

## Organizational performance of commercial banks in Kenya: The paradoxical effects of the digital transformation strategies

<sup>1</sup>Dickson Mwenda & <sup>2</sup>Janet Muthimi, PhD

<sup>1,2</sup>Department of Business Administration, Kenyatta University

Corresponding Email: [dickmwesh@gmail.com](mailto:dickmwesh@gmail.com)

### ABSTRACT

Commercial banks in Nairobi City County, Kenya are facing significant performance challenges due to rapid technological changes, heightened competition, and shifting customer expectations. These factors have impacted key performance metrics such as operational efficiency, customer retention, and employee productivity, pressuring banks to adopt effective strategies that can drive sustainable growth. Digital transformation has emerged as a crucial approach to address these challenges, enabling banks to improve efficiency, boost customer experience, and maintain competitive positioning. This research aimed to evaluate digital transformation strategies impact on the performance of commercial banks in Nairobi City County, Kenya. Precisely, it examined the effects of digital banking platforms, data analytics, fintech partnerships, and cloud computing adoption on the performance of the commercial banks in Nairobi City County, Kenya. The research was anchored in Technology Acceptance Model, Diffusion of Innovation Theory, Resource Based View, and Agency Theory. A descriptive correlational research design was used, targeting all 39 commercial banks in Nairobi City County, Kenya, with the head of IT and heads of strategy or a similar role in each bank as the respondent, totalling to 78 participants. Data was collected via structured questionnaires administered through Google Forms. A pilot test was performed to verify the validity and reliability of the research tool, and internal consistency was evaluated using Cronbach's alpha. Descriptive statistics (mean and standard deviation) and inferential statistics were used in the data analysis process. Multiple linear regression was used to look at how each independent variable affects the dependent variable. The regression analysis revealed that digital transformation strategies explained 80.6% of the variance in organizational performance ( $R^2 = 0.806$ ), with the model being statistically significant ( $F = 69.744$ ,  $p < 0.05$ ). All four predictors—digital banking platforms ( $\beta = 0.196$ ,  $p < 0.05$ ), data analytics ( $\beta = 0.410$ ,  $p < 0.05$ ), fintech partnerships ( $\beta = 0.325$ ,  $p < 0.05$ ), and cloud computing adoption ( $\beta = 0.441$ ,  $p < 0.05$ )—had significant positive effects. The study concluded that digital transformation is a critical driver of operational efficiency, customer satisfaction, and strategic growth. It recommends that banks deepen investment in secure, data-driven, and innovation-led digital infrastructures to sustain long-term performance and competitiveness in a dynamic financial landscape.

**Keywords:** *Organization performance, digital transformation strategies, digital banking platforms, data analytics, fintech partnerships, and cloud computing adoption*

## 1.0 Introduction

In a globalized economy, commercial banks receive heightened competition from local as well as global players, necessitating the need for superior performance to maintain market relevance and competitiveness (Xie & Wang, 2023). Globalization has increased the interconnectedness of financial markets, exposing banks to greater risks and uncertainties, making robust performance crucial for resilience and sustainability amidst market fluctuations and economic downturns (Azizi et al., 2024). Jo'rayev (2024) observes that globalization has expanded opportunities for banks to access new markets and customers, but success in these endeavours relies heavily on the ability to deliver superior products, services, and customer experiences, which are all driven by performance. In an era where technological advancements and digital transformation are reshaping the banking landscape, high-performing, flexible companies are better equipped to adjust to changing consumer demands and market dynamics, seize emerging opportunities, and mitigate emerging threats (Sugihyanto & Arsajah, 2024).

Digital transformation is a strategic approach that enables firms to leverage technology to enhance efficiency, maintain competitiveness in a market that is changing quickly while also improving client experiences (Joel et al., 2024). It involves incorporating digital technologies into all facets of a company, drastically altering how firms operate and offer client value, according to Bhuiyan et al. (2024). The revolution can include the adoption of digital banking platforms, automation of processes, utilization of data analytics, and collaboration with fintech firms. Many organizations, including banks, have embraced digital transformation to streamline operations, enhance service delivery, and meet the growing demands of tech-savvy consumers (Oladele, 2024). For example, banks have implemented mobile and internet banking, automated customer service systems, and advanced data analysis tools to offer seamless and personalized banking experiences. In addition to increasing operational effectiveness, digital transformation gives businesses the capacity to innovate, alter to shifting market conditions, and obtain a competitive advantage (Do et al., 2022).

In the global banking landscape, digital transformation has become a strategic priority to enhance efficiency, customer experience, and overall competitiveness. For instance, HSBC has invested in blockchain technology to streamline international trade finance, reducing processing times and enhancing security (Abdurrahman et al., 2024). Similarly, Deutsche Bank has leveraged artificial intelligence to improve risk management and automate routine banking tasks, releasing funds for more worthwhile endeavors (Adorno, 2020). In the United States, Capital One has successfully implemented cloud computing to improve data management and develop scalable digital banking solutions, underscoring the critical role of technology in modern banking (Khan et al., 2022).

In South Africa, banks too incorporated digital transformation as a strategy of remaining competitive in a rapidly evolving financial sector (Magnus-Eweka, 2023). Standard Bank has developed a mobile banking app that integrates various services, from digital payments to loan applications, making it easier for customers to access banking solutions (Matsepe & Van der Lingen, 2022). Absa Bank has used machine learning to enhance fraud detection and improve the security of online transactions. Additionally, Nedbank has collaborated with tech startups to develop innovative fintech solutions, such as digital wallets, to cater to the growing demand for cashless payments (Jacobs, 2020).

In East Africa, banks in countries like Kenya, Tanzania, and Uganda have been at the forefront of digital transformation. For instance, Kenya's National Bank has introduced digital banking platforms that allow for seamless online transactions, while I&M Bank has adopted cloud

computing to enhance data storage and processing capabilities (Mwenda & Kimutai, 2022). In Tanzania, NMB Bank has implemented a robust mobile banking service that facilitates easy access to rural customers financial services, encouraging financial inclusion (Rwigema, 2020). Uganda's Centenary Bank has integrated digital payment systems to support e-commerce, reflecting a growing trend towards digital solutions in the region (Asiimwe, 2023).

In Kenya, digital transformation has become integral to the operational strategies of many commercial banks (Hakizimana et al., 2023). Equity Bank has been a leader in this space, rolling out a digital platform that integrates mobile banking, online banking, and agency banking, making it accessible even to customers in remote areas (Pyoko et al., 2023). In attempt of better understand client demands and provide individualized services, KCB Bank has developed advanced data analytics capabilities. In the meantime, Co-operative Bank has implemented robotic process automation (RPA) to improve service delivery and expedite back-office activities (Mutuku, 2023). These efforts highlight how digital transformation is not just enhancing efficiency but also driving innovation and growth in Kenya's banking sector (CBK, 2023).

The link between the sub-optimal performance of commercial banks in Nairobi City County, Kenya and digital transformation tactics is evident (Ogallo, 2023). Digital transformation initiatives like digital banking platforms adoption, implementation of data analytics, engagement in fintech partnerships, and adoption of cloud computing technologies hold promise for addressing prevalent challenges like operational inefficiencies, outdated infrastructure, and evolving customer demands (Gaya et al., 2022). According to recent statistics, several Kenyan commercial banks reported a stagnation in revenue growth, with industry-wide profitability declining by an average of 5% in the past two years due to high operational costs and competitive pressures (Kenya Bankers Association, 2023). Additionally, customer retention rates dropped, with customer satisfaction scores falling by nearly 15% between 2022 and 2023, largely attributed to service delays and limited product innovation (Central Bank of Kenya, 2023).

Banks have also faced challenges related to employee productivity, as measured by revenue per employee, which declined by approximately 8% in the same period (Central Bank of Kenya, 2023). These figures highlight the pressing necessity for Kenyan banks to leverage digital transformation effectively to streamline processes, improve decision-making, and introduce innovative, customer-centered services. By optimizing digital transformation strategies, banks can address these specific performance issues and boost their flexibility and competitiveness in a dynamic market (Hakizimana et al., 2023).

### **1.1 Statement of the Problem**

In an ideal state, commercial banks performance might be characterized by robust operational efficiency, high customer retention rates, and enhanced employee productivity, achieved through optimized digital transformation strategies (Selevani, 2023). However, research indicates that banks in Kenya are facing substantial challenges in these areas, which digital initiatives have not fully resolved. According to Mwakera et al. (2024), digital innovations offer potential benefits such as improved transaction efficiency, personalized services, and real-time sound decisions. Yet, as Njagi et al. (2023), the performance of Kenyan commercial banks remains below expectations. Specifically, challenges around operational efficiency, customer retention, and employee productivity persist, despite investments in digital transformation. Methodologically, most existing studies have predominantly employed qualitative approaches, limiting the generalizability of findings on the relationship between digital transformation and performance indicators.

