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Abstract

Purpose: Governments across the globe working through their central banks have put in place several measures to improve financial performance of commercial banks, however the financial performance of commercial banks has reportedly been unstable. This study was conducted to examine the contribution of digital banking technologies on financial performance of commercial banks in Kasese district.

Methodology: Pragmatic paradigm guided the choice of data collection techniques according to mixed-methods principles. Data was collected from 108 respondents who were bank staff and bank customers using questionnaires and interviews. Upon confirmation of normality of data, Pearson correlation technique was used to analyse data.

Findings: The results confirmed a positive and statistically significant association ($r = .749$, $p < .01$) between digital banking technologies and financial outcomes of banks.

Recommendations: – This study contribution is visible in many ways, for example; 1) depicts the significance of digital banking technologies on

financial performance of commercial banks, 2) communicates to the government to invest in digital business infrastructure through the national bank of Uganda, since this has effect in terms of enabling the citizens to access and use financial products to change their socio-economic status, 3) reminds commercial bank managers to allocate resources in establishment of bank-client digital service platforms that make it possible for customers to freely access and use their financial services. Context-specific effect of digital banking technologies on financial performance was examined on commercial banks in Kasese district. The study looked at digital banking technologies in terms of mobile banking, ATM services and agency banking while financial performance was conceptualised as ROE, net profit and ROA different from previous studies whose interest was in other regions and context.

Keywords: *Digital Banking, Financial Performance, Technology, Commercial Banks, Uganda*

JEL Classification Codes: G20; G21; O33; L86; M21

INTRODUCTION

Sustainable economic development of any country relate significantly with the performance of its banking industry (Poudel et al., 2023; Sharma et al., 2020; Achugamonu et al., 2020). A strong banking sector contributes greatly towards building a firm foundation for long-term economic growth by not only availing financial services like savings, loans, money transfers or insurance (Fadikpe et al., 2022) but also contribute to country's capacity to create employment to its citizens (Sahu et al., 2024). The availability of banks influences the financial behaviour of people as they change their savings attitude to be able to fit in the money economy, planning investments and borrowing to finance their businesses which has multiple ripple effects on economic performance of a country. Churchill and Marisetty, (2020) report related poverty reduction outcomes just like Singer et al., (2017) who testify that achievement of certain Sustainable Development Goals more specifically the 2nd, 5th and 8th becomes possible through financial inclusion that commercial banks enhance. Such evidence on social economic impact that commercial banks have forms a basis for the reason why policy makers, researchers and practitioners have always picked interest in financial performance of commercial banks, but this has not stopped them from experiencing rising non-performing loans (NPLs) and net losses for example United Bank for Africa and Cairo Bank which realised net losses in 2022 (Ahiase et al., 2024; Saliba et al., 2021). Equity Bank Uganda saw its net profit reduced by 46.8% in 2022, with corresponding NPLs of 17% compared to the industry benchmark of 5% (Uganda Bankers' Association, 2023). The same source reports that the banking sector in Uganda has experienced a steady decrease in profitability and return on equity (ROE) over the past 23 years, from 2000 to 2023, with an average decline of 23.2% and nearly constant ROA, with limited growth. The researchers in this paper get concerned that economic shocks may result from such poor financial performance among commercial banks which will become difficult to recover from if not addressed. The worrying bit is that quite a number of measures have been devised by the government of Uganda including setting the Central Bank Rate to manage inflation, and regulatory reforms such as strengthening credit and fiscal management (Mawejje & Odhiambo, 2021). Other initiatives as part of seeking solutions to this problem include promoting financial inclusion, developing financial markets through the Financial Markets Development Plan, and increasing minimum capital requirements for banks to improve their stability (World Bank., 2022). These interventions have not yielded much in terms of improving the financial health of commercial banks.

This study looks at financial performance in terms of commercial banks' ability to operate profitably, grow and survive and has been measured through ROA, ROE and Net Profit Margin (Munyambonera, 2015). Previous studies have looked at financial performance using different lenses, for example Mbabazi et al., (2026) using dynamic capabilities while studying Tier IV microfinance institutions, Aheebwa et al., (2025) used tax incentives while studying SMEs, while Rwakasoro et al., (2025) used strategic management practices. Other scholars including Angee et al., (2026), Amanyire et al., (2024) and Rwakihembo et al., (2023) have also looked at financial performance, though using other perspectives and studied different context. This study realises that limitations in these studies make it impossible to generalise their findings to this study, moreover, they did not look at digital banking technologies which literature has spotted to have significant impact on financial performance of banks especially in an era where explosion of mobile money has opened many opportunities for the digital flow of financial services (Siddik & Kabiraj, 2020). Mobile money is apparently a swift and smart way of engaging in a number of financial transactions not limited to service payments, fund transfers but also access to micro

