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Office Automation and Performance of Small and Medium Scale Enterprises in Anambra State, Nigeria

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Abstract

The rapid advancement of technology has transformed business operations, making office automation increasingly crucial for organizational success. This study examined the impact of office automation on the performance of Small and Medium-sized Enterprises (SMEs) in Anambra State, Nigeria. The study adopted a descriptive survey research design with a population of 1,200 SMEs in Anambra State. Using simple random sampling, 300 SMEs were selected, and data were collected through structured questionnaires. The instrument was validated by research experts, and reliability was confirmed using Cronbach's alpha coefficient ($\alpha = 0.88$). Out of 300 distributed questionnaires, 218 (72.7%) were successfully completed and returned. Data analysis employed both descriptive and inferential statistics, with hypotheses tested using linear regression at a 0.05 significance level. The findings revealed that automated record management systems significantly affect operational efficiency ($R^2 = .55$, $F\ 1, 216) = 245.42$, $p < .001$), with improvements observed in document processing time, data security, and error reduction. Similarly, automated communication systems demonstrated a significant impact on customer service delivery ($R^2 = .47$, $F\ (1, 216) = 185.42$, $p < .001$), enhancing response times and customer feedback management. The study concludes that office automation significantly enhances SME performance through improved operational efficiency and customer service delivery. It recommends that SMEs prioritize investment in comprehensive automated systems and suggests that the Anambra State government establish a dedicated SME technology support fund. These findings contribute to the growing body of knowledge on technology adoption in SMEs and provide practical insights for business owners and policymakers seeking to enhance SME performance through office automation.

Keywords*: office automation, SME performance, automated record management, customer service delivery, operational efficiency*

Introduction

The rapid advances in information technology (IT) have transformed the way businesses, including small and medium-sized enterprises (SMEs), operate. In today's highly competitive business environment, organizations must constantly seek new ways to improve efficiency,

reduce costs, and enhance overall performance. This has led to the growing adoption of office automation systems, which integrate computer technology and communication tools to streamline business processes (Pramod, 2022). Office automation refers to the use of technology to execute repetitive tasks and administrative functions, thereby freeing employees to focus on more strategic and creative work (Lacity & Willcocks, 2016). The concept covers a wide range of tools, including word processing software, data processing systems, robotic process automation (RPA), and artificial intelligence (AI), which have become critical for enhancing the performance of SMEs (Cascio & Montealegre, 2016; Pramod, 2022).

SMEs play a crucial role in the economic development of most countries, contributing significantly to employment generation, innovation, and economic growth. The World Bank (2023) defines SMEs as enterprises with fewer than 250 employees and an annual turnover not exceeding EUR 50 million (World Bank, 2023). According to the European Commission (2020), over 99% of all European businesses are SMEs, and they are responsible for more than half of the total value added by businesses in the region (European Commission, 2020). Despite their significant contributions, SMEs often face unique challenges, such as limited financial resources, inefficient processes, and a lack of advanced technological infrastructure. The evolution of office automation has been particularly significant for SMEs. Office automation presents a viable solution to some of these challenges facing them by enabling SMEs to perform tasks more efficiently, reduce operational costs, and improve their overall performance. This, in turn, can help them remain competitive in both local and global markets (Prasanna, Jayasundara, Naradda, Ekanayake, Rajapakshe & Abeyrathne, 2019).

The concept of office automation has evolved significantly over the years. In the early days, it primarily focused on basic tasks such as word processing, spreadsheet creation, and database management (Campbell-Kelly, Aspray, Yost, Tinn & Díaz, 2023). However, with the rapid advancements in technology, office automation now encompasses a wide range of applications, including email communication, document management, project management, customer relationship management (CRM), and more (Jia, Komeily, Wang & Srinivasan, 2019). These tools have revolutionized the way SMEs operate, allowing them to automate repetitive tasks, improve communication, and enhance decision-making processes (Cascio & Montealegre, 2016; Pramod, 2022). As businesses grow and expand, the volume of data and administrative tasks increase exponentially. Without automation, SMEs may struggle to keep up with the demand for speed and accuracy in operations, ultimately impacting their productivity and performance (Mittal, Khan, Romero & Wuest, 2018). According to Coombs, Hislop, Taneva & Barnard, S. (2020), automation enables organizations to manage administrative and information-processing tasks more effectively, reducing the need for manual intervention and minimizing errors.

In the context of SMEs, office automation is particularly valuable due to the resource constraints that often limit their ability to hire additional staff or invest in expensive infrastructure. By automating repetitive tasks such as data entry, document creation, and customer service interactions, SMEs can optimize their existing resources and focus on more value-adding activities (Mittal, Khan, Romero & Wuest, 2018). For instance, robotic process automation (RPA) can handle routine tasks like processing invoices, updating customer records, and managing payroll, while AI-powered tools can assist in decision-making and provide insights from large datasets (Eziefule, Adelakun, Okoye & Attieku, 2022; Attakora Duah, 2023). These capabilities enable SMEs to operate more efficiently and respond to market changes more swiftly, thereby improving their performance. However, the benefits of office automation extend beyond productivity and efficiency gains. Automation also enhances customer service, which is a critical factor in the success of SMEs. According to Amarasinghe (2023), businesses that invest in automation tools, such as chatbots and customer relationship management (CRM) systems, are better equipped to meet customer expectations and provide personalized services. This can lead

to increased customer satisfaction and loyalty, which are essential for the long-term growth of SMEs. Furthermore, automation tools help businesses gather and analyze customer data, enabling them to make informed decisions and tailor their products and services to meet market demands more effectively (Bharadiya, 2023).

