Innovations

Technology Adoption and Employee Performance of Central Bank of Nigeria

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Abstract: *This study aims to investigate the effect of technology adoption on employee performance of Central Bank of Nigeria (CBN). A total of 10,748 staff members of CBN were selected for this study. Data were collected from a sample of 228 using stratified random sampling and snowballing techniques. The latent constructs reported good composite reliability values, which ranged from 0.794 (adaptive performance) to 0.911 (perceived technology usefulness). Data were analyzed using descriptive and inferential statistics. For the test of hypotheses, the partial least squares (PLS) SEM method was used. Finding revealed that technology readiness, acceptance, usability, perceived ease of use, and perceived usefulness all significantly influence employee performance and outcomes. It was concluded that employees with high technology readiness produced higher quality work, suggesting that fostering a technology-friendly culture is beneficial. Moreover, it is important for the CBN to strategically adopt technology in their operations and create a technological-enabled environment that fosters high employee performance, engagement, and overall success.*

Keywords: *Technology Readiness, Work Quality, Technology Acceptance, Adaptive Performance, Technology Usability, Contextual Performance*

Introduction

In the contemporary global landscape, technology stands out as a pivotal force driving significant transformations within organizations. Scholars such as Rana (2019) and Van Esch&Mente (2018) highlight the widespread adoption of automation technologies by organizations to streamline processes. Notably, countries like China and South Korea have embraced Industry 4.0 technologies, including automation, Internet of Things (IoT), and Artificial Intelligence (AI), leading to substantial operational improvements (Mohamad et al., 2018; Tantawi et al., 2019). Automation technologies like robotic process automation (RPA) and AI have notably enhanced efficiency by automating repetitive tasks, reducing errors, and allowing employees to focus on strategic endeavors (Jha et al., 2021). Moreover, advanced data analytics tools enable organizations to make informed, data-driven decisions by analyzing vast

amounts of data to optimize processes (Vassakis et al., 2018). Collaboration tools like Microsoft Teams and Zoom have revolutionized teamwork, facilitating seamless collaboration irrespective of geographical boundaries (Dolgui&Ivanov, 2022). Technology has also significantly impacted the banking sector, particularly in Europe where FinTech investments have surged, with the UK and Germany leading in FinTech investments and unicorn companies (Hodson, 2021).

In Africa, technology has played a transformative role in enhancing organizational procedures and driving economic growth. AI technologies are increasingly being adopted by organizations in Africa to improve resource management and sustainability practices (Wamba-Taguimdje et al., 2020). These technological advancements have not only created millions of job opportunities but also contributed significantly to the economic value of the region (Ndung'u&Signé, n.d.). Within the banking sector in Africa, technology has been pivotal in streamlining processes, improving efficiency, and extending financial services to underserved populations. Mobile banking solutions like M-Pesa in Kenya have revolutionized financial inclusion, allowing individuals without traditional bank accounts to access financial services (Ndung'u, 2018). Similarly, the Nigerian banking sector has leveraged technologies such as IoT, Fintech, blockchain, and AI to enhance operational efficiency and customer service.

Technology's role in enhancing employee performance within financial institutions, particularly central banks like the Central Bank of Nigeria (CBN), cannot be overstated. By automating processes, providing data-driven insights, and fostering continuous learning through training programs, technology equips employees with the necessary tools to excel in their roles (Bandari, 2019; Gurusinghe et al., 2021). This not only enhances individual performance but also contributes to organizational efficiency and competitiveness. Employee performance in financial institutions encompasses various dimensions such as adaptive performance, contextual performance, task performance, quality of work, and dedication (Iroegbu, 2015; Sampath-Kappagoda, 2018). These dimensions collectively determine an employee's effectiveness and contribution within the organization, highlighting the critical role of technology in enhancing performance across these areas.

Research into technology adoption by the CBN for improving employee performance is imperative in the current digital age (DiRomualdo et al., 2018; Saadatmand et al., 2022). Understanding employees' readiness to embrace technology, acceptance of technological changes, and motivation to utilize technology tools is essential for the CBN to align its technology initiatives with organizational goals effectively (Ademola-Thomas, 2022). The Technology-

Organization-Environment (TOE) Theory underscores the importance of aligning technology with an organization's strategy, structure, and culture for successful implementation (Ghaleb et al., 2021; Ghobakhloo et al., 2022; Neumann et al., 2022). Examining the predictive capabilities of technology readiness, acceptance, motivation, and perceived usefulness in relation to employee performance is crucial for the CBN to optimize the effect of technology adoption on employee performance.

Objectives of the Study

The broad objective of the study is to investigate the effect of technology leveraging on employee performance of CBN. The specific objectives are to:

i. Ascertain the effect of technology readiness on employee's quality of work.
ii. Examine the effect of technology acceptance on adaptive performance.
iii. Assess the influences of technology usability on contextual performance.
iv. Examine the effects of perceived ease of use on job dedication.
v. Determine the effect of perceived technology usefulness on task performance.

Research Hypotheses

The study will draw up hypotheses that:

i. Technology readiness has a significant effect on employee's quality of work.
ii. Technology acceptance has a significant effect on adaptive performance.
iii. Technology usability has a significant effect on contextual performance.
iv. Technology perceived ease of use has a significant effect on employees' job dedication.
v. Perceived technology usefulness has a significant effect on task performance.

Literature Review

Conceptual Review

The utilization of technology involves the practical application of scientific knowledge in real-world scenarios, as highlighted by Dahlman and Westphal (1985). Technology encompasses tangible procedures that transform inputs into outputs, alongside the social structures that govern these activities, as defined by Dahlman and Westphal (1985). This definition emphasizes that technology is not just about physical tools and processes but also about how these tools are utilized, managed, and integrated into the broader context of society. Similarly, Karwowski and Zhang (2021) view technology as tools,

systems, or methods that aid in human decision-making processes. Technology adoption entails strategically using existing technological resources to enhance operational efficiency and foster innovation within organizations (Javaid et al., 2021). By leveraging technology, organizations can optimize processes, boost productivity, and achieve their objectives more efficiently (Rejeb et al., 2019). This strategic approach involves customizing technology solutions to specific needs, enabling organizations to derive enhanced value from their activities (Abeysiriwardana et al., 2022).