Conceptually, there is a lack of consensus on the specific digital transformation strategies that drive performance outcomes, creating a gap in understanding their direct influence on operational efficiency, customer retention, and employee productivity (Xie & Wang, 2023).

Industry reports further illustrate these issues: several banks report declining profitability margins, reflecting limited operational efficiency; others struggle with customer attrition, which affects long-term customer retention (Theiri & Hadoussa, 2024). Additionally, inefficiencies within internal processes and stagnant employee productivity levels contribute to this underperformance. If these challenges continue unaddressed, they pose risks to the banks' market share, customer loyalty, and overall financial stability (Kimani & Kibera, 2023). Thus, there is a desire to discover the scope digital transformation strategies can effectively address these specific indicators of performance, including operational efficiency, customer retention, and employee productivity, in Kenya's commercial banking sector.

While some studies have explored impact digital transformation on performance in the banking segment, there exists an empirical gap specifically regarding commercial banks in Nairobi City County, Kenya context. Existing research often focusses on developed markets or generalize findings across diverse geographical regions, overlooking the exceptional encounters and opportunities faced by banks in Kenya's dynamic economic landscape (Azizi et al., 2024; Shanti et al., 2023). Moreover, previous research predominantly examines individual aspects of digital transformation, such as digital banking platforms or data analytics, rather than comprehensively analyzing the combined multiple digital strategies impact on performance (Kothari & Seetharaman, 2022; Oladele, 2024). Thus, the current research purposed to address this gap by undertaking a comprehensive examination of the effect of digital transformation strategies on the performance of commercial banks in Nairobi City County, Kenya, providing valuable intuitions for researchers and practitioners.

## **1.2 Research Objectives**

### **1.2.1 General objective**

The general objective of this research was to determine the effect of digital transformation strategies on performance of commercial banks in Nairobi City County, Kenya

### **1.2.2 Specific objectives**

- i. To establish the effect of digital banking platforms on performance of commercial banks in Nairobi City County, Kenya.
- ii. To find out the effect of data analytics on performance of commercial banks in Nairobi City County, Kenya
- iii. To establish the effect of fintech partnerships on performance of commercial banks in Nairobi City County, Kenya
- iv. To evaluate cloud computing adoption effect on performance of commercial banks in Nairobi City County, Kenya.

## **2.0 Literature Review**

### **2.1 Theoretical Literature Review**

This segment contains discussion of appropriate models that expounds the connotation between digital transformation strategies and performance. Technology acceptance model, diffusion of innovation theory, RBV and agency theory were adopted.

#### **2.1.1 Resource-Based View Theory**

Penrose (1959) founded the RBV theory and advanced by Wernerfelt (1984) and Barney (1991) in describing how firms can achieve and endure competitive edge by effectively utilizing their internal resources. In accordance to the RBV, a firm's capacity to outperform its rivals is determined by its resources, valuable, rare, unique, and non-substitutable (VRIN). A company with valuable resources might take advantage of market opportunities or counteract dangers. Rare resources are ones that are not in possession by numerous competitors, making them a source of competitive advantage (Vasudevan, 2021). Non-substitutable resources indicate that there are no substitutes that can offer the same advantages, and unique resources are challenging for other businesses to imitate. The RBV infers a firm's unique internal capabilities, like technology, skills, and knowledge, can be leveraged to drive long-term success and growth (Freeman et al., 2021).

One limitation of the RBV is that it primarily focuses on internal resources and does not sufficiently address the external factors likely to impact a firm's performance, such as market competition, economic conditions, and regulatory changes (Greve, 2021). Nonetheless, the theory remains a powerful tool for understanding how digital transformation can be a strategic asset (Barney et al., 2021). This study's use of the RBV will demonstrate how Kenyan commercial banks can utilize internal digital resources in gaining long-term competitive advantages and enhance overall performance (Helfat et al., 2023).

The RBV Theory was valid to this research as it underscores internal digital transformation strategies for commercial banks in Nairobi City County, Kenya. By investing in and effectively managing resources like advanced digital banking platforms, data analytics systems, and skilled IT personnel, banks can build unique capabilities that set them apart from competitors. For example, a bank that successfully integrates data analytics to provide personalized services can create a customer experience that is difficult for others to replicate, leading to higher customer loyalty and improved performance. Furthermore, cloud computing adoption can provide banks with scalable and cost-efficient solutions that enhance operational efficiency, offering a competitive edge in the market.

#### **2.1.2 Technology Acceptance Model**

Davis (1989) introduced the TAM to explain how and why individuals resolve to admit and use new technologies. Perceived utility and perceived use ease are the two basic variables upon which TAM is based. Perceived usefulness is the extent to which a person believes that using a particular system or technology would enhance their performance at work. Arguably, consumers are more inclined to accept a digital tool or system if they believe it will enable them to complete activities more quickly or effectively. Conversely, perceived ease of use is the degree to which a person thinks that using a system will be straightforward. In further words, even when technology is seen as beneficial, users may be reluctant to adopt it if it appears complex or difficult to use (Yang et al., 2021). TAM

suggests that these two factors; usefulness and ease of use; unswervingly influence a person's attitude toward adopting a new technology, which subsequently impact actual use of the technology. Wide application of the model is evident in various contexts to understand how users interact with digital innovations, creation it as valuable basis for assessing technology adoption (Aburbeian et al., 2022).

The limitation of TAM is that it primarily focuses on the user's perception and does not account for external aspects like organizational culture, financial constraints, or market competition, that can also influence new technologies adoption (Musa et al., 2024). Despite this, the model remains valuable as it highlights the importance of user acceptance, which is imperative for digital transformation initiatives success (Fussell & Truong, 2022). Therefore, applying TAM in this study will help to understand the factors prompting digital technologies adoption in commercial banks, guiding the development of effective digital strategies to enhance performance (Getugi et al., 2023).

Because it offers insights regarding Kenyan commercial banks' adoption of digital transformation initiatives, TAM is relevant to the current research. By understanding the perceptions of both employees and customers regarding digital banking platforms, data analytics, and other technological innovations, bank executives can develop strategies that enhance acceptance and utilization. This model emphasizes that the successful implementation of digital tools depends on how well these tools meet user needs and expectations. For instance, digital banking platforms that are easy to navigate and offer clear benefits, such as faster transactions, are likely to see higher adoption rates among customers, ultimately improving performance.

### **2.1.3 Diffusion of Innovation Theory**

To describe how, why, and how quickly new concepts and technology spread throughout cultures and societies, Rogers (1962) developed the Diffusion of Innovation Theory. As per the theory, relative edge, compatibility, trialability, complexity, and observability are the five main elements that affect how quickly innovations are adopted. The degree to which an invention is thought to be superior to current options, increasing its likelihood of adoption, is known as its relative advantage. According to Okour et al. (2021), compatibility refers to how well the invention turns with the preexisting requirements, values, and probable consumers experience. Conversely, complexity refers to the degree of difficulty in comprehending and utilizing the innovation; simpler solutions are more easily embraced. Observability is the magnitude advantages of the innovation are apparent to others, promoting broader acceptability, while trialability is the capacity to test or experiment with the innovation prior to committing to full adoption (Al-Razgan et al., 2021).

The limitation of this theory is in its assumption that innovation adoption is a linear process that progresses uniformly across all individuals and organizations (Acikgoz et al., 2023). It fails to fully account for external variables like regulatory constraints, economic conditions, or organizational culture that may affect the rate of adoption. In spite of this, the Diffusion of Innovation Theory continues to be a helpful basis for comprehending how digital innovations might be adopted by the banking industry. (Oyelana et al., 2021). Applying this theory in the current survey will help identify key elements that facilitate or hinder the adoption of digital transformation strategies, offering insights for commercial banks to improve their digital integration efforts (Kimoni, 2023).

The theory was suitable as it helps explain how digital transformation strategies, such as data analytics, fintech partnerships, and cloud computing, spread amidst Kenyan commercial banks. By

considerate the factors that drive technologies adoption, bank executives can implement strategies that encourage faster uptake and utilization. For example, if the relative cloud computing edge, like cost savings and enhanced data security, is clearly communicated and demonstrated, banks are more likely to adopt these solutions. Similarly, showing the compatibility of digital banking platforms with customers' existing banking habits can improve acceptance and usage, leading to enhanced efficacy.