Office automation also plays a critical role in innovation, which is vital for the sustained competitiveness of SMEs. As Liu & Atuahene-Gima (2018) point out, innovation is essential for firms to achieve sustained profitability, access new markets, and enhance their market share. Automation fosters innovation by freeing up employees from mundane tasks, allowing them to focus on creative problem-solving and developing new ideas. This is particularly important in today's fast-paced business environment, where product lifecycles are shorter, and competitive pressure is high (Ali, 2023). By leveraging automation tools, SMEs can continually innovate and adapt to changing market conditions, thereby maintaining their competitive edge. Moreover, office automation enables better collaboration and communication within SMEs. With the rise of remote work and distributed teams, effective communication has become more crucial than ever. Office automation tools such as instant messaging, video conferencing, and project management software facilitate seamless collaboration, regardless of location (Sivhada, Zulu, Sambo & Thango, 2024). These tools allow team members to share information, discuss ideas, and work together on projects in real time, fostering a more cohesive and efficient work environment. As highlighted by Susskind & Susskind (2022), "Office automation technologies have transformed the way teams collaborate, breaking down geographical barriers and enabling SMEs to tap into a global talent pool."

However, despite the apparent benefits, the adoption of office automation in SMEs is not without challenges. Many SMEs face barriers such as a lack of digital literacy, limited financial resources, and resistance to change. According to Endsley (2017), one of the main reasons for the failure of automation initiatives is the lack of knowledge about the technologies being implemented and how to integrate them into existing business processes. Moreover, there is often a lack of clear methodologies or roadmaps for SMEs to follow when adopting automation, making it difficult for them to achieve the desired outcomes (Endsley, 2017). This suggests that, while automation has the potential to significantly improve the performance of SMEs, careful planning and the right support systems are necessary to ensure its successful implementation.

Statement of the Problem

Small and Medium-sized Enterprises (SMEs) are increasingly struggling with operational inefficiencies, rising costs, and declining performance in today's competitive business environment. Manual processing of administrative tasks consumes excessive time and resources, leading to reduced productivity and increased error rates. Many SMEs continue to rely on traditional paper-based systems and manual procedures for crucial business operations such as record keeping, inventory management, customer service, and financial transactions. This dependence on manual processes results in delayed decision-making, poor resource allocation, and compromised service delivery.

The complexity of managing growing business operations without adequate automation tools has created significant operational bottlenecks. SMEs face challenges in handling large volumes of data, maintaining accurate records, and responding promptly to customer inquiries. These inefficiencies often lead to missed business opportunities, reduced customer satisfaction, and decreased competitive advantage. Furthermore, the lack of automated systems makes it difficult for SMEs to scale their operations effectively, resulting in stunted growth and limited market expansion capabilities.

The financial implications of inefficient manual processes are substantial, with SMEs incurring higher operational costs through excessive staffing needs, error correction, and time wastage. The absence of integrated automation systems also hampers effective communication and collaboration among employees, leading to information silos and reduced organizational effectiveness. Additionally, manual processes make it challenging for SMEs to adapt quickly to market changes and customer demands, potentially threatening their long-term survival.

While office automation presents a potential solution to these challenges, there is limited empirical evidence on its impact on SME performance, particularly in Anambra State, creating a need to investigate the relationship between office automation adoption and SME performance in this region, which is the focus of the present study.

Objectives of the Study

The broad objective of this study is to examine the impact of office automation on the performance of Small and Medium Enterprises (SMEs) in Anambra State. Specifically, this study seeks to:

1. Determine the effect of automated record management systems on the operational efficiency of SMEs in Anambra State.
2. Assess the effect of automated communication systems on customer service delivery in SMEs in Anambra State.

Research Questions

The following research questions are raised in line with the specific objectives to guide this study;

1. What is the effect of automated record management systems on the operational efficiency of SMEs in Anambra State?
2. How does automated communication systems impact customer service delivery in SMEs in Anambra State?

Research Hypotheses

The following hypotheses were tested at 0.05 level of significance;
H_1: Automated record management systems have no significant effect on the operational efficiency of SMEs in Anambra State.
H_2: Automated communication systems have no significant effect on customer service delivery in SMEs in Anambra State.

Literature Review

Office Automation

Office automation refers to the integration of various automated technologies to streamline and enhance the efficiency of office operations. It encompasses a range of digital tools and systems that automate routine tasks traditionally performed manually by office workers, including data entry, communication, and documentation (Madakam, Holmukhe & Jaiswal, 2019). According to Mohamed, Mahmoud, Mahdi & Mostafa (2022), office automation significantly reduces human errors and improves workflow efficiency, allowing employees to focus on more strategic tasks. The implementation of office automation technologies can involve software for word processing, spreadsheets, database management, and communication tools.According to Aguirre and Rodriguez (2017), automation emerges as a software-based solution to handle rules-based business processes that involve routine tasks, structured data, and deterministic outcomes. The

key goal is to reduce manual effort while improving the efficiency and reliability of office operations.