insurance and microcredit (Mushtaq & Bruneau, 2019). This study observes that many commercial benefits abound emanating from Industry 4.0 or Fourth Industrial Revolution which has brought many changes in social and economic systems. The existence of many technological infrastructures in form of digital platforms have made it possible for financial service providers to increase access and usage of financial products and services through cell phones and internet connections (Senou et al., 2019). Since digital banking technologies were looked at in terms of Mobile Banking, ATM Services and Agency Banking, it means that commercial banks which embrace these technology tools increase sales of their financial products and achieve their financial performance goals.

Prior studies have confirmed the association between digital banking technologies and financial performance (Roosmawarni et al., 2025; Akugizibwe et al., 2025; Ashiru et al., 2023). These studies agree on the positive effect that digital banking technologies have on financial performance, however other scholars like Mutiara, (2026) found that mobile banking has a negative but insignificant effect on profit growth. The source of the continued poor financial performance of commercial bank is not yet known considering inconsistent voices in literature and the inattention to Mobile Banking, ATM Services and Agency Banking as measures of digital banking technologies. This study was therefore conducted to examine the relationship between digital banking technologies and financial performance of commercial banks in Kasere district. This study has specific theoretical contribution to literature including: 1) reminds stakeholders of the banking industry that digital banking technologies are relevant for their continued survival; 2) evidences the imperative for governments to do more in terms of providing enabling environment for banks to adopt latest technologies; 3) proves Resource-Based Theory and Technology Acceptance Theory as powerful frameworks for explaining the interlinks between digital banking technologies and financial performance of commercial banks.

Review of Literature

Theoretical Review

Two theories i.e. resource-based theory and technology acceptance theory were used to explain relationships in this study as presented below.

Resource Based Theory

Resource based theory is one of the theories developed by Barney (1991), to explain competitive advantage of a firm. Theoretically, it is articulated that unique resources and capabilities a firm has which are characteristically valuable, rare, inimitable, and non-substitutable (VRIN) enable it to outperform its rivals and remain competitive in its operating space. In the context of commercial banks, digital banking technologies represent a strategic resource that can not only enhance efficiency or reduce costs but also help it expand customer reach. Going by this premise we argue that banks that successfully leverage digital banking technologies are likely to experience improved financial performance. By leveraging on specific resources such as technological capabilities, skilled personnel, or digital infrastructure, digital banking technologies become strategic resources that if deployed effectively can enhance financial performance. The study in line with limitations of the theory argue that mere possession of technology is not enough but to emphasise that banks must use them in a way that creates value for customers.

Technology Acceptance Theory

The usage dimension expressed as a condition in the resource-based theory above, imply that mere presence of technology as a resource doesn't help much. This limitation open door for the discussion on the extent of adoption and utilisation of the technology as emphasised by Technology Acceptance Theory advanced by Davis et al., (1989). According to Davis, users' decisions to adopt new technologies have an inherent connection with the degree of perceived usefulness and simplicity. This says something about the actual usage behavior of a certain technology which largely derive from perceived usefulness and perceived ease of use, two of which directly influence users' attitudes. The theory's two important perceived factors i.e perceived usefulness and perceived ease of use explain how technology users come to accept and use it. Impliedly, customers will derive satisfaction from using digital banking technologies. The theory assumption in this case is that if customers perceive the bank's digital services as useful and easy to use, they are more likely to be satisfied and continue using them, boosting service usage and, eventually, financial performance. By looking at it in this benefits-lens, the study anticipates that increased uptake of e-banking services will enhance the financial performance of commercial banks through reduced operational costs, increased transaction volumes, and improved customer satisfaction. The power of this theory is seen in providing a strong foundation for linking the adoption of digital banking technologies to customer satisfaction and consequently improved financial performance of commercial banks.