## **2.2 Empirical Literature Review**

### **2.2.1 Digital banking platforms and Organization Performance**

An empirical meta-analysis on digital banking platforms impact on firm efficiency was undertaken by Kumar et al. (2024). The researchers analyzed over 5,000 findings from 120 studies, revealing that the adoption of digital banking platforms significantly enhances bank performance. The research discovered positive correlation between digital banking platforms and improved profitability, operational efficiency, and customer satisfaction. Additionally, the scholars noted that digital platforms reduce transaction costs and increase service speed. They concluded that digital banking platforms could be an effective strategy for driving performance. However, as a literature review, this study lacked context-specific empirical validation, indicating a need for further research in varied economic settings.

Xie and Wang (2023) examined digital banking platforms impact on commercial banks performance in China, using panel data from 2008 to 2021. Utilizing a fixed-effects regression model to control for endogeneity, the authors found that digital banking adoption was associated with improved financial performance, predominantly in relation to operational efficiency and reduced operational costs. The study also highlighted that these effects were more substantial in banks with greater investment in digital infrastructure. Since this study focused on a developed banking environment with different economic conditions, it presents a contextual gap this research seeks addressing in the Kenyan context.

A meta-analysis by Sharma et al. (2022) explored digital banking impact on performance, analyzing findings from 140 studies. The conclusions indicated a positive affiliation amidst digital banking platforms and enhanced efficacy, with notable improvements in customer satisfaction, employee productivity, and financial outcomes. The authors found that digital banking platforms contributed to lower customer churn and higher transaction volumes. However, as a review of existing literature, the study's conclusions lack empirical specificity, underscoring the need for context-driven research in diverse geographical regions, including Kenya.

Ondiek (2021) explored digital banking platforms impact on Kenyan commercial banks performance. Utilizing 2010-2020 data and multiple regression analysis, the research discovered that digital banking platforms significantly improved operational efficiency, customer satisfaction, and employee productivity. The authors noted that mobile banking adoption was particularly influential in expanding financial inclusion and increasing transaction volumes. Nevertheless, they too observed encounters like cyber-security risks and high maintenance costs associated with digital banking platforms. Given its focus on Kenya, this study provides relevant empirical evidence but highlights an area for further exploration in understanding how other digital strategies, beyond mobile banking, can impact performance in local banks.

### 2.2.2 Data Analytics and Organization Performance

Adeniran et al. (2024) investigated data analytics influence on the financial performance of banking institutions in the United States. The research analyzed data from 50 banks over a three-year period, examining how data analytics adoption influenced profitability and cost-efficiency. The findings indicated that banks leveraging data analytics for decision-making and customer insights reported higher profit margins and reduced operational costs. However, the study ignores other crucial performance factors like employee productivity and customer happiness in favor of concentrating only on financial achievements, which were encompassed in the current research.

Ladeira et al. (2024) steered a meta-analysis on data analytics effect on efficacy across 40 studies in service industry, including banking, healthcare, and telecommunications. The analysis discovered a positive affiliation amidst data analytics adoption and enhanced operational efficacy, with significant improvements in decision-making speed and accuracy. The study's impact was most notable in customer relations and operational efficiency. However, the research depicts a methodological gap as it is a literature review rather than an empirical investigation, underscoring the need for context-specific empirical research in Kenyan commercial banks.

Mittal and Mittal (2023) explored the affiliation between data analytics and client fulfilment among retail banks in India. They surveyed 500 customers to assess their satisfaction levels and perceptions of personalized services driven by data analytics. Results showed that banks using data analytics to tailor products and services saw higher client fulfilment and loyalty rates. However, the research presented conceptual gap as it primarily focused on customer satisfaction without considering internal factors like operational efficiency, which are relevant to the present study.

Oladeinde et al. (2023) surveyed data analytics impact on employee productivity and engagement within enterprises in the Nigeria. Through a survey of 200 employees, the study assessed perceptions of data-driven decision-making and its influence on work effectiveness. Findings revealed that employees in data-empowered environments reported higher productivity and engagement levels. The study, however, has contextual gap, for being it pursued in a advanced economy with societal and fiscal conditions distinct from those in Kenya, the context of the current research.

### 2.2.3 Fintech Partnerships and Organization Performance

Agu et al. (2024) analyzed fintech partnerships effect on supply chain efficiency and performance in Nigerian financial sector. The study, involving 150 firms, revealed that partnerships with fintech providers enabled better inventory management, faster payment processing, and improved supplier relations, ultimately boosting overall performance. Nonetheless, this study presents a conceptual limitation by focusing predominantly on supply chain efficiency without considering customer-focused outcomes, which the current study addressed.

Munangi and Sibindi (2022) conducted a meta-analysis on the role of fintech partnerships across various industries, including retail, telecommunications, and finance, analyzing data from 60 studies. The results showed that fintech collaborations positively impacted customer engagement, cost reduction, and internal process efficiency. The effect was particularly pronounced in firms that integrated fintech solutions for automation and real-time analytics. However, since this was a

literature review, the study lacks empirical specificity, suggesting the need for a context-driven investigation, which the current study aimed to provide in the Kenyan market.

Wang et al. (2022) scrutinized fintech partnerships impact on organizational efficacy within the retail segment in India. The study surveyed 300 retail firms that collaborated with fintech companies for digital payment solutions, loyalty programs, and customer data analytics. Findings indicated that these partnerships significantly enhanced customer satisfaction and sales growth, especially when fintech innovations were used to streamline transactions and personalize marketing efforts. However, this research has conceptual gap since it focused primarily on customer satisfaction, omitting other metrics like operational efficacy and worker efficiency, which were included in the current study.

Anifa et al. (2021) investigated how fintech partnerships influenced operational efficiency and financial outcomes within the healthcare industry in the US. Using a sample of 250 healthcare providers, the study discovered that fintech collaborations in areas like billing automation and patient financing significantly improved cost efficiency and revenue cycle management. The study noted that fintech partnerships reduced manual billing errors and expedited payment processing. However, contextual gap exists as the research was based in a developed economy, differing from Kenya's social and economic context.

#### **2.2.4 Cloud Computing Adoption and Organization Performance**

Hui and Mohammadi (2024) examined cloud computing adoption impact on organizational efficacy across multiple industries in China. Conducting a longitudinal study with 150 firms, they collected data from annual reports and news articles over five years. Their findings revealed that cloud computing adoption certainly impacted efficacy, with firms showing enhanced operational efficiency, cost savings, and customer satisfaction. However, because the research was carried out in a developed economic situation that is diverse from Kenyan, the current research setting, it presents a contextual gap.

Kavre et al. (2023) pursued the connection between cloud computing adoption and performance in India's manufacturing sector, conducting a case study on three large manufacturing firms. Data collected from company reports indicated that cloud adoption led to enhanced process automation, reduced IT costs, and faster decision-making. Despite these benefits, the study focused primarily on manufacturing processes, leaving a contextual gap as it did not address the unique requirements and performance metrics relevant to the banking industry.

Raj and Jeyaraj (2023) steered a meta-analysis on the effect of cloud computing on performance, analyzing 90 studies across various industries, including healthcare, finance, and telecommunications. The meta-analysis discovered a positive correlation between cloud adoption and improved operational efficiency, flexibility, and customer engagement. However, the study has a methodology limitation, as it is a review of existing literature without empirical data, emphasizing the need for a context-specific study in Kenya's commercial banking sector.

