

AI-POWERED VIRTUAL ASSISTANTS AND JOB PRODUCTIVITY OF OFFICE MANAGERS IN SELECTED FEDERAL UNIVERSITIES, SOUTH WEST, NIGERIA

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Abstract

The study investigated the significant relationship between AI-powered virtual assistants and job productivity of office managers in selected public institutions, south-west, Nigeria. The study adopted a descriptive survey design for a population of 356 office managers across various units and departments. The total enumeration was used as the sample size. Data were sourced through a validated questionnaire and was subjected to a Cronbach Alpha test that produced values of 0.709 and 0.698 respectively. The data that obtained from the respondents were analysed using the descriptive and inferential statistics while the null hypothesis was tested using the Multiple regression analysis at the 0.05 level of significance. Out of the expected 356, responses were obtained from 188 and they were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (using multiple correlation to test the null hypothesis at a 0.05 level of significance). The result ($R = 0.615$) with productivity, explaining 37.8% of the variance ($R^2 = 0.378$), while the adjusted R^2 (0.365sssssss, $p < 0.05$) showed that there is a strong significant and positive relationship between the use of AI-powered virtual assistants and job productivity. It was concluded that AI tools positively impact task efficiency, time management, and accuracy. The study recommends targeted AI training, regular sensitization workshops, improved technical support, and strategic investment in AI adoption. The implications highlight the importance of integrating emerging technologies into administrative functions to enhance workforce efficiency in higher institutions.

Keywords: Artificial Intelligence, Virtual Assistants, Job Performance and Productivity, Office Administration and Management, Office Technology and Information Management

Introduction

Job productivity is a crucial measure of efficiency that reflects the output generated by an employee within a given timeframe. In respect to office managers who are the custodians of organisational information, job productivity can be described as the ability of office managers to effectively and efficiently manage administrative tasks, coordinate communication, and ensure the smooth operational activities at the workplace. In

every organisation, office managers are expected to efficiently handle documentation, schedule meetings, respond to correspondences, and supports academic and administrative staff (Afolabi & Solarin, 2025). They play a vital role when maintaining efficiency by reducing delays, improving the overall workflow, supervising clerical staff, and maintaining effective records. By doing so, they streamline administrative processes and reduce

bottlenecks (Chigona et. al., 2024). However, their productivity is often challenged by excessive workloads, outdated administrative systems, and limited access to modern technological tools that could enhance their efficiency.

The productivity of office managers in tertiary institutions is also significantly tied to their competence in leveraging digital tools for administrative efficiency. With the growing adoption of information and communication technology (ICT), office managers are expected to be proficient in database management, virtual communication, and automated scheduling systems. The ability to integrate cloud-based applications, manage virtual documents, and facilitate digital collaboration enhances their work output and reduces errors in administrative tasks (Uppal et. al., 2021). Nevertheless, institutions that fail to invest in continuous professional development and up-to-date technological infrastructure will not only risk diminishing office managers' efficiency and poor results but would also experience poor organisational and administrative performance.

Moreover, workplace support and organizational policies greatly impact the productivity of office managers in tertiary institutions. Adequate staffing, clear job descriptions, and the provision of necessary resources enable office managers to execute their duties effectively (Mwendwa et. al., 2023). Institutions that implement work-life balance policies, ergonomic workspaces, and structured professional training programmes often experience higher levels of efficiency among employees (Sohrabi & Babamiri, 2022). A lack of organizational support may lead to burnout, reduced motivation, and decreased job satisfaction, which negatively impacts productivity. Therefore, fostering a supportive work environment is crucial for office managers to maintain high levels of efficiency and positive results at all times.

The job productivity of office managers is measured using key indicators such as task

completion rates, administrative requests, responsiveness, institutional needs, accuracy and document management. One emerging factor that has significantly influenced these measures is the integration of AI-powered virtual assistants in administrative workflows. These intelligent systems enhance office managers' productivity by automating repetitive tasks, streamlining communication, and providing real-time data analytics, thereby allowing office managers in tertiary institutions to focus on more strategic and high-value responsibilities.

