Sustaining Organizational Growth Outcome for selected Commercial Banks in Nairobi City County, Kenya: The Role of Technological Innovation

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ABSTRACT

This study looked into the whole concept of technological innovation and how it relates to organizational outcomes. The study specific objectives were; to determine the effects of internet banking on the organizational outcomes of commercial banks; to establish the effects of mobile banking on the organizational outcomes of commercial banks; and to assess the effects of electronic funds transfers on the organizational outcomes of commercial banks in Nairobi City County, Kenya. The research was grounded on diffusion of innovations theory, resource-based view theory and Schumpeterian theory of creative destruction. The study primarily concentrated on both quantitative and qualitative data using a descriptive research approach. The population was made up of 44 commercial banks with active operations within Nairobi City County. Thirty banks were chosen using simple random sampling to supply the study's real participants. After this, stratified sampling was utilized to reach a total of 150 participants who comprised of 5 departmental heads from each bank. A semi-structured questionnaire was used to collect primary data. A pilot study was conducted two weeks in advance, involving three banks from the neighbouring Kiambu County, to help the researcher evaluate the research tools. The test-retest method was used to ensure response consistency. Data analysis was performed using descriptive and inferential statistics in SPSS version 23. The findings were presented through frequencies and percentages in form of tables, pie charts, bar graphs, and narratives. The participants were assured of anonymity and confidentiality, meaning their identities would not be disclosed. The findings showed that most banks have used internet banking over the last ten years which has enabled customers to pay their bills with ease. The level of mobile banking has been in the rise over the years and this is directly due to the increase in mobile phone ownership among the populations. Increased growth has been achieved as a result of mobile banking. Mobile banking had a positive significant level of 0.044 ($P < .05$). Electronic funds transfer has increased banks' level of reach to customers, while also increasing security in the money transfer services. There is a positive significance between electronic funds transfer and organizational outcomes represented by the p value of 0.031 ($P < .05$). Most commercial banks have registered improved outcomes over the past ten years, shown by improved service efficiency, increased customer satisfaction, increased penetration of services, as well as an improvement in the levels of profitability. The study recommended that banks need to increase their use of technology in their provision of services. Further research should be done on the influence of technological innovation on financial performance of commercial banks.

Keywords: *Technological innovation, Organizational Outcomes, Electronic Funds Transfers, Internet Banking, Mobile Banking.*

1.0 Introduction

According to Rappoaport (2022), outcome includes three distinct aspects of a business: market share, profits made, operational effectiveness, and the calibre of customer service provided. Examples include profits, return on assets, market share, return on investment, shareholder return and product sales. Results consists of total shareholder return and the economic value added. In the past several years, numerous businesses have tried to control their performance by implying good performance strategies, among them green procurement with an aim of protecting the environment yet performance has kept on decreasing. Additionally, Agboola (2021) views organizational outcome as the extent to which organizational goals are being or have been achieved which can either be financial or non-financial. Penman (2021) on the other hand defines organizational outcomes as the degree of a company's achievement during a certain time period, as measured by its total earnings and losses during that time.

Globalization and increasing deregulation are revolutionizing the banking and financial sector worldwide. Technological developments in the worldwide banking industry, such as those present in smartcard applications, internet banking, phone banking, and ATMs, are occurring far too quickly. The traditional branch teller is being replaced by rapid, massive technological improvements. Numerous branches have shut down due to heightened competition caused by deregulation, globalization, and several mergers and acquisitions in the banking industry. As a component of a broader effort to streamline operations, self-service banking (SSB) options like ATMs, are taking the place of these (Agbada & Osuji, 2020).

Innovation strategies employ a four-equation framework to establish an association between organizational innovation decisions and their resultant performance by scrutinizing the interplay between innovation inputs and outputs, as well as the influence of these outputs on productivity and overall performance enhancement. The findings substantiate the affirmative correlation between innovation endeavors and efficiency at the business level, while also offering further empirical support for the association between organizational size and innovation activities (Rajapathirana & Hui, 2021). Through technological innovation, Canada's commercial banks have expanded their market share, opened up new markets, and earned a competitive advantage. Because of the fierce competition in the constantly changing global marketplaces, many businesses are turning to technological innovation as a key tactic to remain relevant in a cutthroat market (Agbada & Osuji, 2020).

The value of goods and services keeps dropping as a result of increased competition and quickly developing technology (Hinterhuber & Liozu, 2021). Consequently, for businesses striving for high levels of innovation, an innovation strategy becomes a crucial competitive advantage. Employee turnover was reduced when formal diversity initiatives were put into place. These activities supported a strategic contingency connection even though they had no direct effect on return on earnings.

In Africa, technical innovation in the commercial bank sector has amplified the number of new market participants brought about by new financial market goods in addition to opening up new opportunities for industry players. These innovations have not only changed the role of banks by increasing their funding sources and choices for portfolio diversification, but they have also increased the variety of investment and financing alternatives available to economic actors. For instance, technological developments are causing Nigeria's banking sector to face increased

competition in both local and foreign markets. All banks must promptly prepare for entry into a new, competitive financial environment as a result of the nation's shift to monetary unions and these recent events, which herald substantial changes in the banking landscape (Biswas, 2023).

Better financial performance, particularly in emerging countries, has contributed to the promotion of financial inclusion. The rapid advancement in technology and enhanced financial performance have prompted commercial banks to hire knowledgeable and skilled staff members capable of driving change (Anoop, 2020). A variety of corporate financial services tailored to the unique requirements of private company are provided by Uganda's commercial banks. Innovation in technology has been essential for these banks. The calibre and volume of products that financial firms provide to their clients determines their capacity to make a constructive impact on the economy. In order to provide financial services, new and creative approaches including digital financial services, e-banking, and inventive Automated Teller Machine (ATM) techniques are replacing traditional methods (Hewitt, Ray, Jewitt, & Clifford, 2022).

Locally, Kenyan banks have been experimenting with new products, such as online banking and digital financial services have established themselves in a number of local banks. Many banks have integrated internet banking, mobile banking, enhanced their online presence, and prioritized branchless banking (Biswas, 2023). Although banks have an extensive branch network, they strongly encourage customers to use online and phone banking, along with ATMs. Information technology, effective service delivery, and customer happiness are critical elements of a competitive strategy in the modern commercial banking sector (Alfred, 2021). Furthermore, banks have been compelled to create and deploy the required decision assistance technology as a result of fierce competition. This allows businesses to plan new sites, assess performance, prediction consumer responses to new goods and services, estimate the probability of client attrition, and assist their widely scattered branches with marketing (Abong'o, 2023).

1.1.1 Organizational Outcomes

Policy makers are responsible for deciding which course of action will improve the organization's overall performance; a key component of enhanced performance that yields favourable results in all organisational dimensions is the implementation of an appropriate plan; and positive organisational outcomes have also been shown to have a vital effect on a company's achievement (Cerne et al., 2013). Richardo (2019) on the other hand, asserts that when an organization's goals are fulfilled, it is said to have attained organizational performance. An instance in which the business attains a higher return on equity might also be shown by the organizational outcome. To ascertain an organization's results, its performance must be examined in light of its goals and objectives. Organizational performance compares the expected and actual results (Rosli & Sidek, 2022).

