets capable of enhancing organizational performance. According to RBV theory, banks that effectively deploy technology and innovation can improve operational efficiency, reduce service delivery costs, enhance customer satisfaction, and increase profitability. Therefore, the theory provides a suitable framework for explaining how technology adoption and innovation influence financial performance among commercial banks.

Conceptual Framework

Pearls Journal Publishing House

Figure 1: Conceptual Framework Showing the effect of Technology Adoption and Innovation on Financial Performance



The conceptual framework illustrates the relationship between technology adoption and innovation as the independent variable and financial performance as the dependent variable. Technology adoption and innovation are measured through indicators such as mobile banking, internet banking, digital payment systems, automated banking operations, and financial technology (FinTech) innovations. Financial performance is measured in terms of profitability, revenue growth, cost reduction, operational efficiency, and competitive advantage.

The framework assumes that increased adoption of technological innovations enhances the efficiency and effectiveness of banking operations by improving service delivery, reducing transaction costs, increasing transaction speed, and

enhancing customer satisfaction. As a result, these improvements contribute to better financial performance through increased profitability, higher revenues, improved operational efficiency, reduced costs, and stronger market competitiveness. Conversely, inadequate adoption of technology may limit operational efficiency and reduce a bank's ability to compete effectively in the dynamic financial services sector.

Source: Adapted from the Resource-Based View Theory (Barney, 1991) and empirical studies on technology adoption and organizational performance (Dinu et al., 2021; Kiganda et al., 2022).

Literature Review

Technology adoption has become a cornerstone of modern banking strategies worldwide. Studies emphasize that digital platforms, automation, and mobile banking significantly enhance operational efficiency and profitability. Dinu et al. (2021) argue that mobile banking platforms reduce inefficiencies and improve profitability by streamlining transactions and lowering costs. Kiganda, Nakisozi, and Kabugo (2022) reinforce this by showing that Ugandan banks embracing digital solutions experience higher financial growth compared to those relying on traditional methods. Similarly, Madsen and Leurs (2019) highlight that online trading systems improve transaction speed, reduce errors, and increase profitability.

In Uganda, technology adoption has been accelerated by the COVID-19 pandemic, which forced banks to integrate mobile and online services to maintain customer access (Nakayiza, 2023). Mugisha (2022) notes that customer service excellence, supported by digital platforms, has become a key differentiator in Kampala's competitive market. However, challenges remain. Mugerwa and Wanyama (2021) caution that high implementation costs and cybersecurity risks may deter smaller banks from fully embracing advanced digital solutions. Nkumba and Lubega (2020) further emphasize that without adequate safeguards, technology adoption may expose banks to costly disruptions such as data breaches and system failures.

- Dinu et al. (2021) argue that mobile banking platforms reduce inefficiencies and improve profitability.
- Kiganda et al. (2022) found that banks embracing digital solutions experience higher growth compared to traditional institutions.
- Madsen & Leurs (2019) highlight that online trading systems improve transaction speed and profitability.

- Nakatudde & Lule (2021) emphasize efficiency gains from digital trading platforms.
- Babirye et al. (2020) note that automation reduces manual errors and enhances customer satisfaction.
- Mugerwa & Wanyama (2021) caution that high costs and cybersecurity risks may deter smaller banks.

Despite the generally positive findings reported in previous studies, technology adoption does not automatically guarantee improved financial performance. Some studies indicate that high implementation costs, staff resistance, cybersecurity threats, and inadequate technological infrastructure may reduce expected benefits. Therefore, successful technology adoption requires effective planning, employee training, organizational support, and continuous system improvement. This demonstrates that the relationship between technology adoption and financial performance is influenced by multiple organizational and environmental factors.