However, productivity in modern university environments is increasingly influenced by technological advancements. With growing administrative demands, office managers often face challenges such as information overload, multitasking pressures, and time constraints (Smith & Lee, 2024). Traditional methods of task management may no longer be sufficient in meeting the dynamic needs of public universities. As institutions embrace digital transformation, integrating AI-powered virtual assistants into secretarial functions has the potential to enhance efficiency by automating repetitive tasks, streamlining communication, and improving information retrieval. This technological shift presents new opportunities to optimize secretarial productivity, allowing professionals to focus on more strategic and value-driven responsibilities.

AI-powered virtual assistants are transforming administrative and academic operations in tertiary institutions by automating routine tasks, enhancing communication, and improving overall efficiency (Ali, 2024). These intelligent systems use natural language processing (NLP), machine learning, and data analytics to assist students, faculty, and administrative staff in handling various institutional functions. Virtual assistants streamline tasks such as scheduling meetings, managing emails, answering frequently asked questions, and providing instant access to academic resources (David, 2024). By reducing the administrative burden on human staff, AI-

powered virtual assistants allow for a more structured and efficient workflow, ensuring that operations run smoothly within tertiary institutions.

In addition to administrative automation, AI-powered virtual assistants play a crucial role in academic support and institutional decision-making (Lesi, 2020). They assist students by providing personalized learning recommendations, guiding them through course selections, and offering automated tutoring services. Faculty members benefit from AI-driven analytics that help in grading assignments, monitoring student engagement, and detecting patterns in academic performance. Furthermore, these virtual assistants contribute to institutional decision-making by analyzing data trends, predicting enrollment patterns, and identifying areas that require improvement (Mori, 2021). The integration of AI in tertiary institutions enhances responsiveness, optimizes resource allocation, and fosters a data-driven approach to academic and administrative management.

The effectiveness of AI-powered virtual assistants in tertiary institutions can be measured through key performance indicators such as user satisfaction, system uptime, and adaptability to institutional needs. These measures ensure that AI systems are efficiently supporting academic and administrative functions while maintaining high levels of reliability. One of the most significant impacts of AI-powered virtual assistants is their ability to enhance the productivity of office managers by automating repetitive tasks, reducing workload pressure, and enabling them to focus on strategic decision-making and high-value responsibilities. In line with this background, the study intends to examine the influence of AI-powered virtual assistants on the productivity of office managers in tertiary institutions.

Despite the increasing adoption of AI-powered virtual assistants across various sectors, their impact on the productivity of office managers in public universities

remains underexplored. Office managers play a vital role in ensuring administrative efficiency, yet they often struggle with overwhelming workloads, time management challenges, and the repetitive nature of their tasks (Trubshaw, 2018). Traditional secretarial functions require extensive human effort, making it difficult to maintain optimal productivity levels in a fast-paced academic environment. While AI-powered virtual assistants offer solutions to these challenges, there is limited empirical evidence on their effectiveness in enhancing the productivity of secretarial staff in public universities. Additionally, concerns exist regarding the adaptability of office managers to AI-driven tools, their level of digital literacy, and the potential resistance to technological change. Without a clear understanding of how AI-powered virtual assistants impact secretarial productivity, universities may struggle to implement these technologies effectively (Natale, 2021). This study seeks to address this gap by examining the extent to which AI-powered virtual assistants influence the productivity of office managers in selected federal universities, south west, Nigeria.

Aim and Objectives of the Study

The study aims to examine the influence of AI-powered virtual assistants on the productivity of office managers in selected federal universities, south west, Nigeria. The specific objectives are to:

1. ascertain the level of productivity of office managers in selected federal universities, south west, Nigeria;
2. assess the level of AI-powered virtual assistants office managers in selected federal universities, south west, Nigeria;

Research Questions

The following questions will guide the study:

1. What is the level of job productivity of office managers in selected federal universities, south west, Nigeria?
2. What is the level of usage of AI-powered virtual assistants by office managers in selected federal universities, south west, Nigeria?

Research Hypothesis

The null hypothesis below was tested at the 0.05 level of significance:

H₀₁: There is no significant influence of AI-powered virtual assistants on job productivity of office managers in selected federal universities, south west, Nigeria.