Empirical Review

Digital Banking Technologies and Financial Performance

Prior studies have examined digital banking technologies and financial Performance. For instance, by utilising data for the 2012 to 2021 period, Ashiru et al., (2023) examined the impact of mobile, internet, and automated teller machines (ATMs) on banks' financial performance. Based on the ARDL model analysis, bank innovation was found to have the most significant impact on deposit money bank performance because of the large volume and value of transactions witnessed in the banking sector. Likewise, Jeremiah and Ejedegba (2025) examined electronic banking and the performance of Nigeria's banking sub-sector from 2009 to 2023. Data analysis was conducted using the Panel Random Effects model. Findings showed that mobile pay and ATM banking services contributed to higher ROA, although only ATM banking significantly improved the banks' overall performance indicator. Similarly, Dimbia and Wanjohi, (2023) assessed the role of agency banking in promoting financial inclusion in Kenya, focusing on KCB, Equity, and Cooperative Bank. A descriptive research design was applied to address the research problem. The study utilised multiple regression analysis and central tendency measures, including standard deviation, mean, and frequencies. The study established a positive relationship between agent banking and financial inclusion. Scholars like Krishnan (2013), Kaleem and Ahmad (2008) agree that technological innovation significantly reduces the bank's transaction costs. They evidence how digital banking technologies save time, minimize the cost of transactions, provide current information, minimize inconveniences, reduce human resource requirements, increase operational efficiency, minimize the risk of carrying cash, improve service quality, and facilitate quick response in the banking sector. Kayser, (2025) investigated the effect of digital and paperless banking on Eastern Bank PLC's financial performance, specifically within the Retail and SME Banking Division at the Jashim Uddin Road Branch. It examined how adopting digital platforms affects EBL's operational efficiency, customer satisfaction, and

cost savings. Results showed that paperless systems significantly improve transaction speed, reduce manual errors, and speed up service delivery.

Additionally, Theiri, (2024) studied the impact of bank digitisation strategies on the financial performance of Tunisian banks. The study employed the generalised least squares estimation method to analyse data from a sample of twelve Tunisian banks from 2010 to 2020. It was found that digital transformation positively impacts the financial performance of Tunisian banks, measured by return on assets and equity. Specifically, investments in payment tools, digital channels, and internet security are associated with enhanced bank performance. These findings indicate that banks offering digital services tend to perform better, as they can increase profitability, ensure financial stability, and enhance transparency. According to Ouma & Fredrick, (2020) much lower-cost deposits could be realized by banks through adoption of digital banking technologies such as agency banking and mobile banking to attract deposits at lower costs. Banks use customer deposits to maximise interest spread, which subsequently increases their profitability, which results into better financial performance.

Many other current and past studies report a positive relationship between digital banking technologies and financial performance i.e Mbama and Ezepue (2018), from United Kingdom; Theiri, (2024) from Tunisia; Ashiru, Balogun, and Paseda, (2023) from Nigeria; Chogo, (2020) and Ombongi, (2021) from Kenya. Even when the reviewed studies show a strong expectation that digital banking technologies can improve financial outcomes, two gaps are revealed. First, many studies examine broad technological innovation or single channels rather than the combined effect of mobile banking, ATM services and agency banking. Second, limited evidence exists from branch-level Ugandan contexts outside Kampala. These gaps justify the study hypothesis:

H1: Digital Banking technologies have a significant and positive effect on the Financial Performance of Commercial Banks in Kasese district.

Methods

Kasese is a large and economically diverse district in western Uganda, located in the Rwenzori sub-region and linked to agriculture, trade, tourism, transport and cross-border economic activities. The district has an estimated 853,831 people and 193,514 households (UBOS, 2024). It also has rural and semi-urban communities where distance, transport costs, network limitations, digital literacy and service delays may influence how customers experience banking technologies. These district context features makes this problem more specific and practically significant because banks have to position themselves to serve an array of publics including salaried workers (civil servants and those in private sector), traders/microenterprises, farmers, students, and ordinary households. This explains the level of demand among these groups for accessible, convenient and reliable financial services. This study significance can be seen in generating new insights on how digital banking technologies influence financial performance of commercial banks in Kasese district. Centenary bank managers will be able to develop strategies on how to improve specific bank performance metrics like revenue generation, profitability, ROA, cost efficiency, ROE, liquidity position, bank customer deposit growth and loan quality. Pragmatic paradigm was used in attempt to achieve objectives of this study (Sekaran & Bougie, 2016). Authors believed that possibilities are high for reality to be either singular or multiple or both, allowing for the need to interpret contextual responses and also do statistical measurement (Shannon-Baker, 2015). Such a choice explains a philosophical orientation that permits methodological triangulation thus a mixed-methods study. It means therefore that the study was guided by both subjective and objective

assumptions (Pawar, 2020) to investigate the effect of digital banking technologies on financial performance of commercial banks in Kasese district. In line with the same epistemological direction, questionnaires and interview guides were used as data collection techniques to gather evidence from bank staff and bank customers in a span of one month (Creswell, 2019) as evidenced from population and Sample size frame in table 1 below.