Modern office automation encompasses various technologies working together, including enterprise resource planning (ERP) systems, workflow management tools, and robotic process automation (RPA) (Strömberg, 2018; Li, 2024). As noted by Plumwongrot & Pholphirul (2023), these systems can substitute for labour—as it is typically intended to do. However, automation also complements labour, raises output in ways that lead to higher demand for labour, and interacts with adjustments in labour supply.One of the primary drivers of office automation is the need for businesses to optimize their operations and reduce overhead costs while maintaining high productivity levels. Automation simplifies tasks such as scheduling, managing appointments, and tracking documents, which traditionally consumed substantial time and effort (Javed, Alam, Alam, Islam & Ahsan, 2024). Additionally, modern office automation systems facilitate collaboration among employees by integrating communication and file-sharing tools into a unified platform (De Oliveira, Lima & Ribeiro, 2024). These systems not only enhance productivity but also ensure that information is readily accessible and securely stored, which is crucial for decision-making processes and compliance with regulatory standards.

The benefits of office automation extend beyond operational efficiency. It also plays a vital role in improving data accuracy and reducing the likelihood of errors associated with manual data entry. As Ng, Chen, Lee, Jiao & Yang (2021) highlight, automation systems provide a reliable mechanism for capturing, storing, and processing information, which is essential for maintaining organizational integrity and ensuring the timely execution of business processes. Ultimately, office automation represents a transformative approach to modern business management, enabling organizations to achieve higher levels of operational excellence and competitiveness in an increasingly digital world.

Automated Record Management Systems

Automated record management systems (ARMS) are digital platforms designed to manage the creation, storage, retrieval, and disposal of records within an organization. These systems automate the entire lifecycle of records, ensuring that they are properly categorized, stored, and maintained according to organizational policies and legal requirements. Automated record management systems are essential for businesses that deal with large volumes of data and require efficient ways to manage their information assets (Yahaya, Jilantikiri, Hassan, Akande & Yahaya, 2019). According to the Claude (2024), ARMS improve accuracy, reduces labor costs, and enhance the security of sensitive data by minimizing human intervention in the record-keeping process.Modern ARMS leverage database technologies and workflow automation to streamline document processes. According to Blahušiaková (2023), effective systems must be able to collect, store, manage and interpret data from many business activities. This includes capabilities for document versioning, access controls, audit trails, and automated retention policies.

The adoption of ARMS is particularly beneficial for organizations that must comply with stringent regulatory requirements regarding the handling and storage of records. For example, industries such as healthcare, finance, and telecommunications are subject to laws that mandate the secure handling of personal and financial information. By automating record management, organizations can ensure compliance with these regulations while reducing the risk of non-compliance due to human error (Yahaya, Jilantikiri, Hassan, Akande & Yahaya, 2019). Moreover, ARMS enable organizations to implement standardized procedures for record retention and disposal, ensuring that outdated or irrelevant records are purged in a timely manner, thereby improving the efficiency of information retrieval and storage.

A key feature of automated record management systems is their ability to streamline the retrieval of information. Traditional manual systems often involve time-consuming processes to locate specific documents, especially in large organizations with vast amounts of records. In contrast, ARMS use advanced indexing and search capabilities to enable users to quickly locate the documents they need. This not only improves operational efficiency but also enhances decision-making by ensuring that relevant information is available when required (Baviskar, Ahirrao, Potdar & Kotecha, 2021). Byrnes, Al-Awadhi, Gullvist, Brown-Liburd, Teeter, Warren Jr & Vasarhelyi (2018) emphasize that automated systems allow for better tracking and control of records, providing a robust mechanism for auditing and maintaining accountability within the organization.

Automated Communication Systems

Automated communication systems are technological solutions that facilitate the exchange of information between individuals or groups without the need for manual intervention. These systems streamline communication processes by automating tasks such as sending emails, generating reports, and managing customer inquiries (Faheem, Shah, Butt, Raza, Anwar, Ashraf & Gungor, 2018). As noted by Wollschlaeger, Sauter & Jasperneite (2017), automated communication systems enhance the speed and accuracy of information exchange, enabling organizations to respond more efficiently to client requests and internal communications. In today's fast-paced business environment, where timely and accurate communication is crucial, such systems play an indispensable role in maintaining organizational coherence and efficiency.Key components typically include email automation, instant messaging platforms, and unified communications solutions (Najat, 2024). Benjamin, Amajuoyi & Adeusi (2024) emphasize that modern systems must support collecting, processing, and analyzing large amounts of data to facilitate effective organizational communication. This includes capabilities for automated message routing, response handling, and communication analytics.

One of the key advantages of automated communication systems is their ability to handle repetitive tasks, freeing up employees to focus on higher-value activities. For instance, many organizations use automated email systems to send out notifications, reminders, and promotional content to customers. This reduces the workload on administrative staff while ensuring consistency in communication. Additionally, automated systems can be programmed to respond to frequently asked questions or direct inquiries to the appropriate department, improving the overall customer experience (Saad, 2023). This level of automation not only enhances efficiency but also ensures that communication is standardized and aligned with the organization's branding and customer service standards.