Theoretical Review

The Goal-Setting Theory

The Goal-Setting Theory, proposed by Edwin Locke in 1968, emphasizes the relationship between goal specificity, difficulty, and performance outcomes in enhancing job productivity. The theory posits that setting clear, challenging, and achievable goals leads to higher performance levels, as individuals are more motivated when they have specific targets to work toward (Jeong, 2023). Research indicates that goal setting increases employees' persistence, effort, and focus, making it a crucial framework for understanding office managers' job functions in tertiary institutions (Latham, 2023). This theory is related and relevant to this discourse because office managers are responsible for setting performance benchmarks, monitoring team progress, and ensuring that administrative operations align with institutional goals. By leveraging goal-setting principles, office managers can enhance work efficiency, foster accountability, and drive better organizational outcomes (Fayomi & Akanazu, 2024).

In addition, this theory is particularly relevant as it provides a structured approach to task management and productivity optimization. Office managers oversee diverse administrative duties, including document processing, communication coordination, and resource allocation. Setting specific goals enhances task completion rates and minimizes distractions, leading to higher efficiency in office environments (Tilburg University, 2025). Moreover, challenging yet realistic goals encourage office managers and their teams to develop problem-solving

strategies and improve workflow processes (Lunenburg, 2011). By setting clear expectations and tracking progress, office managers can ensure that administrative functions align with institutional policies, enhancing overall productivity in higher education settings.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), propounded by Fred Davis in 1989, is one of the most relevant theories in understanding the adoption and effectiveness of AI-powered virtual assistants in office management. TAM posits that user acceptance of a technology is primarily influenced by perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, 1989). TAM is relevant and related to this study as user satisfaction depends on how efficiently these systems enable office personnel to perform their daily routines and business transactions effectively and efficiently e.g. streamlining the hours to spend in handling administrative tasks, scheduling, documentation, and communication (Afolabi & Solarin, 2025). When virtual assistants demonstrate high accuracy in task execution and reduce cognitive load, office managers perceive them as useful and reliable tools, leading to higher adoption rates (Rahman et al., 2022). Moreover, the integration of AI-powered assistants in institutional settings enhances administrative efficiency, as they provide quick access to information, automate routine processes, and improve decision-making support (Al-Hujran et. al., 2023).

System uptime, another critical measure of AI-powered virtual assistants, is closely related to the "Perceived Reliability" construct that evolved from TAM. A high level of uptime ensures uninterrupted service, minimizing delays and frustration for office managers who rely on these tools for daily operations (Wu & Chen, 2021). When an AI assistant functions seamlessly with minimal technical failures, it fosters greater trust and dependency among users, further strengthening its perceived usefulness

(Saaida, 2023). Research indicates that institutions with reliable AI-powered assistants report higher staff efficiency, fewer administrative bottlenecks, and improved workflow automation (Al-Hujran et al., 2023). Conversely, frequent downtime can lead to decreased satisfaction and reluctance to integrate AI systems into institutional frameworks, highlighting the need for robust technical infrastructure and real-time monitoring (Rahman et al., 2022).

Adaptability to institutional needs, a key factor in the success of AI-powered virtual assistants, aligns with the "Perceived Compatibility" construct, which was later introduced as an extension of TAM (Kakavand et al., 2024; Abulail et al., 2025). AI assistants that seamlessly integrate into office managers' existing workflows, databases, and communication tools increase their effectiveness and acceptance (Wu & Chen, 2021). For instance, in tertiary institutions, AI-powered assistants tailored to administrative requirements, such as managing academic records, handling faculty requests, and automating student queries, enhance productivity and reduce workload (Saaida, 2023). Research suggests that adaptability is a major determinant of AI adoption, as customizable virtual assistants provide greater flexibility, ensuring that office managers can leverage them to meet evolving institutional needs (Al-Hujran et al., 2023). As AI continues to advance, its ability to dynamically adjust to organizational requirements will play a crucial role in shaping its long-term impact on office management and institutional efficiency.