Abdullai and Micheni (2023) opine that an organization's performance can be measured using the Balanced Scorecard, return on investment (ROI), market share, liquidity, growth rates, liquidity, profitability, revenue growth, stock price, sales growth, and operational efficiency. This research concentrated on three key areas: market performance, financial performance, and shareholder value performance (Upadhaya, Munir & Blount, 2022).

In the present study, market share, profitability and operational efficiency were used to evaluate the organizational outcomes. Financial outcomes refer to the measurable results of a business's operations and policies in monetary terms, including realized profits. Market performance,

measured by the market share that an organization's goods command, is a statistic used to evaluate how well a business or product performs in the marketplace. Operational efficiency is a metric that measures an organization's performance and the extent to which a corporation is considered to have satisfied its operational expectations in the market (Upadhaya, Munir & Blount, 2022).

1.1.2 Technological Innovation

Batiz-Lazo and Woldesenbet (2021) define technological innovation as any new idea based on technology, a newly developed or significantly enhanced product or service that has been put on the market, or any noticeably better and innovative method of producing goods and services for the commercial market. Consumer-focused business-to-consumer and consumer-to-consumer activities, as well as the intra-organizational procedures that support these connections and the inter-organizational procedures of market-based sell-buy relationships and cooperation, are all included in technology innovation (Cherotik, Sang, Shisia, & Mutung'u, 2022). There are several benefits to using cutting-edge internet technologies for company.

According to Nyambariga (2021), technological innovation in the banking sector is the continued use of improved financial technology that makes it possible for companies to achieve enhanced customer support and improve customer experiences. Birkinshaw (2020) defines technical innovation as the process of improving an already-existing thing and cites the 20th century's breakthroughs in semiconductor technology as an example, which led to a million-fold improvement in the performance and a million-fold decrease in the cost of electronic materials and devices a feat no other technology had ever achieved.

One important instrument connecting the banking industry and the economy is technological innovation (Batiz-Lazo & Woldesenbet, 2021). Technology advancements are tools used by financial organizations to ensure that customers receive services effectively. Financial institutions now have a significant competitive edge and higher-level financial performance thanks to successful technologies like the internet, especially in a more uncertain work environment (Zu, Gu, & Bonsu, 2019). According to Cherotich, Sang, Shisia, and Mutung'u's (2022) submissions, companies are using e-commerce as a technical innovation tool to boost customer service, reach new markets, save costs, and raise productivity.

According to Nyambariga (2021), technological innovation results in integrated banking technology and this is measured by reduced inventory and free 24-hour access to services which result in increased cost effectiveness. Technological innovation enhances access to international markets and this helps companies to grow. Birkinshaw (2020) states that the foundation of technological innovation is internet banking which is the idea that banking operations are primarily driven by the implementation of online services. The online delivery of banking services and products simplifies various transactions. These include bill payments, mortgage payments, money transfers, checking balances, obtaining deposit certificates, and investing in financial commodities.
Internet banking, commonly referred to as online banking or web banking, enables clients of banks and other financial entities to perform various financial tasks via the institution's website. Customers may now do business online and through the bank's website, as well as monitor their bank accounts, thanks to this technological advancement. A study on the effect of trust on the uptake of internet banking was examined by Goudarzi et al. (2018). According to their summary, trust is a crucial component of online banking transactions (Pikkarainen et al., 2022). They pointed out that internet banking results in cost savings, shorter transaction times, easier access to new

clients, and better customer service, all of which ultimately increase customer satisfaction (Alsajjan & Dennis 2019).

It also helped to enhance customer relationships and generated more revenue. The innovation of internet banking is focused on financial excellence, customer satisfaction, and service quality. New technologies are strongly related to online banking. Due to technological advancement, branch banking began to prioritize online banking over retail banking when it gained traction in the early 21st century. Oluwajoba, Oluwagbemiga, Kehinde, and Akinade (2020) conducted research on evaluating Nigerian small and medium-sized businesses' capacity for innovation. The research evaluated the manufacturing SMEs' capacity and skills for innovation, and they thoroughly examined electronic payment systems as part of their investigation.

Mobile banking is sometimes alluded to as M-banking or SMS banking, according to Bonface and Ambrose (2020). Mobile banking entails methods for carrying out financial transactions using an Android or smartphone, regardless of whether the device is connected to a traditional bank account. The benefit is that financial services are accessible and efficient, no matter your location or type of phone. The foundation of each nation's economy has always been the banking industry, but this is particularly true in developing nations. This business has changed from its earlier form to e-banking and, most recently, m-banking as a result of new innovations and technological advancements (Abong'o, 2023). Koivu (2023) argues that mobile phone penetration in Kenya has been very high. Decision-making, behaviour, and organisational performance are all impacted by mobile banking in Kenya. There is a growing tendency of people continuing to do financial transactions via mobile devices. One invention that has gradually spread over many different areas of the economy and business is personal banking. Muchemi and Moronge (2021) explored the influence of strategic innovation adoption on Kenyan commercial banks' performance, using equity banks as a case study. Mobile banking was one of the metrics of innovation utilized in their analysis. The independent variable was investigated using the diffusion of innovations theory as a basis.

A direct deposit or electronic funds transfer (EFT) is a digital money transfer from one bank account to another. Bank employees are not involved in these transactions. Since the transaction is digital, no paper records are needed (Cyprian & Muturi, 2020). Since EFT is a straightforward, easy, and accessible way to pay or transfer money, it has grown to be a popular money transfer technique. Paper checks become outdated when companies use electronic fund transfers (EFT) more frequently since they are more expensive, take longer to process, and require more work overall (Gikonyo, 2019). A transfer request first travels to the sender's bank and then to the recipient's bank via a variety of digital networks, such as the internet or a payment terminal. Senders include people, companies, and employers who pay for services like electricity. Similarly, beneficiaries may be organizations such as workers, suppliers of commodities, merchants, or utility providers. Different nations and payment systems have different names for EFT transactions. For instance, they could be called "electronic checks" or "e-checks" in the US. The terms "BACS Payment," "bank transfer," and "bank payment" are utilized in the United Kingdom; "e-transfer" is utilized in Canada; and "giro transfer" is the phrase that is often used in a number of other European nations (Maiyo, 2020).

In a study by Ahmad et al. (2019), on a linkage between technological capability and performance manufacturing companies. According to the report, emerging nations, like Malaysia, are attempting to participate in the fierce global market; as a result, this important sector must preserve and

enhance indigenous capabilities for stability and economic strength. In this study, technological capability was stressed in terms of electronic funds transfer which was used as an indicator of the adoption of technology by organizations. The research was grounded on the Schumpeterian theory of creative destruction, which has also been used in the present study.