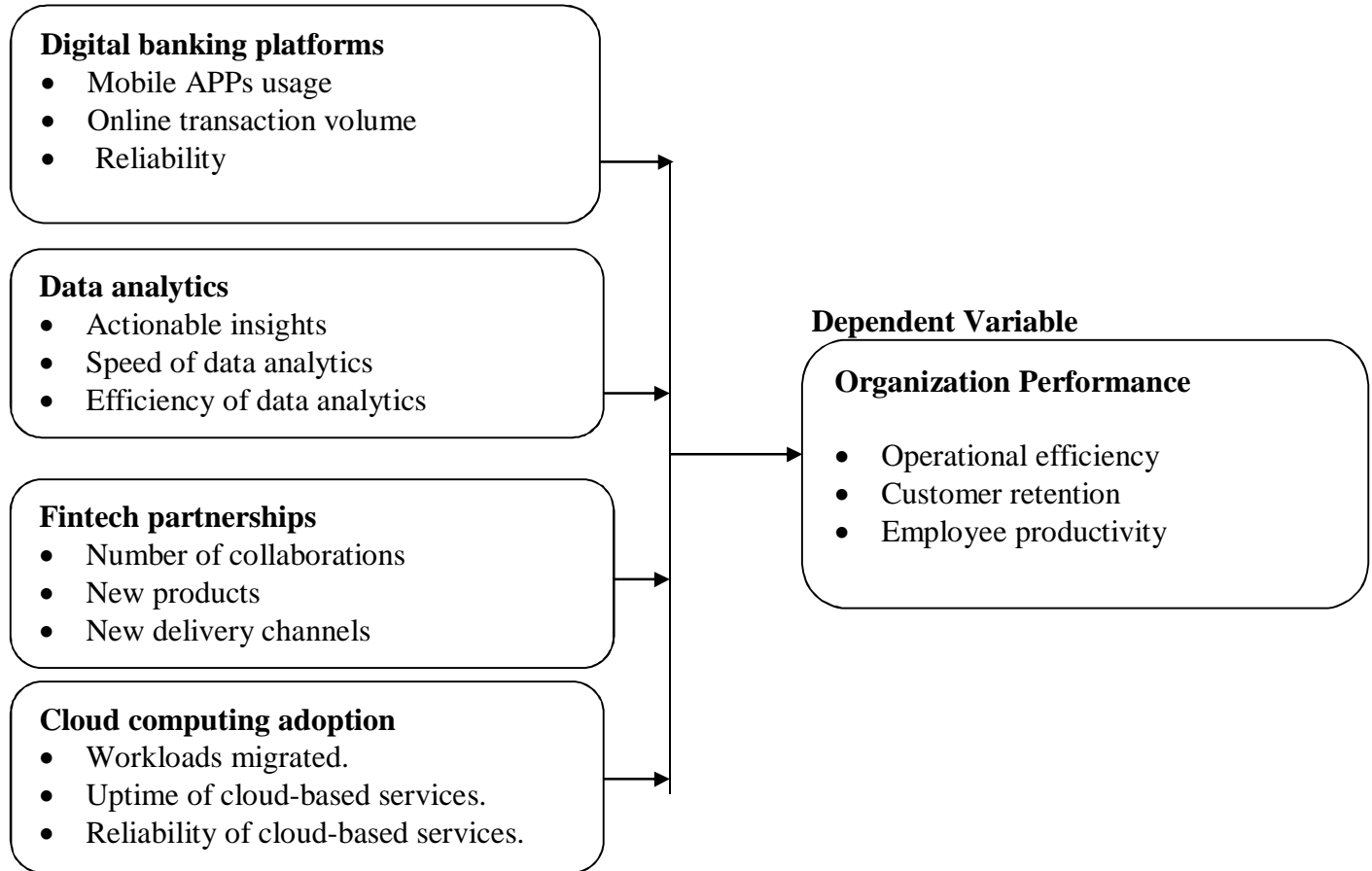
Odero (2021) explored cloud computing adoption impact on performance in Kenya's SME's sector. Through a survey of 120 SME's, the study assessed the benefits of cloud services in data management, customer interaction, and operational processes. The results indicated that companies

using cloud computing experienced improved data accessibility and customer service efficiency. The research does, however, have a contextual gap because it was performed in the retail sector, which operates differently than the banking sector where the current study was done.

### 2.3 Conceptual Framework

Figure 1 shows the study's conceptual framework which shows the interrelation between the independent variable and the dependent variable.

#### Independent Variables



**Figure 1: Conceptual Framework**

### 3.0 Research Methodology

A descriptive correlational research design was used, targeting all 39 commercial banks in Nairobi City County, Kenya, with the head of IT and heads of strategy or a similar role in each bank as the respondent, totaling to 78 participants. Data was collected via structured questionnaires administered through Google Forms. A pilot test was performed to verify the validity and reliability of the research tool, and internal consistency was evaluated using Cronbach's alpha. Descriptive statistics (mean and standard deviation) and inferential statistics were used in the data analysis process. Multiple linear regression was used to look at how each independent variable affects the dependent variable.

## 4.0 Results and Discussion

### 4.1 Response Rate

Table 1 exhibits the response rate obtained from the distributed questionnaires. Out of the targeted 78 respondents, 72 successfully completed and returned their questionnaires.

**Table 1: Response Rate**

Response Rate	Frequency	Percent
Returned	72	92.3%
Unreturned	6	7.7%
<b>Total</b>	<b>78</b>	<b>100</b>

The research reached a response rate of 92.3%, which is considered excellent for survey-based research and demonstrates a strong level of engagement from the targeted respondents. As per Kothari (2019), a response rate exceeding 70% is deemed satisfactory for statistical analysis and enhances the reliability and representativeness of the data obtained. The research huge response rate can be accredited to Google Forms use, which provided a convenient and time-efficient way for respondents to participate without disrupting their work schedules. The minimal number of unreturned questionnaires (7.7%) did not significantly affect the data quality, thereby allowing for robust analysis and meaningful conclusions.

### 4.1 Descriptive statistics

This segment offers the research variables descriptive statistics, providing an overview of respondents' perceptions regarding digital transformation strategies and performance. The analysis includes central tendency measures (mean) and dispersion (standard deviation) in summarizing responses across the key dimensions: digital banking platforms, data analytics, fintech partnerships, cloud computing adoption, and performance of commercial banks.

#### 4.4.1 Digital Banking Platforms

Table 2 specify that respondents generally agreed with the effectiveness and reliability of digital banking platforms in their respective commercial banks. The highest-rated statement was "Our digital banking platforms consistently maintain high reliability and minimal downtime" (Mean = 4.64, Std. Dev = 0.48), suggesting that most banks have successfully developed stable and dependable systems. Similarly, strong agreement was observed for the robustness of online security systems (Mean = 4.09, Std. Dev = 0.60), the user-friendliness of mobile banking interfaces (Mean = 4.05, Std. Dev = 0.77), and the frequency of mobile app usage and customer engagement (Mean = 4.05, Std. Dev = 0.77). These results reflect the banks' focus on enhancing customer experience and securing digital transactions.

Other aspects such as infrastructure capacity (Mean = 3.98, Std. Dev = 0.73), high-volume transaction handling (Mean = 3.91, Std. Dev = 0.95), and the comprehensiveness of mobile banking services (Mean = 3.86, Std. Dev = 0.81) also scored positively, though with slightly higher variability. The statement with the lowest mean was still above average, indicating that even the least agreed-upon item was viewed relatively favourably. The overall mean score for this section was (Mean = 4.08, Std. Dev = 0.76), confirming that digital banking platforms are widely perceived

as effective in enhancing banking operations, minimizing downtime, and offering secure, user-friendly experiences to customers.

**Table 2: Descriptive Statistics for Digital Banking Platforms**

Statements	N	Mean	Std. Dev
The mobile app offers comprehensive banking services that meet customer needs effectively.	72	3.86	0.81
The interface of the mobile banking app is made to be easy for users to use.	72	4.05	0.77
The bank's online transaction systems are equipped to handle high transaction volumes seamlessly.	72	3.91	0.95
Our digital banking platforms have robust security measures to protect online transactions.	72	4.09	0.60
Our mobile app usage metrics indicate high customer engagement and transaction frequency.	72	4.05	0.77
Our digital banking platforms consistently maintain high reliability and minimal downtime.	72	4.64	0.48
The mobile app and online banking systems are regularly monitored to prevent technical issues.	72	4.06	0.79
The infrastructure supporting online transactions has sufficient capacity for peak usage periods.	72	3.98	0.73
<b>Overall mean Score</b>	<b>72</b>	<b>4.08</b>	<b>0.76</b>

The results align to earlier research. Kumar et al. (2024) discovered that digital banking platforms enhance customer satisfaction, operational efficiency, and profitability through improved service delivery and cost reduction. Sharma et al. (2022) similarly noted that digital banking reduces transaction costs and boosts customer retention, while Xie and Wang (2023) confirmed a strong link between digital infrastructure investment and performance gains. Locally, Ondiek (2021) emphasized that mobile banking significantly improves operational efficiency and financial inclusion. The present study, therefore, reinforces existing empirical evidence by providing context-specific validation that digital banking platforms positively contribute to the performance of commercial banks in Kenya.

#### 4.4.2 Data Analytics

Table 3 disclose respondents' perceptions of data analytics mandate in boosting performance within commercial banks. The highest-rated statement was "Data analytics has improved the bank's operational efficiency by automating data processing tasks" (Mean = 4.12, Std. Dev = 0.44), suggesting that automation driven by analytics is a key driver of efficiency. Two assertions tangled for the second-highest rating: "Our data analytics tools offer actionable intuitions that support decision-making within the bank" and "Our data analytics solutions allow us to respond to market changes in a timely manner" (both with Mean = 4.09, Std. Dev = 0.67 and 0.73 respectively). This indicates that the analytical systems in place are not only functional but also strategically valuable in enabling timely and informed decision-making.