Automated communication systems also facilitate internal collaboration by integrating various communication channels into a single platform. This allows employees to share information, collaborate on projects, and communicate across departments more effectively (Benjamin, Amajuoyi & Adeusi, 2024). According to Joseph (2024), such systems integrate tools like instant messaging, video conferencing, and file sharing, creating a seamless communication ecosystem that enhances productivity. Furthermore, automated systems often provide tracking and reporting functionalities that allow managers to monitor communication patterns and address any bottlenecks or inefficiencies in the process.

Small and Medium-sized Enterprises (SMEs)

Small and Medium-sized Enterprises (SMEs) play a crucial role in the global economy, serving as the backbone of many countries' economic growth and development. The European Commission defines SMEs as enterprises with fewer than 250 employees and an annual turnover not exceeding €50 million or a balance sheet total not exceeding €43 million (European

Commission, 2024). These businesses are known for their agility, adaptability, and potential for innovation, which allows them to fill niche markets and respond quickly to changing customer needs (Chan, Teoh, Yeow & Pan, 2019). SMEs contribute significantly to job creation, with the World Bank estimating that they account for more than 50% of employment worldwide (World Bank, 2023). Moreover, SMEs foster entrepreneurship and local economic development, as they are often deeply rooted in their communities and contribute to the diversification of the economic landscape (OECD, 2017). However, despite their importance, SMEs face numerous challenges, such as limited access to finance, skilled labour shortages, and regulatory burdens, which can hinder their growth and sustainability (Yoshino & Taghizadeh-Hesary, 2018).

SME Performance Indicators

Measuring the success and sustainability of SMEs involves tracking various performance indicators. Two key indicators are operational efficiency and customer service delivery, both of which significantly influence the competitiveness and profitability of SMEs.

Operational Efficiency

Operational efficiency refers to the ability of an SME to deliver products or services in the most cost-effective manner without compromising quality (Gilmore & Carson, 2018). It is a critical determinant of an SME's capacity to generate profits while minimizing waste and ensuring optimal use of resources. According to Adesina, Iyelolu & Paul (2024), operational efficiency in SMEs involves optimizing processes, reducing downtime, and improving workflows to achieve maximum productivity. Efficient operations allow SMEs to reduce costs, improve output quality, and enhance their competitive position in the market.

To achieve operational efficiency, SMEs often adopt lean management principles that focus on eliminating waste and enhancing productivity (Zhou, 2016). Lean methodologies encourage SMEs to continuously assess and streamline their operations, ensuring that every step in the production or service delivery process adds value. For example, a manufacturing SME might use automation technologies to reduce time spent on repetitive tasks, thereby increasing throughput and reducing labour costs (Mofolasayo, Young, Martinez & Ahmad, 2022). By implementing lean principles, such as just-in-time production, continuous improvement (kaizen), and value stream mapping, SMEs can streamline their operations, reduce lead times, and enhance quality (Kumar, Dhingra & Singh, 2018). This not only leads to cost savings but also enables SMEs to respond more quickly to market demands and customer needs.

Another critical aspect of operational efficiency is the effective management of resources, including human capital, financial resources, and technology. SMEs often face resource constraints, making it essential for them to allocate and utilize their resources optimally (Prasanna, Jayasundara, Naradda, Ekanayake, Rajapakshe & Abeyrathne, 2019). This involves implementing efficient processes, investing in employee training and development, and leveraging technology to automate tasks and improve productivity (Nolan & Garavan, 2016). However, achieving operational efficiency is not without challenges for SMEs. Limited financial resources can restrict their ability to invest in advanced technologies or hire specialized staff. Additionally, SMEs often face difficulties in maintaining efficiency as they scale up, as increased complexity can lead to inefficiencies in communication, workflow coordination, and inventory management (Sevinç, Gür & Eren, 2018). Therefore, SMEs must strike a balance between growth and operational efficiency to sustain long-term success.

Customer Service Delivery

Customer service delivery is another critical performance indicator for SMEs, as it directly impacts customer satisfaction, loyalty, and overall business reputation. According to YuSheng & Ibrahim (2019), customer service delivery encompasses the interactions between a business and its customers during the provision of a product or service. For SMEs, providing high-quality customer service can differentiate them from larger competitors, particularly in niche markets where personalized service is highly valued.One of the key elements of effective customer service delivery in SMEs is understanding and anticipating customer needs. This requires SMEs to actively engage with their customers, gather feedback, and use this information to tailor their products and services accordingly (Galvão, de Carvalho, Oliveira, & Medeiros, 2018). By adopting a customer-centric approach, SMEs can create a positive customer experience, which leads to increased customer satisfaction and loyalty. Moreover, SMEs can leverage their close relationships with customers to provide personalized service, which is often more challenging for larger enterprises to replicate (Ceesay, 2020, Yunusa et al, 2021).

Another crucial aspect of customer service delivery is the responsiveness and reliability of the SME. Customers expect prompt and efficient service, and any delays or inconsistencies can lead to dissatisfaction and loss of business. Therefore, SMEs must invest in building a strong service culture, training their employees in customer service skills, and establishing clear service standards and processes (Janjua, 2017). SMEs typically have closer relationships with their customers due to their smaller size and more personalized approach. This proximity allows them to respond quickly to customer inquiries, complaints, and feedback, leading to higher levels of customer satisfaction (Vatavwala, Kumar, Sharma, Billore & Sadh, 2022). Moreover, SMEs often rely on word-of-mouth and repeat business, making excellent customer service a vital component of their growth strategy.

