

# EFFECT OF DIGITAL PAYMENT SYSTEMS ON THE COMPETITIVE ADVANTAGE OF COMMERCIAL BANKS IN NAIROBI

Dianah Injendi Manyengo<sup>1</sup>, Ann Omamo<sup>2</sup>, Antony Sije<sup>3</sup>

<sup>1,2</sup>College of Human Resource Development, School of Business, Department of Business Administration,  
Jomo Kenyatta University of Agriculture and Technology, Kenya

<sup>3</sup>College of Agriculture and Natural Resources, School of Agriculture and Environmental Sciences,  
Department of Agricultural and Resource Economics, Jomo Kenyatta University of Agriculture and Technology, Kenya

DOI: <https://doi.org/10.5281/zenodo.17608747>

Published Date: 14-November-2025

---

**Abstract:** The main objective of the study was to determine the effect of digital payment systems on the competitive advantage of commercial banks in Nairobi, Kenya. The research recognizes that Kenya's banking sector operates in an increasingly digitalized and competitive environment, driven by fintech innovations, changing customer expectations, and technological advancement. A mixed-methods research design was employed, combining quantitative and qualitative data collected from managers and IT specialists across top-tier banks in Nairobi. Statistical analysis using SPSS was conducted to examine the relationship between digital payment and competitive advantage. The results reveal that digital payment explain a significant proportion of the variance in competitiveness among banks. Digital payment systems showed a strong positive effects. The study concludes that while digital technologies are critical enablers of competitiveness, their effectiveness depends on complementary factors such as organizational culture, employee skills, and regulatory support. The findings provide actionable insights for banks to refine their digital systems for better market performance and offer policymakers a framework for promoting innovation while maintaining financial stability. Ultimately, the research contributes to the growing body of knowledge on digital systems in emerging economies, emphasizing its role in achieving sustainable competitive advantage in Kenya's banking sector.

**Keywords:** Digital Payment, Competitive Advantage, Commercial Banks.

---

## 1. INTRODUCTION

The business setting undergoes continuous evolution because of economic conditions together with regulatory frameworks and technological changes and competitive elements. Business organizations from all industries compete to protect their market standing by implementing advanced operational systems and better services to customers with creative business frameworks. Business strategy depends heavily on competition that requires companies to establish differences through competitive costs and innovative products and customer-focused methods. Financial banks face intensified competition due to global market entry and changing regulations and the appearance of non-conventional fintech financial service companies.

Global banking sector competition has undergone major digital transformation which now generates new opportunities for enhanced customer experiences while simplifying operations and better brand position. The strategic adoption of digital technologies for innovative business changes and enhanced processes and customer relationships defines digital transformation which enables banks to become more agile operationally (Plekhanov et al., 2023). The Nairobi-based commercial banks in Kenya need to adopt digital solutions because they face market pressures including rising customer demands together with fintech competition and service efficiency requirements.

The essentialness of mobile banking digital payments and customer relationship management systems proves vital as Kenyan banks advance their digital integration strategies during the present digital period. These technological resources make financial services available to more people and help organizations become more effective and design specialized financial solutions that target specialized customer groups (Obeng, 2021). The industry progression demands an assessment of how digital transformation strategies influence competitive advantage. The assessment of these tactics provides valuable insights about how they affect customer satisfaction and operational efficiency and market reach in Kenyan banking institutions. An analysis of the permanent digital innovation effects enables Nairobi-based banks to develop technological strategies that preserve and strengthen their market stance (Pereira & Romero, 2021).

## 2. STATEMENT OF THE PROBLEM

The rapid advancement of digital technologies has reshaped Kenya's financial sector. In 2024, 52.6% of adults in Kenya used mobile money services daily, more than doubling from just 23.6% in 2021, underscoring how deeply digital finance has permeated everyday life (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2024). Despite this widespread adoption, commercial banks are not always benefiting proportionately. Only 45% of commercial banks in Kenya report a noticeable increase in market share due to their digital services (Central Bank of Kenya, 2023).

This gap raises a crucial question: Are digital transformation strategies truly enhancing competitive advantage for Nairobi's commercial banks, or are there barriers undermining their effectiveness? FinTech and digital-only financial service providers, known for offering faster, more customer-centric solutions, are increasingly attracting consumers away from traditional banks (Mugambi & Kinyua, 2020). Yet, empirical evidence on how specific digital strategies, such as mobile banking, digital payments, automated customer service, and data analytics, improve competitiveness in Kenya's banking sector remains limited.

