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Technology Integration in Human Resource Management and Public Sector Performance in Kaduna State, Nigeria, 2014-2023.

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Abstract

This study assesses the impact of technology integration in human resource management HRM on public sector performance in Kaduna State, using New Public Management (NPM) theory as its theoretical framework. Primary and secondary data were collected from staff of five selected MDAs, with a Sample size of 260 drawn from a population of 770 using purposive sampling. Data were gathered through questionnaire and interviews, and analysed using descriptive and inferential statistics with SPSS. The data source ensured the generation of comprehensive and reliable information. The questionnaires were administered using a 5-point Likert scale. Interviews with some relevant stakeholders provided deeper insights, complementing the quantitative data. Data from the questionnaires were analyzed using descriptive and inferential statistics via SPSS. The findings reveal that the integration of technology in human resource management has a significant positive impact on public sector performance in Kaduna State. The study concludes that technology-driven human resource management practices enhance public sector effectiveness and recommends expanding digital human resource applications, particularly in performance appraisal and performance-linked incentives, to motivate further and improve outcomes.

Keywords: Human Resource; Human Resource Management; Technology; Public Sector; Public Sector Performance.

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INTRODUCTION

The integration of technology into public sector governance has become a critical strategy for improving efficiency, transparency, accountability, and service delivery. Globally, governments have adopted technology-driven reforms to modernise public administration and enhance the performance of the public sector (Adewumi & Abasilim, 2024). In Nigeria, similar reforms have been pursued at both federal and state levels, with particular emphasis on strengthening human resource management (HRM) systems.

Despite these efforts, public sector performance at the state level has remained constrained by weak and inefficient HRM processes. In many Nigerian states, including Kaduna State, human resource management has been characterised by poor personnel data management, weak payroll systems, a lack of synchronisation between nominal rolls and payroll, and limited use of digital tools. These weaknesses have contributed to problems such as ghost workers, payroll leakages, low staff productivity, and inefficient utilization of public resources (World Bank, 2005). Such deficiencies undermine public sector performance and highlight the need for effective integration of technology into HRM processes.

In Kaduna State, the civilian administration that was inaugurated in 1999 inherited a public sector characterised by low productivity, weak accountability, and inefficient resource management (Sani, 2010). In response, the government introduced several HRM-related reforms, including payroll computerisation, centralised salary payments, periodic staff audits, and pension reforms through the Contributory Pension Scheme. More recently, the Kaduna State Government, in partnership with the World Bank, initiated the State Governance Reform and Capacity Building Project, which emphasizes the integration of technology and innovation in human resource management processes.

However, despite these initiatives, persistent challenges in HRM efficiency and public sector performance remain evident (Sani, 2010). This raises a critical empirical question: does the integration of technology in human resource management significantly improve public sector performance in Kaduna State? Addressing this question is central to evaluating the effectiveness of ongoing reforms.

Accordingly, this study seeks to assess the impact of integrating technology in human resource management on public sector performance in Kaduna State. The study is guided by the hypothesis that the integration of technology in HRM has a significant positive impact on public sector performance. By empirically examining this relationship, the study contributes to evidence-based policy formulation and offers insights into how technology-driven HRM reforms can enhance the effectiveness of the public sector.

Statement of the Research Problem

The public sector serves as the backbone of national development, responsible for providing essential services, promoting social equity, and ensuring good governance. Its role in safeguarding public welfare and driving economic stability is critical to the progress of any society (World Bank, 2016). In today's rapidly evolving world, the integration of technology into public sector operations has become indispensable. Digital innovation enhances transparency, improves service delivery, increases efficiency and fosters greater citizen engagement, ultimately strengthening the public sector's ability to meet the growing and changing needs of the population (United Nations, 2022). Technological innovation not only modernizes administrative processes but also strengthens citizen engagement and trust, enabling governments to respond more effectively to complex and evolving societal needs.

In Kaduna State, the effectiveness of the public sector has been compromised by weak management structures and inadequate use of technology, resulting in the inability to provide citizens with basic services.

In response to these challenges, the Kaduna State Governance Reform and Capacity Building Project (SGR&CBP) was launched with support from the World Bank in 2005. The overarching objective of the project was to enhance public sector performance by integrating technology into human resource management, ensuring adherence to the principles of transparency, accountability, and efficiency.