Technology plays a crucial role in enhancing customer service delivery for SMEs. Many SMEs utilize customer relationship management (CRM) systems to track customer interactions, preferences, and purchase history. This enables businesses to provide tailored services and anticipate customer needs more effectively (Iyelolu, Agu, Idemudia & Ijomah, 2024).). For instance, a retail SME might use CRM data to send personalized recommendations or offer loyalty rewards, thereby fostering stronger customer relationships.Despite the importance of customer service delivery, many SMEs struggle to maintain consistent service quality due to limited resources and staffing constraints. Small teams may find it challenging to manage increasing customer demands, particularly during peak periods or times of rapid growth. According to Awah, Aniefiok & Emmanuel (2024), service quality is multi-dimensional, involving factors such as reliability, responsiveness, assurance, empathy, and tangibles. SMEs must invest in training and systems to ensure that these dimensions are met consistently, even as the business expands.

Theoretical Framework

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was propounded by Fred Davis in 1989. TAM is a widely recognized theory that explains the factors influencing the adoption and use of technology. It is rooted in the idea that two primary variables—*perceived usefulness* (PU) and *perceived ease of use* (PEOU)—determine users' acceptance of technology. Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance their job performance, while perceived ease of use describes how effortless the user expects the system to be. These factors, combined with external variables such as system design and user experience,

shape attitudes toward technology, which ultimately influence behavioural intentions to use and actual usage behaviour.

In the context of office automation and the performance of Small and Medium-sized Enterprises (SMEs), TAM provides a useful framework for understanding how and why SMEs adopt office automation tools. Office automation involves the use of various technologies—such as cloud computing, automated scheduling, or digital document management—that streamline and optimize workflows. For SMEs, adopting these technologies can be critical for improving efficiency, reducing operational costs, and staying competitive in an increasingly digital business environment.

Applying TAM, the perceived usefulness of office automation tools directly relates to how SME managers and employees believe these tools will improve their overall performance, such as by reducing manual tasks or speeding up decision-making processes. Additionally, the perceived ease of use is crucial, as SMEs often have limited technical expertise and resources, and thus, the simpler the technology, the more likely it is to be adopted. Therefore, understanding these core components of TAM helps explain how office automation technology adoption can lead to enhanced performance outcomes in SMEs.

Empirical Review

Onah, Mary & Onwuchekwa (2024) analyzed the relationship between digital transformation and the performance of public sector organizations in Anambra State, Nigeria. The primary objective was to determine how digital maturity and the use of digital tools influence decision-making and service quality. The study employed a survey research design, targeting a population of 3,220 employees across four public sector organizations in the state. Using the Taro Yamane formula, a sample size of 356 was determined, with questionnaires distributed across the organizations. Data were analyzed using descriptive statistics and Pearson Product Moment Correlation, with the reliability of the instrument yielding a Cronbach Alpha coefficient of 0.70. Results showed a significant positive relationship between digital maturity and improved decision-making ($r = 0.876$, $p = 0.041$) and between digital tools and quality service delivery ($r = 0.647$, $p = 0.015$). The study concluded that digital transformation significantly enhances the performance of public sector organizations by improving decision-making processes and service delivery. It recommended fostering a data-driven culture within public organizations and enhancing digital literacy through continuous training programs.

Okoliko, Ayetigbo, Ifegwu & Chidiebere (2023) conducted a study on the impact of Artificial Intelligence (AI) in revolutionizing the Nigerian banking industry, focusing on selected deposit money banks in Abuja. The primary objective was to assess how AI adoption influences the performance of banks, particularly in enhancing customer satisfaction and operational efficiency. The study employed a cross-sectional descriptive research design and surveyed 135 employees from five deposit money banks operating within the Federal Capital Territory (FCT), Abuja. Using census sampling, the study distributed structured questionnaires to all participants, achieving a response rate of 96.3%, with data analyzed via Statistical Package for Social Sciences (SPSS Version 22). The reliability of the instrument was tested using Cronbach's Alpha, yielding a coefficient of 0.773, which indicates acceptable internal consistency. Findings revealed that AI significantly enhances efficiency ($R^2 = 0.227$, $F = 18.481$, $p < 0.05$) and customer satisfaction ($R^2 = 0.194$, $F = 15.135$, $p < 0.05$) in the selected banks. The study concluded that AI plays a crucial role in improving the overall performance of deposit money banks by optimizing customer experience and operational processes. Recommendations included the implementation of AI-powered chatbots to enhance customer service and the promotion of data-driven decision-making to sustain competitive advantage.