Table 1: Population and Sampling Frame

	Category	Research study population	Selected sample size
1.	Bank Staff	45	40
2.	Bank Customers	28,000	110
	Total	28,045	150

To guarantee questionnaire and interview guide validity, content validity index (CVI) analysis was tested to confirm whether or not the instruments represent the theorized concepts. The University research supervisors and experts in banking and digital technologies were identified and requested to evaluate each questionnaire item as per the research objectives set. Four relevance scores determined the CVI of the questionnaire: 1, deemed irrelevant, 2, somewhat relevant with major revision, 3, relevant with minor revision, and 4, relevant (Fajarini & Rahayu, 2020). Questionnaire statements found to be ambiguous were either rephrased or removed as argued by Safdari, et al., (2022). From the CVI obtained, the research instrument was approved as rather valid since all question items were higher than 0.7 a threshold (Jamali et al, 2023) deemed acceptable in their study as shown in table 2 below.

Table 2: Content Validity Index (CVI)

Variable	CVI
Digital Banking Technologies	.76
Financial Performance	.78

Source: Primary Data (2026)

The internal consistency of questionnaire items was assessed with the use of Cronbach's alpha. Reliability coefficients were computed in SPSS (version 21) to examine particularly the measure reliability of each instrument subscale (Marcial & Launer, 2021). Nonetheless, all questionnaire items yielded an acceptable Cronbach's Alpha above the acceptable 0.7 (Shrestha, 2021). Thus, questions likely to elicit inadmissible responses were discarded (Huang & Ferreira, 2020). Table 3 below has details of the achieved Cronbach's Alpha coefficient for each variable.

Table 3: Reliability results

Variable studied	Cronbach's alpha coefficient	Number of items
Financial Performance	0.78	6
Digital Banking Technologies	0.74	6

Source: Primary Data (2026)

Empirical studies were the basis for measuring variables with acceptable level of adaption as indicated in table 4 below. This is important because the existing instruments were applicable in varied geographical areas like Kenya and Nigeria, Philippines, which differ from the adopted research area. The operationalisation of variables benefited from literature sources i.e Digital banking technologies (Durak & Yazici, 2024; Chogo, 2020; Sarker et al.,2025; Silva & Santos, 2024; Adeyemi & Bello, 2024) and financial performance (Munyambonera, 2015; Chogo, 2020;

Gentry & Shen, 2010; Murphy, Trailer & Hill, 1996; Richard et al., 2009; Venkatraman & Ramanujam, 1986).

Table 4: Measurement of Variables

Study variable	Measurement indicators
Digital banking technologies	Mobile banking, ATM services, Agency Banking
Financial performance	ROE, Net profit margin and ROA,

Source: Developed from reviewed literature (Chogo, 2020; Munyambonera, 2015)

Certain tests were done on the study data to inform the choice of analysis techniques. Largely the tests aimed at evaluating the compliance of data to parametric assumptions. In view of the recommendations by Tabachnick & Fidell, (2019) and Sathyanarayana, (2026) statistical method was used to test normality (see table 5 below).

Table 5: Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Financial performance	.167	30	.033	.907	30	.012
Digital banking	.197	30	.005	.912	30	.017

a. Lilliefors Significance Correction

The study finally stated the regression model as indicated below: its depiction of how financial performance regressed on digital banking technologies.

$$FP = \beta_0 + \beta_1 DBTs + e$$

where,

FP = Financial Performance,

β_0 =constant, ----the intercept (value of FP particularly when entirely other constraints are set to 0)

$\beta_1 DBTs$ =coefficient of digital banking technologies (DBTs); the regression coefficient (β_1) of the independent variable (i.e. the effect of the Digital Banking technologies on the financial results of banks).

and

e = error term, ---- model error (how much variation there is in the estimation of FP)

Upon ascertaining the data normality, data was analysed using regression technique.

Results

Response Rate

150 questionnaires were administered to bank staff and bank customers but only 108 were returned well filled constituting a response rate of 72%. For the qualitative study, saturation level was achieved while interviewing the 11th respondent.

Demographic Characteristics of Respondents

Table 6 below presents demographic characteristics of respondent in terms of gender, age, education levels.