Despite these initiatives, significant gaps in public sector performance persist in Kaduna State. There was growing lack of capacity among senior officers to execute major assignments, overloading of few experienced officers, rapid deterioration of productivity, low quality of new entrant into public sector, low rate of modernization, lack of regular and functional staff training, absence of motivation, all continues to hinder effective public sector performance in Ministries, Departments, and Agencies, (SGR&CBP, 2003).

In light of these persistent issues, it is essential to assess the impact of integrating technology in human resource management toward enhancing public sector performance in Kaduna State. This research aims to identify areas where further improvements are needed to enhance efficiency, accountability, and public sector performance.

Research Question

The fundamental question guiding this research work is: To what extent has the integration of technology in the human resource management process impacted public sector performance in Kaduna State?

Objectives of the Study

The primary objective of this study is to evaluate the impact of integrating technology into the human resource management process on public sector performance in Kaduna State, with a focus on efficiency, transparency, and employee engagement. Additionally, to identify the challenges encountered during the digital transformation and to develop practical recommendations to optimise digital human resource solutions.

Research Hypothesis

H0: Integrating technology in the human resource management process has no significant impact on public sector performance in Kaduna State.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The literature relevant to the research topic will be reviewed to provide the study with a conceptual exploration of the various terms used, and a theoretical framework relevant to this research will be provided.

Conceptual Exploration

a. Concept of public sector performance

Several scholars have explored the concept of public sector performance from various perspectives, considering factors such as efficiency, accountability, and responsiveness in the public sector.

The World Bank (2023) defines public sector performance as the efficiency and effectiveness with which public institutions deliver services and achieve policy objectives. It encompasses the processes and outcomes associated with governmental functions, aiming to meet the needs and expectations of citizens. A performance-oriented public sector emphasises results and impact, ensuring that achievements align with set goals and contribute to societal well-being.

Bovaird & Finkelstein (2023) argue that understanding public sector performance involves recognising the multifaceted nature of public sector operations and the need for robust performance management systems to ensure accountability, transparency, and the efficient use of resources in delivering public services.

Tekhena. (2023), a Meta review of public sector performance management research underscores the complexity of measuring and managing performance in public organisations. The review suggests that while performance management systems are widely implemented, their effectiveness varies, and challenges persist in achieving intended improvements.

Boyne (2023) argues that public sector performance can be evaluated by examining factors such as organisational capacity, environmental pressures, and management practices. In his work, Boyne emphasizes that a combination of internal resources and external constraints influences sector performance. He emphasised that performance can be improved through management reform, a focus on public sector outcomes, and achieving efficiency gains. Andrews & Van de Walle (2013) suggested that citizen satisfaction and trust are key elements of public sector performance.

Their study highlights that performance is often judged by the public not only in terms of efficiency but also in terms of transparency, fairness, and responsiveness. Citizens' perceptions of public services are crucial, and better performance often correlates with increased public trust.

These scholars offer a range of perspectives on public sector performance, encompassing efficiency, citizen satisfaction, democratic accountability, and the impact of external contexts. Together, they highlight the complexity of measuring and improving public sector performance in various governance settings. While there are common threads among these scholars, such as the importance of performance measurement, accountability, and the influence of external factors, they differ significantly in their conceptualisation of the key drivers of public service performance.

b. Human resource management

Dessler & Varkkey (2021) view Human Resource Management as the process of recruiting, selecting, training, and managing employees to maximise their contributions to the organisation. Likewise, Armstrong (2022) describes HRM as a strategic and coherent approach to managing an organisation's most valuable assets—the people who individually and collectively contribute to achieving its objectives. Also, Bratton and Gold (2023) viewed HRM as a set of interrelated policies, practices, and systems that influence employee behavior, attitudes, and performance. Conversely, Kramar (2021) emphasises that modern HRM must integrate sustainability and corporate social responsibility. It is evolving beyond traditional functions such as recruitment and payroll, now playing a pivotal role in shaping organisational values, managing employee well-being, and ensuring ethical labour practices (Salau et al., 2022). Additionally, Noe et al. (2023) define HRM as a comprehensive set of practices that foster employee development, encompassing everything from initial hiring to performance evaluation. Torrington et al. (2022), described HRM as the organizational function responsible for managing people, ensuring that employees contribute effectively and productively to the overall company direction and the accomplishment of the organization's goals. They argue that HRM is becoming increasingly strategic, with a greater focus on aligning HR practices with overall business strategies and addressing the challenges posed by technological advancements and globalisation. ICEHRM (2020) views Human Resource Management (HRM) as a critical function of any organisation, as it manages its most important asset: its people. Effective Human Resource Management is essential for attracting and retaining talented employees, fostering a positive work environment, and achieving organizational success. IEduNote (2023) views Human Resource Management (HRM) as encompassing the planning, organising, directing, and controlling of the procurement, development, compensation, integration, maintenance, and separation of human resources to achieve individual and societal objectives.