**Table 3: Descriptive Statistics for Data Analytics**

Statements	N	Mean	Std. Dev
Our data analytics tools offer actionable intuitions that support decision-making within the bank.	72	4.09	0.67
The insights generated through data analytics have contributed positively to strategic planning.	72	3.95	0.71
Effective understanding of consumer preferences and behaviors is made possible by data analytics.	72	3.68	1.14
The data analytics systems in place process large datasets quickly and efficiently.	72	3.64	0.88
Our data analytics solutions allow us to respond to market changes in a timely manner.	72	4.09	0.73
Speed in data processing enables faster decision-making across departments.	72	3.95	0.88
Data analytics has improved the bank's operational efficiency by automating data processing tasks.	72	4.12	0.44
The bank's data analytics infrastructure is reliable and performs well under high-demand conditions.	72	3.95	0.68
<b>Overall Mean Score</b>	<b>72</b>	<b>3.93</b>	<b>0.60</b>

Moderate agreement was recorded in areas such as data processing speed (Mean = 3.64, Std. Dev = 0.88) and understanding of consumer behavior (Mean = 3.68, Std. Dev = 1.14), with the latter exhibiting the highest variability. This suggests that while analytics are generally effective, there may be inconsistencies in their application or capability across different banks. Strategic planning (Mean = 3.95, Std. Dev = 0.71), interdepartmental decision-making speed (Mean = 3.95, Std. Dev = 0.88), and infrastructure reliability (Mean = 3.95, Std. Dev = 0.68) were also viewed positively, contributing to an overall mean score of (Mean = 3.93, Std. Dev = 0.60). The results point to a strong appreciation for data analytics in driving operational efficiency and agility, though areas like customer insight generation and processing speed may benefit from further enhancement or investment.

The conclusions concur to earlier studies on data analytics role in performance improvement. Adeniran et al. (2024) found that banks leveraging data analytics reported higher profit margins and cost-efficiency, while Ladeira et al. (2024) highlighted its contribution to faster, more accurate decision-making across sectors. Oladeinde et al. (2023) also noted increased employee productivity in data-driven environments. The current study confirms these benefits within the Kenyan banking context, offering empirical evidence that data analytics enhances operational performance, supports strategic planning, and enables responsive decision-making in a competitive and rapidly changing financial landscape.

#### 4.4.3 Fintech Partnerships

Table 4 reflect respondents' views on the contribution of fintech partnerships to the performance of commercial banks. The highest-rated statement was "Collaborations with fintech firms have facilitated the development of new delivery channels for banking services" (Mean = 4.16, Std. Dev = 0.56), indicating that partnerships are perceived to significantly enhance how banks deliver services. This was followed closely by "Fintech partnerships have enabled the bank to reach

customers more effectively through digital channels” (Mean = 3.98, Std. Dev = 0.63) and “The new products introduced through fintech partnerships have attracted a positive customer response” (Mean = 3.95, Std. Dev = 0.56). These scores suggest that fintech collaborations are not only expanding access but also improving customer engagement and satisfaction through innovative solutions.

**Table 4: Descriptive Statistics for Fintech Partnerships**

Statements	N	Mean	Std. Dev
The bank has enthusiastically pursued fintech partnerships to enhance its service offerings.	72	3.73	0.91
Our collaborations with fintech firms have expanded the bank’s technological capabilities.	72	3.73	0.62
Fintech partnerships have contributed to achieving our strategic goals.	72	3.86	0.55
Fintech collaborations have enabled the bank to advance new, client innovative products.	72	3.14	0.87
The new products introduced through fintech partnerships have attracted a positive customer response.	72	3.95	0.56
Fintech partnerships have accelerated the bank’s ability to bring new products to market.	72	3.82	0.72
Collaborations with fintech firms have facilitated the development of new delivery channels for banking services.	72	4.16	0.56
Fintech partnerships have enabled the bank to reach customers more effectively through digital channels.	72	3.98	0.63
<b>Overall Mean Score</b>	<b>72</b>	<b>3.80</b>	<b>0.50</b>

Moderate agreement was observed on statements such as achieving strategic goals (Mean = 3.86, Std. Dev = 0.55), accelerating time-to-market (Mean = 3.82, Std. Dev = 0.72), and enhancing technological capabilities (Mean = 3.73, Std. Dev = 0.62). However, the lowest-rated item was “Fintech collaborations have enabled the bank to advance new, client innovative products” (Mean = 3.14, Std. Dev = 0.87), indicating that while fintech partnerships are beneficial, their role in fostering radical innovation may still be limited or unevenly realized. The overall mean score for this section was (Mean = 3.80, Std. Dev = 0.50), suggesting that while fintech partnerships are broadly viewed as beneficial, there remains room for growth in areas such as co-creation of innovative offerings and deeper integration into strategic initiatives.

The results concur with earlier research that emphasised the positive role of fintech partnerships in enhancing organizational performance. Agu et al. (2024) found that such collaborations significantly improved operational processes and supply chain efficiency. Similarly, Munangi and Sibindi (2022) noted that fintech partnerships enhance customer engagement and reduce costs, particularly when integrated for automation and real-time analytics. Wang et al. (2022) emphasized improved customer satisfaction and sales growth through fintech-enabled personalization. The present study validates these outcomes in the Kenyan context by demonstrating that fintech partnerships strengthen service delivery and digital outreach, though there remains an opportunity to deepen their strategic impact and innovation potential.

#### 4.4.4 Cloud Computing Adoption

Table 5 offers respondents' views on the extent and impact of cloud computing adoption in their respective commercial banks.

**Table 5: Descriptive Statistics for Cloud Computing Adoption**

Statements	N	Mean	Std. Dev
A significant portion of our bank's workloads has been successfully migrated to cloud-based services.	72	3.73	0.62
Cloud computing adoption has improved the scalability of workloads across the bank's operations.	72	3.64	0.71
The transition of workloads to cloud services has positively impacted operational efficiency.	72	3.36	0.88
Our cloud-based services consistently maintain high uptime, minimizing disruptions in service delivery.	72	4.05	0.56
Cloud adoption has enhanced our capacity of offering uninterrupted services to clients.	72	3.64	0.77
The uptime performance of our cloud-based infrastructure meets the bank's reliability standards.	72	4.41	0.49
The reliability of cloud-based services has met our bank's expectations and requirements.	72	4.01	0.55
Cloud infrastructure has proven to be a dependable solution for critical banking applications.	72	3.92	0.63
<b>Overall Mean Score</b>	<b>72</b>	<b>3.85</b>	<b>0.47</b>

The highest-rated statement was "The uptime performance of our cloud-based infrastructure meets the bank's reliability standards" (Mean = 4.41, Std. Dev = 0.49), indicating that cloud computing is viewed as highly dependable for maintaining service continuity. This was closely followed by the reliability of cloud services (Mean = 4.01, Std. Dev = 0.55) and the ability to maintain high uptime with minimal disruptions (Mean = 4.05, Std. Dev = 0.56). These results point to strong confidence in the reliability and resilience of cloud infrastructure, especially for critical banking services.

Moderate agreement was observed on statements related to operational efficiency (Mean = 3.36, Std. Dev = 0.88) and scalability (Mean = 3.64, Std. Dev = 0.71), suggesting that while cloud adoption has begun to yield benefits, its transformative potential in these areas may still be unfolding. The migration of workloads to the cloud (Mean = 3.73, Std. Dev = 0.62) and enhanced service continuity (Mean = 3.64, Std. Dev = 0.77) also received favourable responses. The statement "Cloud infrastructure has proven to be a dependable solution for critical banking applications" (Mean = 3.92, Std. Dev = 0.63) reinforces this positive outlook. With an overall mean score of (Mean = 3.85, Std. Dev = 0.47), the data suggests that while cloud computing adoption is still progressing in terms of full integration and operational transformation, it is already delivering meaningful performance benefits in reliability and service delivery.

The conclusions align with previous empirical research that emphasize the value of cloud computing in driving performance across financial institutions. Hui and Mohammadi (2024) found

that cloud adoption significantly improved operational efficiency, cost management, and customer satisfaction across industries, while Raj and Jeyaraj (2023) reported that cloud solutions increased organizational flexibility and responsiveness. Locally, Odero (2021) observed similar advantages in Kenya's SME sector, particularly in data management and service efficiency. The current study supports these conclusions within the context of Kenya's commercial banking sector, reinforcing that cloud infrastructure—while still evolving—is a dependable and increasingly vital asset for enhancing operational performance.

#### 4.4.5 Organizational Performance

Table 6 outlines respondents' perceptions of how digital transformation policies have influenced the overall commercial banks performance. The highest-rated statements were "Digital transformation initiatives have contributed to improve accuracy and reduce errors in operations" and "The bank's digital offerings encourage long-term customer loyalty" (Mean = 4.09, Std. Dev = 0.67 and 0.73 respectively), indicating strong consensus on the operational and customer relationship benefits of digitization. Other highly rated items included improved employee effectiveness (Mean = 4.02, Std. Dev = 0.81), enhanced productivity through digital tools (Mean = 3.98, Std. Dev = 0.67), and reduced customer churn (Mean = 3.95, Std. Dev = 0.88). These results point to significant gains in operational accuracy, employee performance, and customer relationship management driven by digital transformation.