Table 6: Characteristics of the Respondents

Characteristics	Frequency	Percentage
Gender of respondent		
Male	63	68%
Female	45	42%
Age of respondent		
Below 30 years	49	45%
30-39 years	34	32%
40-49 years	18	17%
50-Above	7	6%
Education Background		
Diploma	5	5%
Degree	86	80%
Post graduate	17	15%

Source: *Primary Data, 2026*

Results show that males were the majority (68%), females constituting 42% (Table 6 above). out of whom 45% were aged below 30 years, 32% aged between 30 -39 years, and the rest aged above 40 years. Over 80% of the them were degree holders, while 15% held a postgraduate qualification.

Pearson Correlation Analysis

Pearson correlation analysis was employed to assess the associations between digital banking technologies and financial performance.

Table 7: Pearson Correlation Analysis Results

	1	2	
1 Digital Banking technologies	1		
2 Financial Performance	.749**	.859**	1

Note: ** $P < 0.01$ level (1-tailed), $n = 110$

Source: Primary Data (2026)

Table 7 above demonstrates a positive and yet statistically significant association ($r = .749$, $p < .01$) existing between digital banking technologies and financial outcomes of banks. This indicates that an increased adoption of digital banking technologies improves the financial results of banks. This finding aligns with the views of the customers during the focus group discussion, who agreed that digital banking services had increased access and usage of the bank services. Consequently,

commercial banks have the potential to improve their performance by leveraging the employment of digital banking technologies. These findings verify hypothesis H₁ that hypothesized a positive association between digital banking technologies and financial performance among banks in Kasese district.

Discussion of results

Digital Banking Technologies and Financial Performance of Commercial Banks

Grounded in relevant theories and prior empirical work, this study examined the association among digital-supported banking technologies and the financial results of banks in Kasese district. The primary hypothesis (H1) posited a positive association among digital-aided banking technologies and financial results. Pearson correlation analysis (Table 7) revealed a positive yet particularly statistically significant association among the two variables. These results align with qualitative evidence from the study, which similarly indicated that the implementation of digital banking technologies has contributed to enhanced financial performance.

The results align with prior scholars. A case in point, Kyambade et al., (2024) underscored digital banking technologies as a predictor of the financial outcomes of banks in Uganda. Theiri, (2024) report that increased usage of digital banking technologies improves the performance of banks. According to Dimbia and Wanjohi, (2023) digital banking technologies are a basis for competitive advantages and a mechanism toward better financial results. Jeremiah and Ejedegba (2025) similarly observed a positive connection among digital-aided banking technologies and bank financial performance. Akugizibwe et al., (2025) also posits that online bankers are the more profitable customer segment for banks. Similarly, Silva & Santos, (2024) emphasize that digital banking technologies are driven primarily by costs minimization and revenues maximization.

Nevertheless, the positive relationship established by the present study challenges findings by other studies. Chogo, (2020) exploring the association between digital banking technologies and performance in Kenyan banks established that digital banking technologies involve high capital investment, which in turn becomes a cost burden on the firm and thus negatively affects the firm's financial performance. Previous empirical investigations suffer from limited generalizability due to their geographic focus on developed markets and their analytical concentration on alternative organizational forms and predictors. Given these institutional and economic variations, prior conclusions cannot be seamlessly extrapolated to the East African financial sector. This study resolves this empirical gap by evaluating how digital banking technologies influence the financial performance metrics of commercial banks within the specific context of Uganda.

Collectively, these results resonate with the Resource-Based theory (Barney, 1991), confirming that a firm's market insulation depends on its internal resource configuration. For Ugandan commercial banks, digital banking technologies represent a core strategic capability that enhances processing efficiency, reduces overhead costs, and expands demographic reach. Thus, the systematic exploitation of these technological assets serves as a critical driver of enhanced corporate profitability and performance. A positive connection observed in this investigation confirms the assumption of the theory that digital banking technologies give a bank a competitive advantage, which enhances the bank's financial performance (Silva & Santos, 2024).

Conclusion

Based on study objective and hypothesis (H1) and the study findings, the study concluded: digital-aided banking technologies have a rather positive yet significant effect on the financials of banks.

This becomes true in that banks that adopt digital banking technologies will benefit from economies of scale which would result in increased profitability.

Recommendations

With study findings and conclusion as indicated above, banks are advised to strategically leverage digital banking technologies to enhance financial returns. Adoption of digital banking technologies will ensure service quality, reliability, convenience, and accessibility. This approach will enhance bank customers' satisfaction, which translates in increased profitability and financial results.

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