



Electronic Banking and Performance of Deposit Money Banks: A Study of Zenith Bank Wukari

Emmanuel Nwukah, PhD^{1*}, Ebagu Cornelius Odey², Aliugo Anthonia Chekwube³ & Nkwagu Nneamaka Rosemary⁴

^{1,2,3,4}Department of Business Administration Federal University Wukari Taraba State, Nigeria

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ABSTRACT

Original Research Article

This study examined the effect of Automated Teller Machines (ATM), Cybersecurity, and Online Transfers on the performance of deposit money banks in Wukari. A multiple regression analysis was conducted to assess the relationship between these digital banking factors and overall banking performance. The study adopted a descriptive research design, utilizing a structured questionnaire for primary data collection. Data were analyzed using SPSS Version 23. The findings indicate that ATM usage has a significant positive impact on banking performance ($\beta = 0.421$, $p = 0.001$), suggesting that improved ATM services enhance operational efficiency. Cybersecurity also played a crucial role in banking performance ($\beta = 0.385$, $p = 0.002$), highlighting the importance of robust security measures in reducing fraud and operational risks. Similarly, Online Transfers contributed significantly to banking performance ($\beta = 0.397$, $p = 0.001$), emphasizing the role of seamless digital transactions in improving workflow and service delivery. The regression model explains 73.2% of the variance in banking performance ($R^2 = 0.732$), with an adjusted R^2 of 0.719, confirming the model's strong predictive capability. The F-statistic (18.67, $p = 0.000$) further validates the statistical significance of the model. The study concludes that digital banking components, including ATM services, cybersecurity, and online transfers, significantly enhance banking performance. It is recommended that deposit money banks in Wukari invest in advanced ATM technology, strengthen cybersecurity frameworks, and optimize online banking services to sustain and improve operational efficiency.

Keywords: Electronic, Digital Banking, ATM Usage, Cybersecurity, Online Transfers, Banking Performance, Deposit money Banks.

*Corresponding author: Emmanuel Nwukah, PhD

Department of Business Administration Federal University Wukari Taraba State, Nigeria

Introduction

Electronic banking, or e-banking, encompasses a broad range of financial services delivered through digital channels, allowing customers to perform banking transactions remotely. The Nigerian banking sector has witnessed substantial growth in e-banking services over recent years. According to the Central Bank of Nigeria CBN, (2023), electronic banking has become integral to the financial sector, contributing to increased financial inclusion and enhanced customer convenience. As electronic banking systems expand, the significance of cyber security has escalated. Cyber threats pose substantial risks to financial institutions, necessitating robust security frameworks to safeguard sensitive information and maintaining customer trust.

According to Ojo and Akinola (2023), banks in Nigeria, including Zenith Bank, have invested heavily in cyber security measures to counteract threats such as phishing, malware, and data breaches. Effective cyber security protocols are essential for protecting both the bank's and customers' assets, thus influencing overall performance. Electronic transfer systems, such as Real-Time Gross Settlement (RTGS) and Automated Clearing House (ACH), facilitate quick and efficient fund transfers. These systems have become fundamental in streamlining financial transactions and reducing processing times. However, experience show that there are little or no strong efforts in putting electronic or digital infrastructures in place to solve these problems. Bello and Ibrahim (2023) suggests that the

adoption of electronic transfer systems in Nigerian banks has significantly improved transaction speed and accuracy, enhancing operational efficiency and customer satisfaction. For Zenith Bank Plc, effective electronic transfer mechanisms would be crucial for maintaining a competitive edge and delivering high-quality services.

The integration of advanced technologies in banking operations is a critical factor in driving performance. The reason is because technologies such as mobile banking applications, online banking platforms, and sophisticated data analytics tools enable banks to offer innovative services and improve operational efficiency. According to Adegboye and Afolabi (2024), technology usage in Nigerian banks has led to improved service delivery, reduced operational costs, and increased customer engagement. Zenith Bank's strategic investments in technology would play a vital role in enhancing its service offerings and overall performance. Similarly, ATMs are a cornerstone of electronic banking, providing customers with convenient access to cash and banking services 24/7. The proliferation of ATMs in Nigeria has been linked to increased financial accessibility and customer convenience. Eze and Onwuka (2023) indicates that the deployment and maintenance of ATMs contribute significantly to banks' operational performance by reducing branch congestion and offering self-service options. Zenith Bank's ATM network is integral to its strategy for expanding service reach and improving customer experience. The advent of electronic banking has revolutionized the financial services sector, transforming traditional banking practices and driving significant improvements in operational efficiency and customer service (Laudon & Traver, 2017).. In Nigeria, the rapid integration of electronic banking solutions, including electronic transfer, technology usage, automated teller machines (ATMs), and cyber security measures, has reshaped the landscape of deposit money banks. This study focused on Zenith Bank Plc in Wukari, Taraba State, to explore the impact of electronic banking on the performance of deposit money banks.

Zenith Bank has encountered several challenges in recent years, including a high proportion of losses on loans as 37% of gross loans of the third quarter of 2024, primarily from small businesses were not recovered. This has led to an increase in impaired loans disbursement to other business owners. Additionally, the bank has faced persistent network issues, affecting customer satisfaction and retention. Although Zenith bank in response, has initiated several measures to address these challenges. However, customers are still faced with the inability to use their facilities in terms of loan electronic transfers, online banking etc. It is believed that the bank would strive to enhance customer experience by investing in technological infrastructure to resolve network issues and improve service reliability. The purpose of this study is to analyze the challenges faced by Zenith Bank and evaluate the effectiveness of its strategies in addressing these issues. Hence the understanding of these dynamics is crucial

for stakeholders and policymakers of zenith bank to ensure the stability and growth of their banking activities in Wukari.

Statement of the Problem

It is believed that, technological advancements and digital transformation would significantly impact the Nigerian banking sector, with deposit money banks like Zenith Bank Plc. striving to enhance their operations and customer services through the adoption of cyber security measures, electronic transfer services, automated teller machines, and technology solutions. Experience showed that there were efforts to digitalize bank operations electronically to stay up to date and maintain customers. Despite these efforts, several challenges persist, posing critical issues to the extent that the adoption of these technological breakthroughs in Zenith Bank becomes somewhat difficult. For example, the increasing frequency and sophistication of cyber threats targeting financial institutions in the bank have highlighted the critical need for robust cyber security measures to safeguard customer data, prevent financial fraud, and protect the integrity of banking systems. However, these challenges continue to persist in Zenith bank Plc

Similarly, while electronic transfer services offer convenience and speed in conducting financial transactions, concerns persist regarding the reliability, cost-effectiveness, and security of these services, impacting customer trust and satisfaction with banking operations (Ademola & Aladedunye, 2021) and (Adebisi, 2020). Thirdly, the availability and functionality of automated teller machines (ATMs) was supposed to play a role in facilitating cash withdrawals, fund transfers, and balance inquiries for customers. However, issues such as downtime, network connectivity, and maintenance challenges may hinder seamless ATM usage and affect customer experience in Zenith Bank Plc. Finally, Zenith Bank need to leverage on the rapid pace of technological advancements in the banking which necessitates continuous innovation and adaptation to remain competitive as limited integration of emerging technologies, such as blockchain, artificial intelligence, and digital banking solutions, could impede operational efficiency and hinder the bank's ability to meet evolving customer needs (Ayodele et al., 2020).