The concept of technology adoption is integral to the modern financial landscape, particularly within the CBN. The strategic utilization of technology is crucial for the CBN to fulfill its mission and navigate the evolving financial terrain (Attaran, 2020). Leveraging technology in the CBN involves identifying areas for improvement, selecting appropriate technologies, integrating and implementing them, customizing solutions, providing training, measuring impact, enhancing communication, ensuring security, and privacy (Kalolo, 2019). Within organizations, technology readiness, technology acceptance, technology use motivation, technology dominance, and technology-led HR functions play crucial roles in technology leveraging and innovation.

Employee performance is a multifaceted concept that encompasses the measurable outcomes and achievements of employees within their roles (Afshan et al., 2012). It involves the successful completion of tasks, alignment with organizational objectives, and the display of acquired knowledge and skills (Mensah, 2015; Bataineh, 2019). Employee performance is vital for organizational success as it contributes to efficiency, productivity, and overall effectiveness (Abualoush et al., 2018). In the context of the CBN, employee performance involves not only task completion but also attributes such as professionalism, teamwork, and continuous learning. The CBN recognizes that employee performance directly impacts its stability and ability to promote economic growth (Ismail et al., 2019).

Employee performance within the CBN can be measured through task performance and contextual performance. Task performance involves the execution of job responsibilities and contributing to the technical functions of the organization (Bertolino et al., 2013). Quality of work and adaptive performance are key components of task performance, emphasizing employees' ability to fulfill their responsibilities effectively and adapt to changing circumstances (Kim et al., 2021). Contextual performance, on the other hand, refers to voluntary behaviors that go beyond job duties, such as helping colleagues, volunteering for additional tasks, and active participation in team activities (Organ & Ryan, 1995). Job dedication is a crucial aspect of

contextual performance, reflecting employees' commitment, enthusiasm, and proactive engagement in their work (Han et al., 2019).

Technology Readiness and Quality of Work

Technology readiness is a crucial aspect for organizations in today's dynamic business landscape, as it pertains to their ability to adopt and effectively utilize new technologies. This readiness is essential for organizations to remain competitive and enhance the quality of work among their employees. According to Wei (2015), organizations need to develop suitable technology to adapt to new challenges and capitalize on opportunities to enhance employee skills. Albukhitan (2020) also emphasizes the importance of organizations being prepared to adjust to the evolving digital environment.

In the context of the CBN, technology readiness significantly influences the quality of work. The CBN recognizes the importance of being technologically advanced and leveraging new technologies to enhance work processes and productivity. This approach fosters high-quality work among employees, as noted by Ali et al. (2020) and Shin et al. (2019), who highlight the positive impact of technology adoption on employee satisfaction. Employees who are passionate about technology and their roles are more likely to be committed to delivering high-quality work within organizations that prioritize technology (Adisa, 2021).

Technology Acceptance and Adaptive Performance

In the contemporary digital era, the integration of technology has become pivotal for businesses, particularly in fostering teamwork and collaboration among employees. Scholars such as Burnett &Lisk (2019) and Pillai&Sivathanu (2020) assert that the acceptance of technology is a critical factor in the successful implementation and utilization of technology within the workplace. This acceptance significantly affects the effectiveness of teamwork and collaboration among employees who possess the requisite technological skills. In a rapidly evolving technological landscape, organizations must not only embrace new technologies but also ensure that employees are adept at using them (Kişi, 2022). By comprehending the factors influencing technology acceptance, organizations can make informed decisions regarding technology adoption and employee training (Zhang et al., 2019), thereby optimizing technology implementation strategies and equipping employees with the necessary proficiency to leverage the adopted technologies effectively.

Ensuring compatibility with existing systems is another crucial factor that significantly impacts technology acceptance. New technologies must seamlessly integrate with current systems and processes to prevent additional workload for employees, which can lead to reduced productivity and teamwork (Sunny et al., 2018). Incompatibility issues may disrupt

communication within the organization, hampering adaptive performance. Evaluating compatibility with existing systems before adopting new technologies is essential to avoid disruptions and facilitate adaptive performance (Ranieri et al., 2018; Tu, 2018).

Technology Usability and Contextual Performance

The relationship between technology usability and contextual performance focuses on how employees' motivation to utilize technology affects their adherence to required work behaviors (Liu et al., 2021; Ryan & Power, 2020). Non-discretionary work behaviors encompass tasks that employees must perform within their roles, with limited flexibility. These behaviors involve following procedures, adhering to rules, and meeting performance standards. Technology use motivation reflects employees' internal drive to engage with technology, influenced by factors like usefulness, ease of use, and personal interest.

High technology use motivation is linked to improved compliance with non-discretionary work behaviors. Motivated employees are more likely to follow processes, utilize technology effectively, and meet standards, seeing technology as a tool that enhances efficiency (Hartmann &Lussier, 2020). They actively seek technological solutions to streamline processes and improve outcomes. Conversely, low motivation may lead to underutilization of technology, affecting work behaviors negatively.

In response to technological advancements, the CBN invested in technologies like IoT, Fintech, blockchain, and AI, encouraging employees to embrace these tools (Ibeme& Musa, 2022). The CBN provided training programs to equip employees with skills to utilize these technologies effectively (Pichler et al., 2021; Sharma & Srivastava, 2019). This investment in technology use motivation significantly affects the contextual performance of CBN employees. Employees felt empowered and engaged in technological advancements, developing new skills like data analysis and programming. Training opportunities fostered technology use motivation, leading to positive effects on employees' contextual performance.

Perceived Ease of Use of Technology and Job Dedication

The development of literature on the effect of Perceived Ease of Use of Technology on Job Dedication has become increasingly important in understanding how technological innovations affect job dedication. Salami et al. (2022) emphasize the role of technology in creating new avenues for delivering banking products, with banks adopting various solutions such as digital banking systems, automated transaction processing, fintech, blockchain technology, and data analytics tools to meet industry demands (Soetan et al., 2021; Yahaya&Sa'idu, 2021). Technology's influence on employee dedication is

a significant area of study. The introduction of new technologies has shown positive outcomes in enhancing commitment levels among staff members. By leveraging technological advancements, employee well-being and engagement can be improved, leading to higher productivity and dedication among employees (Ahmed, 2021; Famodun, 2020; Gaur, 2020; Ibeme& Musa, 2022; Malik et al., 2022).