1.1.3 Relationship between Technological Innovation and Organizational Outcomes

The research by Reichert and Zawislak (2022) examined the linkage between an organization's performance and its technical competence. The research's objective was to explore the linkage between technical capabilities investments and Brazilian companies' financial performance. The researcher's assumptions showed a positive correlation with the economic growth theory and the country's development history. An analysis of 133 Brazilian firms was conducted. It is shown that, considering the economic conditions of emerging nations, where most firms rely on low and medium technology, there is a positive association between an organization's technological aptitude and performance. There are more factors that assist firms in achieving this kind of success. Businesses with low levels of technology intensity performed mediocrely on economic metrics, and their unfavourable investment was lower than that of businesses with medium levels of technological capability. The results are consistent with a country's history of concentrating its resources on fundamental sectors. The association between technological investments and performance was the main focus of the research. The existing research examined technology innovation and its impact on organizational results. Furthermore, the study solely examined technological competence rather than innovation in general.

The goal of Rehman, Lohana, and Zabri's (2022) study was to ascertain if Malaysian customers intended to utilize mobile banking. It sought to determine the elements influencing this adoption. Malaysian university students who utilized mobile banking were polled by the researchers. 700 students were given questionnaires, and 384 completed answers were obtained for analysis. A structural equation model was embraced to analyze the data. The results showed a strong positive relationship between attitudes, perceived utility, and convenience of use and the uptake of mobile banking. Additionally, the study discovered a high but unfavorable correlation between attitude, security risk, and privacy risk and the nation's adoption of mobile banking. The approach used in this study has a gap since it utilized the structural model equation for analysis, but it also used both descriptive and inferential statistics to analyze the primary data gathered. Moreover, the study looked at the variables that affect mobile banking adoption, but it did not link mobile banking use to organizational outcomes.

1.1.4 Commercial Banks in Kenya

Over the last ten years, Kenya's banking sector has seen several financial and regulatory changes. These reforms have brought about a number of noteworthy improvements in the industry and have also prompted international banks to establish and grow their operations in the nation. This has allowed banks to look at additional areas that might help them achieve greater operational efficiency (Kamau, 2022).

Five foreign bank representative offices, 115 foreign exchange bureaus, two credit reference bureaus, six deposit-taking microfinance institutions, one mortgage financing company, and 54 commercial banks make up Kenya's banking sector. Of these, 31 are owned domestically, and the remaining ones are held by foreigners. Three banks with significant government or state corporate

ownership, one home financing firm, and 27 commercial banks make up the locally owned institutions (CBK, 2020). The Micro Finance Act and the Central Bank of Kenya Act cap 491 regulate deposit-taking microfinance institutions and currency bureaus, while the Banking Act cap 488 licenses and regulates Kenyan commercial banks. The Central Bank of Kenya further divides commercial banks into three groups based on their market shares in pre-tax earnings, advances, net assets, and client deposits.

One of the key principles of the Central Bank of Kenya's (CBK) 2019 Kenya Banking Sector Charter was a significant emphasis on client centricity. Kenya's banking sector is renowned for using technology to increase productivity and meet customer needs for "anytime, anywhere" financial services (Wangolo, 2022).

1.2 Statement of the Problem

As a result of the divide that exists between innovation and organizational outcomes, banks have been largely affected and as an indication, there is a present threat in which the banking sector is experiencing stiff competition from the mobile money transfer companies making it hard to clearly draw an association between financial innovation and organizational outcomes. Also, despite the many gains made, financial exclusion still stands at about 21.8% according to the survey on financial access (CBK, 2022). These factors have created a slow improvement in the banking outcomes over time, resulting in reduced profits, reduced efficiency in operations, and a perceived reduction in market share.

A number of gaps have been identified, which the existing research seeks to fill. Numerous researches were initially done in different contexts than the current one, which was carried out with Nairobi as the focal point and in the framework of Kenya's banking sector. Furthermore, several methodological techniques have been used in the literature that is currently accessible, which has prevented the topic of study from yielding definitive results. Using a descriptive survey research approach, the existing research made utilization of both qualitative and quantitative data. The focus of the existing research on this subject is on organizational performance and innovation. Since performance is only one component of organizational results, the present research concentrated on profitability, market share, and operational outcomes. Further gap has been identified in terms of the empirical literature that is available. As at now, not much research has been done in the areas of innovation and organizational outcome, especially in the banking sector.

The commercial banks' performance in Kenya has grown notably between years 2022 to 2023 with the total banking sector assets growing by 15.6% from 6.42 trillion in 2022 to 7.41 trillion in 2023. The core earnings per share for the listed banks recorded a weighed growth of 11.4% in FY'2023 compared to a weighted growth of 2026% recorded in FY'2022 indicating a sustained performance despite tough operating environment resulting from high inflation (CBK, 2024). Based on this background, it is evident that the level of technological innovation has a direct correlation with organizational outcomes. However, this correlation is not regular, leading to the need to carry out this research to explore technological innovation and organizational outcomes in the banking sector in Kenya, concentrating on commercial banks.

1.3 Research Objectives

1.3.1 General objective

This research aimed to explore the effect of technological innovation on organizational outcomes of commercial banks in Nairobi City County, Kenya.

1.3.2 Specific objectives

i. To determine the effects of internet banking on the organizational outcomes of commercial banks in Nairobi City County
ii. To establish the effects of mobile banking on the organizational outcomes of commercial banks in Nairobi City County
iii. To assess the effects of electronic funds transfers on the organizational outcomes of commercial banks in Nairobi City County

2.0 Literature Review

The chapter provides empirical research of the key factors as well as an explanation of the research's theoretical foundations. This section also offers a summary of the research's philosophical framework and knowledge gaps.

2.1 Theoretical Literature Review

2.1.1 Schumpeterian Theory of Creative Destruction

According to Schumpeter (1928, 1939), innovations are the primary drivers of growth rates in capitalist societies and are perpetual storms of creative destruction. The early and later theories of innovation by Schumpeter are distinguished by certain academics. According to his early theories, innovation depended on extraordinary people or businesspeople who voluntarily took big risks. His subsequent views, on the other hand, recognized the role that big businesses play in encouraging and supporting innovation. Over the course of his life, Schumpeter's opinions changed significantly, which led him to investigate how oligopolies affect innovation a topic that is sometimes misunderstood as his primary contribution (Freeman, 1994).

Schumpeter maintained that the potential for new profits was generated by the ideas of entrepreneurs, who may be either individual innovators or R&D engineers in big businesses. Groups of investment would then be sparked by groups of imitators attracted to super-profits, lowering the innovation's profit margin. However, a new invention, or sequence of inventions as Schumpeter called them, would appear to restart the business cycle before the economy could stabilize.

The Schumpeterian Theory is applicable to the existing study because, as things stand, the introduction of new technology results in the complete replacement of the old technology, which ultimately leads to an overall improvement because the new technology is superior to the old. This is due to the fact that new technology benefits the user. The independent variable, innovation, which is exemplified by online and mobile banking as well as electronic money transfers, may be explained by the theory. The removal of outdated technology from the past has led to the development of modern technical breakthroughs. The banking industry has therefore come from the

era of fully depending on the banking hall to do business to the current era which is technologically driven and in which banks can still reach their customers using innovation/technology-driven platforms.