Without solid evidence, banks risk misallocating resources to digital investments that fail to deliver strategic value. Therefore, this study aims to evaluate empirically how digital payment systems influence the competitive advantage of commercial banks in Nairobi, offering insights on which strategies drive success and helping banks make informed, goal-oriented digital decisions.

## 3. LITERATURE REVIEW

These contemporary payment platforms permit users to execute digital commercial transactions without needing cash which operates through electronic platforms. Customers use multiple electronic payment systems including credit and debit cards as well as digital wallets and online banking transfers to make secure transactions through internet and mobile networks (Chiu et al., 2020). The technology-driven payment solutions ensure maximum banking effectiveness together with top-level transaction safety and effortless customer service (Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014).

Digital payment systems gain increased popularity because consumers favor their user-friendly nature along with their security features. Chiu et al. (2020) analyzed how customers make decisions about digital payment systems through their study which showed security and convenience as key adoption determinants. The study by Liébana-Cabanillas et al. (2014) analyzed mobile payment system adoption factors with a focus on trust together with perceived usefulness as main determinants for user acceptance.

Digital payment systems facilitate electronic financial transactions, reducing reliance on physical cash and enhancing transaction efficiency. In the retail sector, digital payment solutions have revolutionized customer transactions, enabling faster checkouts and improving customer satisfaction. A study by Kumar and Gupta (2021) on the impact of digital payments on the retail industry found that integrating digital payment solutions significantly enhanced operational efficiency and customer retention. The study employed a mixed-methods approach, analyzing transaction records and surveying retail managers to determine the effect of digital payments on firm performance.

Similarly, Zhang et al. (2022) explored the role of digital payments in the hospitality industry. Their research utilized a case study methodology, examining hotel chains that implemented contactless payment systems. Findings indicated that adopting digital payment methods reduced service wait times and increased customer loyalty, thereby strengthening competitive advantage. The study concluded that seamless payment solutions are crucial for enhancing customer experience and operational effectiveness in service-based industries.

The existing literature on digital transformation strategies in banking, particularly digital payment systems, mobile banking applications, automated customer service platforms, and digital data analytics, presents significant contributions to understanding their impact on competitive advantage. However, several critical gaps emerge in terms of methodological approaches, contextual relevance, and generalizability of findings.

For instance, studies on digital payment systems emphasize their role in improving transaction efficiency and security (Chiu et al., 2020; Liébana-Cabanillas et al., 2014). While these studies provide valuable insights, they predominantly focus on consumer adoption factors rather than firm-level strategic implications. Furthermore, many studies explore digital payment systems in developed economies with advanced financial infrastructure, leaving a gap in understanding their effects in emerging markets like Kenya. Would the same level of security and efficiency apply in regions with underdeveloped regulatory and technological frameworks?

#### 4. RESEARCH METHODOLOGY

This study employed a mixed-methods research design, integrating quantitative and qualitative approaches to explore digital payment system in Nairobi's commercial banks. The target population for this study consisted of managers and IT specialists from Nairobi's commercial banks. The sampling frame for this study consisted of managers and IT specialists from commercial banks in Nairobi, as they are directly involved in implementing digital payment system. The study used both questionnaires and survey interviews to collect primary data. The questionnaire had both closed-ended questions, which provided data that is easy to analyze quantitatively, and open-ended questions, which allow respondents to explain their views in detail (Hertzog, 2008). Similarly, the interviews used open-ended prompts to encourage detailed explanations and deeper discussion. The data collection actions began after the completion of the final data collection tools and approval from every necessary authority. The study executed preliminary pilot research that gauges the research instrument's validity and reliability, particularly within questionnaires, before delivering the central data acquisition. The collected data was analyzed using both descriptive and inferential statistical methods. Descriptive statistics, such as mean, percentages, and standard deviation, were used to summarize the data.

#### 5. FINDINGS

The regression results show that digital payment systems have a significant positive relationship with competitive advantage ( $B = 0.142$ ,  $\beta = .191$ ,  $p = .001$ ). This suggests that strengthening payment systems enhances banks' ability to retain customers, grow transaction volumes, and create switching costs that make it less attractive for clients to change providers. These findings are consistent with industry-level analyses, which identify digital payments as a central revenue driver and strategic battlefield for banks in emerging markets (McKinsey & Company, 2022).