Research Gap

Existing literature suggests that technology adoption and innovation positively influence organizational and financial performance. For instance, Dinu et al. (2021) established those technological innovations improve service delivery and operational efficiency in financial institutions. Similarly, Babirye et al. (2020) reported that automation and digital banking systems contribute significantly to improved customer satisfaction and profitability. Kiganda et al. (2022) further observed that commercial banks embracing technological innovations achieve better financial outcomes than those relying on traditional banking practices.

However, most previous studies focused on developed economies or broader financial sectors, with limited attention given to the Ugandan banking context. Moreover, few studies have specifically examined the extent to which technology adoption and innovation influence financial performance among commercial banks operating in Kampala. Therefore, a contextual and empirical gap exists regarding technology adoption and innovation within Uganda's commercial banking sector. This study was conducted to address that gap by providing empirical evidence from selected commercial banks in Kampala, Uganda.

DOI: https://doi.org/10.5281/zenodo.24135988 · © 2026 The authors · CC BY 4.0

Methodology of the Study

This study employed a descriptive cross-sectional survey design to examine the effect of technology adoption and innovation on the financial performance of commercial banks in Kampala, Uganda. The target population consisted of 280 staff members**,** with a sample size of 165 respondents determined using Sloven's formula. total of 165 questionnaires were distributed to respondents. However, only 161 questionnaires were fully completed and found suitable for analysis, representing a response rate of 97.6%. Four questionnaires were excluded because they contained incomplete responses and substantial missing information.

A combination of purposive, stratified, and simple random sampling techniques was used to ensure representativeness across departments. Primary data were collected using a standardized questionnaire and an interview guide, with reliability confirmed through a Cronbach's alpha coefficient of 0.835 and validity established by a Content Validity Index (CVI) of 0.8, both exceeding the minimum threshold of 0.70. Data analysis involved frequency counts, percentages, means, and standard deviations, alongside Pearson's Linear Correlation Coefficient and multiple linear regression to test relationships and predictive effects, while qualitative data from interviews were analyzed thematically to capture deeper insights into innovation and strategic practices.

Ethical Considerations

Ethical principles were observed throughout the study. Participation was voluntary and informed consent was obtained from all respondents before data collection. Participants were informed about the purpose of the study and assured that the information provided would be treated confidentially and used strictly for academic purposes. Respondents were allowed to withdraw from the study at any stage without any consequences. No identifying information was recorded during data collection.

RESULTS

4.3.1 The effect of technology adoption and innovation on the financial performance of Selected Commercial Banks in Kampala, Uganda

Table 1: Showing the descriptive statistics of the technology adoption and innovation on financial performance

Technology adoption and innovation	Mean	Std. Deviation
The adoption of new technologies has improved our bank's financial performance.	4.11	1.009
Innovation in banking services has contributed to an increase in revenue.	3.97	1.091
Technology adoption has reduced operational costs in our bank.	3.80	1.040
Investment in digital banking solutions has attracted more customers.	3.78	1.066
Innovation in our bank's services has helped us compete effectively in the market.	3.74	1.029
Average Mean	3.88	1.047

Source: Author's computation, 2025

Table 1 presents descriptive statistics illustrating how technology adoption and innovation effect the financial performance of selected commercial banks in Kampala, Uganda. A total of five key statements were analyzed, each representing different dimensions of competitive strategy linked to technological advancements.

The findings reveal that respondents generally rated the effect of technology adoption and innovation on financial performance as satisfactory, with an overall average mean of 3.88 and a standard deviation of 1.047. This suggests that commercial banks in Kampala perceive technological strategies as integral to achieving financial efficiency and competitive advantage.

The highest-rated item, "The adoption of new technologies has improved our bank's financial performance", received a mean score of 4.11 with a standard deviation of

1.009, indicating strong agreement among respondents. This suggests that new technologies have had a direct and favorable influence on financial outcomes such as profitability, operational efficiency, and service delivery.

Following this, the statement “Innovation in banking services has contributed to an increase in revenue” recorded a mean of 3.97, highlighting the recognition that continuous innovation supports income generation and enhances value for customers. This points to the role of creative banking solutions in attracting business and responding to evolving customer needs.