The adoption of new technologies not only streamlines work processes but also creates a more convenient and engaging work environment. Automation of repetitive tasks allows employees to focus on complex and rewarding work, ultimately enhancing job satisfaction and dedication (Kim et al., 2019; Wang et al., 2020). Employees who perceived ease of use in new technology are more likely to demonstrate commitment and dedication to their roles (Saks, 2021). Moreover, technological progress enables improved collaboration and communication among team members, fostering teamwork and knowledge sharing. The implementation of digital banking systems at the CBN facilitates seamless collaboration regardless of geographical locations, enhancing relationships and dedication among employees (Laili et al., 2022). By exploring the effect of Perceived Ease of Use of Technology on Job Dedication, organizations like the CBN can create a supportive work environment that encourages dedication, commitment, and improved performance among its workforce.

Perceived Technology Usefulness and Task Performance

When employees believe that technology can enhance their job execution, they are more likely to embrace it and actively seek opportunities to enhance their skills. Salloum et al. (2019) suggest that external influences shape the perceived usefulness, which subsequently influences individuals' attitudes towards its adoption. Research indicates that perceived usefulness and ease of use play a pivotal role in enhancing performance (Salloum et al., 2019). Employees tend to adopt technology in their daily responsibilities to improve their productivity, effectiveness, and efficiency when they perceive it as advantageous. High perceived benefits of technology adoption lead to increased willingness to embrace and effectively utilize new technologies. For instance, if the CBN introduces a new digital currency platform like e-Naira, employees who recognize its benefits, such as faster transactions and enhanced security, are more likely to engage with the platform and improve their task performance through enhanced knowledge and skills. Providing training and resources to enable CBN staff to effectively use technology can act as a mediator between perceived technology usefulness and task performance. Famodun (2020) suggests that training provisions can motivate desired work behaviors within an organization, fostering an environment of continuous learning and innovation that enhances task performance.

Studies (Al-Emran et al., 2020; Hamidi&Chavoshi, 2018) demonstrate that technology's usefulness can enhance task performance by enabling skill development and core competency improvement. Implementing user-friendly data analytics tools at the CBN enables employees to efficiently analyze data, identify trends, and make informed decisions, ultimately leading to enhanced performance and organizational success. However, challenging technologies can hinder work behaviors by creating barriers for employees lacking technical expertise, potentially resulting in reduced efficiency and increased turnover rates.Employees who recognize the benefits of technology are more likely to drive innovation and efficiency within the organization by experimenting with new technologies to enhance operational effectiveness. Conversely, low perceived technology benefits may hinder motivation to learn new technologies effectively, limiting skill development and core competency enhancement.

Methodology

This study focuses on technology adoption and employee performance. Thus, quantitative research method was employed.

Research Design

The research design, specifically a cross-sectional survey, is crucial for this study. Cross-sectional surveys collect data at a specific point in time, offering insights into population characteristics and relationships between variables. The cross-sectional survey design is suitable for efficiently collecting data from a large and diverse sample for this study.

Population of the Study

The population of the study is the entire group of individuals, items, or elements that are the subject of investigation or analysis in a research study (Priya, 2021). The population of this study consisted of 10,748 staff members of Central Bank of Nigeria. This population is made up of employees at from entry-level, mid-level and senior staff.

Sample Size Determination

Sample size refers to the number of individuals, items, or data points selected from a larger population for the purpose of conducting research, surveys, experiments, or data analysis (Johnson, 2018). It represents a subset of the population that is studied or analyzed to draw conclusions or make inferences about the entire population. A sample size of 373 was determined for this study using the Krejcie and Morgan (1970) sample size table (please see appendix).

Table 1: Allocation of Sample

S/N	Central Bank of Nigeria	Population	Sample
1	Entry Level Staff	887	31
2	Mid-Level	9108	316
3	Senior Staff	753	26
	Grand Total	**10,748**	**373**

Source: Personnel Department, 2024.

Sampling Techniques

To select the sample size for this study, the stratified random sampling and snowballing techniques were used. First the researcher identified staff with requisite experience and who were also willing to be part of the study. Then these participants were asked to recommend others with the requisite experience and exposure on the study. This snowball effect helped the researcher to reach individuals who might not have been easily found, leading to a richer and more diverse sample. The referral chain continues until the researcher reach the sample size.

Validity and Reliabilityof Instrument

The pilot study allows to test the research instrument and identify any potential issues (Dźwigoł, 2020). Based on the pilot study's validity and reliability analysis, the research instrument was refined. The reliability of the instrument for this study was confirmed via the Cronbach Alpha, Average variance extracted (AVE) and Composite reliability. The output of validity and reliability analyses which were carried via SmartPLS version 3.2.7 are shown in tables 2 and 3.

Table 2: Factor Loadings, Reliabilities and AVEs

Latent Variable	Indicators	Convergent validity			Internal consistency reliability	
		Loadings	Indicator reliability	AVE	Composite reliability ρ_c	Cronbach Alpha (CA)
		>0.70	>0.50	>0.50	>0.70	0.70 – 0.90
TR	TRI_1	0.733	0.537	0.613	0.888	0.884
	TRI_2	0.875	0.766			
	TRI_3	0.749	0.561			
	TRI_4	0.759	0.576			
	TRI_5	0.792	0.627			