In Kenya, the case of M-Pesa illustrates how robust payments infrastructure not only promotes financial inclusion but also strengthens the competitive position of financial service providers (Jack & Suri, 2014; Suri & Jack, 2016). Customers often remain loyal to providers who offer secure, convenient, and interoperable payment platforms. Therefore, digital payments represent both a functional service and a strategic asset, positioning banks that invest in reliable, customer-friendly systems ahead of competitors

The study established that digital payment systems significantly enhance the competitive advantage of commercial banks in Nairobi. Strengthening these systems enables banks to retain customers, grow transaction volumes, and create switching costs that discourage client mobility. The findings align with industry evidence that positions digital payments as a core revenue driver in emerging markets, while the case of M-Pesa illustrates how robust payment infrastructures promote financial inclusion and bolster competitive strength. Overall, secure, convenient, and interoperable digital payment systems serve as both functional enablers and strategic assets for banks.

#### 6. CONCLUSION AND RECOMMENDATION

Digital payment systems are a cornerstone of competitiveness for commercial banks in Nairobi. Their ability to expand transaction volumes, foster customer retention, and create switching costs demonstrates their dual role as both functional enablers and strategic assets. The success of platforms such as M-Pesa highlights how payment innovations can drive financial inclusion and strengthen market positioning, making digital payments indispensable in sustaining long-term competitive advantage. Since the study concluded that digital payment systems significantly enhance banks' competitive advantage by increasing customer retention and transaction volumes, commercial banks should intensify investments in

secure, interoperable, and customer-friendly payment platforms. Leveraging the lessons of M-Pesa, banks should expand innovative digital payment solutions that promote financial inclusion while creating switching costs that lock in customer loyalty.

#### REFERENCES

- [1] Adam, M., Wessel, M., & Benlian, A. (2020). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 30(3), 427-445.
- [2] African Development Bank. (2023). *Digital banking transformation in Africa: Trends and challenges*. AfDB Publications.
- [3] Alkami. (2024, May 22). Alkami releases 2024 generational trends in digital banking study. Alkami. <https://www.alkami.com/news/alkami-releases-2024-generational-trends-in-digital-banking-study/>
- [4] Alkarmi, A., & Alqaralleh, B. (2021). Big data analytics in developing countries: Opportunities and challenges. *International Journal of Information Management*, 58, 102442. <https://doi.org/10.1016/j.ijinfomgt.2020.102442>
- [5] Al-Okaily, M., Bataineh, A., & Masa'deh, R. (2022). *The Role of Digital Transformation in Improving Banking Competitiveness*. *Journal of Banking & Finance*, 76(3), 45-60.
- [6] American Bankers Association. (2024, November 22). Consumer survey: Banking methods 2024. <https://www.aba.com/about-us/press-room/press-releases/consumer-survey-banking-methods-2024>
- [7] Apopa, V. (2018). *Research methods in social sciences*. Oxford University Press.
- [8] Bankole, F. O., Bankole, O. O., & Brown, I. (2024). The impact of artificial intelligence applications on digital banking in the Turkish banking sector. *Journal of Banking and Financial Technology*, 8(1), 15-29.
- [9] Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- [10] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- [11] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- [12] Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287–1294. <https://doi.org/10.2307/1911963>
- [13] Brown, T., Smith, R., & Lee, C. (2022). AI-driven chatbots and customer satisfaction in online retail. *Journal of E-Commerce Studies*, 15(3), 45-62.
- [14] Bryman, A., & Cramer, D. (2019). *Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists* (2nd ed.). Routledge.
- [15] Central Bank of Kenya. (2022). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya.
- [16] Central Bank of Kenya. (2022). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya.
- [17] Central Bank of Kenya. (2022). *Annual report and financial statements 2022*. <https://www.centralbank.go.ke>
- [18] Central Bank of Kenya. (2023). *Annual banking sector report: Digital financial services and market trends*. Nairobi, Kenya.
- [19] Chiu, C.-M., Wang, E. T. G., Fang, Y.-H., & Huang, H.-Y. (2020). Understanding customers' repeat purchase intentions in B2C e-commerce: The roles of utilitarian value, hedonic value, and perceived risk. *Information Systems Journal*, 24(1), 85-114.
- [20] Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.
- [21] Cochran, W. G. (1977). *Sampling Techniques* (3rd ed.). New York: John Wiley & Sons.
- [22] Communications Authority of Kenya. (2022). *Annual report 2022: Digital transformation and mobile payment trends*. Retrieved from Communications Authority of Kenya website