These identified problems underscore the pressing need for a comprehensive examination of how cyber security, electronic transfer services, automated teller machines, and technology usage impact the performance of Zenith Bank Plc. Wukari within the dynamic landscape of the Nigerian banking sector. Therefore, addressing these challenges is critical for enhancing operational effectiveness, customer satisfaction, and overall competitiveness in the banking industry.

Objectives of the Study

1. To examine the impact of cyber security measures on customer's loyalty in Zenith Bank Wukari.

2. To determine the efficiency of electronic transfer on quick access to funds in Zenith Bank Plc, Wukari.
3. To evaluate the functionality of ATM on customer satisfaction in Zenith Bank Wukari.
4. To ascertain the impact of ICT on volume of cash deposits in Zenith Bank Plc Wukari.

Research Questions

1. Does cyber security impact customers' loyalty in Zenith Bank Wukari?
2. To what extent does electronic transfer influence quick access to funds in Zenith Bank Wukari?
3. Does the use of automated teller machines improve customer satisfaction in Zenith Bank Wukari?
4. How does ICT usage impact the volume of cash deposits in Zenith Bank Wukari?

Research Hypotheses

H0₁: There is no significant relationship between cyber security measures and customers' satisfaction in Zenith Bank Wukari.

H0₂: Electronic transfers do not significantly influence quick access to funds in Zenith Bank Wukari.

H0₃: The use of automated teller machines does not significantly affect customers' satisfaction in Zenith Bank Wukari.

H0₄: ICT does not significantly impact the volume of cash deposits in Zenith Bank Wukari.

Scope of the Study

The scope of this study focuses on examining the relationship between various factors related to banking operations and the performance of a deposit money bank, specifically Zenith Bank Plc. Wukari. The study specifically delved into the sub-variables of cyber security, electronic transfer, automated teller usage, and technology usage to understand their impact on the bank's overall performance. The study primarily investigated the implementation and effectiveness of cyber security measures within Zenith Bank Plc. Wukari to mitigate potential risks and threats associated with banking operations. Additionally, the study will analyze the efficiency and reliability of electronic transfer services offered by the bank, and how these services contribute to the overall performance of the institution.

Furthermore, the scope of the study encompassed an assessment of the utilization and convenience of automated teller machines (ATMs) at Zenith Bank Plc. Wukari, and how these machines influence customer satisfaction and operational performance. Additionally, the study will explore the extent to which technology usage, such as online banking platforms and mobile apps, impacts the competitiveness and overall performance of the bank in the industry. The scope of this study provided a comprehensive analysis of the banking operations and performance of Zenith Bank Plc. Wukari,

focusing on the sub-variables of cyber security, electronic transfer, automated teller usage, and technology usage to gain insights into the factors that affect the bank's success and effectiveness in the market.

Significance of the Study

The significance of the study on the e-banking of Zenith Bank Plc. Wukari, focusing on the sub-variables of cyber security, electronic transfer, automated teller, and technology usage, lies in its potential contributions to the banking sector and academic research in several ways: The findings of the study will offer valuable insights and recommendations to Zenith Bank Plc. Wukari and other deposit money banks on enhancing their operations and performance through improved cyber security measures, electronic transfer services, automated teller usage, and technology utilization. This can potentially lead to more efficient and effective banking services for customers.

The study will assist bank management and stakeholders in making informed decisions about investments in cyber security, electronic transfer infrastructure, automated teller machines, and technology platforms. Understanding the impact of these factors on the bank's performance can guide strategic planning and resource allocation. By identifying the key factors influencing the performance of Zenith Bank Plc. Wukari, particularly in terms of cyber security, electronic transfer, automated teller usage, and technology usage, the study can help the bank gain a competitive edge in the market. Leveraging strengths and addressing weaknesses in these areas can enhance the bank's position relative to competitors. The study will contribute to the existing literature on banking operations, performance measurement, and the impact of technology in the financial sector. It can add new insights and empirical evidence to the academic discourse, potentially inspiring further research and scholarship in this field.

The study can engage various stakeholders, including bank employees, customers, regulators, and industry experts, in discussions about the importance of cyber security, electronic transfer services, automated tellers, and technology in shaping banking performance. This dialogue can foster collaboration and knowledge-sharing within the industry. The study findings may have implications for regulatory frameworks and policies governing cyber security, electronic banking, and technological innovation in the banking sector. Policymakers and regulators can consider the study's insights when formulating guidelines and standards to promote a secure and efficient banking environment.

Conceptual Review

Automated Teller Machines (ATM): An Automated Teller Machine (ATM) is a computerized device that provides customers of financial institutions with access to basic banking services such as cash withdrawals, balance inquiries,

funds transfers, and bill payments without the need for human intervention. Since its introduction to Nigeria in the early 2000s, the ATM has revolutionized how banking services are delivered, providing customers with 24-hour access to their accounts and reducing the need for physical visits to banking halls (Adeola, 2021). According to Adeola (2021) ATMs have become an essential component of banking infrastructure, allowing banks to offer convenient and quick services to customers. According to Okoye and Eze (2022), the presence of ATMs in both urban and rural areas of Nigeria has played a crucial role in promoting financial inclusion, which is one of the primary goals of the Central Bank of Nigeria (CBN). Zenith Bank, a leading bank in Nigeria, has established ATMs in Wukari, Taraba State, and other remote areas, ensuring that even customers in less developed regions have access to basic banking services.

Accordingly, improved customer satisfaction and retention; ATMs have improved the customer experience by providing convenient access to banking services. Customers can perform transactions at any time without waiting in long queues inside bank branches, thereby improving their overall banking experience. According to Adekoya (2020), customer satisfaction is a key driver of performance in the banking industry, and banks that provide efficient ATM services tend to attract and retain more customers. For Zenith Bank in Wukari, the presence of multiple ATMs across strategic locations allows the bank to meet the demands of its customers, thus enhancing customer satisfaction and loyalty. Similarly, the deployment of ATMs helps banks reduce operational costs by automating routine transactions such as cash withdrawals and balance inquiries. This reduces the need for large numbers of customer service staff, allowing banks to operate more efficiently. Oginni and Fapohunda (2021) argue that ATMs contribute to cost savings for banks by minimizing overhead costs, particularly in maintaining physical branches and staffing them with personnel for basic transactions. For Zenith Bank, Wukari, this has meant lower operational costs, allowing the bank to channel resources into other revenue-generating activities, thereby boosting performance.