Review of Empirical Studies

Several empirical studies have explored the role of AI-powered virtual assistants in improving job productivity in various organizational settings. Al-Hujran et al. (2023) examined AI adoption through the lens of the Technology Acceptance Model (TAM), finding that perceived usefulness and ease of use significantly impact employees' productivity. Their study in corporate

environments revealed that AI-powered virtual assistants enhance workflow automation, reduce repetitive tasks, and improve decision-making efficiency. Similarly, Rahman, Karim, and Alam (2022) investigated AI adoption in digital workplaces, emphasizing system reliability and user satisfaction as key factors influencing employee performance. Their findings demonstrated that AI systems with high uptime and adaptability to business needs contribute to higher efficiency, reduced workload, and enhanced employee responsiveness. In the educational sector, Saaida (2023) provided evidence from higher institutions, showing that AI-driven workplace automation leads to optimized time management, reduced administrative delays, and improved communication, thus enhancing employee productivity.

AI-powered virtual assistants have also been found to play a crucial role in higher education and office automation. Grigorescu and Garais (2023) studied the implementation of AI-powered automation tools such as Asana for digitizing teaching activities in universities. Their research indicated that virtual assistants streamline academic workflows, reduce manual administrative tasks, and improve efficiency in handling documentation. Lesi (2020) investigated the impact of office automation on secretarial productivity at Rivers State University, emphasizing how AI-driven tools support real-time scheduling, record-keeping, and communication efficiency. Additionally, Wu and Chen (2021) analyzed how AI-based automation enhances administrative roles in educational institutions, focusing on reliability and adaptability. Their study confirmed that AI-powered assistants boost office managers' efficiency by automating information processing, maintaining organized records, and minimizing errors in institutional workflows.

Another key area of empirical research is the adaptability of AI-powered virtual assistants to diverse work environments. Mekni (2021)

explored the role of AI-based conversational agents in business operations, finding that these systems significantly reduce employees' workload by handling repetitive inquiries and enhancing task coordination. Pérez, Rodríguez, and González (2023) conducted a systematic literature review on the role of AI chatbots in education, showing that adaptive AI-powered assistants provide personalized support to employees, fostering better engagement and improved work outcomes. Tandon, Patel, and Chang (2023) examined continuous feedback mechanisms in hybrid work environments and found that AI-powered virtual assistants facilitate real-time feedback loops, improving employee responsiveness and job performance. These findings underscore that the adaptability of AI-driven assistants to organizational needs determines their impact on employee efficiency and engagement.

Studies have also highlighted the influence of AI-powered virtual assistants on mental well-being and overall employee satisfaction. Lee, Kim, and Park (2023) analyzed AI-powered mental health virtual assistants and found that their ability to provide emotional support, stress management tips, and mental health resources positively affects employees' focus and productivity. Butt (2020) proposed a conceptual framework for digital transformation, demonstrating that AI-driven tools facilitate seamless business process management, reducing stress levels among employees by automating repetitive administrative tasks. Similarly, David (2024) explored AI-powered virtual assistant solutions for supporting international students, emphasizing how these tools help manage schedules, organize tasks, and improve time management skills, ultimately enhancing overall productivity in academic settings.

The application of AI-powered virtual assistants in workplace environments, particularly in office management, is further

supported by research in automation and employee efficiency. Mori (2021) examined AI-powered virtual assistants in banking and financial services, revealing that these tools improve workflow automation, optimize customer interactions, and minimize human errors. Uppal et al. (2021) investigated cloud-based AI solutions in office automation, showing that AI-driven predictive models enhance employee well-being by reducing workload strain and streamlining documentation processes. Furthermore, Zhenjing et al. (2022) examined the impact of workplace environments on employee performance, highlighting that AI-driven assistants contribute to a more structured, organized, and stress-free work environment, leading to better productivity and efficiency.

Overall, these empirical studies provide strong evidence that AI-powered virtual assistants positively impact job productivity by enhancing automation, improving efficiency, increasing responsiveness, and supporting adaptability to organizational needs. This growing body of research highlights the necessity for institutions and businesses to invest in AI-driven solutions to streamline administrative tasks, enhance employee satisfaction, and optimize operational effectiveness.