- [23] Cooper, D. R., Schindler, P. S., & Sun, J. (2018). *Business research methods* (13th ed.). McGraw-Hill Education.
- [24] Côte-Real, N., Oliveira, T., & Ruivo, P. (2019). Assessing business value of big data and analytics in European firms. *Journal of Business Research*, 97, 256–263. <https://doi.org/10.1016/j.jbusres.2018.06.011>
- [25] Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage publications.
- [26] Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications.
- [27] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- [28] De Vaus, D. A. (2013). *Surveys in social research* (6th ed.). Routledge.
- [29] Deloitte Insights. (2024, November 19). Women and generative AI: The adoption gap. Deloitte. <https://www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2025/women-and-generative-ai.html>
- [30] Deloitte. (2023). *The state of digital transformation in global banking*. Deloitte Insights.
- [31] Dempsey, M., Dowling, M., & Larkin, P. (2016). The role of the gatekeeper in research: Learning from reflexivity and reflection. *Journal of Research in Nursing*, 21(5–6), 493–502. <https://doi.org/10.1177/1744987116654061>
- [32] Denzin, N. K. (1978). *The Research Act: A Theoretical Introduction to Sociological Methods* (2nd ed.). McGraw-Hill.
- [33] Equity Group Holdings. (2023). *EazzyBanking: A case study in digital transformation*. Equity Bank Publications.
- [34] Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- [35] Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- [36] European Banking Authority. (2022). *Open banking and the digital revolution: A regulatory perspective*. EBA Reports.
- [37] Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). SAGE Publications.
- [38] Fink, A. (2013). *How to Conduct Surveys: A Step-by-Step Guide* (5th ed.). SAGE Publications.
- [39] Forrester Research. (2023). *The impact of AI-powered customer service in banking*. Forrester Reports.
- [40] Frazier, P. A., Tix, A. P., & Barron, K. E. (2001). Testing Moderator and Mediator Effects in Counseling Psychology Research. *Journal of Counseling Psychology*, 51(1), 115–134. <https://doi.org/10.1037/0022-0167.51.1.115>
- [41] Freeman, R., Kimani, D., & Wanjiru, J. (2021). Digital transformation strategies and competitive advantage of commercial banks in Kenya. *IOSR Journal of Business and Management*, 26(4), 1-7.
- [42] FSD Kenya. (2022). *Annual Report on Financial Access and Usage*. Financial Sector Deepening (FSD) Kenya.
- [43] Gai, K., Qiu, M., & Sun, X. (2016). A survey on FinTech. *Journal of Network and Computer Applications*, 71, 28-40.
- [44] Garcia, M., Patel, K., & Wanjiru, J. (2023). The role of data analytics in financial fraud detection. *Journal of Financial Technology*, 18(2), 78-94.
- [45] Gnewuch, U., Morana, S., & Maedche, A. (2017). Towards designing cooperative and social conversational agents for customer service. *Proceedings of the International Conference on Information Systems (ICIS)*, Seoul, South Korea.