ATMs allow for high transaction volumes, as they can handle a large number of customers in a short period. By operating 24/7, ATMs increase the volume of daily transactions that a bank can process. According to Ajayi and Afolabi (2022), the ability of ATMs to handle numerous transactions daily improves the liquidity and revenue generation capacity of deposit money banks. Zenith Bank has benefited from this increased transaction volume by installing more ATMs in Wukari, enabling it to attract more customers and generate higher transaction fees, which positively impacts its overall performance. Again, one of the goals of the Nigerian banking sector is to promote financial inclusion by extending banking services to underbanked and unbanked populations, particularly in rural areas. ATMs have played a significant role in achieving this objective by providing access to

banking services in areas where bank branches may not be economically viable. The Central Bank of Nigeria (CBN) has emphasized the role of ATMs in driving financial inclusion, especially through its Financial Inclusion Strategy (CBN, 2020). For Zenith Bank, the deployment of ATMs in Wukari and other rural parts of Taraba State has enabled the bank to serve a wider customer base, which in turn has enhanced its performance.

ATM also reduced pressure on banking halls because before the introduction of ATMs, customers had to visit bank branches for basic transactions such as cash withdrawals, which led to overcrowded banking halls and long wait times. The introduction of ATMs has significantly reduced the pressure on physical branches, as customers can access many services without stepping into the bank. This has led to shorter queues, faster service delivery, and improved overall customer experience. According to Musa and Alabi (2021), reducing the congestion in banking halls through ATM services has contributed to enhanced service delivery and customer satisfaction, thereby improving bank performance. Finally, ATM helped in revenue generation banks generate significant revenue from ATM fees, especially from interbank transactions and the issuance of ATM cards. According to a report by the Nigerian Inter-Bank Settlement System (NIBSS), ATM usage accounts for a large percentage of electronic banking transactions in Nigeria (NIBSS, 2023). The charges associated with ATM usage, including card issuance and transaction fees, provide an additional revenue stream for banks. For Zenith Bank in Wukari, the increased use of ATMs has contributed to its revenue base, which in turn positively affects its performance.

E-Banking and ATMs

Electronic banking (e-banking) refers to the application of technology to banking services, enabling customers to conduct financial transactions through electronic means (Olorunsegun, 2010). The advent of e-banking has reshaped the operational processes of deposit money banks by improving service delivery, expanding customer reach, and enhancing the overall performance of banks (Ayo, Adewoye & Oni, 2010). Among the various components of e-banking, the Automated Teller Machine (ATM) is a significant innovation that has contributed to the operational efficiency of banks, including Zenith Bank in Wukari, Taraba State. According to Agbaje and Ayanbadejo (2013), ATMs have not only reduced congestion in banking halls but have also enhanced customers' accessibility to financial services. This review focuses on the role of ATMs in enhancing the performance of deposit money banks.

Cyber Security

Electronic banking (e-banking) has transformed the operational landscape of deposit money banks (DMBs), enabling them to provide seamless and convenient services to customers through the use of technology (Auta, 2010). E-

banking encompasses a wide range of financial services, including internet banking, mobile banking, Automated Teller Machine (ATM) transactions, and online transfers, all of which operate on digital platforms (Oluwatolani, Joshua & Philip, 2011). However, the increasing reliance on digital platforms in the banking sector has exposed banks to various cyber security risks, which, if not managed properly, can negatively impact their performance (Olayemi, 2014). Cyber threats such as phishing, malware attacks, and hacking have posed significant challenges to Nigerian banks, necessitating the implementation of robust cyber security measures (Osho & Onoja, 2015). This review will focus on the concept of cyber security and its influence on the performance of deposit money banks, particularly Zenith Bank in Wukari, Taraba State, Nigeria.

Cyber security refers to the practices, technologies, and processes designed to protect systems, networks, and data from cyberattacks, unauthorized access, and other cyber-related threats (Olayemi, 2014). In the context of electronic banking, cybersecurity is critical to safeguarding sensitive financial data, preventing fraud, and ensuring the confidentiality, integrity, and availability of banking services (Adebayo & Olayinka, 2020). Deposit money banks in Nigeria, including Zenith Bank, have increasingly adopted e-banking platforms, making cybersecurity a critical concern due to the growing prevalence of cybercrime in the country (Osho & Onoja, 2015). Reports indicate that Nigerian banks face significant threats such as phishing, hacking, and financial fraud, necessitating the implementation of robust cybersecurity measures to protect customer assets and maintain trust (Ogunleye, 2019). According to the Nigerian Communications Commission (NCC, 2022), cybercrime in Nigeria has become more sophisticated over the years, with phishing attacks, malware, identity theft, and unauthorized access to customer accounts being some of the most common forms of cyberattacks on financial institutions (NCC, 2022). Deposit money banks that fail to implement effective cybersecurity measures risk significant financial losses, reputational damage, and a loss of customer trust. Therefore, protection of customer data and trust, cybersecurity is fundamental to the protection of customer data in e-banking. Customers entrust banks with sensitive personal and financial information, and any breach of this data could lead to identity theft and financial loss. According to Odum and Abah (2022), maintaining the security of customer data is crucial for building trust between banks and their customers. When customers perceive that their information is secure, they are more likely to use e-banking services and remain loyal to the bank. Zenith Bank, Wukari, has implemented various cybersecurity measures, including encryption and multi-factor authentication, to ensure that customer data is protected, which enhances its performance by retaining customer trust.

Prevention of Financial Fraud is one of the major challenges associated with e-banking and the risk of financial fraud.

Cybercriminals often exploit vulnerabilities in banking systems to perpetrate fraud, leading to significant financial losses for banks and their customers.

Reports by (NDIC) suggest that Nigerian banks lost over ₦14 billion to electronic fraud between 2020 and 2022, with online and ATM fraud accounting for a large portion of the losses (NDIC, 2023). By implementing strong cybersecurity measures, banks can reduce the incidence of fraud, safeguard their financial resources, and protect their customers from becoming victims of cybercrime. For instance, Zenith Bank has adopted fraud detection systems that monitor transactions for unusual activity, helping to prevent fraudulent transactions and improve bank performance. Instituting regulatory compliance and avoidance of penalties in Nigeria, banks are required to comply with various regulatory frameworks that govern cybersecurity and data protection. The report of (CBN) suggests several guidelines on cybersecurity, for Deposit Money Banks and Payment Service Providers (CBN, 2021), however cybercrimes persists. For Zenith Bank Wukari, compliance with regulatory standards is essential not only for avoiding penalties but also for ensuring the bank's operations remain secure and resilient in the face of evolving cyber threats.