TEA	TEA_1	0.717	0.514	0.607	0.885	0.881
	TEA_2	0.787	0.619			
	TEA_3	0.769	0.591			
	TEA_4	0.747	0.558			
	TEA_5	0.868	0.753			
TUM	TUM_1	0.759	0.576	0.613	0.888	0.883
	TUM_2	0.852	0.726			
	TUM_3	0.825	0.681			
	TUM_4	0.758	0.575			
	TUM_5	0.713	0.508			
PEU	PEU_1	0.732	0.536	0.587	0.810	0.797
	PEU_2	0.804	0.646			
	PEU_3	0.761	0.579			
PTU	PTU_1	0.826	0.682	0.671	0.911	0.893
	PTU_2	0.816	0.6659			
	PTU_3	0.836	0.699			
	PTU_4	0.753	0.567			
	PTU_5	0.861	0.741			
QOW	QOW_1	0.724	0.524	0.540	0.854	0.843
	QOW_2	0.742	0.551			
	QOW_3	0.736	0.542			
	QOW_4	0.747	0.558			
	QOW_5	0.724	0.524			
TAC	TAC1	0.751	0.564	0.583	0.893	0.890
	TAC2	0.718	0.516			
	TAC3	0.824	0.679			
	TAC4	0.749	0.561			
	TAC5	0.803	0.645			
	TAC6	0.732	0.536			
CP	CP1	0.755	0.570	0.612	0.904	0.892
	CP2	0.844	0.712			
	CP3	0.793	0.629			
	CP4	0.732	0.536			
	CP5	0.804	0.646			
	CP6	0.762	0.581			
JDN	JDN1	0.745	0.555	0.563	0.794	0.789
	JDN2	0.778	0.605			
	JDN3	0.728	0.530			
ADP	ADP1	0.785	0.616	0.646	0.879	0.874
	ADP2	0.814	0.663			
	ADP3	0.873	0.762			

	ADP4	0.738	0.545			

Source: SmartPLS 3.2.7 output on research data, 2024.

Note: TR = Technology Readiness, TEA = Technology Acceptance, TUM = Technology Usability, PEU = Perceived Ease of Use of Technology, PTU = Perceived Technology Usefulness, QOW, Quality of Work, TAC = Task Performance, CP = Contextual Performance, JDN = Job Dedication, and ADP = Adaptive Performance

To verify the convergent validity, factor loadings of individual items were observed. Each item loadings are above 0.6, while the averages of the item-to-factor loadings in the model were above the 0.5 threshold (Bagozzi& Yi, 1988; Hair, Hult, Ringle&Sarstedt, 2017). These results show convergent validity of the items.

From the results reported in Table 2, the latent constructs reported good composite reliability values, which ranged from 0.794 (adaptive performance) to 0.911 (perceived technology usefulness). This means that the proportion of the total composite variance that serves as an estimation of the true-score variance of each construct, is above the 0.70 cut off value (Hair et al., 2017).
Also, the results in Table 2 show that all variables have average variance extracted (AVE) values exceeding the 0.50 threshold recommended by Fornell and Larcker (1981). The lowest AVE is 0.540 generated by quality of work latent variable, while the highest AVE is 0.671 generated by perceived technology usefulness. In addition, all the degrees of freedom, are greater than zero, thus, all the models are over-identified. Therefore, the model, has evidence of convergent validity.

Table 3: Discriminant Validity and Reliability

	AVE	TR	TEA	TUM	PEU	PTU	QOW	TAC	CP	JDN	ADP
TR	0.613	**0.767**									
TEA	0.607	0.421	**0.766**								
TUM	0.613	0.014	0.335	**0.775**							
PEU	0.587	0.217	0.132	-0.126	**0.789**						
PTU	0.671	0.223	-0.261	0.120	0.152	**0.846**					
QOW	0.540	-0.231	-0.325	0.342	0.114	0.126	**0.733**				
TAC	0.583	0.231	0.112	0.312	0.128	0.225	0.012	**0.874**			
CP	0.612	0.134	0.411	-0.111	0.223	0.311	0.110	0.121	**0.768**		
JDN	0.563	0.007	0.132	-0.126	0.213	0.132	0.321	0.222	0.221	**0.778**	

ADP	0.646	0.117	0.112	0.226	0.211	0.132	0.121	0.217	0.132	0.339	**0.798**

Source: SmartPLS 3.2.7 output on research data, 2024.

Note: AVE = Average Variance Extracted, TR = Technology Readiness, TEA = Technology Acceptance, TUM = Technology Usability, PEU = Perceived Ease of Use of Technology, PTU = Perceived Technology Usefulness, QOW, Quality of Work, TAC = Task Performance, CP = Contextual Performance, JDN = Job Dedication, and ADP = Adaptive Performance. Diagonal elements are the square root of Average Variance Extracted (AVE) between the constructs and their measures. Off- diagonal elements are correlations between constructs.

To ensure discriminant validity, the square roots were calculated for the AVEs. This shows the extent that a construct is different from others. As shown in the model, the correlation between the square root values with other variables values show that the square root values for each AVE is greater than the inter-construct correlations. Thus, indicating acceptable discriminant validity of all constructs (Fornell&Larcker, 1981; Hair et al., 2019).

Data Analysis Techniques

Descriptive and inferential statistics was employed. Descriptive statistics involved the use of mean, standard deviation and percentage using Statistical Package for Social Sciences (SPSS) version 25. For the test of hypotheses, the partial least squares (PLS) SEM method was used. The rationale for choosing this method includes: Firstly, PLS technique is a better means of prediction as this study intends to extend the existing theory (Hair et al, 2019). Secondly, PLS method has the ability to handle both reflective and formative constructs (Chin, 1998) and finally, PLS places minimal limitations on distributional characteristics and sample size.

Decision Rule

The level of significance for the study is 5%, for a two-tailed test. The decision rule was: do not reject the null hypothesis if the critical/t-value (±1.96) is greater than the calculated value, otherwise, reject the null hypothesis. That is, using the student *t*-test (*t*-statistic), a variable is statistically significant if t^* (*t*-calculated) is greater than the tabulated value of ±1.96 under 95% (or 5%) confidence levels and it is statistically insignificant if the t^* is less than the tabulated value of ±1.96 under 95% (or 5%) confidence levels.

Data Analyses and Results

In this study, 373 copies of the questionnaire were distributed. Some copies of the questionnaire distributed were duly completed, some were not returned

due to respondents' unavailability. Table 4 indicates the number of copies of the questionnaire returned and not returned.

Table 4: Questionnaire Distribution

S/N	Central Bank of Nigeria	Number distributed	Number Returned (%)	Number not Returned (%)
1	Entry Level Staff	31	19(61.29)	12(38.71)
2	Mid-Level	316	193(61.08)	123(38.92)
3	Senior Staff	26	16(61.54)	10(38.46)
	Grand Total	**373**	**228(61.30)**	**145(38.70)**

Source: Survey Data, 2024.