2.1.2 Resource-Based View Theory

The RBV framework is used to project and highlight the concepts of organisational performance and competitive advantage. RBV relies on internal organisational resources rather than external ones to manage an internally-driven strategy and assess the effectiveness of leveraging corporate operations (Kozlenkova, Samaha, & Palmatier, 2014). Having a competitive edge and outperforming rivals are considered aspects of efficiency in business (Barney & Clark, 2007:25). The difference between what consumers think they will receive and what the business will actually pay when they buy a product or use a service offered by the firm is known as economic value.

In the context of the existing research, this theory is relevant in explaining the dependent variable because organizational outcomes are highly dependent on the adaptations that emanate from within the organization, such as the kind of innovations that are embraced by the organization. According to the theory, the corporation has a competitive edge because of its internal resources, which are comprised of a range of resources and capabilities. The idea states that if a company manages its resources well, it may gain a competitive edge, which leads to better organisational outcomes in terms of profitability, operational efficiency, and market share. Therefore, being in possession of strategic resources gives a company the chance to get an edge over its competitors and in the same way get to improve its outcomes.

2.1.3 Diffusion of Innovations Theory

Diffusion, according to Rogers, is the process by which an invention progressively permeates a social system's members through certain routes. Organizations frequently accept innovations through two different sorts of innovation decisions: authority and communal decisions. When adoption is done by consensus, the collective choice is made. Only a small number of people in high positions of authority inside an organization embrace the authority decision (Dedrick & West, 2003).

The Diffusion of Innovation Theory helps explain how technological innovation influences outcomes in commercial banks. It provides a clear understanding of innovation components like internet banking, electronic funds transfers and mobile banking. The theory also shows how adopting these innovations can impact an organization's performance, including market share, efficiency, and profitability. According to the theory, the four main elements of the dissemination of innovations are time, social structure, and communication routes. According to Rogers, the diffusion process is highly dependent on human capital, and for the invention to be self-sustaining, it needs to be universally embraced.

2.2 Empirical Literature Review

2.2.1 Internet Banking and Organizational Outcomes

Onay and Ozsoz (2023) utilized panel data from 18 retail banks in Turkey from 1990 to 2020 and uncovered a positive linkage between the number of loans, deposits, and earnings per branch and Internet banking use. Additionally, after two years of use, their research showed that online banking

had a detrimental influence on bank profitability. According to the authors, this negative effect results from internet banking's increased competitiveness and decreased interest income. The research was limited to Turkey, a particular geographic region, even though its focus was internet banking penetration and profit levels.

According to a study by Ovia (2023) on the integration of IT into Nigerian banking, Nigerian banks have become increasingly dependent on IT, and their IT spending is far higher than that of any other Nigerian business. According to the report, online systems have made Nigerian Internet banking easier, as seen by the fact that many of them have set up websites. He also found that regardless of the location where the account is situated, banks now provide their customers the choice to manage their accounts at any branch. Cashless transactions are now possible thanks to modern civilization. The banking industry was the main subject of this Nigerian research. Nevertheless, the research solely explored the advantages of technology use in the banking industry. However, the existing study investigated the effects of technology innovation on organizational outcomes.

Suki (2022) used a multiple regression technique using a sample of 100 participants to explored the elements impacting Malaysian customers' adoption of online banking. The findings uncovered that hedonic-leaning banking locations, the perceived value of online banking in relation to banking demands, and compatibility all have a major impact on Malaysian clients' adoption of the platform. The survey had a geographical gap in addition to excluding mobile banking and electronic financial transfers, which are part of the current research.

Mbugua and Omagwa (2021) assessed the monetary execution of commercial banks in Embu County, Kenya, as well as online and agency banking. The poll indicates that online and agency banking are becoming increasingly popular worldwide because to the associated benefits. Providing financial services to the "unbanked" is a new source of revenue for banks in some nations. They provide banking and payment services through retail establishments, such as pharmacies, grocery shops, petrol stations, and merchants of seeds and fertilizer, instead of utilizing bank branches and their own field agents. Innovative technology has been a crucial tactic for the banking industry to stay competitive despite changes in the business environment. By offering easy and accessible services through online and mobile banking, the banking industry has completely changed its financial operations. In order to do this, banks are quickly creating branchless banking options including internet, mobile, and ATM banking. While the existing study has addressed technological innovation as a broad concept and focus on online banking, mobile banking, and electronic money transfers, this research was more focused on internet and agency banking separately.

2.2.2 Mobile Banking and Organizational Outcomes

Muchiri (2023) examined how mobile banking impacted SMEs' operations in Nairobi County. The research's target group contained of 176 SMEs, and a descriptive survey research approach was applied. A sample of 122 individuals was obtained using the sampling formula developed by Krejci and Morgan (1970). The primary data was gathered using pre-made questionnaires that included both closed-ended and open-ended inquiries. The quantitative data from the survey was examined using SPSS, while the qualitative data was explored using content analysis. The outcomes of the survey show that more consumers are adopting mobile banking as it is thought to be a simple and practical method of making payments. Transactions, company efficiency, and profit margins all increased for SMEs as a consequence. The research looked at mobile banking's impact independently and contrasted it with the execution of SMEs in Nairobi County. Innovation in

Nairobi City County's commercial banks was evaluated in the current study based on organisational outcomes.

Michaels (2023) conducted e-payment case studies in Kenya. The outcomes uncovered that there are just a few ways for consumers to make electronic payments in Kenya, mainly via cheques, mobile money, and electronic funds transfers. In recent years, the government has started a thorough modernization project. Additionally, mobile money is outpacing traditional payment options and is still expanding. Therefore, it came to the conclusion that switching from cash payments to mobile money has undoubtedly benefited the businesses that utilize it. The organisations who decide to use mobile payment solutions may immediately observe the advantages in payment delivery, even though some of the benefits are also the consequence of other efficiency gains, such as at the Ministry of Lands. The use of a case study methodology made the research biassed. All commercial banks with branches in Nairobi were involved in this research, which employed a descriptive survey methodology.

Saliu (2022) did a survey in Kumasi Metropolis, Ghana, to explore the influence of mobile money transfer services on the socioeconomic position of mobile money merchants (MM). The population consisted of MM merchants in Kumasi Metropolis; 104 participants were selected as a sample size for analysis using SPSS software. The responses indicate that income levels, occupational characteristics, and housing circumstances have a substantial effect on the socioeconomic standing of the MM vendors in the research region. The research was predicated on the Technology Acceptance Model. The survey uncovered a favorable and statistically noteworthy correlation between Ghanaian financial inclusion and mobile banking. This research ignored Ghana's financial institutions in favor of concentrating on mobile money dealers. The present research, which was conducted in Kenya, examined technology in the banking sectors from the viewpoint of commercial banks.