The third item, “Technology adoption has reduced operational costs in our bank”, achieved a mean score of 3.80, suggesting that technological integration has contributed to internal efficiencies. Respondents acknowledged that automation and digitization help cut costs and streamline processes.

The fourth statement, “Investment in digital banking solutions has attracted more customers”, was rated at 3.78, implying that digital platforms are an important strategy for customer acquisition and retention, especially in a tech-savvy market.

Finally, the item “Innovation in our bank’s services has helped us compete effectively in the market” had a mean of 3.74, reinforcing the view that innovation is essential not just for internal improvements, but also for sustaining competitive positioning within the banking sector.

Interview from Department Head (e.g., Technology or Operations)

> *‘The adoption of new technologies has had a profound effect on our bank's financial performance. From an operational standpoint, it has led to cost reductions, especially by automating routine processes and minimizing manual errors. For example, the implementation of a mobile banking platform has significantly enhanced customer engagement and helped us scale services without proportional increases in operating costs. This, in turn, has contributed to both customer retention and acquisition, positively effecting revenue."*

The main challenges when implementing new technologies include integration with legacy systems, ensuring data security, and managing change within the organization. While we strive to adopt the latest technologies, integrating them into our existing infrastructure can be complex and costly. Additionally, ensuring that these systems comply with stringent security standards is critical to maintaining customer trust. From an internal perspective, getting employees to adapt to new systems also requires significant training and support."

Senior Management (e.g., CEO or CFO)

"At the senior management level, we view technology adoption as a strategic enabler. Implementing innovations like digital payment systems and AI-driven analytics has not only reduced operational expenses but also expanded our market reach. Our ability to offer faster and more efficient services has improved our competitiveness, contributing to revenue growth. Moreover, it has given us better insights into financial performance, allowing us to make more informed decisions. We've seen improvements in key performance indicators like ROI and customer satisfaction, directly effecting our profitability."

Innovation is crucial in maintaining our competitive advantage in the rapidly evolving banking sector. At the strategic level, we prioritize innovation by investing in both technology and talent. Whether it's adopting AI for better decision-making or expanding our fintech partnerships, innovation drives our ability to stay ahead of competitors. Additionally, we view it as a way to not only improve financial performance but to solidify our market position in both traditional and digital banking spaces."

Audit Committee

"From an audit perspective, the adoption of new technologies has enhanced the accuracy and transparency of our financial

reporting. With tools such as automated data management and real-time reporting, we've been able to identify discrepancies earlier and reduce the risk of errors. Additionally, technology has helped in enhancing regulatory compliance by ensuring that we maintain audit trails and meet reporting standards. These improvements contribute to financial stability and reduce risks, both of which are critical to ensuring long-term financial performance."

"From an audit perspective, we monitor the risks associated with innovation to ensure they align with the bank's internal controls and regulatory compliance. While innovation is a key element of the bank's competitive strategy, we also ensure that these new technologies are implemented within a structured framework. Innovations like blockchain or AI need to be carefully evaluated for any potential risk to financial performance, and we oversee processes to mitigate any associated risks."

Correlation's analysis of technology adoption and innovation on financial performance

Table 2: Correlations of technology adoption and innovation on financial performance

		Technology adoption innovation	**Financial andperformance**
Technology adoption and innovation	Pearson Correlation	1	.696
	Sig. (2-tailed)		.002
	N	161	161
Financial performance	Pearson Correlation	.696	1
	Sig. (2-tailed)	.002	
	N	161	161

Correlation is significant at the 0.01 level (2-tailed).