Table 4 showed that a total of 373 copies of the questionnaire were distributed to CBN staff members. A total of 61.3% representing 228 copies were returned, while 38.7% representing 145 copies were not returned. All the returned copies were used for further analyses since they were all properly filled.

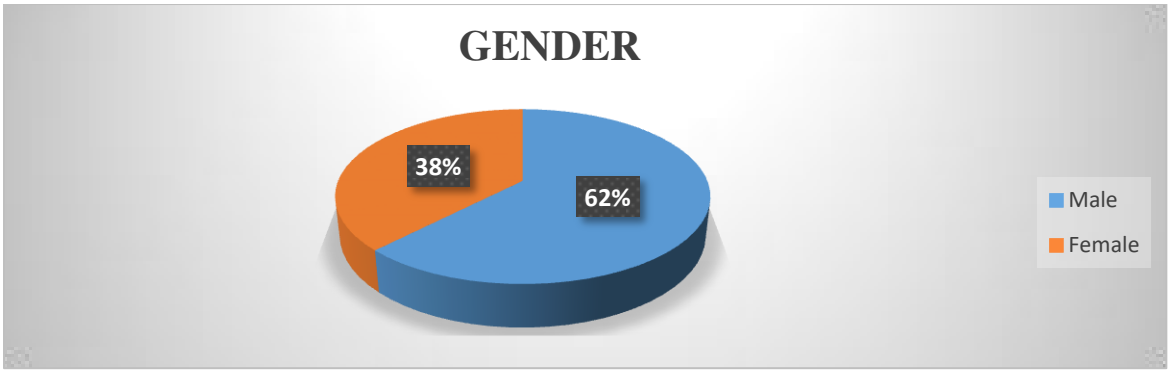

Figure 4.1: Gender of Respondents
Source: Field Survey, 2024.

Figure1 show that 142 (62.3%) of the respondents are males while females are 86(37.7%) of the respondents. This result indicated that there are more male staff than female among the respondents. This may be due to gender biased factor, and how time demanding the job is especially for females who are married.

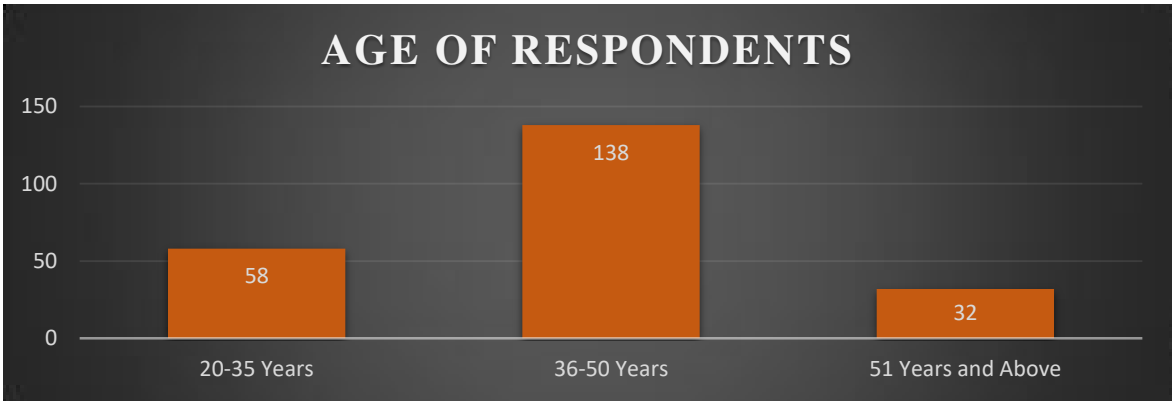

Figure 4.2: Age of Respondents
Source: Field Survey, 2023.

Figure 2 showed the age brackets of the respondents. The result showed that 58 representing 25.4% of the respondents are within the age bracket of 20-35 years, 138 representing 60.5% of the respondents are within 36-50 age bracket, while 32 representing 14% are 51 years and above. This implies that the majority were between 36-50 years of age, followed by 20-35 years of age. The youthful workforce reveal the Central bank of Nigeria have potential long-term employees.

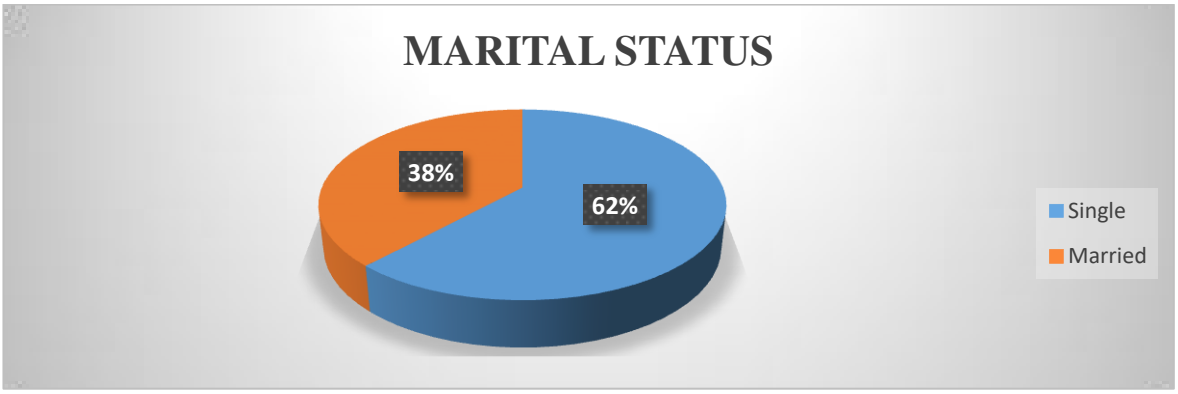

Figure 3: Marital Status of Respondents
Source: Field Survey, 2024.

Figure 3 showed that 141 people (61.8 %) of the respondents are married, 7 people (4 %) are single and 87 people (38.2%) are separated. This result implied that the majority of the respondents are single.