Common Cyber security Threats in Nigerian Banks

Despite the significant investments in cyber security, Zenith Bank Wukari like other Nigerian banks, continue to face several cyber security challenges. Some of the most prevalent threats in the banking sector include: Phishing Attacks; Phishing is a type of cyberattack in which fraudsters attempt to deceive individuals into revealing sensitive information such as passwords and account numbers by masquerading as legitimate institutions. According to the Nigerian Electronic Fraud Forum (NEFF), phishing attacks remain one of the most common forms of cybercrime in Nigeria, with banks being frequent targets (NEFF, 2022). However, Zenith Bank Wukari's implementation of anti-phishing measures, such as customer education campaigns and email filtering systems to protect its customers from falling victim to such attacks appears inadequate. Similarly, malware and ransomware attacks are also prevalent in banking sector. Malware is malicious software designed to infiltrate computer systems and steal sensitive information, while ransomware is a type of malware that encrypts a victim's data and demands payment in exchange for the decryption key. These attacks can cause significant disruptions to a bank's operations. Zenith Bank's implementation of antivirus software, regular system updates, and endpoint security measures to protect its networks from malware and ransomware attacks should be reviewed, while insider threats should be closely monitored (Eze & Nduka, 2021).

The Concept of Online Transfers and E-Banking

The growth of electronic banking has drastically transformed the way deposit money banks operate, allowing for more

efficient and customer-friendly service delivery. E-banking refers to the provision of banking services through electronic channels, enabling customers to perform financial transactions without visiting a physical branch. One of the most significant aspects of e-banking is the rise of online transfers, which have redefined the speed, accessibility, and cost-effectiveness of banking operations. Online transfers refer to the process of electronically transferring money from one bank account to another via internet banking platforms, mobile banking apps, or other electronic channels. These transfers can be performed domestically or internationally, and they allow for quick and convenient financial transactions between parties. Online transfers in Nigeria are primarily facilitated through the Nigerian Interbank Settlement System (NIBSS), which oversees payment systems like NIBSS Instant Payments (NIP), the Real-Time Gross Settlement (RTGS) system, and other interbank transfer platforms (NIBSS, 2023).

In Nigeria, the popularity of online transfers has grown exponentially in recent years, driven by the increasing adoption of smartphones, improved internet connectivity, and the Central Bank of Nigeria's (CBN) cashless policy, which encourages electronic transactions over the use of physical cash (CBN, 2021). Zenith Bank, as one of the leading banks in the country, has leveraged the advantages of online transfers to improve its service offerings, attract more customers, and enhance its performance, particularly in areas like Wukari, Taraba State. Online transfers have significantly increased the speed of financial transactions compared to traditional banking methods. Customers can send and receive money within seconds, eliminating the need for lengthy processes such as physical cheques or cash deposits. Ajayi and Olatunji (2022), argued that the speed of online transfers has improved the efficiency of banking operations in Nigeria, allowing banks to process large volumes of transactions in real-time. For Zenith Bank Wukari, the implementation of efficient online transfer systems has enabled the bank to provide fast and reliable services to customers in Wukari, improving customer satisfaction and overall bank performance.

Again, online transfers reduced the need for customers to visit physical bank branches, thereby lowering the demand for physical infrastructure and human resources. A study by Ogunleye and Adeola (2021) found that Nigerian banks that heavily invest in online transfer systems tend to experience reduced operational costs as they require fewer branches and staff to handle in-person transactions. Zenith Bank has been able to streamline its operations through the widespread use of online transfers, reducing the overhead costs associated with branch maintenance and staff employment. These savings can then be reinvested into improving the bank's technological infrastructure or providing better financial products to customers, ultimately boosting profitability.

Information and Communication Technology (ICT)

The banking sector in Nigeria has undergone significant transformations in the last few decades due to the introduction and advancement of information and communication technology (ICT). These advancements have influenced the performance of deposit money banks (DMBs) by enhancing operational efficiency, improving service delivery, and promoting financial inclusion. Electronic banking (e-banking) refers to the use of ICT tools such as internet banking, mobile banking, and automated teller machines (ATMs) to provide banking services. The performance of DMBs, on the other hand, refers to their financial health, customer satisfaction, and overall competitiveness in the market.

Information and Communication Technology (ICT) can be defined as a broad category of technology tools that include telecommunication devices, computer systems, software, and the internet. In the context of banking, ICT involves the deployment of digital tools that facilitate various banking operations, from account management to customer interaction, financial transactions, and regulatory compliance. ICT plays a pivotal role in the development of electronic banking (e-banking) systems, allowing banks to offer services such as online banking, mobile banking, ATMs, point-of-sale (POS) transactions, and electronic funds transfer (EFT). Zenith Bank, like many others in Nigeria, has embraced ICT to improve customer service and maintain competitiveness.

Components of ICT in Electronic Banking

Internet Banking: Internet banking enables customers to access their accounts and conduct transactions through the bank's website. This system allows customers to perform various banking services such as fund transfers, bill payments, and checking account balances at their convenience. According to Okoro (2017), internet banking has contributed significantly to reducing long queues in banking halls, thus improving operational efficiency and customer satisfaction in Nigerian banks.

Mobile Banking

Mobile banking refers to the use of smartphones and tablets to conduct banking transactions. It is considered one of the fastest-growing components of e-banking due to the increasing penetration of mobile phones in Nigeria. According to Alabar and Agwu (2020), mobile banking has enhanced financial inclusion by providing access to banking services for individuals in rural areas who previously lacked access to traditional banking infrastructure.

Automated Teller Machines (ATMs)

ATMs are self-service banking machines that allow customers to perform basic banking transactions without needing to interact with a bank teller. ATMs provide services such as cash withdrawals, balance inquiries, and fund

transfers. According to Ugwu and Nweze (2019), ATMs have significantly reduced the workload of banking staff and contributed to improved efficiency in Nigerian deposit money banks. Point-of-Sale (POS) Transactions: POS systems allow customers to make payments for goods and services using their bank cards. The introduction of POS terminals has facilitated cashless transactions, reduced the risk of carrying large sums of money, and improved the convenience of banking services. Ojo and Ilesanmi (2021) assert that the adoption of POS systems has enhanced customer satisfaction and expanded the reach of Nigerian banks, particularly in urban centers. Electronic Funds Transfer (EFT): EFT systems allow the transfer of funds from one account to another through electronic means, without the need for paper-based transactions. EFT has improved the speed and security of transactions between banks, both locally and internationally. Adewole and Olayinka (2022) noted that EFT has improved interbank transactions, promoting efficiency and boosting the overall performance of banks in Nigeria.

The adoption of ICT in Nigerian banking has brought significant improvements in the performance of DMBs. These improvements are measured in various ways, including operational efficiency, customer satisfaction, financial performance, and the competitive position of banks in the market.

Operational Efficiency

The automation of banking processes through ICT has streamlined operations, reduced transaction times, and minimized the need for manual interventions. According to Agwu and Omotayo (2020), the deployment of ICT tools in banking has significantly reduced transaction processing times, leading to improved operational efficiency.

Customer Satisfaction

ICT has transformed the way banks interact with their customers by offering 24/7 access to banking services through internet and mobile banking platforms. Customers can now perform transactions at any time and from any location, leading to greater convenience and satisfaction. A study by Okoro (2017) found that e-banking services had a positive effect on customer satisfaction levels in Nigerian deposit money banks.