Methodology

The study adopted a descriptive survey design for a population of 356 office managers across various units and departments. The total enumeration was used as the sample size. Data were sourced through a validated questionnaire and was subjected to a Cronbach Alpha test that produced values of 0.709 and 0.698 respectively. The data that obtained from the respondents were analysed using the descriptive and inferential statistics while the null hypothesis was tested using the Multiple regression analysis at the 0.05 level of significance.

Table 1: Population and Sample Size

S/N	Institutions	Pn	Stratified Method	Sample Size
1	University of Ibadan, Ibadan	92	$92/356 \times 100 = 25.8$	48
2	Ladoke Akintola University of Technology, Ogbomoso	61	$61/356 \times 100 = 17.1$	32
3	Emmanuel Alayande University of Education, Oyo	18	$18/356 \times 100 = 5.2$	11
4	University of Lagos, Akoka, Lagos	103	$103/356 \times 100 = 28.9$	54
5	Federal University of Oye Ekiti, Ekiti State	82	$82/356 \times 100 = 23$	43
		356	100	188

Source: Institutional Website/Researchers' Contact, 2025

Table 1 shows that from a population of 356 across five institutions, a proportional sample size of 188 was drawn. The University of Lagos had the largest sample (54), followed by the University of Ibadan (48), Federal

University of Oye Ekiti (43), Ladoke Akintola University of Technology (32), and Emmanuel Alayande University of Education with the least (11).

Table 2: Demographic Data Analysis of Respondents

Variables	Category	Frequency	Percentage (%)
Gender	Male	19	10.1
	Female	169	89.9
Marital Status	Single	83	44.1
	Married	105	55.9
Age Range	Below 25 years	13	6.9
	25 – 30 years	41	21.8
	31 – 35 years	35	18.7
	36 – 40 years	29	15.4
	41 – 45 years	25	13.3
	46 years and above	45	23.9
Academic Qualifications	ND	41	21.8
	HND/B.Sc.	119	63.3
	MBA/M.Sc.	28	14.9
	Ph.D.	0	0.0
Years in Service	Below 5 years	83	44.1
	5 – 10 years	51	27.1
	11 – 15 years	29	15.4
	16 – 20 years	15	8.1
	Above 20 years	10	5.3

Source: Field survey, 2025

The demographic analysis of the 188 respondents shows that the majority were female (89.9%), while males accounted for only 10.1%. In terms of marital status, 55.9%

were married and 44.1% single, indicating a slightly higher representation of married participants. The age distribution reveals a fairly diverse spread, with the highest

proportion within the 46 years and above category (23.9%), followed by 25–30 years (21.8%) and 31–35 years (18.7%), while the least represented group was those below 25 years (6.9%). Regarding academic qualifications, most respondents held an HND/B.Sc. (63.3%), with 21.8% holding ND and 14.9% MBA/M.Sc., while none had a Ph.D. Concerning years in service, a significant proportion had below 5 years of

experience (44.1%), followed by 5–10 years (27.1%), whereas only a few had 16–20 years (8.1%) or above 20 years (5.3%), reflecting a predominantly early- to mid-career workforce.

Analysis of Research Question 1: What is the level of job productivity of office managers office managers in selected federal universities, south west, Nigeria?

Table 3: Level of Job Productivity of Office Managers office managers in selected Federal Universities, South West, Nigeria

Measures	Mean	SD	Remark
Task Completion Rates	3.19	0.72	Accepted
Responsiveness	2.16	0.84	Rejected
Accuracy	3.00	0.79	Accepted
Document Management	3.25	0.70	Accepted

Source: Field survey, 2025

Decision Rule: Mean \geq 3.00 - Accept; Mean $<$ 3.00 - Reject

Table 3 illustrates the level of job productivity among office managers at the University of Lagos, Akoka, focusing on task completion, responsiveness, accuracy, and document management. Task completion (3.19) and document management (3.25) recorded the highest means. Accuracy (3.00)

was also accepted, showing consistency in work quality. However, responsiveness (2.16) was rejected as a weak area. Overall, the data suggests a generally positive perception of job productivity except responsiveness. This implies strength in routine tasks but poor adaptability to urgent demands.