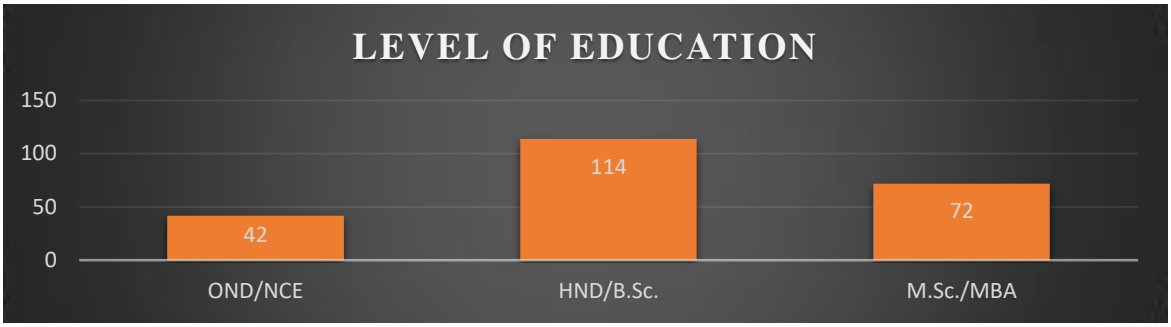

Figure 4: Level of education of Respondents
Source: Field Survey, 2024.

Figure 4 showed the level of educational qualification attained by respondents. The outcome showed that 42 representing 18.4% of the respondents have obtained OND/NCE, 114 respondents representing 50% have HND/B.Sc., while 72 representing 31.6% of the respondents are masters and above. This implied that there are more HND/B.Sc. holders among the respondents followed by MSc/MBA holders. Hence, indicating that majority of central bank of Nigeria workers are highly educated.

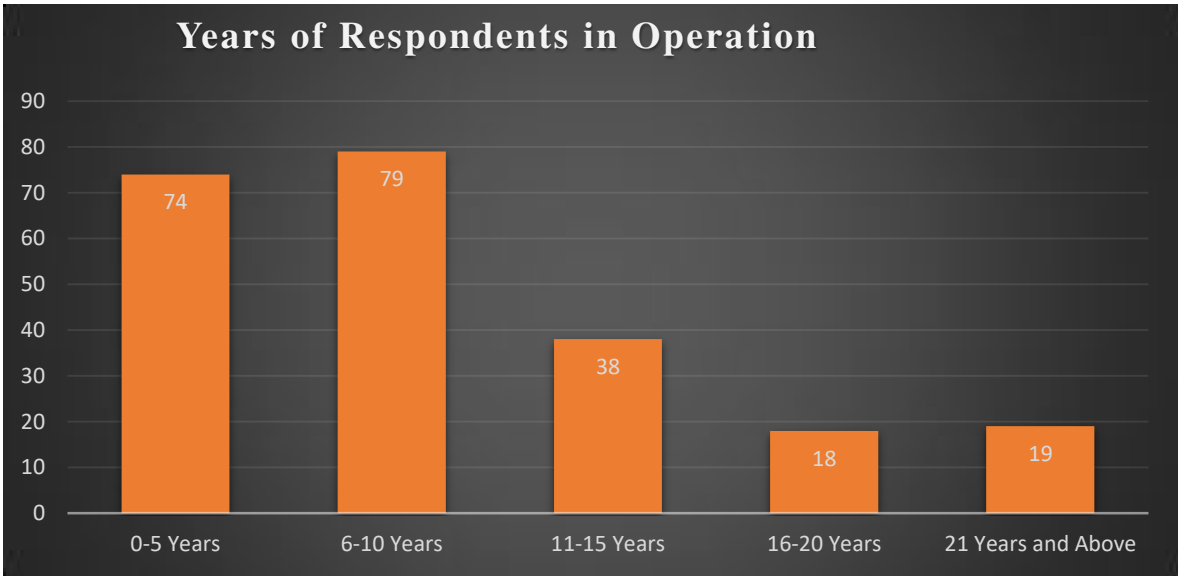

Figure 5: Years of Working Experience
Source: Survey Data, 2024.

Table 5 and figure 4.6 showed number of years of respondents in operation. 74 (32.5%) have 0-5 years of experience, 79 (34.6%) have 6-10 years of experience, 38 (16.7%) have 11-15 years of experience, 18 (7.9%) have 16-20 years of experience, 19 (8.3%) have 21 years and above working experience. The data showed that the least number of people have the highest number of years in operation (16-20 years, 21 years and above).

Table 5: Predictive Accuracy, Predictive Relevance and Effect sizes (f2)

Hypotheses	Correlation Coefficient (β)	Predictive Accuracy (r^2)	Adjusted (r^2)	P-Values	T-Values	Effect Size (f^2)	Predictive Relevance (Q^2)
TR -> QOW	0.783	0.613	0.610	0.000	11.213	0.36	0.195
TEA -> AP	0.870	0.757	0.755	0.001	9.049	0.20	0.281
TUM -> CP	0.698	0.487	0.484	0.003	13.103	0.36	0.312
PEU -> JDN	0.704	0.496	0.497	0.002	15.102	0.19	0.196
PTU -> TAC	0.798	0.637	0.632	0.001	9.891	0.35	0.167

Source: SmartPLS 3.2.9 Output on Research Data, 2024.

Note: TR = Technology Readiness, TEA = Technology Acceptance, TUM = Technology Usability, PEU = Perceived Ease of Use of Technology, PTU = Perceived Technology Usefulness, QOW, Quality of Work, TAC = Task Performance, CP = Contextual Performance, JDN = Job Dedication, and ADP = Adaptive Performance. r^2,= 0.19 = weak, r^2,0.33 = moderate, r^2, 0.67 = substantial (Chin, 1998). Effect size (f^2), 0.02 = small, 0.15 = moderate, while 0.35 = large. Predictive Relevance (Q^2),> 0 = satisfactory (Hair, et al., 2019).

H_1: Technology readiness has a significant effect on employee's quality of work.