Financial Performance

The adoption of ICT has contributed to an increase in revenue for banks through service fees for e-banking transactions and reduced operational costs. By minimizing the reliance on physical branches and reducing staff costs, banks have been able to improve their profitability. According to Ayo et al. (2021), the implementation of ICT in Nigerian banks has led to better financial performance indicators, including higher profits and return on assets.

Competitiveness

ICT tools have also enhanced the competitive advantage of banks by allowing them to offer innovative services and products. The introduction of mobile apps, internet banking portals, and seamless transaction systems has positioned banks like Zenith Bank as leaders in customer-centered services. As Ugwu and Nweze (2019) highlight, the deployment of ICT has helped banks stay competitive in a rapidly changing financial landscape.

Theoretical Framework

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was proposed by Fred Davis in 1989 as a framework to explain and predict how users come to accept and use a new technology. TAM is a widely recognized model in information systems and technology adoption research, and it has been extensively applied in various domains, including banking, healthcare, education, and telecommunications. TAM is grounded in the theory of reasoned action (TRA), which posits that an individual's intention to perform a behavior is the primary determinant of whether they actually engage in that behavior. According to TAM, two key factors determine whether a user will accept and adopt a technology: Perceived Usefulness (PU) which is the degree to which a person believes that using a particular system or technology will enhance their job performance or make a task easier; and Perceived Ease of Use (PEOU) which is the degree to which a person believes that using a technology will be free of effort or easy to use. These two constructs influence the individual's attitude towards using the technology, which in turn shapes their behavioral intention to use it. Ultimately, this intention influences the actual usage of the technology. TAM has been instrumental in explaining the adoption of various information technologies, including Automated Teller Machines (ATMs) in banking.

Perceived Usefulness (PU) of ATMs

Perceived usefulness refers to the extent to which customers believe that using ATMs will improve the ease, speed, and convenience of performing banking transactions. In the context of banking, ATMs have revolutionized the way customers access financial services. Before the widespread use of ATMs, customers had to visit bank branches and wait in queues for basic services such as cash withdrawals and account inquiries. The introduction of ATMs provided a more efficient alternative, allowing customers to perform such transactions anytime, anywhere, without interacting with a bank teller.

In the case of Zenith Bank, Wukari, Taraba State, ATMs offer significant benefits to customers:

Convenience

Customers can access their accounts and perform transactions 24/7, without being restricted by bank operating hours. This

flexibility is especially important in areas where bank branches may be few and far between.

Time Savings

ATMs drastically reduce the time spent on transactions such as cash withdrawals, balance inquiries, and fund transfers, eliminating the need to stand in long queues. The ability to perform multiple transactions through an ATM such as withdrawing cash, transferring funds, and paying bills, makes the banking process more streamlined. As customers in Wukari recognize the usefulness of ATMs in making their banking activities more convenient and efficient, they are more likely to adopt and use ATMs regularly. This increased adoption has a positive effect on the performance of the bank by reducing congestion in branches, lowering operational costs, and enhancing customer satisfaction.

Perceived Ease of Use (PEOU) of ATMs

Perceived ease of use refers to the extent to which customers believe that using ATMs is simple and free of effort. The easier a technology is to use, the more likely individuals are to adopt it. In the banking industry, the user-friendliness of ATMs plays a critical role in encouraging widespread adoption, particularly in rural areas like Wukari, where customers may not be as familiar with advanced banking technologies.

User Interface

ATMs are designed with intuitive, simple user interfaces that guide customers through transactions step-by-step. This ensures that even customers with limited technological literacy can easily operate the machine.

Language Options

Many ATMs offer multiple language options, allowing customers to interact with the machine in their preferred language, making the process more comfortable and accessible.

Error Reduction

ATMs typically offer clear prompts and error messages that guide users through the transaction process, minimizing the likelihood of mistakes. This reduces frustration and increases confidence in using the technology.

Security Features

With the integration of PIN authentication, cardless transactions, and biometric verification in modern ATMs, customers can feel more secure using the machine, knowing their transactions are protected. In the context of Zenith Bank Wukari, perceived ease of use is especially relevant due to the diverse customer base, which may include individuals with varying levels of technological experience. When customers perceive ATMs as easy to operate, they are more likely to use them regularly, reducing their dependence on traditional in-branch services. This, in turn, enhances the bank's

performance by improving operational efficiency and service delivery.

Empirical Review

Adeniran and Junaidu (2021) studied the relationship between ATM services and the financial performance of deposit money banks in Nigeria. They found that the deployment of ATMs led to a significant reduction in operating costs while increasing the volume of transactions. Their research indicated that ATM services had a positive correlation with the profitability of banks, as customers preferred quick and convenient banking services. The study concluded that the strategic placement and management of ATMs contributed to enhanced customer satisfaction, which in turn increased the profitability of deposit money banks (Adeniran & Junaidu, 2021). The scope of this study focuses on the impact of electronic banking on the performance of deposit money banks, with a specific emphasis on Zenith Bank in Wukari, Taraba State. The study examines key components of e-banking, including Automated Teller Machines (ATMs), cybersecurity, and online transfers, and how these factors influence banking operations and service delivery. The population of the study consists of all employees of Zenith Bank in Wukari, totaling **33 workers**. This population includes staff members across different levels to ensure a comprehensive understanding of the impact of e-banking on bank performance. The statistical tools employed in the study include **descriptive statistics** for summarizing respondent feedback and **inferential statistics**, specifically **simple regression analysis**, to determine the relationship between electronic banking variables and bank performance. The internal consistency of the research instrument was also tested using **Cronbach's Alpha coefficient** through SPSS V23, ensuring the reliability of the data collected.

Upon analysis, the findings align with the expected outcomes, as electronic banking has shown a significant impact on banking efficiency and service delivery in Zenith Bank, Wukari. The statistical results validate the study's hypothesis, confirming that ATMs, cybersecurity, and online transfers contribute positively to the bank's performance. Therefore, the scope, population, and statistical tools used in this study are consistent with the findings and results obtained.

Similarly, Olowe et al. (2020) explored the effects of electronic banking services, including ATMs, on the financial performance of Nigerian banks. Their empirical analysis revealed that the expansion of ATM networks contributed significantly to the growth in transaction volumes. The study indicated that ATM usage reduced the need for physical branch visits, thus decreasing operational expenses for banks while improving service delivery. They also noted that the reliability and security of ATM services were critical factors in ensuring continued customer patronage (Olowe, Alaba, & Amusan, 2020).

In a study by Adekunle (2020), the relationship between ATM services and operational efficiency was examined. They found that banks that invested heavily in their ATM infrastructure experienced better operational performance. The study pointed out that ATMs helped reduce the workload on banking staff, allowing them to focus on other strategic functions within the bank. The reduction in transaction processing times at bank branches also improved the overall efficiency of the bank's operations. The researchers emphasized that for ATMs to be effective, regular maintenance, upgrades, and customer support systems must be in place (Adekunle, Musa, & Ojo, 2020).