Kamau and Oluoch (2020) looked at financial inclusion and monetary innovations in Kenya. The research uncovered that monetary inventions significantly improve monetary inclusion. The accessibility of ATMs, mobile banking, and mobile money technologies all contribute to monetary inclusion in Kenya. So, the development of ATM and mobile cash transactions in besides agency banking has a considerable influence on monetary inclusion in Kenya. This research looked at how Kenyan financial inclusion has been facilitated by innovations. However, the existing research investigated the linkage between technological innovation and organizational success. Furthermore, the study only employed secondary data, indicating that conclusions were derived on secondary data findings. However, primary data, which is more immediate and may provide a comprehensive picture of the entire situation, was utilized in the existing research.

2.2.3 Electronic Funds Transfers and Organizational Outcomes

Mukwana et al. (2023) did research on the potential and practice of goods in Kenyan money transfer networks. The research intended to explore the variety of money transfer services available in Kenya and how they are used by individuals and companies, particularly those with low incomes. The research looked at service gaps and characteristics to evaluate the standards and opportunities for developing money transfer goods and services in the microfinance industry. According to the results, commercial banks dominate Kenya's money transfer market, primarily serving high-volume customers and, to a lesser degree, low-income consumers. Since they provide the least expensive service for transferring huge sums of money, electronic funds transfers, telegraphic transfers, and

bank drafts are the commercial bank instruments most frequently utilized for high value transactions. The research's goal was to determine which money transfer services are available in Kenya and which ones lack technical innovation. The existing research was conducted with an emphasis on organizational results and technology innovation.

Aduda and Kangoo (2022) used data from the Central Bank of Kenya's and a few chosen banks' annual reports to investigate the linkage between e-banking and the operation of the Kenyan banking system. The performance was contrasted with independent factors including the number of bank accounts, ATMs, and debit cards that were given to consumers. E-banking typically has a solid and considerable extra link with the profitability of the Kenyan banking system, according to the examination of descriptive and inferential data. Similarly, e-banking services and the institution's execution were positively correlated. Because the existing research only focused on e-banking, it did not contain the other criteria the researcher used.

Getembe et al. (2022) examined how electronic money transfers benefit business process management in Kenyan commercial banks. The research utilized a descriptive design and concentrated on 45 commercial banks. Its main aim was to explore the respondents' key preferences when using electronic money transfer services. The results showed that two respondents (10%) selected dependability, seven respondents (35%) liked speed, and eleven respondents (55%) preferred efficiency. While the majority of respondents (55%) favoured efficiency and a minority (2%) favoured dependability, none of them selected low-cost money transfer solutions. This showed that, inasmuch as the money transfer system was increasing efficiency, managers were prepared to pay for it. Additionally, because they could readily access financial services, respondents stated that electronic money transfers allowed them to live more comfortably. Along with reducing waste, they added, computerized money transfer methods have replaced traditional banking. The results showed that money transfer systems have some sort of effect on business process management. In addition to electronic funds transfer that was studied in this research, the present research also looked into mobile banking and internet banking which make up technological innovation in the banking sector.

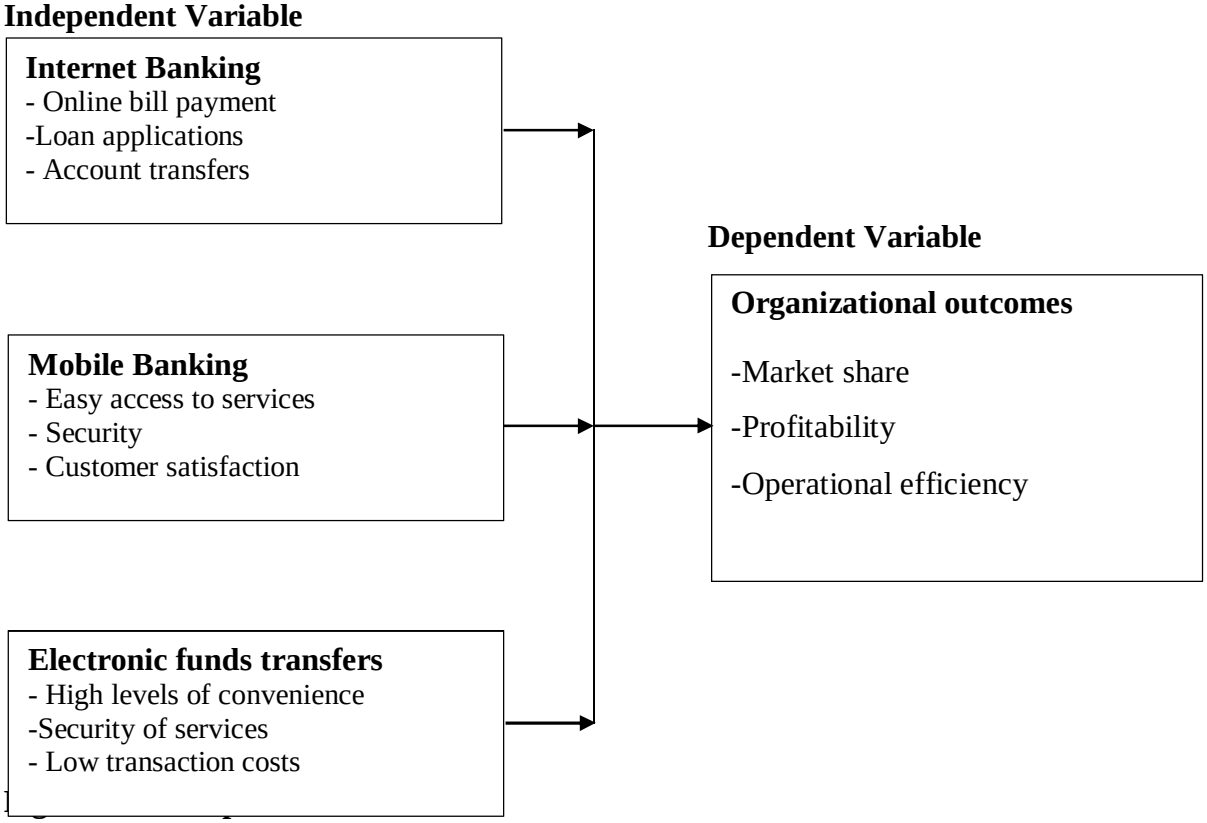
According to Lusaya and Kalumba's (2022) research in Zambia, e-banking adoption is contingent upon the availability of e-banking information. The findings focus on the difficulties clients face while embracing e-banking. Therefore, it is anticipated that a large number of clients would adopt e-banking if it receives more awareness. The outcomes also uncovered that educational attainment has a statistically significant effect on e-banking use. This suggests that as educational attainment rises, so does the utilization of e-banking services. This aligns with the idea of adopting technology. The study found no association between personal security concerns and e-banking service use at the 5% level of significance. Because the research focused on client concerns, it did not consider the banks' point of view. Nairobi City County, Kenya's commercial banks' organizational outcomes and technological innovation were the focus of the present study.

Karthick (2022) carried out a research on Thiruverumbur's customer attitude toward the Electronic Fund Transfer System and found that, despite the fact that EFT offers convenience and speed in conducting financial transactions, people are still hesitant to use it for a number of reasons. Two components of perceived risk are security and privacy. People don't want to test the system if they don't understand it well enough. The desire to use EFT is positively impacted by perceived utility, usability, and consumer awareness, but negatively by perceived danger. This demonstrates that bank clients base their intention to embrace EFT on the system's user-friendliness and positive results.