Evidence from table 5 revealed that technology readiness has a statistically significant positive effect on employee quality of work. The beta coefficient (β = 0.783) showed that for every unit increase in technology readiness, employee quality of work increases by an average of 0.783 units. The r-squared (r^2 = 0.613) indicated that 61.3% of the variation in employee quality of work can be explained by technology readiness within this model. The t-statistic (t = 11.213) and p-value (p < 0.05) confirmed a significant effect of technology readiness on quality of work. Therefore, employees who are more receptive to new technologies can leverage them to perform their tasks more effectively and efficiently, potentially resulting in higher quality work output. Thus, the alternate hypothesis which stated that technology readiness has a significant effect on employee's quality of work was accepted, while the null hypothesis was rejected.

H_2: Technology acceptance has a significant effect on adaptive performance.

Table 5 showed that technology acceptance has a significant effect on adaptive performance. The high beta coefficient (β = 0.870) indicated a strong relationship between technology acceptance and adaptive performance, meaning that as employees become more accepting of technology, their

ability to adapt and perform effectively in changing environments increases significantly. The r-squared value is 0.757, suggesting that approximately 75.7% of the variance in adaptive performance is explained by technology acceptance, highlighting its importance as a major determinant. The high t-value (9.049) reinforces the significance of this relationship, indicating it is unlikely due to random chance, while the p-value < 0.05 confirmed its statistical significance. These findings suggest that technology acceptance is crucial for enhancing adaptive performance, implying that employees who embrace new technologies are better equipped to adapt to changes, solve problems, and perform efficiently in dynamic environments. Therefore, the alternative hypothesis which stated that technology acceptance has a significant effect on adaptive performance was accepted, while the null hypothesis was rejected.

H_3: Technology usability has a significant effect on contextual performance.

Table 5 indicated that technology usability has a statistically significant and positive effect on contextual performance. The beta coefficient (β = 0.698) suggests a strong positive effect of technology usability on contextual performance, meaning that higher usability of technology is associated with better contextual performance. The r-squared value (r^2 = 0.487) indicated that approximately 48.7% of the variance in contextual performance can be explained by technology usability. The t-value of 13.103 is significantly higher than the critical value typically used for determining statistical significance, reinforcing that the observed relationship is unlikely to be due to random chance. The p-value being less than 0.05 further confirms the statistical significance of the findings, meaning there is less than a 5% probability that the observed relationship occurred by chance. These results suggest that the usability of technology plays a crucial role in improving contextual performance. Therefore, the alternate hypothesis which stated that technology usability has significant effect on contextual performance was accepted.

H_4: Technology perceived ease of use has a significant effect on job dedication.

Table 5 showed that technology perceived ease of use had a statistically significant and positive effect on employee job dedication. The beta coefficient (β = 0.704) indicated a strong positive effect of technology perceived ease of use on job dedication, meaning that as the perceived ease of use of technology increases, so does employees' job dedication. The r-squared value (r^2 = 0.496) revealed that approximately 49.6% of the variance in job dedication can be explained by the perceived ease of use of technology. This is a considerable proportion, highlighting that ease of use is a key factor in ensuring job dedication among employees. The t-value of 15.102 is above the critical value necessary to establish statistical significance. Additionally, the p-value being

less than 0.05 further confirms the statistical significance. The finding suggests that when employees find technology easy to use, they are more likely to be dedicated to their jobs. Thus, the alternate hypothesis which stated that technology perceived ease of use has a significant effect on job dedication was accepted, while the null hypothesis was rejected.

H_5: Perceived technology usefulness has a significant effect on task performance.

Table 5 showed that perceived technology usefulness has a statistically significant effect on task performance. The high beta coefficient (β = 0.798) suggests a strong positive effect of perceived technology usefulness on task performance, meaning that as the perceived usefulness of technology increases, task performance improves significantly. The r-squared value (r2 = 0.637) indicates that approximately 63.7% of the variance in task performance can be explained by perceived technology usefulness. The t-value of 9.891 is considerably high, exceeding the typical critical value for establishing statistical significance. Additionally, the p-value being less than 0.05 confirms the statistical significance of the findings, indicating there is less than a 5% probability that the observed relationship occurred by chance. The result indicated that the more employees perceive technology as useful, the better their task performance will be. Therefore, the alternate hypothesis which stated that perceived technology usefulness has a significant effect on task performance was accepted, while the null hypothesis was rejected.

Discussion of Findings

Finding revealed that technology readiness has a positive and significant effect on employee's quality of work ($r = 0.783$; $r^2 = 0.613$, $t = 11.213$; $p < 0.05$). This result implies that fostering a culture of technology readiness can reap significant benefits. Investing in training programmes, providing access to user-friendly tools, and encouraging experimentation with technology can empower employees to utilize technology effectively. This, in turn, can lead to improved efficiency, accuracy, and innovation within the bank's operations. In other words, employees who are comfortable and confident using technology can leverage its capabilities to enhance their work quality.The finding that technology readiness has a positive and significant effect on employee quality of work in the CBN aligns with a growing body of research. For example, Kim, et al. (2020) found that employees with higher technology readiness demonstrated increased productivity, engagement, and problem-solving skills. Similarly, Park, et al. (2022) observed that technology-ready employees were more likely to embrace new technologies, leading to improved performance and innovation. Also, Oyediran and Oloke (2022) found a positive relationship between technology readiness and employee performance in Nigerian banks. They attribute this to increased efficiency, knowledge sharing,

and decision-making capabilities enabled by technology (Oyediran&Oloke, 2022). Further, Adejumo, et al. (2021) argue that technology empowers employees and creates a more stimulating work environment, thereby improving employee productivity and job satisfaction.

Finding revealed that technology acceptance positively affects employee adaptive performance ($r = 0.870$; $r^2 = 757$, $t = 9.049$; $p < 0.05$). This shows the role of technology acceptance in the operations of the Central Bank. It further reveals that when employees embrace and integrate technology into their work processes, they tend to exhibit higher levels of adaptive performance, which involves the ability to adjust to changing work environments, tasks, and demands.Numerous studies corroborate the positive relationship between technology acceptance and adaptive performance among employees. For instance, research by Lee and Lee (2018) found that employees who perceive technology as useful and easy to use are more likely to demonstrate adaptive behaviors in the workplace. Similarly, a study by Chen et al. (2020) observed a significant association between technology acceptance and adaptive performance, highlighting the importance of user-friendly interfaces and training programs in promoting technology adoption and adaptive behaviours. Similarly, in a study in Italy, Molino, et al. (2020) found that technology acceptance plays an important role in work engagement among white collar workers. In same vein, in a study of German local government employees, Nguyen and Süß (2023) found that local government employees' technology acceptance of e-participation affects their overall performance.