**Table 6: Descriptive Statistics for Organizational Performance**

Statements	N	Mean	Std. Dev
Digital transformation initiatives have contributed to improve accuracy and reduce errors in operations.	72	4.09	0.67
Adoption of digital transformation strategies in banks have reduced the time taken to complete banking transactions.	72	3.95	0.71
Investments in digital technology has led to a decline in the bank's operational costs.	72	3.68	1.14
Customer retention and satisfaction have increased because to digital banking services.	72	3.64	0.88
The bank's digital offerings encourage long-term customer loyalty.	72	4.09	0.73
Our digital transformation efforts have helped reduce customer churn rates.	72	3.95	0.88
Digital tools and platforms have improved employee productivity across the organization.	72	3.98	0.67
Employees are more effective in their roles due to the availability of digital resources.	72	4.02	0.81
<b>Overall Mean Score</b>	<b>72</b>	<b>3.93</b>	<b>0.73</b>

Moderate agreement was also noted for reduced transaction time (Mean = 3.95, Std. Dev = 0.71) and operational cost savings (Mean = 3.68, Std. Dev = 1.14), while customer satisfaction and retention from digital banking services had a slightly lower mean (Mean = 3.64, Std. Dev = 0.88), possibly reflecting variations in customer experience across different banks. The overall mean score for this section stood at (Mean = 3.93, Std. Dev = 0.73), signifying that, on average, respondents agreed that digital transformation strategies have positively impacted key aspects of organizational

performance including operational efficiency, cost-effectiveness, customer loyalty, and workforce productivity. The variation in responses also suggests that while some banks have realized substantial benefits, others may still be refining their digital strategies to achieve optimal outcomes. These findings align with several empirical studies that have linked digital transformation to performance enhancement. Sharma et al. (2022) and Kumar et al. (2024) highlighted that digital platforms and tools improve customer satisfaction, transaction speed, and cost control. Mittal and Mittal (2023) also demonstrated that digital resources enhance employee effectiveness and client service conveyance in the banking sector. The present research reinforces these insights within the Kenyan context, illustrating that digital transformation contributes meaningfully to operational excellence, employee productivity, and customer engagement in commercial banks in Nairobi City County.

#### 4.5 Correlation Analysis

Table 7 presents the Pearson correlation results examining the relationship between digital transformation strategies and organizational performance of commercial banks in Nairobi City County. The results reveal that digital banking platforms have a strong positive correlation with organizational performance ( $r = 0.842$ ,  $p < 0.05$ ). This suggests that banks with well-established and reliable digital platforms tend to experience higher levels of operational efficiency, customer satisfaction, and employee productivity. These findings are consistent with Kumar et al. (2024) and Xie and Wang (2023), who emphasized that digital platforms reduce transaction costs, enhance service quality, and improve financial outcomes.

Data analytics showed the strongest positive correlation with organizational performance ( $r = 0.855$ ,  $p < 0.05$ ), indicating that its role in supporting decision-making, improving responsiveness, and optimizing operations is particularly impactful. This supports findings by Adeniran et al. (2024) and Ladeira et al. (2024), who observed that the use of data analytics enhances cost-efficiency and boosts strategic planning. The result also aligns with Oladeinde et al. (2023), who found that data-driven decision-making improves productivity and engagement. These insights underscore the importance of investing in analytics infrastructure and talent to strengthen performance outcomes in commercial banking.

Fintech partnerships also demonstrated a strong positive correlation with organizational performance ( $r = 0.717$ ,  $p < 0.05$ ), indicating that strategic collaborations with fintech firms are associated with improved service innovation, customer outreach, and process efficiency. This supports studies by Agu et al. (2024) and Munangi and Sibindi (2022), who found that fintech collaborations accelerate service delivery, enhance customer experience, and expand digital capabilities. The results confirm that partnerships can serve as a strategic lever for innovation and performance enhancement, particularly when integrated into core banking operations.

Lastly, cloud computing adoption showed a moderate but significant positive correlation with organizational performance ( $r = 0.583$ ,  $p < 0.05$ ). This suggests that while cloud technologies do contribute to operational reliability and scalability, their impact may be less pronounced compared to other digital strategies. This finding is in line with Hui and Mohammadi (2024) and Raj and Jeyaraj (2023), who acknowledged the operational benefits of cloud computing but noted that the extent of performance gains depends on the maturity and integration of cloud systems. In the context of Nairobi's commercial banks, this result implies that while cloud adoption is valuable, its full potential may still be in the process of being realized.

**Table 7: Correlation Results**

		Organizational performance	Digital banking platforms	Data analytics	Fintech partnerships	Cloud computing adoption
Organizational performance	Pearson Correlation Sig. (2-tailed)	1				
Digital banking platforms	Pearson Correlation Sig. (2-tailed)	.842**	1			
Data analytics	Pearson Correlation Sig. (2-tailed)	.855**	.577**	1		
Fintech partnerships	Pearson Correlation Sig. (2-tailed)	.717**	.641**	.600**	1	
Cloud computing adoption	Pearson Correlation Sig. (2-tailed)	.583**	.567**	.468**	.427**	1
		.000	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).						
b. Listwise N=72						

#### 4.2 Test of Hypothesis

This section presents the results of the multiple linear regression analysis. The analysis includes model fitness, analysis of variance (ANOVA), and regression coefficients to assess the strength, significance, and predictive power of the model.

**Table 8: Model Fitness**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.898 <sup>a</sup>	.806	.795	.2003

a. Predictors: (Constant), Cloud computing adoption, Fintech partnerships, Digital banking platforms, Data analytics

Table 8 shows that the regression model had a strong goodness-of-fit, with an R value of 0.898 and an R Square of 0.806. This implies that 80.6% of the variance in organizational performance can be explained by the combined influence of digital banking platforms, data analytics, fintech partnerships, and cloud computing adoption.

**Table 9: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.188	4	2.797	69.744	.000 <sup>b</sup>
	Residual	2.687	67	.040		
	Total	13.875	71			

a. Dependent Variable: Organizational performance

b. Predictors: (Constant), Cloud computing adoption, Fintech partnerships, Digital banking platforms, Data analytics

Table 9 presents the ANOVA results. The F-statistic value of 69.744 with a corresponding p-value of 0.000 indicates that the model is statistically significant at the 5% level. This means that the combined effects of the independent variables significantly predict organizational performance.

**Table 10: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-1.358	.728		-1.865	.067
	Digital banking platforms	.196	.086	.274	2.276	.026
	Data analytics	.410	.121	.411	3.389	.001
	Fintech partnerships	.325	.132	.187	2.453	.017
	Cloud computing adoption	.441	.188	.155	2.353	.022

a. Dependent Variable: Organizational performance

The multiple regression model used is illustrated below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon,$$

$$Y = -1.358 + 0.196X_1 + 0.410X_2 + 0.325X_3 + 0.441X_4$$

Table 10 displays the regression coefficients, showing the individual contribution of each predictor to organizational performance. All four variables were statistically significant at the 5% level. Digital banking platforms had a positive and significant effect ( $\beta = 0.196$ ,  $p < 0.05$ ), indicating that enhanced digital banking services contribute to improved performance. Data analytics had the strongest positive effect ( $\beta = 0.410$ ,  $p < 0.05$ ), suggesting that banks that leverage analytics effectively experience greater gains in operational efficiency and decision-making. Fintech partnerships also showed a significant positive effect ( $\beta = 0.325$ ,  $p < 0.05$ ), highlighting the role of collaboration in expanding service delivery and innovation. Cloud computing adoption had a positive and significant impact as well ( $\beta = 0.441$ ,  $p < 0.05$ ), pointing to its role in improving scalability, uptime, and service reliability.

The significant positive effect of digital banking platforms supports previous findings by Kumar et al. (2024) and Sharma et al. (2022), who found that digital platforms reduce operational costs, enhance customer satisfaction, and improve efficiency. Similarly, the strong influence of data analytics aligns with Adeniran et al. (2024) and Ladeira et al. (2024), who noted that data-driven

strategies enhance profitability and responsiveness. The current study adds empirical support in the Kenyan context by showing that analytics are not only useful for decision-making but also for driving strategic performance outcomes.