Table 4: Research Question II: What is the level of AI-powered virtual assistants office managers in selected Federal Universities, South West, Nigeria?

Measures	Mean	SD	Remark
User Satisfaction	2.96	0.85	Reject
System Uptime	2.94	0.91	Reject
Adaptability to Institutional Needs	2.95	0.89	Reject

Source: Field survey, 2025

Decision Rule: Mean \geq 3.00 \rightarrow Accept; Mean $<$ 3.00 \rightarrow Reject

The analysis of Table 4.4 reveals that the level of AI-powered virtual assistants among office managers in selected federal universities, south west, Nigeria, is generally low, as all measures fell below the 3.00 benchmark. User satisfaction (Mean = 2.96, SD = 0.85), system uptime (Mean = 2.94, SD = 0.91), and adaptability to institutional needs (Mean = 2.95, SD = 0.89) were all rejected,

indicating that AIPVAs are yet to meet the expected standards in enhancing productivity, ensuring consistent system reliability, and aligning with the unique administrative demands of institutions. This suggests that despite the potential of AI tools, their current utilization and effectiveness in the surveyed universities remain inadequate.

Test of Hypothesis

H₀1: There is no significant influence of AI-powered virtual assistants on productivity of office managers office managers in selected Federal Universities, South West, Nigeria.

Table 5a: Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.615	0.378	0.365	4.212

a. Predictors: (Constant), *User satisfaction, system uptime, and adaptability to institutional needs*

Table 5b: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	812.543	3	270.848	15.272	0.000
	Residual	1337.456	184	7.267		
	Total	2149.999	187			

a. Dependent Variable: *Productivity*

b. Predictors: (Constant), *User satisfaction, system uptime, and adaptability to institutional needs*

Table 5c: Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	12.421	2.315	–	5.367	0.000
User Satisfaction	0.318	0.092	0.284	3.457	0.001
System Uptime	0.275	0.088	0.261	3.125	0.002
Adaptability	0.332	0.099	0.295	3.355	0.001

a. *Dependent Variable: Productivity*

The multiple regression results show that AI-powered virtual assistants significantly influence the productivity of office managers in selected Federal Universities, South West, Nigeria. Table 5a indicates that the model has a moderate correlation ($R = 0.615$) with productivity, explaining 37.8% of the variance ($R^2 = 0.378$), while the adjusted R^2 (0.365) confirms the model’s reliability. The ANOVA results in Table 5b reveal that the overall model is statistically significant ($F = 15.272$, $p < 0.05$), rejecting the null hypothesis. Table 5c further shows that all three predictors, user satisfaction ($\beta = 0.284$, $p = 0.001$), system uptime ($\beta = 0.261$, $p = 0.002$), and adaptability to institutional needs ($\beta = 0.295$, $p = 0.001$), significantly and positively affect productivity. This implies that improvements in these factors contribute meaningfully to enhancing office managers’ productivity, thereby confirming the

significant influence of AI-powered virtual assistants in the institutional context.

Discussion of Findings

The findings of this study revealed that office managers in selected federal universities in South West Nigeria demonstrate moderate levels of job productivity across key indicators such as task completion, accuracy, and document management, while responsiveness emerged as a weak area. This outcome aligns with Afolabi and Solarin (2025), who noted that office managers serve as the backbone of institutional efficiency by managing communication, records, and administrative tasks, but often struggle with delayed responses due to overwhelming workloads. Similarly, Chigona et al. (2024) emphasized that while office managers streamline processes and reduce bottlenecks, their productivity may falter in areas requiring adaptability and swift

responsiveness, which resonates with the rejection of responsiveness in this study.