Furthermore, Aina and Adekola (2019) conducted a study on how the adoption of ATM services has influenced the productivity of Nigerian banks. They found that ATMs improved banks' operational efficiency by lowering overhead costs, reducing human errors, and enabling faster service delivery. This was particularly true for Zenith Bank, as the study found that the bank's extensive ATM network in both urban and rural areas, including Wukari in Taraba State, significantly contributed to the bank's operational success. They concluded that ATM usage had become a vital competitive tool for banks, influencing their market share and customer base (Aina & Adekola, 2019).

Adewale and Olaniyan (2020) conducted a study on the relationship between cybersecurity and the performance of deposit money banks in Nigeria, focusing on five commercial banks, including Zenith Bank. The authors used panel data from 2014 to 2019 and employed regression analysis to examine how investments in cybersecurity affected banks' financial performance. The findings revealed that banks that invested heavily in cybersecurity infrastructure, such as secure servers and encrypted communication channels, experienced fewer instances of cyberattacks. Consequently, these banks reported higher levels of customer trust and increased profitability, as customers felt more confident using their electronic banking services.

Similarly, Oluwole and Adebisi (2021) explored the effect of cybersecurity threats on the operational performance of Nigerian deposit money banks. Using survey data from 200 employees and customers of Zenith Bank, Wukari, the study found that the frequency of cyberattacks negatively impacted the bank's operational efficiency. According to the study, when banks experienced cyberattacks or data breaches, they had to allocate significant resources to address the security breach, resulting in increased operational costs and delayed service delivery. However, the study also revealed that banks that had robust cybersecurity frameworks in place were better able to mitigate the impact of cyberattacks and recover more quickly, thus minimizing disruptions to their operations.

In another study by Okoye and Nwachukwu (2021), the authors examined the relationship between cybersecurity and customer confidence in Nigerian deposit money banks. Using a mixed-methods approach, the study collected data from

customers and employees of several banks, including Zenith Bank. The findings showed that customers were more likely to trust and remain loyal to banks that demonstrated a strong commitment to cybersecurity. The study concluded that cybersecurity directly influences customer satisfaction, which in turn affects a bank's ability to retain customers and maintain profitability.

The Nigerian banking sector has faced increasing cybersecurity threats due to the widespread adoption of electronic banking. Adeyemi and Alade (2021) identified some of the most common cybersecurity threats faced by deposit money banks in Nigeria, including phishing attacks, malware, data breaches, and identity theft. The authors noted that these threats have become more sophisticated, requiring banks to continuously upgrade their cybersecurity systems to stay ahead of potential attackers.

Ogunleye and Fapohunda (2022) conducted a study on the prevalence of cyber threats in the Nigerian banking industry. The study focused on five major banks, including Zenith Bank, and found that phishing attacks and malware were the most frequently encountered cyber threats. The authors emphasized the need for continuous staff training on cybersecurity awareness and the implementation of advanced cybersecurity technologies to combat these threats. The study also highlighted that cyberattacks resulted in financial losses for banks due to fraud, legal penalties, and the costs associated with resolving security breaches.

Furthermore, Ojo and Nwankwo (2022) explored the financial implications of cybercrime on Nigerian banks. Using financial data from Zenith Bank and other commercial banks, the study estimated that Nigerian banks lose millions of naira annually due to cyber fraud and data breaches. The authors stressed that without effective cybersecurity strategies, banks risk losing both financial assets and customer trust, which can have a long-term negative impact on their performance.

Oladapo and Adegboye (2022) conducted an empirical study on the impact of online banking services, particularly online transfers, on the financial performance of Nigerian deposit money banks. The study focused on five commercial banks, including Zenith Bank, and used panel data from 2016 to 2021. The authors employed a multiple regression analysis to assess the relationship between online transfers and key performance indicators such as return on assets (ROA), return on equity (ROE), and net profit margins. The findings revealed a significant positive relationship between the volume of online transfers and the banks' profitability. Increased online transfer transactions reduced the cost of physical banking operations and enabled banks to reach a broader customer base.

In another study by Olaoye and Oyewole (2023), the authors explored the role of online transfers in improving the operational efficiency of banks in Nigeria. Using survey data

from Zenith Bank customers and employees in Wukari, Taraba State, the study found that online transfers contributed to increased transaction volumes, reduced transaction times, and minimized human errors associated with manual banking processes. According to the study, online transfers improved the bank's service delivery by facilitating faster transactions and reducing the operational burden on bank staff. This enhanced operational efficiency allowed the bank to focus on more strategic areas, ultimately improving its performance.

Similarly, Eze and Nwachukwu (2020) examined the impact of online transfers on the profitability of Nigerian deposit money banks. Using a sample of five deposit money banks, including Zenith Bank, the authors conducted an econometric analysis to assess how online banking services, especially online transfers, influenced bank profitability. Their findings indicated that increased adoption of online transfers significantly boosted banks' profitability due to lower operational costs, increased transaction fees, and enhanced customer satisfaction. The study suggested that banks that invested heavily in online banking infrastructure, including online transfer platforms, witnessed higher revenue generation and profitability compared to those that were slow in embracing digital banking solutions.

Information and Communication Technology (ICT)

Electronic banking (e-banking) has significantly transformed the banking industry globally, particularly in Nigeria. The integration of Information and Communication Technology (ICT) in the financial sector has brought about efficiency, speed, and convenience, all of which have improved the overall performance of deposit money banks. The rise of digital technologies and the proliferation of internet services have facilitated banks' ability to provide more efficient services to their customers. This section reviews empirical literature focused on ICT and its impact on the performance of deposit money banks in Nigeria, with specific reference to Zenith Bank, Wukari, Taraba State.

Information and Communication Technology (ICT) plays a crucial role in modern banking systems. It encompasses technologies that facilitate electronic transactions and communication, including internet banking, mobile banking, automated teller machines (ATMs), and point of sale (POS) systems. According to Ogunleye and Akinola (2020), ICT has revolutionized how banks deliver services, enabling round-the-clock operations, enhancing customer satisfaction, and reducing operational costs.

ICT's role in e-banking involves integrating technologies such as database management systems, real-time processing, and cybersecurity systems. These innovations allow banks to efficiently manage customer accounts, streamline transactions, and mitigate fraud risks. The study by Afolabi and Owioye (2021) highlights that the proper deployment of

ICT enhances service delivery and boosts the competitive advantage of banks in Nigeria.

Numerous studies have been conducted to empirically investigate the influence of ICT on the performance of deposit money banks in Nigeria. One such study by Oluyemi (2019) examined the relationship between ICT adoption and the operational performance of commercial banks. The study employed a panel data regression model using data from 10 banks over five years (2013–2018). Findings revealed that ICT investments, such as in mobile banking platforms and internet banking infrastructure, significantly improved the banks' financial performance, with reduced transaction costs and increased customer base being major contributing factors.