The positive effect of fintech partnerships on performance confirms earlier findings by Agu et al. (2024) and Wang et al. (2022), who observed that such collaborations enhance service delivery, innovation, and customer engagement. Furthermore, the significance of cloud computing adoption echoes the conclusions by Hui and Mohammadi (2024) and Raj and Jeyaraj (2023), who highlighted cloud technologies' role in increasing operational efficiency and reliability. This study demonstrates that within Nairobi's commercial banks, cloud infrastructure plays a key role in enabling uninterrupted service delivery, supporting the broader narrative that technology-driven transformation significantly boosts organizational performance.

## 5.0 Conclusion

Based on the study findings, it is concluded that digital transformation strategies have a significant and positive effect on the performance of commercial banks in Nairobi City County, Kenya. Each of the four digital transformation strategies examined—digital banking platforms, data analytics, fintech partnerships, and cloud computing adoption—demonstrated a statistically significant contribution to organizational performance. This confirms that embracing digital technologies is critical in enhancing efficiency, improving customer satisfaction, and strengthening competitiveness within the banking sector.

Firstly, the study concludes that digital banking platforms play a vital role in driving performance improvements in commercial banks. These platforms have enhanced the reliability, accessibility, and user experience of banking services, leading to operational efficiency and improved customer engagement. The strong correlation and significant regression results highlight that well-developed digital platforms are essential in supporting modern banking operations and enabling banks to meet customer needs effectively.

Secondly, the study concludes that data analytics has the most substantial effect on organizational performance among the four digital transformation strategies examined. Data analytics facilitates informed decision-making, automation of operational processes, and responsiveness to market changes, all of which contribute to improved internal efficiency and strategic outcomes. The findings confirm that banks that leverage data effectively are better positioned to enhance productivity and optimize performance across departments.

Finally, the study concludes that fintech partnerships and cloud computing adoption also contribute meaningfully to organizational performance. Fintech partnerships help banks expand their digital capabilities, offer innovative products, and improve service delivery through collaboration. Similarly, cloud computing supports performance by enhancing service reliability, system uptime, and scalability. Although their effects are slightly less pronounced than digital banking platforms and data analytics, both strategies remain integral to a bank's digital transformation journey and long-term performance success.

## 6.0 Recommendations

Based on the findings of this study, it is recommended that commercial banks in Nairobi City County continue to invest in and strengthen their digital banking platforms. Efforts should focus on improving user experience, enhancing platform security, and ensuring system reliability to maintain

high customer engagement and satisfaction. Banks should also ensure that their digital platforms are accessible across various devices and are inclusive to a diverse customer base, including those with limited digital literacy.

Secondly, banks should prioritize the integration of advanced data analytics tools across all departments. Investments should be made in staff training and capacity building to enhance data interpretation and utilization for decision-making. By embedding data-driven practices into their operations, banks can enhance operational efficiency, support strategic planning, and improve customer personalization. Data analytics should not only be seen as a back-end support tool but as a core element of competitive strategy.

Thirdly, it is recommended that commercial banks deepen their collaboration with fintech firms to foster innovation and expand digital service offerings. Banks should establish structured partnership models that promote knowledge sharing, agility, and mutual value creation. By leveraging fintech capabilities in areas such as digital payments, automation, and customer engagement, banks can rapidly enhance their service portfolios and improve market responsiveness.

Lastly, commercial banks should continue adopting cloud computing solutions, especially for mission-critical applications that require high availability and scalability. Emphasis should be placed on building secure, compliant, and resilient cloud environments to support digital operations. Banks should also work with reputable cloud service providers to ensure data protection and continuity in service delivery. Strengthening cloud adoption will support long-term efficiency, reduce infrastructure costs, and enhance the flexibility of banking operations in a dynamic digital environment.

## REFERENCES

- Abdurrahman, A., Gustomo, A., & Prasetyo, E. A. (2024). Enhancing banking performance through dynamic digital transformation capabilities and governance, risk management, and compliance: Insights from the Indonesian context. *The Electronic Journal of Information Systems in Developing Countries*, 90(2), e12281-e12299.
- Aburbeian, A. M., Owda, A. Y., & Owda, M. (2022). A technology acceptance model survey of the metaverse prospects. *Ai*, 3(2), 285-302.
- Acikgoz, F., Elwalda, A., & De Oliveira, M. J. (2023). Curiosity on cutting-edge technology via theory of planned behavior and diffusion of innovation theory. *International Journal of Information Management Data Insights*, 3(1), 140-152.
- Adeniran, I. A., Efunniyi, C. P., Osundare, O. S., Abhulimen, A. O., & One Advanced, U. K. (2024). Integrating business intelligence and predictive analytics in banking: A framework for optimizing financial decision-making. *Finance & Accounting Research Journal*, 6(8); 23-37.
- Adorno, O. D. A. (2020). *Business process changes on the implementation of artificial intelligence* (Doctoral dissertation, Universidade de São Paulo).
- Agu, E. E., Chiekezie, N. R., Abhulimen, A. O., & Obiki-Osafiele, A. N. (2024). Optimizing supply chains in emerging markets: Addressing key challenges in the financial sector. *World Journal of Advanced Science and Technology*, 6(01), 035-045.
- Al-Razgan, M., Alrowily, A., Al-Matham, R. N., Alghamdi, K. M., Shaabi, M., & Alssum, L. (2021). Using diffusion of innovation theory and sentiment analysis to analyze attitudes toward driving adoption by Saudi women. *Technology in Society*, 6(5), 501-558.
- Anifa, M., Ramakrishnan, S., Joghee, S., Kabiraj, S., & Bishnoi, M. M. (2022). Fintech innovations in the financial service industry. *Journal of Risk and Financial Management*, 15(7), 269-287.
- Asiimwe, N. (2023). *Electronic Banking Service Quality, E-Banking Usage and Performance of Financial Institutions in Uganda. A Case Study of UBA* (Doctoral dissertation, Cavendish University Uganda).
- Azizi, M., Judijanto, L., Mere, K., Moridu, I., & Anwar, M. A. (2024). Global Perspectives on Financial Dynamics: Insights into the Interconnected Realms of Economics, Finance, and Accounting. *Dinasti International Journal of Economics, Finance & Accounting*, 4(6), 838-847.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Barney, J. B., Ketchen Jr, D. J., & Wright, M. (2021). Bold voices and new opportunities: an expanded research agenda for the resource-based view. *Journal of Management*, 47(7), 1677-1683.
- Bhuiyan, M. R. I., Faraji, M. R., Rashid, M., Bhuyan, M. K., Hossain, R., & Ghose, P. (2024). Digital Transformation in SMEs Emerging Technological Tools and Technologies for Enhancing the SME's Strategies and Outcomes. *Journal of Ecohumanism*, 3(4), 211-224.
- Central Bank of Kenya. (2023). *Annual report*. Central Bank of Kenya. Retrieved from <https://www.centralbank.go.ke>
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology. *MIS quarterly*, 3(7);32-37.

- Do, T. D., Pham, H. A. T., Thalassinou, E. I., & Le, H. A. (2022). The impact of digital transformation on performance: Evidence from Vietnamese commercial banks. *Journal of risk and financial management*, 15(1), 21.
- Freeman, R. E., Dmytriiev, S. D., & Phillips, R. A. (2021). Stakeholder theory and the resource-based view of the firm. *Journal of management*, 47(7), 1757-1770.
- Fussell, S. G., & Truong, D. (2022). Using virtual reality for dynamic learning: an extended technology acceptance model. *Virtual Reality*, 26(1), 249-267.
- Gaya, F., Omoro, N., & Kinyua, H. W. (2022). Digital Banking and Financial Performance of Listed Commercial banks in Nairobi City County, Kenya. *African Development Finance Journal*, 4(3), 169-197.
- Getugi, J. C., Osoro, C., & Kihara, A. (2023). Online Banking and Technical Efficiency of Commercial banks in Nairobi City County, Kenya. *International Journal of Finance*, 8(5), 27-45.
- Greve, H. R. (2021). The resource-based view and learning theory: Overlaps, differences, and a shared future. *Journal of Management*, 47(7), 1720-1733.
- Hakizimana, S., Wairimu, M. M. C., & Stephen, M. (2023). Digital Banking Transformation and Performance-Where Do We Stand? *International Journal of Management Research and Emerging Sciences*, 13(1);12-23.
- He, W., Hung, J. L., & Liu, L. (2023). Impact of big data analytics on banking: a case study. *Journal of Enterprise Information Management*, 36(2), 459-479.
- Helfat, C. E., Kaul, A., Ketchen Jr, D. J., Barney, J. B., Chatain, O., & Singh, H. (2023). Renewing the resource-based view: New contexts, new concepts, and new methods. *Strategic Management Journal*, 44(6), 1357-1390.
- Hui, Z., & Mohammadi, A. (2024). The Role of Cloud Computing Adoption and Firm Performance Using SMEs Technological and Environmental Contexts in Hospitality Industry of Henan, China. *South Asian Journal of Social Sciences and Humanities*, 5(3), 196-220.
- Jacobs, B. (2020). *Employability skills of branch banking employees at Standard Bank Bloemfontein in the digital banking era* (Doctoral dissertation, University of the Free State).
- Joel, O. S., Oyewole, A. T., Odunaiya, O. G., & Soyombo, O. T. (2024). Navigating the digital transformation journey: strategies for startup growth and innovation in the digital era. *International Journal of Management & Entrepreneurship Research*, 6(3), 697-706.
- Jo'rayev, O. K. (2024). The role of commercial banks in improving the country's investment climate. *Science and innovation in the education system*, 3(2), 9-13.
- Kavre, M., Narwane, V. S., Gardas, B. B., & Sunnapwar, V. (2023). Role of human factors in cloud manufacturing adoption across manufacturing micro, small and medium enterprises. *International Journal of Computer Integrated Manufacturing*, 36(4), 611-633.
- Kenya Bankers Association. (2023). *Kenya banking industry performance review*. Kenya Bankers Association. Retrieved from <https://www.kba.co.ke>
- Khan, S., Kabanov, I., Hua, Y., & Madnick, S. (2022). A systematic analysis of the capital one data breach: Critical lessons learned. *ACM Transactions on Privacy and Security*, 26(1), 1-29.
- Kimani, J., & Kibera, M. (2023). Evolution of Risks Facing Commercial banks in Nairobi City County, Kenya and Associated Strategic Responses. *International Journal of Modern Risk Management*, 1(2), 56-65.
- Kimoni, L. M. (2023). *Effect of Digital Technology Adoption on the Performance of Commercial banks in Nairobi City County, Kenya* (Doctoral dissertation, KCA University).