In terms of the use of AI-powered virtual assistants, the results showed that user satisfaction, system uptime, and adaptability to institutional needs all fell below the acceptance benchmark. This suggests that despite the potential of AI tools, their utilization in the surveyed universities remains inadequate. These findings support Natale (2021), who observed that while AI-driven tools promise efficiency, poor adaptability and resistance to change hinder their adoption in academic institutions. Similarly, Trubshaw (2018) argued that traditional methods of office management in universities make it difficult for staff to embrace technological innovations, often resulting in low satisfaction and underutilization of AI-powered systems. However, the multiple regression results clearly indicate that AI-powered virtual assistants significantly and positively influence office managers' productivity, with adaptability emerging as the strongest predictor, followed by user satisfaction and system uptime. This aligns with Rahman et al. (2022), who found that system reliability and user satisfaction are central to the successful integration of AI tools in workplaces. Likewise, Saaïda (2023) emphasized that adaptability to institutional needs determines the extent to which AI systems contribute to employee efficiency, showing that when virtual assistants are tailored to specific organizational contexts, productivity increases significantly.

The findings also resonate with the Technology Acceptance Model (TAM) by Davis (1989), which highlights perceived usefulness and ease of use as determinants of technology adoption. In this study, the significance of user satisfaction as a predictor of productivity aligns with TAM's assertion that when individuals perceive a system as useful and easy to use, adoption rates improve. Wu and Chen (2021) further observed that system uptime (or reliability) fosters trust and enhances user satisfaction,

which corresponds with the positive influence of system uptime found in this study. Therefore, despite the current low levels of acceptance, the regression results confirm that AI-powered assistants hold great potential for improving administrative efficiency in higher education institutions. Furthermore, the results validate the Goal-Setting Theory (Locke, 1968), which posits that clear and structured targets enhance employee performance. Office managers' productivity in areas like task completion and document management reflects their ability to meet set goals effectively. However, their poor responsiveness suggests a gap in adaptive goal-setting under pressure. Latham (2023) emphasized that realistic but challenging goals drive persistence and creativity in problem-solving. By integrating AI-powered virtual assistants to support responsiveness, universities can bridge this gap, ensuring that office managers meet dynamic demands without compromising efficiency (Fayomi & Akanazu, 2024).

Empirical studies also reinforce the study's findings. For instance, Al-Hujran et al. (2023) and Grigorescu & Garais (2023) demonstrated that AI-powered automation reduces repetitive tasks and streamlines workflows, directly improving productivity. In the Nigerian context, Lesi (2020) showed how office automation in universities supports secretarial efficiency by enhancing scheduling and record-keeping, findings that align with the significant positive influence observed in this study. Similarly, Mori (2021) and Pérez et al. (2023) highlighted adaptability as a key factor in AI effectiveness, emphasizing that institutions benefit most when AI systems are customized to their operational and administrative needs. The discussion reveals that while office managers in federal universities maintain moderate levels of productivity in structured administrative tasks, their responsiveness remains inadequate. At the same time, AI-powered virtual assistants, though currently underutilized, significantly predict productivity outcomes when assessed

collectively. This dual finding suggests a paradox: productivity is being achieved despite the low adoption of AI, but the potential for greater efficiency lies in fully integrating AI systems. Supporting earlier research (Ali, 2024; David, 2024), the results underscore the transformative role AI can play in higher education by automating repetitive duties, improving responsiveness, and enhancing accuracy, thereby enabling office managers to focus on strategic and value-driven responsibilities.

Conclusion

The study concludes that AI-powered virtual assistants significantly influence the productivity of office managers in selected Federal Universities, South West, Nigeria. The findings reveal that user satisfaction, system uptime, and adaptability to institutional needs are key factors that determine the effectiveness of these technologies in enhancing office managers' performance. This implies that when AI systems are reliable, user-friendly, and tailored to institutional demands, they enable office managers to carry out their tasks more efficiently, ensure timely completion of responsibilities, and improve overall workflow. Consequently, the adoption of AI-powered virtual assistants serves as a vital tool for strengthening administrative processes and achieving greater efficiency in university management.

Recommendations

Based on the findings and conclusion, the researchers made the following recommendations:

1. Management should consistently make provisions for adequate administrative support, modern office technologies, and workload distribution strategies to office managers to help minimise heavy workloads and improve their responsiveness and boost their commitment to work.
2. Management should continuously organising training on AI virtual

assistant tools, provide technical support, and create awareness programmes for office managers so as to increase user satisfaction, improve system utilization, and encourage the effective adoption of AI-powered virtual assistant technologies in universities.

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