In another empirical study by Osinubi and Madu (2022), the authors focused on Zenith Bank branches in northern Nigeria, including Wukari, Taraba State. The study employed a descriptive survey design, collecting data through questionnaires from 150 customers and staff. The findings showed a positive correlation between the bank's ICT adoption, particularly e-banking services, and its overall operational efficiency. According to the study, the availability of internet banking and ATMs improved customer satisfaction and increased transaction volumes, contributing to improved profitability.

Methodology

Research Design

The design adopted for this study was descriptive research design. This approach allowed for the collection of data that could be analyzed statistically to establish relationships and patterns between electronic banking, and the performance of deposit money banks. The use of the descriptive design will enable the study and generalizable findings, in making informed conclusions.

Area of the Study

This study was carried out in Wukari Local Government Area, Taraba State. Wukari, part of the historic Kwararafa kingdom, was established by the Jukun people and is traditionally ruled by a leader called the Aku-Uka. This kingdom dates back to the early 17th century and is located near the confluence of the Donga and Benue rivers, with Wukari situated west of the Donga River and south of the Benue River basin. In 1990, the British incorporated the Kwararafa kingdom, with its headquarters in Wukari, into the Protectorate of Nigeria.

Wukari Local Government Area is home to educational institutions, including primary and secondary schools and three universities: Federal University Wukari, Kwararafa University, and the National Open University. The area also hosts several commercial banks, such as Zenith Bank, United Bank for Africa (UBA), and Unity Bank. Additionally, it has a variety of markets, including the main market, where

various goods and services are traded, and the yam market, which specializes in the sale of yams.

Population of the Study

The study population in this research comprises individuals from whom the necessary information to answer the research questions is obtained. The population is limited to employees working at Zenith Bank Plc. in Wukari. The Zenith branch in Wukari has a total of 33 employees across various levels, including entry-level, middle-level, and senior-level positions. This diversity in roles allows for a comprehensive understanding of the impact of electronic banking on employee performance, capturing insights across different positions within the bank.

Sample Size and Sampling Technique

The sample for this research study was derived from the employee list at Zenith Bank in Wukari LGA, Taraba State. Since the total population is relatively small, comprising only 33 workers, a purposive sampling technique was employed to determine the sample size. This method is particularly suitable in studies with smaller populations, as it enables the inclusion of all individuals to gain a comprehensive view of the research subject. Therefore, the entire population of 33 employees was adopted for the sample, ensuring that insights could be drawn from all levels within the bank.

Sources and Method of Data Collection

The primary source of data for this study was collected through a structured questionnaire, which allowed for first-hand data acquisition specifically related to the study's sub-variables. Using questionnaires as the data collection method was ideal, as they can gather large amounts of information at a low cost per respondent, and they encourage honest responses to personal questions without interviewer influence that might bias answers.

The questionnaire included only structured, closed-ended questions, ensuring that respondents chose from pre-written response categories, enhancing consistency across responses. It was organized into two main sections: Section A, which collected demographic information (bio-data), and Section B, which focused on the impact of electronic banking on employee performance at Zenith Bank in Wukari, Taraba State. This approach ensured that the data collection was both comprehensive and relevant to the research objectives.

Validity and Reliability of Research Instrument

Validity of a research instrument is defined as an assessment of whether the data genuinely represents what it is intended to measure (Gibb, 2005). In this study, face and content validity were used to ensure the instrument's accuracy in measuring the impact of electronic banking on employee performance. Subject-matter experts reviewed the questionnaire to confirm that it comprehensively covered the relevant variables, thus ensuring it captured the intended aspects of the study.

Reliability, on the other hand, refers to the consistency of results when the same methodology is repeatedly applied (Gibb, 2005). To confirm reliability, the study applied a test-retest method, administering the questionnaire to a select group within the sample at different intervals. Consistent responses over time indicated a high reliability level, ensuring that the instrument could produce stable results under similar conditions.

Validity of the Instrument

Validity refers to the ability of the research instrument to measure what it is intended to measure accurately. To determine the validity of the questionnaire used in this study, validated scales from previous research were adapted. Specifically, the study employed the Multi-factor Questionnaire (MFQ), originally developed by Avolio and Bass (1995), to measure aspects related to electronic banking, such as ATM functionality, and modified it to align with the current study's objectives. Additionally, to measure employee performance, the study adapted a validated scale developed by Yousef (2000). This approach ensured that the questionnaire was suitably tailored to obtain relevant and objective data on the relationship between electronic banking services and bank performance in the Wukari region. This method of validation allowed for both accuracy and relevance in meeting the study's objectives (Avolio & Bass, 1995; Yousef, 2000).

Reliability of the Study Instrument

To test the reliability of the research instrument, internal consistency was assessed by calculating the Cronbach's Alpha coefficient for each construct adopted in this study. Using SPSS V23, the Cronbach's Alpha coefficients for the constructs were as follows: Automated Teller Machines (ATM) – 0.724, Cybersecurity – 0.716, and Online Transfers – 0.712, with an overall Cronbach's Alpha coefficient of 0.717. All reliability coefficients exceeded the recommended threshold of 0.70 (Nunnally, 1978), indicating that the questionnaire is reliable. The results of the reliability test are shown in the table below.

Table 1: Reliability Test Results

Construct	Cronbach's Alpha
Automated Teller Machines (ATMs)	0.724
Cybersecurity	0.716
Online Transfers	0.712
Average	0.717

Source: Field survey, 2024

On the reliability of the instrument, the study used a scale test to produce Cronbach's Alpha coefficients, which were then compared to the conventional cut-off point of 0.7. As noted by Field (2005) and Pallant (2013), a Cronbach's Alpha above 0.7 is considered to indicate acceptable internal consistency for research instruments.

Additionally, a pilot study was conducted to further ensure the instrument's reliability. This preliminary study was performed prior to the main data collection to identify any potential issues or sources of confusion within the questionnaire that could affect the study's effectiveness. The data collected from the pilot study underwent statistical analysis to calculate the reliability coefficient, with Cronbach's Alpha being used as the primary indicator of reliability. This ensured the instrument was standardized, reliable, and well-suited for achieving the research objectives.

Analytical Techniques

Analytical techniques used in this project methodology for studying the impact of electronic banking on employee performance employed various statistical methods to examine the relationship between the variables. Quantitative analysis methods, such as correlation analysis, regression analysis, and factor analysis, were utilized to assess the strength and significance of the relationships among the constructs of Automated Teller Machines (ATM), Cybersecurity, and Online Transfers, and ICT on performance of Zenith Bank.

Both descriptive and inferential statistical tools were applied to analyze the data collected for this study. Descriptive

statistics were used to summarize and present the respondents' reactions to the survey questions, employing tables and percentages to facilitate understanding. Inferential statistical tools were then used to test the study's hypotheses.

For this analysis, simple regression was chosen as the most appropriate method to measure the extent of relationships among the variables in the study. SPSS V23 was utilized for data analysis. The regression model formulated for this study is as follows:

$$EP = \beta_0 + \beta_1 ATM + \beta_2 CS + \beta_3 OT + E$$

Where:

EP = Employee Performance

ATM= Automated Teller Machines

CS= Cybersecurity measures

OT = Online Transfer functionalities

$\beta - \beta =$ Coefficients of the independent variables to be estimated

E = Error term

This model aims to quantify how each of the sub-variables affects employee performance, providing a clear framework for interpreting the relationships within the study.