- Kothari, U., & Seetharaman, A. (2020). Impact of digital transformation on retail banking industry in the UAE. In *Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation: IFIP WG 8.6 International Conference on Transfer and Diffusion of IT, TDIT 2020, Tiruchirappalli, India, December 18–19, 2020, Proceedings, Part I* (pp. 425-438). Springer International Publishing.
- Kumar, P., Chauhan, S., Kumar, S., & Gupta, P. (2024). A meta-analysis of satisfaction in mobile banking: a contextual examination. *International Journal of Bank Marketing*, 42(3), 357-388.
- Ladeira, W. J., Santini, F. D. O., Rasul, T., Cheah, I., Elhajjar, S., Yasin, N., & Akhtar, S. (2024). Big data analytics and the use of artificial intelligence in the services industry: a meta-analysis. *The Service Industries Journal*, 3(7);1-28.
- Magnus-Eweka, E. (2023). *Navigating the challenges to digital transformation: the case of a pan African Commercial Bank* (Doctoral dissertation, University of Warwick).
- Matsepe, N. T., & Van der Lingen, E. (2022). Determinants of emerging technologies adoption in the South African financial sector. *South African Journal of Business Management*, 53(1), 2493.
- Mittal, A., & Mittal, A. (2023). Impact of Technological Advancements on Customer Satisfaction in Retail Banking: An Empirical Study. *Journal of Informatics Education and Research*, 3(2);33-44.
- Munangi, E., & Sibindi, A. B. (2022). Fintech, Bigtech Credit and Economic Growth: A Bibliometric Review and Meta Analysis. *Journal of Risk Analysis and Crisis Response*, 12(4);34-51.
- Musa, H. G., Fatmawati, I., Nuryakin, N., & Suyanto, M. (2024). Marketing research trends using technology acceptance model (TAM): A comprehensive review of researches (2002–2022). *Cogent business & management*, 11(1), 332-375.
- Mutuku, E. K. (2023). *Banking Platforms in the Rural Setting a Case Study of Makeni County* (Doctoral dissertation, University of Nairobi).
- Mwakera, J. M., Riwo-Abudho, M., & Abudho, S. O. (2024). The Influence of E-banking on the Financial Performance of Kenyan Commercial Banks. *Asian Journal of Economics, Business and Accounting*, 24(4), 332-342.
- Mwenda, N. M., & Kimutai, C. J. (2022). Digital Transformation and Sustainability of Entrepreneurship for Underserved Communities in East Africa. In *Sustainability and the Future of Work and Entrepreneurship for the Underserved* (pp. 347-363). IGI Global.
- Njagi, A. M., Maina, K. E., & Ngali, R. (2023). Digital financial services and sustainable performance of commercial banks in Nairobi City County, Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, 7(2);23-29.
- Odero, E. A. (2021). *Framework for Adoption of Cloud Computing by Small and Medium-Sized Enterprises in Meru County* (Doctoral dissertation, KeMU).
- Ogalloh, M. A. (2023). *Technological Innovation Strategies and Service Delivery of Commercial banks in Nairobi City County, Kenya During the Covid-19 Pandemic* (Doctoral dissertation, University of Nairobi).
- Okour, M. K., Chong, C. W., & Abdel Fattah, F. A. M. (2021). Knowledge management systems usage: application of diffusion of innovation theory. *Global Knowledge, Memory and Communication*, 70(8/9), 756-776.

- Oladele, T. C. (2024). Digital Transformation in Finance and Banking Sectors. In *Digital Transformation in South Africa: Perspectives from an Emerging Economy* (pp. 23-38). Cham: Springer Nature Switzerland.
- Oladeinde, M., Hassan, A. O., Farayola, O. A., Akindote, O. J., & Adegbite, A. O. (2023). Review of it innovations, data analytics, and governance in Nigerian enterprises. *Computer Science & IT Research Journal*, 4(3), 300-326.
- Ondiek, D. (2021). *Influence of Digital Technology on the Performance of Kenya Commercial Bank* (Doctoral dissertation, University of Nairobi).
- Oyelana, O., Kamanzi, J., & Richter, S. (2021). A critical look at exclusive breastfeeding in Africa: Through the lens of diffusion of innovation theory. *International Journal of Africa Nursing Sciences*, 1(2), 160-267.
- Penrose, E. T. (1959). *The theory of the growth of the firm*. Oxford University Press.
- Pyoko, O. M., Akims, M. A., Nyachae, S. M., & Mbugua, L. (2023). Mobile phone technology, agency banking services, online banking services and financial inclusion of small and medium enterprises in Kenya. *Asian Journal of Economics, Business and Accounting*, 23(22), 422-434.
- Raj, A., & Jeyaraj, A. (2023). Antecedents and consequents of industry 4.0 adoption using technology, organization and environment (TOE) framework: A meta-analysis. *Annals of Operations Research*, 322(1), 101-124.
- Rogers, E. M. (1962). Diffusion of innovations: An up-to-date review and commentary. *Annals of the International Communication Association*, 3(1), 67-81.
- Rwigema, P. C. (2020). Digital technology and its relevance to political and social economic transformation. Case study of East African Community region. *Strat. J. Bus. Chang. Management*, 7(6), 1402-1436.
- Selevani, L. K. (2023). *Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya* (Doctoral dissertation, KCA University).
- Shanti, R., Siregar, H., Zulbainarni, N., & Tony. (2023). Role of Digital Transformation on Digital Business Model Banks. *Sustainability*, 15(23), 16293.
- Sharma, S., Sharma, R., Kayal, G., & Kaur, J. (2022). Digital banking: A meta-analysis approach. *Indian Journal of Marketing*, 52(5), 41-68.
- Sugihyanto, T., & Arsjah, R. J. (2024). The Effect of Digital Banking, Digital Transformation the Efficiency of Sharia and Conventional Commercial Banks in Indonesia. *International Journal of Social Science, Education, Communication and Economics (SINOMICS JOURNAL)*, 2(6), 1813-1826.
- Theiri, S., & Hadoussa, S. (2024). Digitization effects on banks' financial performance: the case of an African country. *Competitiveness Review: An International Business Journal*, 34(1), 144-162.
- Vasudevan, H. (2021). Resource-based view theory application on the educational service quality. *International Journal of Engineering Applied Sciences and Technology*, [S. l.], 6(6), 174-186.
- Wang, H., Zheng, L. J., Xu, X., & Hung, T. H. B. (2022). Impact of financial digitalization on performance: A look at the dark side. *Journal of Global Information Management (JGIM)*, 30(1), 1-35.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.

- Xie, X., & Wang, S. (2023). Digital transformation of commercial banks in China: Measurement, progress and impact. *China Economic Quarterly International*, 3(1), 35-45.
- Yang, L., Bashiru Danwana, S., & Yassaanah, I. F. L. (2021). An empirical study of renewable energy technology acceptance in Ghana using an extended technology acceptance model. *Sustainability*, 13(19), 760-791.