- [46] Gomber, P., Koch, J. A., & Siering, M. (2018). Digital finance and fintech: Current research and future research directions. *Journal of Business Economics*, 87(5), 537–580. <https://doi.org/10.1007/s11573-017-0852-x>
- [47] GSMA. (2023). *State of the mobile money industry in Africa*. GSMA Intelligence.
- [48] Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *Information & Management*, 53(8), 1049–1064. <https://doi.org/10.1016/j.im.2016.07.004>
- [49] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson.
- [50] Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health*, 31(2), 180–191. <https://doi.org/10.1002/nur.20247>
- [51] I&M Holdings Limited. (2021). *Audited Integrated Financial Report 2021*. I&M Bank Group. Retrieved from <https://www.imbankgroup.com>
- [52] Investopedia. (2022). *Automated banking systems: Benefits and risks*. Retrieved from <https://www.investopedia.com>
- [53] IOSR Journals. (2024). Digital transformation strategies and competitive advantage in the Kenyan banking industry. *IOSR Journal of Business and Management*, 26(4). <https://doi.org/10.9790/487X-2604090107>
- [54] Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104(1), 183–223. <https://doi.org/10.1257/aer.104.1.183>
- [55] Johnson, P., Kumar, V., & Gupta, S. (2021). Big data analytics in manufacturing: A longitudinal study. *Journal of Operations Research*, 30(1), 22-40.
- [56] KCB Group. (2023). *KCB Group Total Assets Rise by 54% to KShs. 1.86 Trillion in H1 2023, Net Profit Closes at KShs. 16.1 Billion*. KCB Group. Retrieved from <https://kcbgroup.com>
- [57] Kenya Bankers Association. (2020). *Banking industry customer satisfaction survey report*. KBA.
- [58] Kenya Bankers Association. (2020). *The state of banking industry report 2020*. Nairobi: KBA.
- [59] Kenya Bankers Association. (2023). *Digital banking and consumer trends in Kenya: A report on the current state and the impact of digital transformation*. Retrieved from Kenya Bankers Association website
- [60] Kenya National Bureau of Statistics. (2021). *Economic Survey Report 2021*. Nairobi: Kenya National Bureau of Statistics.
- [61] Kothari, C. R. (2014). *Research methodology: Methods and techniques* (2nd ed.). New Age International.
- [62] Kothari, C. R., & Garg, G. (2004). *Research Methodology: Methods and Techniques*. New Age International. <https://play.google.com/store/books/details?id=hZ9wSHysQDYC>
- [63] Kothari, C. R., & Garg, G. (2018). *Research methodology: Methods and techniques* (4th ed.). New Age International.
- [64] KPMG. (2023). *Digital transformation in Nigeria's banking sector: Key insights and strategies*. KPMG Reports.
- [65] Krishnaswamy, O. R., Sivakumar, R., & Mathirajan, M. (2009). *Management research methodology: Integration of principles, methods and techniques*. Pearson Education India.
- [66] Kultar, S. (2017). *Quantitative social research methods*. Sage Publications.
- [67] Kumar, A., & Gupta, R. (2021). Digital payment systems and competitive advantage in the retail industry. *International Journal of Retail Management*, 12(4), 99-115.
- [68] Leedy, P. D., & Ormrod, J. E. (2018). *Practical research: Planning and design* (12th ed.). Pearson.
- [69] Levin, R. I., Rubin, D. S., Stinson, J., & Gardner, P. (2017). *Statistics for management* (8th ed.). Pearson.
- [70] Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior*, 35, 464-478.

- [71] Ma, Y. (2025). Digital transformation of commercial banks: A review of literature. *Scientific Journal of Economics and Management Research*, 7(4).
- [72] Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital transformation in the banking industry: The role of knowledge management and human capital. *Journal of Knowledge Management*, 24(2), 141–160. <https://doi.org/10.1108/JKM-11-2018-0686>
- [73] McKinsey & Company. (2022). *Global payments report 2022*. McKinsey & Company.
- [74] McKinsey & Company. (2022). *The future of digital banking in emerging markets*. McKinsey Global Institute. Retrieved from <https://www.mckinsey.com>
- [75] McKinsey & Company. (2023). *How digital banking is reshaping financial services*. McKinsey Global Banking Reports.
- [76] Mugambi, M., & Kinyua, G. (2022). *Effects of digital banking on banking sector performance in Kenya*. University of Nairobi Repository.
- [77] Mugenda, A. G. (2008). *Social science research: Theory and principles*. Nairobi Applied Research. [https://scholar.google.ca/scholar?cluster=5075611222735658575&hl=en&as\\_sdt=0,5&scioldt=0,5](https://scholar.google.ca/scholar?cluster=5075611222735658575&hl=en&as_sdt=0,5&scioldt=0,5)
- [78] Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. Acts Press.
- [79] Mugusia, P. (2016). Technology adoption and competitive advantage of commercial banks in Kenya. *University of Nairobi Repository*.
- [80] Muriithi, J., & Mutsune, T. (2022). Mobile banking adoption and financial performance of commercial banks in Kenya: The moderating role of customer trust. *African Journal of Economic and Management Studies*, 13(4), 765–781. <https://doi.org/10.1108/AJEMS-07-2021-0327>
- [81] Mwangi, L., & Wanjiru, M. (2020). Mobile banking applications and financial inclusion: Evidence from the telecommunications sector. *African Journal of Business Research*, 9(2), 56-78.
- [82] Nguyen, T. H., Newby, M., & Macaulay, M. J. (2020). Information technology adoption in small business: Confirmation of a proposed framework. *Journal of Small Business Management*, 53(1), 207-227.
- [83] Obeng, G. (2021). *Digital solutions and the evolution of banking services: Impacts on customer satisfaction and operational efficiency*. *Journal of Financial Services*, 12(3), 45-67.
- [84] Obeng, R. (2021). *The impact of digital banking innovations on customer experience in Ghana*. *African Financial Studies*, 19(3), 45-62.
- [85] Orodho, J. A. (2004). *Techniques of writing research proposals and reports in education and social sciences*. Nairobi: Masola Publishers
- [86] Ozili, P. K. (2020). Digital finance and financial inclusion: The role of mobile money and digital banking in Africa. *Journal of African Business*, 21(4), 457–478. <https://doi.org/10.1080/15228916.2020.1816199>
- [87] Patel, S., Zhang, Y., & Wang, L. (2021). Mobile banking applications and their impact on financial accessibility. *Journal of Financial Inclusion*, 10(3), 33-55.
- [88] Patton, M. Q., Hay, K., & McKegg, K. (2019). *Developmental evaluation exemplars: Principles in practice*. Guilford Publications.
- [89] Pereira, C., & Romero, P. (2021). *Strategic implications of digital transformation in the banking sector*. *International Journal of Business and Digital Economy*, 9(2), 120-139.
- [90] Pereira, J., & Romero, F. (2021). *The rise of digital banking and its effect on traditional financial institutions*. *Journal of Financial Innovation*, 8(2), 67-89.
- [91] Plano Clark, V. L., & Ivankova, N. V. (2016). *Mixed methods research: A guide to the field*. Sage Publications.