The study concentrated on consumer perceptions of electronic financial transfers. This created a gap because the study did not include other facets of technical developments. Since the current research examined technological innovation, electronic financial transfers, online banking, and mobile banking were all included.

2.3 Conceptual Framework

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



3.0 Research Methodology

3.1 Research Design

A descriptive research technique was embraced because the research was interested in quantitative data.

3.2 Target Population

A population is a gathering of distinct individuals, items, or things from which measurements are made; it is the group from which the researcher hopes to draw inferences (Babbie, 2010). The 44 banks that are active in Kenya and have branches in Nairobi were all the focus of this investigation. The managers for all the concerned departments such as ICT, R&D, Operations, customer service, risk and quality assurance were targeted by the study (Appendix E).

3.3 Sample Size and Sampling Design

To explore the sample, simple stratified random sampling was employed. To determine which banks to include in the research, basic random selection was combined with the formula by Nassiuma (2000):

$$\boldsymbol{n} = \frac{(NCv^2)}{(Cv^2 + \mathrm{N} - 1e^2)}$$

Where; **n** = sample size
N = accessible population
Cv = Coefficient of Variance
e = Standard error
Hence:

$$n = \frac{44(0.5)^2)}{(0.5^2) + (44 - 1)\ 0.05^2}$$

$$n = \frac{44\text{x}0.25}{0.25 + (43\ \text{x}\ 0.0025)}$$

$$n = \frac{11}{0.25 + 0.1075}$$

$$n = \frac{11}{0.3575}$$

$$n = 30.7$$

n=30

The staff members were categorized by department once the 30 banks that were part of the study had been chosen at random from the 44 total. The researcher then picked the heads of departments from 5 departments directly concerned with the current topic of research (operations, ICT, customer relations, customer care, and human resource). This translated to 5 individual participants from each bank, leading to a final sample size of 150 participants. This is exhibited on Table 1;

Table 1: Sample Size

Category	**Target groups**		
30 Commercial banks		Operations manager	1
		ICT manager	1
		Customer relations manager	1
		Customer care	1
		Human Resource manager	1
		Operations manager	**30**

Total	**150**	**ICT manager**	**30**
		Customer relations manager	**30**
		Customer care	**30**
		Human Resource manager	**30**

3.4 Data Collection Instrument

The primary data utilized in this research was gathered mostly through questionnaires. Zikmund, Babin, Carr, and Griffin (2013) claim that questionnaires consist of questions that are methodically shown to respondents in order to elicit their answers. There were four sections to the questionnaire: A, B, C, and D. The characteristics of the respondents were covered in Part A, while the first, second, and third research questions were covered in Parts B, C, and D. All responder categories utilized the surveys. The questionnaires were constituted of both open and closed questions. The research also made use of a 5-point Likert scale in the questionnaires.

3.5 Validity and Reliability of the Research Instrument

3.5.1 Pilot Test

To help the researcher evaluate the research instruments, a pilot study was done. This was done in order to regulate the research instruments' usefulness. To explore the degree of departure from the actual research, the pilot study incorporated a previous study on the actual participants from the companies. Two weeks beforehand, a pilot study was done at three banks to assist the researcher in assessing the research tools. The selection of the banks was based on their substantial client base and innovative efforts. This represented 10% of the study sample in accordance with the suggestion of Mugenda and Mugenda (2011) who recommends the use of 10% of the sample size for purposes of pilot study. This meant that the findings would be representative of the overall situation in the market.

3.5.2 Validity of the Research Instrument

Construct validity, criterion validity, and face validity were all utilized in this investigation. The degree to which a test seems to assess what it is intended to measure is known as face validity. A test is considered to have good face validity if most participants feel that the test items adequately evaluate what the exam is intended to measure. The researcher solicited feedback on the questionnaire from the supervisor and other specialists to guarantee face validity. The researcher ensured that the measures and indicators are carefully developed utilising relevant, up-to-date information in order to achieve construct validity. Only pertinent inquiries that intended to gauge established indicators were involved in the survey. An assessment of a measure's degree of agreement with a gold standard is called criterion validity. The research has measured what it was supposed to assess if the correlation is high.

3.5.3 Reliability of the Research Instrument

In a pilot study, the researcher administered the research instruments to study participants who were not participating in order to explore the dependability of the data gathering tools. The findings of both exams were identical, and the researcher would use their answers to determine how helpful the questionnaires were. The test-and-retest approach was employed to guarantee the validity of the questions on the questionnaire and other research tools. After the questionnaire was given, values were assigned to its items for scoring purposes in order to determine its reliability. Next, the odd versus even approach was used to divide the things in half. An appropriate reliability coefficient was 0.7.

The application of the coefficient alpha was recognized by Cronbach (1951), who also made it prominent. Yin (2017) states that a reliability of 0.7 or above indicates that an item is internally consistent when it comes to hypothesizing construct measures. Each element in this study was considered to have a co-efficient of more than 0.7. The reliability results were as displayed in Table 3.2.

Table 2: Reliability Analysis

	Reliability Alpha	Cronbach's	Number of Items	Comments
Internet banking	.732		15	Acceptable
Mobile banking	.801		15	Acceptable
Electronic funds transfer	.761		15	Acceptable
Organizational outcomes	.713		15	Acceptable

3.6 Data Collection Procedure

To gather data, permission was first be sought from NACOSTI and the graduate school board at Kenyatta University. Once authorized, the management of the relevant banks were notified. After receiving consent from the banks, a date for data gathering was scheduled. On the designated day, the researcher visited the banks and distributed questionnaires. Once the respondents completed the surveys, the researcher collected them later that day.

3.7 Data Analysis and Presentation

Creswell (2014) defines data analysis as the act of providing structure, order, and relevance to the enormous amount of information that has been acquired. The analysis was done using SPSS version 23. Data was cleansed, coded, inputted, and then examined in order to do this. Quantitative data was summarized, categorized, and modified to eliminate inconsistencies for simpler tabulation and comprehension. The findings were described using descriptive statistics to highlight the average respondent and the overall pattern of responses. The findings which were displayed as frequencies and percentages, were methodically illustrated using frequency tables, charts and narratives. The research also utilized inferential statistics by merging the variables into a multivariate regression model and a linear regression model.

The multiple linear regression equation ($Y = a+ \beta_1 X_1+ \beta_2 X_3+ \beta_3 X_3+e$) was used

Where;

y= Outcomes of commercial banks

a = Constant or intercept
β_1, β_2, and β_3 are Beta coefficient for X_1, X_2 and X_3.
X_1; Internet Banking
X_2; Mobile Banking
X_3; Electronic Funds Transfers
e is the error term

4.0 Results and Discussion

4.1 Response Rate

One hundred and fifty (150) questionnaires were issued and out of these, 118 were returned for analysis representing a response rate of 78.7%. This information is relayed on Table 4.1;

Table 3: Response Rate

	Issued	**Returned**	**Not returned**
No. of questionnaires	150	118	32
Percentage	100	78.7	21.3

118 responses were received from the respondents and these therefore formed the basis for data analysis.