Source: Author's computation, 2025

The results in Table 2 indicate a strong positive and statistically significant correlation between technology adoption and innovation and financial performance of commercial banks in Kampala, Uganda ($r = 0.696$, $p = 0.002 < 0.01$). This means that as banks enhance their adoption of modern technologies and innovative practices, their financial performance tends to improve significantly. Therefore, the null hypothesis that stated "there is no significant relationship between technology adoption and innovation and financial performance" is rejected. The findings provide strong statistical evidence that increased technology adoption and innovation efforts are closely linked with improved financial outcomes. This strong positive relationship implies that banks which strategically allocate resources toward digital transformation such as implementing mobile banking, AI systems, or core banking upgrades are more likely to experience enhanced profitability and market competitiveness. In other words, the adoption of technology is not merely a technical enhancement but a strategic investment that directly influences financial success. Banks in Kampala that embrace modern digital tools are likely to achieve greater operational efficiency, improved customer satisfaction, and ultimately, stronger and more sustainable financial performance.

Regression analysis Effect of technology adoption and innovation on the Financial Performance of Selected Commercial Banks in Kampala, Uganda

The first objective of this study was to examine the effect of c technology adoption and innovation on the financial performance of commercial banks in Kampala, Uganda

Table 3: The effect of technology adoption and innovation on the financial performance of Commercial Banks operating in Kampala, Uganda

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. Change
1	.696[a]	.484	.480	.56807	.484	67.667	1	160	.000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.165	1	11.165	67.667	.000[b]
	Residual	26.179	159	.165		
	Total	37.344	160			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.240	.312		7.187	.000
	technology adoption and innovation	.402	.080	.696	5.035	.002

a. Dependent Variable: financial performance

Source: Author's computation, 2025

Table 3 the results from the regression analysis reveal a moderate statistically significant positive effect of technology adoption and innovation on the financial performance of commercial banks in Kampala, Uganda. The R-squared value of 0.484 indicates that 48.4% of the variance in financial performance can be explained by technology adoption and innovation, which highlights the significant effect of these factors on the banks' financial outcomes.

Hypothesis I, which states that technology adoption and innovation do not significantly affect financial performance, was rigorously tested. With a significance level of 0.05, the null hypothesis was rejected, and the alternative hypothesis was accepted. This confirms that technology adoption and innovation have a meaningful and substantial effect on the financial performance of these banks.

The ANOVA results ($F = 67.667$, $p = 0.000$) further reinforce the robustness of the regression model in explaining the relationship between technology adoption and financial performance. The F-value indicates a good fit for the model, demonstrating its credibility in predicting financial outcomes based on technology adoption and innovation.

Additionally, the regression coefficients show that technology adoption and innovation have a significant influence on financial performance, with a coefficient of 0.402 ($p = 0.000$). This suggests that a one-unit increase in technology adoption and innovation leads to a 0.402-unit increase in financial performance while holding other factors constant. The positive coefficient indicates that improvements in technology adoption and innovation are associated with improvements in financial performance.

Thus, the equation: $FP=\beta 0+\beta 1(TAI)+\varepsilon$…… (2)

- FP = Financial Performance
- TAI = Technology Adoption and Innovation
- β_0 = Constant
- β_1 = Regression Coefficient
- ε = Error Term

Will be $FP=2.240+0.402(TAI)+\varepsilon$

This implies that a one-unit increase in technology adoption and innovation leads to a 0.402-unit increase in financial performance while holding other factors constant. The coefficient is positive and statistically significant ($\beta = 0.402$, $p = 0.002$), indicating that technology adoption and innovation positively influence financial performance.

In conclusion, the findings highlight the critical role that technology adoption and innovation play in enhancing the financial performance of commercial banks in Kampala, Uganda. The study establishes a statistically significant relationship between these factors and financial performance, suggesting that investments in technology and innovation can lead to a considerable improvement in financial outcomes. These insights are valuable for decision-makers in the banking sector, guiding strategic initiatives aimed at boosting financial success through technological advancements.