Human resource management is a crucial function of any organisation. It encompasses the management of people within an organisation in the form of a collective relationship between management and employees. Ujo (2008) believe that the concepts of personnel administration are often used to describe public sector or non-profit personnel administration. On the other hand, personnel management and human resource management are used to describe the administration of personnel within a business. The three concepts are often used interchangeably.

These contemporary perspectives on HRM emphasise the shift towards strategic management of human resources, focusing on aligning HR practices with broader organisational goals, employee engagement, and sustainability.

c. Integrating Technology in Human Resource Management Process

In recent years, integrating technology in human resource management has become critical for improving organizational effectiveness, particularly in the public sector. Technology is no longer just a tool for administrative efficiency; it has evolved into a strategic enabler of human capital development. According to Marler and Boudreau (2017), technological tools such as e-HRM systems, HR analytics, and artificial intelligence applications have reshaped the HR landscape by enabling faster decision-making, employee engagement, and improved talent management.

Furthermore, Meijerink, Bondarouk, and Lepak (2020) emphasise that e-HRM systems empower employees through self-service technologies and foster greater autonomy, thus enhancing employee satisfaction and productivity. These digital tools enable decentralised

decision-making, reduce bureaucracy, and foster more agile HRM practices – essential qualities for modern public sector organisations facing dynamic challenges.

Digital transformation in human resource management also facilitates data–driven practices. Strohmeier and Piazza (2022) argue that HR analytics allows organisations to predict workforce trends, identify potential risks, and optimize resource allocation. By leveraging big data and predictive analytics, HR departments can design more effective training programs, refine recruitment strategies, and proactively manage employee retention and turnover.

In the public sector context, Albrecht et al. (2022) observe that technology integration strengthens transparency, accountability, and citizen trust in government operations. Public sector organisations increasingly rely on digital HR systems to ensure that recruitment and promotion processes are fair, auditable, and free from bias.

However, scholars also caution against over-reliance on technology. Gal, Jensen, and Stein (2020) note that technological adoption without adequate cultural change, employee training, and ethical consideration may lead to staff alienation and resistance. Hence, the success of technology integration in HRM hinges not only on the tools themselves but also on how organisations manage change and build digital competencies among employees (Abasilim, Durojaiye & Gberevbie, 2022).

Extensive research highlights the benefits of integrating technology into human resource practices; however, a noticeable gap remains in understanding the long-term impact of digital HRM solutions, particularly within public sector organisations (Abasilim & Esisio, 2025). Much of the existing literature (e.g. Marler & Boudreau, 2017; Strohmeier & Piazza, 2022) focuses on private sector applications, with limited empirical studies addressing the unique challenges faced by government agencies, such as a rigid regulatory environment, political influences, and public accountability.

Overall. The conceptual consensus suggests that when strategically implemented, technology integration in HRM can significantly enhance efficiency, employee empowerment, transparency, and service delivery, particularly in public sector organisations that are held to high accountability standards.

Theoretical Framework

This study is anchored in the New Public Management (NPM) Theory, which advocates for the application of private sector practices and management principles within the public sector to improve efficiency, accountability, and service delivery (Hood, 1991). NPM emphasises performance measurement, decentralisation, customer orientation, and information and communication technology (ICT) to drive public sector reforms.