4.2 Demographic Information

4.2.1 Gender of Respondents

Findings on gender are relayed on Table 4.2;

Table 4: Gender of Respondents

Gender	**Frequency**	**Percent**
Male	73	61.9
Female	45	38.1
Total	**118**	**100.0**

4.2.2 Age

Findings on age have been presented below;

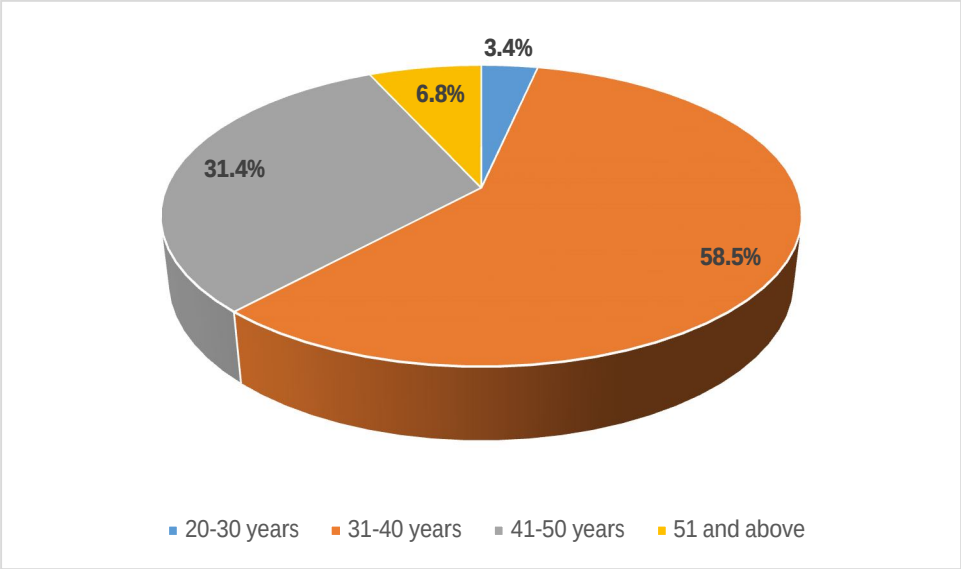


Figure 2: Age of Respondents

4.2.3 Duration of Work

The findings were as presented on Table 4.3;

Table 5: Duration of Work

Duration	Frequency	Percent
1-4 years	18	15.3
5-9 years	59	50.0
10-14 years	24	20.3
Above 15 years	17	14.4
Total	**118**	**100.0**

4.2.4 Designation

The findings indicated that all the respondents were departmental managers with 24 from operations, 22 from customer relations, 27 from ICT, 25 from customer care, and 20 from HR.

4.3 Descriptive statistics

In the data analysis, central tendency was measured using the mean, and dispersion was measured using the standard deviation for each variable. An explanation of the results for each variable is provided, along with the overall mean and standard deviation for each variable, after the relevant table summarizing the descriptive data.

4.3.1 Internet Banking

The first objective was aimed at determining the effects of internet banking on the organizational outcomes. The study first sought to ascertain whether internet banking has been largely adopted by the bank. The findings were as shown below;

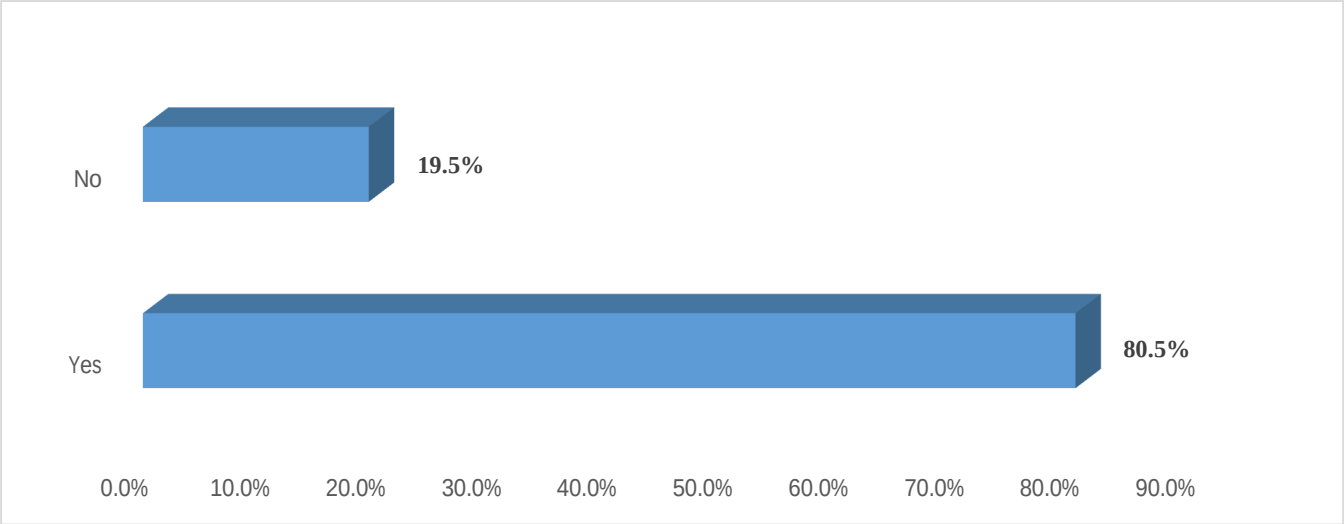


Figure 3: Internet Banking Adoption

Table 6: Effects of Internet banking on organizational outcomes

	Mean	Std. Dev.
Internet banking has been used by the bank over the last ten years	3.58	1.355
By using internet banking, customers have been able to promptly conduct bill payment operations	3.69	1.252
The number of loan applications done via internet banking has increased	3.17	1.440
The use of internet banking platform for making transfers has increased	3.68	1.300
Internet banking has increased the organization's visibility.	3.53	1.369
Aggregate Mean and Std. Dev.	**3.53**	**1.343**

4.3.2 Mobile Banking

The second objective of the study sought to establish the effects of mobile banking on organizational outcomes. From the findings, it was established that the level of mobile banking has been in the rise over the years as respondents indicated that since the inception of mobile banking, the rate of mobile phone ownership among the populations has been on the rise and in the same way, the uptake or mobile banking has been on the rise. In terms of organizational outcome, the

respondents stated that so much growth has been achieved as a result of mobile banking. Top among the achievements cited was the ability of banks to reach the unbanked populations through mobile banking. The findings further showed that mobile banking has enhanced the level of customer satisfaction while increasing the level of customer access to banking services. As a follow up question, the study sought to find out whether phone ownership was directly related to uptake of mobile banking. The responses were as shown on table 4.5;