- [92] Plekhanov, D., Gavrillets, I., & Fedorov, M. (2023). *Digital transformation in financial institutions: Strategies, challenges, and opportunities*. *International Review of Financial Innovation*, 15(1), 23-48.
- [93] Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
- [94] PwC. (2023). *Digital banking transformation in South Africa: Future trends and strategies*. PwC Reports
- [95] Reuters. (2024, September 17). *JPMorgan CEO Jamie Dimon to visit Africa in growth push*. Reuters. Retrieved from <https://www.reuters.com/world/africa/jpmorgan-ceo-jamie-dimon-visit-africa-growth-push-2024-09-17/>
- [96] Shaikh, A. A., & Karjaluo, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129–142. <https://doi.org/10.1016/j.tele.2014.05.003>
- [97] Singpurwalla, N. D. (2013). *Reliability and risk: A Bayesian perspective*. John Wiley & Sons.
- [98] Smith, J., & Lee, P. (2023). The impact of AI-powered virtual assistants in telemedicine services. *Journal of Health Informatics*, 14(2), 120-135.
- [99] Strategic alliances and competitive advantage in Kenyan commercial banks. *International Journal of Research in Business and Social Science*.
- [100] Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292. <https://doi.org/10.1126/science.aah5309>
- [101] Susanti, R., Anggadwita, G., & Rachmawati, D. (2023). Digital transformation in the banking sector: Evidence from Indonesia. *International Journal of Bank Marketing*, 41(2), 357–376. <https://doi.org/10.1108/IJBM-03-2022-0128>
- [102] Tam, C., & Oliveira, T. (2017). Understanding mobile banking individual performance: The DeLone & McLean model and the moderating effects of individual culture. *Internet Research*, 27(3), 538-562.
- [103] Tashakkori, A., & Teddlie, C. (2003). *Handbook of Mixed Methods in Social & Behavioral Research*. SAGE Publications.
- [104] Tee, P. K. (2024). Demand for digital skills, skill gaps and graduate employability: Evidence from employers in Malaysia. *F1000Research*, 13. <https://doi.org/10.5256/f1000research.162834.r303733>
- [105] Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273-315.
- [106] Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- [107] Walliman, N. (2017). *Research methods: The basics* (2nd ed.). Routledge.
- [108] World Bank. (2025). Digital skills in Nigeria (Digital Skills Report). World Bank. <https://thedocs.worldbank.org/en/doc/a607bb6e3b76d2be0f3db8db34dcf73e-0140022025/original/1Nigeria-TF0C2441-Digital-Skills-Report-final.pdf>
- [109] Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6th ed.). SAGE Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2017). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, and trust. *Journal of Financial Services Marketing*, 22(2), 141-160.
- [110] Zhang, W., Luo, H., & Chen, X. (2022). Contactless payment adoption and customer loyalty in the hospitality sector. *Journal of Hospitality and Tourism Management*, 19(1), 88-102.
- [111] Zhou, T. (2011). An empirical examination of users' post-adoption behavior of mobile banking services. *Electronic Commerce Research and Applications*, 10(4), 475-482