These findings are supported by Dinu et al. (2021), who argue that the adoption of technologies such as mobile banking platforms and automated foreign exchange systems enhances service efficiency and reduces operational costs, directly improving financial performance. Kiganda et al. (2022) further reinforce this by showing that commercial banks that embrace digital solutions experience higher

financial growth compared to those using traditional methods. Similarly, Madsen and Leurs (2019) suggest that integrating technological innovations like mobile applications and online trading systems leads to improved transaction speeds, fewer errors, and greater profitability, aligning with the findings of this study.

Nakatudde and Lule (2021) highlight those commercial banks utilizing digital trading platforms are able to handle high transaction volumes more efficiently, resulting in cost savings and improved financial outcomes. This is further supported by Babirye et al. (2020), who note that automated platforms help reduce manual errors and enhance customer satisfaction, contributing to higher profitability. Additionally, Turyahabwe et al. (2020) point out that urban commercial banks that adopted modern technologies, such as mobile banking and automated data management systems, reported higher profit margins compared to those in rural areas, supporting the idea that technology adoption leads to better financial performance.

Achieng and Olwande (2020) argue that the automation of core processes through technology improves service delivery and financial outcomes, further validating the positive effects of technological adoption on financial performance. Musinguzi and Akello (2020) also emphasize that while the initial costs of adopting new technologies may be high, the long-term benefits, such as reduced fraud risks and increased customer satisfaction, contribute to sustainable financial growth. The findings of the regression analysis in this study, which demonstrate a significant positive effect of technology adoption on financial performance, are consistent with the conclusions of these researchers.

Discussion of Findings

The findings revealed a strong positive relationship between technology adoption and innovation and financial performance ($r = 0.696$, $p = 0.002$). This suggests that commercial banks that invest in technological innovations tend to achieve superior financial outcomes compared to those relying on traditional banking systems. The findings further indicate that technology adoption and innovation explain approximately 48.4% of the variation in financial performance ($R^2 = 0.484$), demonstrating the strategic importance of technology in contemporary banking operations.

DOI: https://doi.org/10.5281/zenodo.24135988 · © 2026 The authors · CC BY 4.0 · PJ-2026-0232

The results support the Resource-Based View Theory, which argues that valuable organizational resources create sustainable competitive advantages and superior performance. Technological innovations such as mobile banking, automated transaction systems, digital customer platforms, and data analytics capabilities constitute strategic resources that enhance operational effectiveness and organizational competitiveness. Commercial banks that possess and effectively utilize such technological resources are likely to improve revenue generation, operational efficiency, and customer satisfaction.

The findings are consistent with Dinu et al. (2021), who observed that mobile banking and automated systems improve service efficiency while reducing transaction costs. Likewise, Kiganda et al. (2022) reported that banks embracing technological innovations achieve higher financial growth than those using traditional banking approaches. Similarly, Babirye et al. (2020) found that automation improves customer acquisition, reduces operational errors, and enhances profitability. These similarities suggest that the contribution of technology to organizational performance is a consistent phenomenon across different banking environments.

The descriptive findings further revealed that respondents strongly agreed that adoption of new technologies improves financial performance (Mean = 4.11). This implies that employees and managers recognize technology as a critical driver of organizational success. Digital solutions enable banks to process transactions faster, reduce operational costs, improve decision-making, and expand access to financial services. Consequently, technology adoption contributes not only to profitability but also to long-term sustainability and competitive advantage.

However, despite the positive effect, the study acknowledges challenges associated with technological implementation. High investment costs, cybersecurity threats, staff resistance, and integration complexities remain significant concerns. These findings resonate with Mugerwa and Wanyama (2021), who caution that technological transformation requires substantial financial investments and robust security mechanisms. Therefore, while technology adoption is beneficial, commercial banks must balance innovation with risk management and cybersecurity strategies to maximize financial returns.

The findings suggest that technology has evolved from a supporting operational tool into a strategic organizational resource. Commercial banks that invest in mobile banking, internet banking, and other digital platforms are able to improve service delivery, reduce operational costs, and enhance customer satisfaction. These

improvements subsequently contribute to stronger financial performance. The findings are consistent with Resource-Based View Theory, which argues that unique organizational capabilities create competitive advantages and improve organizational outcomes.