Chux-Nyeche, Lezina & Garrick (2023) conducted a study on office process automation and the organizational performance of commercial banks in Port Harcourt, Rivers State, Nigeria. The study's objective was to examine the extent to which office automation, including robotic/artificial intelligence, business documentation automation, and big data analytics, impacts the performance of banks. The study adopted a cross-sectional survey research design and targeted a population of 225 managers and administrative staff across 22 commercial banks. Using the Taro Yamane formula, a sample size of 144 was selected, and data were collected through structured questionnaires. The reliability of the instrument was tested using Cronbach's Alpha, which yielded a coefficient of 0.70. Data analysis was performed using Spearman's Correlation and regression analysis. The results showed a significant positive relationship between robotic/artificial intelligence and process performance ($r = 0.677$, $p = 0.000$), customer service ($r = 0.669$, $p = 0.02$), and innovativeness ($r = 0.635$, $p = 0.000$). The study concluded that office automation significantly enhances organizational performance by improving efficiency and customer satisfaction. Recommendations included further investment in automation technologies and training for employees to maximize the benefits of automation.

Dunmade, Ajayi, & Oladejo (2022). conducted a study on the impact of office automation on service delivery in the Kogi State Civil Service, with a focus on the Yagba-West Local Government Area (LGA) of the state in Nigeria. The study employed a survey research design, and a structured questionnaire was used as the primary instrument for data collection. The population of the study included 150 employees from the Yagba-West LGA, and a random sampling technique was used to gather responses, with 122 valid questionnaires returned, representing an 81% response rate. The validity of the instrument was ensured through expert review, while reliability was confirmed with a Cronbach Alpha coefficient for each construct: modern database management (0.809), task management (0.788), and global data exchange (0.901), all surpassing the .70 threshold for reliability. The data were analyzed using both descriptive statistics (percentages, means) and inferential statistics, specifically least square regression analysis, to test the hypotheses. The results showed that modern database management had a significant positive impact on employees' efficiency, with an R^2 value of 0.50 and a t-statistic of 2.44 ($p < .05$). Similarly, task management significantly improved employee effectiveness, with an R^2 value of 0.441 and a t-statistic of 5.708 ($p < .05$). Global data exchange also positively influenced the quality-of-service delivery, accounting for 27.3% of the variation in service quality ($R^2 = 0.273$, $t = 6.60$, $p < .05$). The study concluded that office automation significantly enhances the performance of employees in the Kogi State Civil Service by improving efficiency and service delivery. It was recommended that the civil service should invest in more robust training programs to equip employees with the necessary skills to effectively use office automation technologies, thereby improving overall service quality.

Okatahi, Nwachukwu & Okhuese (2022) conducted a study titled "Assessment of Office Automation, Digitization, and Public Enterprise Performance in Kogi State, Nigeria," which aimed to examine the effects of office automation and digitization on the performance of public enterprises in Kogi State. The study employed a descriptive and quantitative research design. The population consisted of 9,735 full-time employees from 51 selected public enterprises in Kogi State. Using random sampling, questionnaires were electronically administered to 539 employees, with the aim of capturing a broad range of responses. The primary data collection instrument was a structured questionnaire, developed using a five-point Likert scale. Data were analyzed using descriptive statistics and the Analysis of Variance (ANOVA) test. The ANOVA test was specifically employed to test the two formulated hypotheses. The results indicated that Microsoft Office applications (Word, Excel, PowerPoint) were the most frequently used office automation tools, with 277 respondents confirming their regular use. Mobile phone applications were the most widely adopted digitization tools, with 341 respondents acknowledging their importance for daily work routines. The results further showed that office automation

significantly impacted the performance of public enterprises in Kogi State, with the ANOVA results indicating a statistically significant relationship between office automation and performance ($F = 2.880$, $p = .000$). Similarly, digitization also had a significant impact, as shown by an ANOVA result of $F = 2.243$ and $p = .000$. These results suggest that both automation and digitization positively influence organizational efficiency and productivity. The authors recommended that policymakers replace manual operations with automated systems to enhance productivity.

Ifeoma, Phina, Nwanonigwe & Uchechukwu (2021) carried out a study on digital transformation and business sustainability in telecommunication firms in Lagos State, Nigeria. The study employed a descriptive survey design, and data were collected through structured questionnaires distributed to both senior and junior staff of four major telecommunication companies—MTN, Globacom, Etisalat, and Airtel. The total population was 286, and Taro Yamane's formula was used to determine a sample size of 143 respondents. The instrument was validated using content and construct validity, and its reliability was confirmed with a Pearson Product Moment Correlation Coefficient, which indicated strong internal consistency (Cronbach Alpha > 0.7). Data were analyzed using descriptive statistics and Pearson correlation to test the formulated hypotheses. The results indicated that digital technology had a significant positive effect on operational efficiency, with an R^2 value of 0.871 and a t-statistic of 16.245 ($p < .05$), showing that 87.1% of the variation in operational efficiency could be explained by the adoption of digital technologies. The relationship between digital infrastructure and service delivery was also found to be significant, with a Pearson correlation coefficient of 0.846 ($p < .05$), indicating a strong positive relationship between the two variables. The authors recommended that telecommunication firms should continue to invest in digital technologies to enhance their sustainability, operational efficiency, and service quality, thus ensuring long-term competitiveness in the global market.