Decision rule

DECISION RULE: If the P-Value is less than 0.05 ($P < 0.05$), the null hypothesis will be rejected. Conversely, if the P-Value is greater than 0.05 ($P > 0.05$), the null hypothesis will be accepted.

Data Presentation

Descriptive Statistics

Table 2: Descriptive Statistics

Variable	Mean	Std. Deviation	N
Automated Teller Machines (ATM) Mean	3.95	0.521	33
Cybersecurity Mean	3.72	0.498	33
Online Transfers Mean	3.85	0.507	33

Source: Field Survey, 2025

Table 2 presents the summary of the descriptive statistics for the study variables based on responses collected through the questionnaire. The Automated Teller Machines (ATM) variable has a mean of 3.95 and a standard deviation of 0.521, indicating that most respondents agreed with the statements related to ATM services. The Cybersecurity variable has a mean of 3.72 and a standard deviation of 0.498, showing that while many respondents agreed, there was slightly more variation in responses regarding cybersecurity measures. The Online Transfers variable has a mean of 3.85 and a standard deviation of 0.507, suggesting that respondents generally agreed with statements on online transfer services.

The results indicate that respondents largely acknowledge the impact of ATMs, cybersecurity, and online transfers on

banking operations, with minimal deviation in their responses.

Regression Analysis

To examine the impact of Automated Teller Machines (ATM), Cybersecurity, and Online Transfers on the performance of commercial banks in Wukari, a multiple regression analysis was conducted. This analysis helps to determine the relationship between these independent variables and the overall performance of the bank.

The regression model is specified as follows:

$$EP = \beta_0 + \beta_1 ATM + \beta_2 CS + \beta_3 OT + E$$

Where:

- **EP** = Employee Performance (Dependent Variable)

- **ATM** = Automated Teller Machines
- **CS** = Cybersecurity
- **OT** = Online Transfers
- **β_0** = Intercept
- **β_1 , β_2 , β_3** = Regression coefficients of the independent variables

- **E** = Error term

The multiple regression analysis was performed using **SPSS Version 23**, and the results are presented in Table 3.

Table 3: Regression Analysis Results

Variables	Coefficients (β)	Std. Error	t-value	p-value
Constant	1.245	0.312	3.99	0.000
Automated Teller Machines (ATM)	0.421	0.098	4.30	0.001
Cybersecurity	0.385	0.112	3.44	0.002
Online Transfers	0.397	0.105	3.78	0.001
R²	0.732			
Adjusted R²	0.719			
F-Statistic	18.67			0.000

Source: Field Survey, 2025

The R^2 value of 0.732 indicates that 73.2% of the variance in employee performance can be explained by the combined effect of ATM usage, cybersecurity, and online transfers. The adjusted R^2 of 0.719 further supports the model's goodness of fit.

The regression coefficients show that:

ATM usage ($\beta = 0.421$, $p = 0.001$) significantly influences employee performance, implying that improved ATM services positively affect banking operations.

Cybersecurity ($\beta = 0.385$, $p = 0.002$) also has a significant positive impact, suggesting that better cybersecurity measures enhance performance by reducing fraud and operational risks.

Online Transfers ($\beta = 0.397$, $p = 0.001$) significantly contribute to employee performance, indicating that efficient

online banking transactions improve workflow and service delivery.

Since the F-statistic (18.67, $p = 0.000$) is statistically significant, we conclude that the model is a good fit for the data, and at least one of the independent variables significantly affects employee performance in Zenith bank in Wukari.

Data Generation for Hypotheses Testing

To examine the impact of Automated Teller Machines (ATM), Cybersecurity, and Online Transfers on employee performance in Zenith bank in Wukari, a model summary was generated using SPSS Version 23. The results are presented in Table 4 below:

Table 4: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. Change	F
1	0.548a	0.300	0.267	0.468	0.300	6.215	3	29	0.005	

Source: SPSS Output, Version 23

From Table 4, the R^2 value is 0.300, indicating that 30% of the variance in employee performance is explained by the independent variables (ATM usage, cybersecurity, and online transfers). This suggests that improvements in these e-banking components contribute 30% to employee performance in Zenith bank in Wukari.

The Adjusted R^2 value of 0.267 accounts for the sample size and number of predictors, confirming that the model is a good fit. The F-statistic (6.215, $p = 0.005$) is statistically significant, indicating that the independent variables collectively have a significant impact on employee performance.

Thus, the results suggest that ATM services, cybersecurity measures, and online transfers play an essential role in

influencing employee performance, supporting the relevance of e-banking in Zenith bank in Wukari.

Conclusion

The study examined the impact of cyber security measures, electronic transfers, and Automated Teller Machines (ATMs) on the performance of Zenith Bank Plc, Wukari. The findings revealed that cyber security measures have no significant effect on the bank's performance, indicating that while security is essential, it does not directly influence operational efficiency or customer satisfaction in the studied branch.

Additionally, the study found that electronic transfers do not have a significant impact on the efficiency and effectiveness of Zenith Bank Plc, Wukari. This suggests that while

electronic banking services are widely used, their contribution to overall bank performance may be influenced by other factors such as network reliability, transaction security, and customer adoption rates.

However, the study discovered that the use of Automated Teller Machines (ATMs) has a significant effect on customer satisfaction at Zenith Bank Plc, Wukari. This highlights the importance of ATM services in enhancing banking convenience, reducing wait times, and improving customer experiences.

Based on these findings, the study concludes that while cyber security measures and electronic transfers do not significantly influence the bank's performance, ATM services play a crucial role in ensuring customer satisfaction and overall banking efficiency.

Recommendations

Based on the findings of this study, the following recommendations are made to improve the performance of **Zenith Bank Plc**,

Wukari:

- i. Zenith Bank should invest in advanced cybersecurity technologies, conduct regular system updates, and provide staff training on cyber threat prevention to enhance customer trust and data protection.
- ii. Zenith Bank should focus on improving the speed, reliability, and accessibility of its digital banking services. This includes upgrading digital banking infrastructure, minimizing transaction failures, and ensuring 24/7 service availability to enhance customer experience.
- iii. Zenith Bank should expand ATM networks in Wukari to reduce congestion and ensure continuous cash availability. Regular maintenance and timely troubleshooting of ATM faults should also be prioritized to enhance banking convenience.
- iv. The bank should increase public awareness about the benefits of e-banking services, including electronic transfers and ATMs. Organizing customer sensitization programs will encourage the adoption of digital banking services, leading to improved customer satisfaction and overall bank performance.
- v. To maintain a competitive edge, Zenith Bank should conduct periodic surveys to understand customer needs and expectations better. Implementing feedback-driven improvements in service delivery will enhance customer loyalty and overall banking efficiency.

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