Finding indicated that technology usability positively affects employee contextual performance of the Central Bank ($r = 698$; $r^2 = 0.487$; $t = 13.103$; $p < 0.05$). This finding suggests that when employees perceive technology as usable and efficient, they are more likely to engage in behaviours such as helping colleagues, providing innovative ideas, and contributing to a positive work environment. Thus, enhancing technology usability can encourage collaboration, innovation, and mutual support within the organization, hence ensuring higher employee contextual performance.Several studies have reported similar findings regarding the relationship between technology usability and employee contextual performance. For example, research by Davis and Venkatesh (2020) demonstrated that employees who find technology easy to use are more likely to engage in citizenship behaviors aimed at promoting the welfare of their colleagues and the organization as a whole. Similarly, a study by Kim et al. (2019) found that perceived usability of technology positively predicts employee engagement in organizational citizenship behaviors, highlighting the importance of user-centered design principles in promoting prosocialbehaviours in the workplace. Nwakoby et al.

(2019) in a study on ICT and performance of banks in Nigeria found that technology usability boost employee performance of the banks.

Finding revealed that perceived ease of use of technology has a positive and significant effect on job dedication (r =704; r^2 = 0.496; t = 15.102; $p < 0.05$). This finding shows when employees perceive technology as easy to use, they are more likely to feel competent and confident in performing their job duties, which can enhance their sense of dedication and engagement. Moreover, by reducing the cognitive load associated with technology use, CBN can enable employees to focus more on the substantive aspects of their work, leading to increased productivity and job satisfaction. Several studies have reported similar findings regarding the positive relationship between perceived ease of use of technology and job dedication among employees. For instance, research by Venkatesh et al. (2022) affirmed that technology usefulness positively influence employee job outcomes. In addition, Huang and Li (2019) demonstrated that employees who perceive technology as easy to use exhibit higher levels of dedication and commitment to their jobs. Similarly, a study by Davis et al. (2017) found that perceived ease of use of technology positively predicts employees' willingness to invest effort and time in their job tasks, highlighting the role of usability perceptions in shaping work-related attitudes and behaviours. Also, in a study in the Nigerian oil and gas sector, Bolodeoku, et al (2022) found that perceived usefulness of technology has significant effect on organizational outcomes including employee performance. Likewise, Alqarni, et al (2024) assert that perceived usefulness of Internet of Things (IOT) has significant impact on quality of life of special needs and elderly individuals in Saudi Arabia.

Finding indicated that perceived technology usefulness has a positive and significant effect on task performance (r = 798; r^2 = 637; t = 9.891; $p < 0.05$). This shows that when employees perceive technology as useful, they are more likely to engage with it proactively, explore its functionalities, and leverage its capabilities to enhance their task performance. Moreover, by aligning technology functionalities with job requirements and providing adequate training and support, CBN can enhance employees' perceptions of technology usefulness, thereby improving overall task performance and productivity.Numerous studies have reported similar findings regarding the positive relationship between perceived technology usefulness and task performance among employees. For instance, a study by Baskaran, et al (2020) in the Malaysian manufacturing sector, found that technology innovation has an important influence on employee's job performance by helping to reduce human error, increase productivity, and increase the speed of communication. Also, Venkatesh et al. (2016) demonstrated that employees who perceive technology as useful are more likely to achieve higher levels of task

performance and efficiency. Similarly, a study by Lin and Huang (2018) found that perceived usefulness of technology positively predicts employees' task mastery and goal attainment, highlighting the importance of perceived utility in driving effective technology adoption and usage behaviors.

Conclusion

This study examined the effect of technology adoption on employee performance of Central Bank of Nigeria. The findings reveal that technology readiness, acceptance, usability, perceived ease of use, and perceived usefulness all significantly influence employee performance and outcomes. Hence, it was concluded that employees with high technology readiness produced higher quality work, suggesting that fostering a technology-friendly culture is beneficial. Also, the study shows that, it is important to integrate technology into work processes for adapting to changing demands. Additionally, usable technology fostered contextual performance, leading to increased collaboration, innovation, and positive work environments. In addition, perceived ease of use was linked to job dedication, demonstrating that employees who find technology easy to use are more likely to be dedicated to their work. Furthermore, perceived usefulness enhanced task performance, as employees who see technology as valuable are more motivated to explore its potential and improve their performance. Overall, this study concluded that it is important for the CBN to strategically adopt technology in their operations and create a technology-enabled environment that fosters high employee performance, engagement, and overall success.

Recommendations

i. The Central Bank of Nigeria (CBN) should ensure that technology systems are accessible and inclusive to all employees, including those with disabilities or diverse needs. This can be achieved through incorporating features such as screen readers, keyboard shortcuts, and adjustable font sizes to accommodate a wide range of users.
ii. To encourage technology acceptance, management of the Central Bank of Nigeria, should actively listen to employee concerns about new technologies, provide comprehensive training and support resources to address any anxieties or perceived difficulties, as well as provide user guides, readily available technical support, or peer-to-peer mentoring programmes.
iii. To ensure higher levels of employee contextual performance, the Central Bank of Nigeria should design training programmes specifically for the technologies used by different departments and units. Move beyond basic functionality and focus on how employees can use technology to excel in their contextual roles. This could include training

on features that support problem-solving, collaboration, or data analysis, depending on departmental needs.

iv. To ensure employee job dedication, the Central Bank of Nigeria should prioritize acquiring technology that is intuitive and requires minimal training. This reduces frustration and increases confidence among employees, making them more likely to embrace and actively use the new tools.

v. The Central Bank of Nigeria can improve its employee task performance by empowering its workforce through the implementation of workflow automation, data visualization dashboards, secure collaboration platforms, and providing access to relevant online learning resources and certifications.

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