Methodology

This study adopted a descriptive survey research design. The study was carried out in Anambra State, Nigeria. The population of the study consisted of 1,200 SMEs in Anambra State. A total of 300 SMEs were selected using a simple random sampling technique from the population.The instrument for data collection was a structured questionnaire with two sections: Section 'A' covered the 'socio-economic characteristics' of the respondents, while Section 'B' focused on the research questions and objectives. The questionnaire utilized a 5-point Likert scale, ranging from Strongly Agree (SA) to Strongly Disagree (SD), with the intermediate options being Agree (A), Undecided (UD), and Disagree (D). The instrument underwent face and content validation by two research experts from the Department of Cooperative Economics and Management at Nnamdi Azikiwe University, Awka. These experts assessed the appropriateness, comprehensiveness, and clarity of the questionnaire items. Their feedback was incorporated to refine the structure and content of the questionnaire. To ensure reliability, the researcher employed test-retest reliability using Cronbach's alpha coefficient, which yielded a reliability coefficient of 0.88, indicating high internal consistency.

The researcher administered and collected the data with the assistance of four research assistants who were properly trained on data collection protocols and ethical considerations. The data collection process spanned six weeks to ensure comprehensive coverage of all selected SMEs. To enhance the response rate and quality of responses, the researchers employed both online and physical questionnaire distribution methods. Data analysis was conducted using both descriptive and inferential statistics. Mean and standard deviations were used to answer research questions, while the hypotheses were tested using linear regression analysis at a 0.05 level of significance. This statistical tool was chosen for its appropriateness in measuring the impact of office

automation on SME performance among the target population. All analyses were carried out using Statistical Package for Social Sciences (SPSS) version 27.

Data Presentation and Analysis

The presentation and analysis of data collected from the field were carried out in this section. The aim is to present the data in an interpretable form so that the variables of the study can be comprehensive. Out of the 300 copies of questionnaires that were distributed, 218 (72.7%) copies of the questionnaires were filled and returned, while 82 (27.3%) copies of the questionnaires were not recovered.

Analysis of Data Related to Research Questions

Decision Rule:

The decision in the analysis section is determined by the average of the responses of respondents.

Strongly Agreed (5 points), Agreed (4 points), Disagreed (3 points), Strongly Disagreed (2 points) and Undecided (1 point). The average of the responses:

$$\frac{(5 + 4 + 3 + 2 + 1)}{5} = 3.0$$

Therefore, a mean score below 3.0 would be considered rejected and a mean score of 3.0 and above would be considered accepted.

RQ1: What is the effect of automated record management systems on the operational efficiency of SMEs in Anambra State?

Table 1: Mean Ratings on Effect of Automated Record Management Systems on the Operational Efficiency of SMEs in Anambra State

S/N	Item	N	Mean	Std. Dev.	Remark
	Automated Record Management Systems				
1	Digital filing system has reduced time spent searching for documents	218	3.70	1.201	Accepted
2	Automated data backup systems have improved data security and retrieval	218	3.92	1.118	Accepted
3	Digital record keeping has reduced documentation errors	218	3.71	1.254	Accepted
4	Automated inventory management system helps track stock levels accurately	218	3.64	1.180	Accepted
	Operational Efficiency				
5	Work processes are completed faster since implementing automated systems	218	3.71	1.243	Accepted
6	Operating costs have reduced due to automated record keeping	218	3.61	1.237	Accepted
7	Staff productivity has improved with digital workflow management	218	3.87	1.126	Accepted
8	Resource allocation is more efficient with automated tracking systems	218	3.68	1.185	Accepted
	Grand Mean	**218**	**3.73**	**1.193**	**Accepted**

Table 1 shows the mean ratings on effect of automated record management systems on the operational efficiency of SMEs in Anambra State.The analysis revealed significant positive perceptions regarding automated record management systems and operational efficiency among

SMEs in Anambra State. All items scored above the decision criterion of 3.0, with mean scores ranging from 3.61 to 3.92. Automated data backup systems showed the highest impact (M = 3.92, SD = 1.118), followed by staff productivity improvements through digital workflow management (M = 3.87, SD = 1.126). The majority of respondents affirmed that digital record keeping reduced documentation errors (M = 3.71, SD = 1.254) and accelerated work processes (M = 3.71, SD = 1.243). The overall grand mean of 3.73 (SD = 1.193) indicates an overwhelming acceptance that automated record management systems positively affect operational efficiency.

RQ2: How does automated communication systems impact customer service delivery in SMEs in Anambra State?

Table 2: Mean Ratings on Impact of Automated Communication Systems on Customer Service Delivery in SMEs in Anambra State

S/N	Item	N	Mean	Std. Dev.	Remark
	Automated Communication Systems				
1	Automated email responses have improved response time to customer inquiries	218	3.81	1.165	Accepted
2	Digital messaging system has enhanced internal team communication	218	3.80	1.166	Accepted
3	Customer feedback is better managed through automated ticketing systems	218	3.67	1.214	Accepted
4	Digital communication channels have increased customer engagement	218	3.78	1.186	Accepted
	Customer Service Delivery				
5	Customer satisfaction has improved since implementing automated support systems	218	3.90	1.139	Accepted
6	Automated CRM system has enhanced customer relationship management	218	3.79	1.179	Accepted
7	Customer complaints are resolved faster through automated channels	218	3.76	1.217	Accepted
8	Digital communication tools have improved service delivery accuracy	218	3.73	1.184	Accepted
	Grand Mean	**218**	**3.78**	**1.181**	**Accepted**

Table 2 shows the mean ratings on impact of automated communication systems on customer service delivery in SMEs in Anambra State.The analysis demonstrated strong positive outcomes across all measured aspects. All items exceeded the 3.0 decision threshold, with mean scores ranging from 3.67 to 3.90. Customer satisfaction showed the highest improvement following automated support system implementation (M = 3.90, SD = 1.139), while automated email responses significantly enhanced customer inquiry response times (M = 3.81, SD = 1.165). The digital messaging system substantially improved internal team communication (M = 3.80, SD = 1.166). The grand mean of 3.78 (SD = 1.181) indicates an overwhelming acceptance that automated communication systems positively impact customer service delivery.