The findings further demonstrate the growing importance of digital transformation within Uganda's banking sector. As customer preferences increasingly shift toward digital banking services, banks that fail to invest in technological innovation risk losing competitiveness and market share

Limitations of the Study

This study was limited to selected commercial banks operating in Kampala, Uganda. Consequently, the findings may not be fully generalizable to banks operating in other regions of Uganda.

The study employed a cross-sectional research design, which collected data at one point in time. As a result, the study could not establish long-term changes in financial performance arising from technology adoption and innovation.

The study relied primarily on self-reported responses from employees and managers. Such responses may be affected by personal bias, perceptions, or organizational interests.

Additionally, the study focused only on technology adoption and innovation as a determinant of financial performance. Other factors such as customer-centric strategies, regulatory compliance, economic conditions, and organizational culture may also influence financial performance but were not examined within the scope of this article.

Conclusions

The study concludes that technology adoption and innovation play a crucial role in enhancing the financial performance of commercial banks in Kampala. The findings indicate a strong and positive relationship between the use of advanced banking technologies such as mobile platforms, automation, and digital systems and improved financial outcomes. These technologies help reduce operational inefficiencies, enhance customer experience, and support faster, more accurate transactions. Despite the high initial investment costs and potential cyber security risks, the long-term financial benefits position technology adoption as a strategic necessity for competitive growth in the banking sector.

The study contributes to existing literature by providing empirical evidence on the relationship between technology adoption, innovation, and financial performance within the Ugandan banking sector. The findings support the argument that strategic investment in technology remains critical for organizational sustainability and competitiveness.

Recommendations

Commercial banks in Kampala should prioritize strategic investments in digital infrastructure, such as mobile banking platforms, automated systems, and secure online transaction technologies, to enhance operational efficiency and financial performance. This involves not only acquiring the right technological tools but also ensuring proper integration into core banking operations to maximize return on investment.

In addition, banks should allocate resources toward cyber security and data protection measures to mitigate risks associated with technological innovations. Implementing robust risk management frameworks and investing in continuous staff training on cyber security protocols will help safeguard financial and customer data while ensuring regulatory compliance.

Banks should also consider forming partnerships with finance technology companies to access cutting-edge innovations without bearing the full cost of in-house development. Such collaborations can accelerate technological integration and promote agility in product and service delivery.

Finally, to ensure sustainability, banks must engage in continuous technological upgrades and maintain flexible IT infrastructure that allows for adaptation to rapidly evolving customer demands and industry trends.

AUTHOR CONTRIBUTIONS

Tukahirwa Clidias conceptualized the study, collected and analyzed data, and prepared the manuscript. Okinyi Lennox Oguma, Ahabwe Jackline, Ayebare Dickson, and Asiimwe Spechioza reviewed the manuscript, contributed to interpretation of findings, and provided academic supervision and guidance. All authors approved the final version of the manuscript.

References

Achieng, P., & Olwande, M. (2020). *Technology adoption and its effect on financial performance in the commercial banks trading sector*. Journal of Financial Innovation, 11(3), 189-205.

Aidoo, S. (2021). *Strategies for managing exchange rate volatility in West Africa*. Journal of African Financial Studies, 12(3), 45-60.

Babirye, D., Mugume, A., & Nakimera, S. (2020). *Technology adoption and financial performance in the financial services sector: A case of commercial banks in Uganda*. Journal of Finance and Innovation, 6(2), 112-124.

Barney, J. (1991). *Firm resources and sustained competitive advantage*. Journal of Management, 17(1), 99-120.

Benali, H., & Ahmed, A. (2022). *Effect of exchange rate reforms on financial institutions in Morocco*. North African Economic Review, 14(2), 77-92.