Table 7: Phone Ownership and Mobile Banking

Response	Frequency	Percent
Yes	90	76.3
No	28	23.7
Total	**118**	**100**

Table 8: Effects Of Mobile Banking on Organizational Outcomes

	Mean	Std. Dev.
Customer satisfaction has increased due to use of mobile banking services.	3.57	1.349
Mobile banking makes financial services more accessible to customers.	3.47	1.436
Mobile banking has improved the security of the financial sector.	3.80	1.399
Mobile banking has boosted the bank's long-term performance.	3.65	1.323
Technological change has brought new development and innovation in the banking process.	3.41	1.463
Aggregate Mean and Std. Dev.	**3.58**	**1.394**

4.3.3 Electronic Funds Transfers

The study's third objective was to find out the effects of electronic funds transfers on the organizational outcomes and based on the responses, several effects were cited as being attributable to organizational outcomes as a result of electronic funds transfer. These were also responsible for the success of commercial banks. The study findings indicated that electronic funds transfer has made it possible for customers to conduct their banking activities conveniently. The responses showed that customers are able to do their transactions conveniently, and within the shortest time. Further findings have been presented on Table 9;

Table 9: Effects of Electronic Funds Transfer on Organizational Outcomes

	Mean	Std. Dev.
Electronic funds transfer ensures high levels of convenience to the customers	3.50	1.382
Security of services offered through electronic funds transfer ensure that the clients' finances are safe	3.54	1.442
This innovation has been lauded for the low transaction costs	3.07	1.472
Customers are able to transact within the shortest time	3.46	1.418
Electronic funds transfer has enabled banks to have access to more customers	3.43	1.522
Aggregate Mean and Std. Dev.	**3.40**	**1.447**

4.3.4 Organizational Outcomes of Commercial Banks

The study sought to find out the trends in outcomes recorded by commercial banks and according to the responses, most commercial banks have registered improved outcomes over the past ten years. This has been signified by improved service efficiency, increased customer satisfaction, increased penetration of services, as well as an improvement in the levels of profitability recorded by banks over the same period of ten years. The respondents also stated that the banks have used innovation in various ways to improve outcome. This has been by way of incorporation of many technological functions in their services. Many banks have developed applications that customers can install into their phones and access all the banking services from their homes. Further, commercial banks have invested more funds into internet banking and electronic funds transfer. A number of banks have adopted the use of agents as a way of reaching more customers. This is an innovation that ensured that even the unbanked individuals in remote areas are able to access banking services with ease. Further findings on organizational outcomes of commercial banks have been presented on Table 10;

Table 10: Organizational Outcomes of Commercial Banks

	Mean	Std. Dev.
Product quality leadership in the market has been registered in the last five years	2.75	1.296
Customer contentment as reported has improved in the last two years	3.22	1.520
Cost has been minimized over the last period	3.14	1.581
Higher levels of profitability have been registered	3.21	1.574
Positive outcomes have been registered overall over the last few years	3.64	1.330

Innovation has helped banks to improve operational efficiency	3.20	1.522
Aggregate Mean and Std. Dev.	**3.19**	**1.471**

4.4 Correlation Analysis

The usefulness of correlation was demonstrated using Pearson correlation. The significance level was tested at a 95% confidence level using these connections.

Table 11: Correlation Analysis

		Internet Banking	Mobile Banking	Electronic Funds Transfer	Organizational Outcomes
Internet Banking	Pearson Correlation	1	.072	.011	.018
	Sig. (2-tailed)		.436	.909	.847
	N	118	118	118	118
Mobile Banking	Pearson Correlation	.072	1	-.006	.186*
	Sig. (2-tailed)	.436		.951	.044
	N	118	118	118	118
Electronic Funds Transfer	Pearson Correlation	.011	-.006	1	-.198*
	Sig. (2-tailed)	.909	.951		.032
	N	118	118	118	118
Organizational Outcomes	Pearson Correlation	.018	.186*	-.198*	1
	Sig. (2-tailed)	.847	.044	.032	
	N	118	118	118	118

4.5 Test of Hypothesis

A unit increase in scores of internet banking would be responsible for 0.007 increase in organizational outcomes. This variable was not significant, shown by 0.941 ($P > .05$). This led to the adoption of the null hypothesis stating that there is no significant relationship between internet banking and organizational outcome and rejection of the alternate hypothesis. The findings further showed that with a unit increase in mobile banking, there would be a 0.200 increase in the scores of organizational outcomes. This variable had a positive significant level of 0.044 ($P < .05$). With these findings, the null hypothesis was rejected and the alternate hypothesis adopted, showing that there is a positive significant relationship between mobile banking and organizational outcomes of commercial banks.

Findings relayed on the table further showed that a unit increase in electronic funds transfer would result in a -0.203 increase in organizational outcomes of commercial banks in Nairobi City County. This variable had a positive significance represented by the p value of 0.031 ($P < .05$). This led to the adoption of the alternate hypothesis and rejection of the null hypothesis, showing that there is a positive significance relationship between electronic funds transfer and organizational outcome of commercial banks

5.0 Conclusion

5.1.1 Internet Banking and Organizational Outcomes

The study concluded that internet banking, if used properly by banks, can result in increased customer satisfaction and retention. Banks have incorporated the use of internet banking for the purpose of improving on service delivery. Internet banking is also used by banks to keep them competitive in the market. To a large extent, the use of internet banking has enabled customers to do their transactions promptly. Internet banking has also ensured that transfers are made by customers at a larger scale.

5.1.2 Mobile Banking and Organizational Outcomes

The study established that so much growth has been achieved as a result of mobile banking, and among these is the ability of banks to reach the unbanked populations through mobile banking. It can also be concluded that the use of mobile banking has the potential of increasing the long-term performance of a bank. Mobile banking also increases the level of customer satisfaction because of the ease with which banking services can be accessed through mobile banking.

5.1.3 Electronic Funds Transfers and Organizational Outcomes

Electronic funds transfer introduces convenience to customers in terms of access to banking services. Cost of transactions have also been seen to reduce as a result of incorporating electronic funds transfer into banking. As a consequence of customers being able to transact from far, electronic funds transfer has ensured that banks are able to access more customers with ease. The study also concludes that the use of electronic funds transfer also increases security of funds as a number of security measures are put in place to protect the customers' money. This in turn increases customer confidence, making it possible for them to transact more, thereby increasing the banks' outcomes.

6.0 Recommendations

Banks need to increase their use of technology in their provision of services. This is because, according to the study findings, the use of technology in banking has several ways by which it can improve the overall outcomes of these banks. When banks use internet banking, they are able to serve customers more conveniently and increase visibility. This would in the long run lead to an overall increase in organizational outcomes. Banks should maximize on the current increase in the number of mobile phone owners and initiate campaigns aimed at onboarding more customers to their mobile banking platforms. When this is done properly, these banks will be able to increase the number of customers that they are able to serve at a given time. Increased number of customers directly correlates with improved organizational outcomes. Banks should research into, and embrace the adoption of artificial intelligence in the delivery of services. By doing so, the banking sector would be at par with other sectors in terms of technology adoption and innovation. Using

radical innovative approaches such as artificial intelligence has been seen to reduce operation costs in other sectors and if used in the banking sector, increased outcomes can be achieved.

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