Hypotheses Testing

Decision Rule: Reject the null and accept the alternate if P-value < 0.5; if otherwise accept the null Hypothesis.

Hypothesis One

H_1: Automated record management systems have no significant effect on the operational efficiency of SMEs in Anambra State.

Table 3: Linear Regression Results for Automated Record Management Systems and Operational Efficiency

Predictor	B	SE B	β	t	p
Constant	1.145	0.246	—	4.655	< .001
Automated Record Management Systems	0.635	0.040	.742	15.664	< .001

Note: $R^2 = .55$, $F(1, 216) = 245.42$, $p < .001$.

The regression analysis for automated record management systems' effect on operational efficiency (Table 3) yielded statistically significant results ($F(1, 216) = 245.42$, $p < .001$). The model explained 55% of the variance ($R^2 = .55$), with automated record management systems significantly predicting operational efficiency ($\beta = .742$, $p < .001$). The strong positive relationship ($B = 0.635$, $SE\ B = 0.040$) indicates that for every unit increase in automated record management systems, operational efficiency increases by 0.635 units. Given these significant results, we reject the null hypothesis that automated record management systems have no significant effect on operational efficiency.

Hypothesis Two

H_2: Automated communication systems have no significant effect on customer service delivery in SMEs in Anambra State.

Table 4: Linear Regression Results for Automated Communication Systems and Customer Service Delivery

Predictor	B	SE B	β	t	p
Constant	1.280	0.277	—	4.620	< .001
Automated Communication Systems	0.608	0.045	.683	13.617	< .001

Note: $R^2 = .47$, $F(1, 216) = 185.42$, $p < .001$.

The regression analysis examining automated communication systems' impact on customer service delivery (Table 4) showed statistically significant results ($F(1, 216) = 185.42$, $p < .001$). The model accounted for 47% of the variance ($R^2 = .47$), with automated communication systems significantly predicting customer service delivery ($\beta = .683$, $p < .001$). The positive relationship ($B = 0.608$, $SE\ B = 0.045$) indicates that for every unit increase in automated communication systems, customer service delivery increases by 0.608 units. Based on these significant results, we reject the null hypothesis that automated communication systems have no significant effect on customer service delivery.

Discussion of Findings

The study found that automated record management systems significantly affect the operational efficiency of SMEs in Anambra State. This positive impact can be attributed to the streamlining of document processing, improved data security, and reduced manual handling of records, which collectively minimize errors and save time. This finding aligns with Onah, Mary & Onwuchekwa (2024), who found that digital transformation enhances organizational performance through improved decision-making processes. Similarly, Dunmade, Ajayi, & Oladejo (2022) reported that modern database management significantly improved employee efficiency in the public sector. The finding also corresponds with Okatahi, Nwachukwu & Okhuese (2022), who found that office automation tools, particularly Microsoft Office applications, significantly impacted public enterprise performance by enhancing operational efficiency.

The study also revealed that automated communication systems significantly impact customer service delivery in SMEs in Anambra State. This positive relationship can be explained by the enhanced response times, improved customer feedback management, and better internal team communication that automated systems enable. These improvements allow SMEs to provide

more responsive and consistent customer service. This finding is consistent with Okoliko *et al*. (2023), who found that AI-powered communication systems significantly enhanced customer satisfaction in the banking sector. The result also aligns with Ifeoma, Phina, Nwanonigwe & Uchechukwu (2021), who reported a strong positive relationship between digital infrastructure and service delivery in telecommunication firms. Furthermore, Chux-Nyeche, Lezina & Garrick (2023) found similar results in their study of commercial banks, where robotic/artificial intelligence systems significantly improved customer service delivery.

Conclusion

Based on the findings, office automation significantly enhances SME performance in Anambra State through improved operational efficiency and customer service delivery. Automated record management systems streamline operations by reducing documentation errors and improving data security, while automated communication systems enhance customer service through faster response times and better feedback management. The strong positive relationship between automation systems and performance metrics demonstrates that investing in office automation technologies is crucial for SMEs to maintain competitiveness and achieve sustainable growth in today's digital business environment.

Recommendations

Based on the study findings, the following recommendations are made:

1. SMEs in Anambra State should prioritize investment in comprehensive automated record management systems, including digital filing systems, automated data backup, and inventory management tools. This investment should be accompanied by regular staff training programs to ensure optimal utilization of these systems and maximize their impact on operational efficiency.
2. The Anambra State government should establish a dedicated SME technology support fund to assist small businesses in acquiring and implementing automated communication systems. Additionally, they should organize regular workshops and technical support programs to help SMEs effectively integrate and maintain these systems, particularly focusing on customer relationship management tools and digital communication platforms.

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