Chen, X. (2022). *Strategic responses of commercial banks to China's financial market opening*. Asian Financial Journal, 16(1), 25-39.

Dinu, A. M., Brătianu, C., & Matei, D. (2021). *The role of technological innovation in financial institutions*. Journal of Financial Studies, 10(2), 45-58.

Dlamini, T. (2023). *The role of FinTech innovations in South Africa's commercial banks market*. South African Journal of Financial Technology, 8(1), 56-72.

El-Masry, A. (2021). *Currency stabilization strategies in North Africa post-2016*. African Finance Review, 18(4), 112-127.

Johnson, M. (2021). *Corporate strategy evolution in the U.S. financial sector*. American Journal of Business Strategy, 19(2), 33-49.

Kiganda, R., Nakisozi, S., & Kabugo, P. (2022). *The effect of technological innovations on the financial performance of commercial banks in Uganda*. Uganda Journal of Finance and Economics, 6(3), 89-103.

Kumah, R. (2022). *Regulatory frameworks and commercial banks' market dynamics in Nigeria*. West African Economic Journal, 13(2), 45-61.

Liu, J. (2021). *Globalization and the rise of technology in financial institutions*. International Financial Review, 17(1), 72-89.

Madsen, C., & Leurs, A. (2019). *Technology innovation in financial services: Enhancing operational efficiency and financial performance*. Global Finance Journal, 18(3), 201-217.

Miller, R. (2022). *Post-crisis regulatory changes in financial institutions*. Financial Regulation Quarterly, 29(3), 14-29.

Mugambi, M. (2021). *The role of digital platforms in commercial banks' services in Kenya*. East African Financial Studies, 15(3), 94-108.

Mugerwa, P., & Wanyama, D. (2021). *Challenges of technology adoption in financial services: Insights from commercial banks in Uganda*. Technology in Business Review, 9(2), 124-138.

Mugisha, F. (2022). *Customer service excellence in Uganda's commercial banks market*. Uganda Business Review, 30(2), 67-80.

Musinguzi, A., & Akello, T. (2020). *Challenges in technology adoption for financial institutions: Insights from commercial banks in East Africa*. Journal of Business Technologies, 16(2), 158-172.

Mwita, T. (2021). *Digital payment solutions and financial inclusion in Tanzania*. Tanzanian Financial Journal, 12(2), 34-50.

Nakatudde, M., & Lule, A. (2021). *The role of technology adoption in enhancing financial performance*. Journal of Digital Financial Services, 12(1), 195-209.

Nakayiza, J. (2023). *Adapting corporate strategies to regulatory changes in Uganda*. Ugandan Financial Review, 25(4), 101-115.

Nkumba, D., & Lubega, F. (2020). *Cybersecurity and its effect on the financial performance of commercial banks in Kampala*. Journal of Information Technology in Finance, 5(2), 35-47.

Ochieng, J. (2022). *Mobile money and commercial banks' services in Kenya*. Journal of East African Economic Development, 18(1), 45-58.

Owino, K. (2023). *Challenges in commercial banks' strategy implementation in Kampala Uganda*. Kampala Business Journal, 16(1), 21-35.

Smith, J., & Jones, P. (2021). *The Euro's effect on European financial institutions*. European Financial Analysis Journal, 20(3), 112-127.

Ssekandi, J. (2022). *Cost leadership strategies in Uganda's commercial banks*. Ugandan Economic Review, 28(2), 55-69.

Takashi, N. (2021). *Japan's commercial banks market and global hub status*. Journal of Japanese Financial Markets, 14(2), 23-38.

Tumusiime, P. (2021). *Regulatory evolution of commercial banks in Uganda*. East African Business Journal, 17(4), 76-90.

Turyahabwe, B., Akena, P., & Namanya, J. (2020). *Technology and financial performance: A comparative study of commercial banks in urban and rural Uganda*. African Journal of Finance, 7(4), 102-117.

Pearls Journal Publishing House