In the context of human resource management, NPM theory supports the shift from traditional bureaucratic actions and enhances employee satisfaction by providing better access to HR services. HR practices are moving toward more flexible, strategic, and technology-driven approaches. Integrating technology in HRM is consistent with NPM's core belief that modern management tools- such as digital recruitment systems, HR analytics, and e-HRM platforms – can enhance public sector responsiveness, transparency, and cost-effectiveness (Pollitt & Bouckaert, 2017).

Under NPM, public sector organisations are encouraged to use technology to decentralise HR functions, empower managers and employees through self-service systems, and improve performance management using real-time data. These technology integrations are expected to increase efficiency by reducing administrative burden, enhancing transparency through better information flows, and strengthening accountability with precise tracking of HR services.

NPM theory provides a strong theoretical perspective to analyse how integration of technology into HRM practices can positively (or negatively) impact the performance of public sector organisations.

RESEARCH METHODOLOGY

This study employs an explanatory sequential type of mixed-methods research design. It is a method in which the researcher first conducts quantitative research, analyses the results, and then builds on them to explain the findings in more detail through qualitative research. The research design is ideal for this study, as it combines the breadth of qualitative research with the depth of quantitative research, ensuring that the findings are not only statistically significant but also meaningful and actionable in a real-world context. Adapted questionnaires were administered to a sampled population from the stakeholder MDAs, and the findings were generalised to the entire population of the study. Qualitatively structured interviews were also conducted with two (2) key officers from each of the five stakeholder MDAs and three members of civil society organisations.

a. Population of the Study

The population of this study comprises the entire staff of five stakeholder Ministries, Departments, and Agencies (MDAs) which are Kaduna State Planning and Budget Commission (146 Staff), Ministry of Finance (170 Staff), Office of Auditor-General State Audit (76 Staff), Kaduna State Internal Revenue Service (KADIRS) (297 Staff) and Office of the Head of Service (OHOS) (81 Staff). The researcher believes that the selection of the five MDAs was appropriate and sufficient to elicit valid findings regarding the variables and their impact.

b. Determination of Sample Size

The study sample size was determined using the Research Advisors' (2006) sample size determinant, with a 95% Confidence Level and a 5% Margin of Error. Based on the population of this study, which is 770, the sample size was 260. However, to accommodate the non-response rate, 10% of the sample size was added, resulting in a total of 286. This number of questionnaires was administered. The Kaduna State Planning and Budget Commission has a sample of 52, the Ministry of Finance has 61, the Office of the Auditor General (State Audit) has 28, the Kaduna Internal Revenue Service has 111, and the Office of the Head of Service has 30, making a total sample of 286.

c. Sampling Technique

The researcher adopted judgment sampling (also known as purposive sampling), a non-probability sampling technique in which the researcher uses their expertise, knowledge, or judgment to select participants most relevant to the study. The primary justification for adopting this technique is that it ensures the data comes from individuals who have direct experience or expertise in the research area. This approach is also efficient and time-saving for this study, ensuring that participants were highly relevant to the research questions.

d. Sources of Data

This research basically uses two (2) major sources of data, namely primary and secondary Sources. The researcher generated the primary data for this study through the administration of questionnaires and conducted interviews. It was used in this study due to its practicality, cost-effectiveness, speed, and ease of analysis. A research interview is a two-person meeting conducted to increase knowledge on a given topic. It is designed to gather valid data and reliable information through the responses of the interviewee to a planned sequence of questions.

e. Data Analysis Technique

Data analysis was conducted using both descriptive and inferential statistics. All the data were subjected to descriptive statistics. The justification for using descriptive statistics was that it allowed for the ease of data visualisation, and it also enabled the data to be presented in a meaningful and logical way, facilitating simplified interpretation of the data.

The inferential statistics (correlation and Regression Analysis) generated more meaning from the data, which assisted in answering the research questions. Correlation analysis was used to determine whether a linear association exists between the variables under study. The justification for using correlation is the possibility of predicting causal relationships, predicting human behaviour, and being the most cost-effective approach. Additionally, the methodology and statistical analysis are more straightforward to implement.

Regression analysis, on the other hand, was applied to test the impact of the independent variable on the dependent variable (public sector performance). It is used to assess the strength of

the relationship between variables and for modelling the future relationship between them. This method was used because it allowed the researcher to examine the relationship between two or more variables of interest.

f. Reliability Test

Researchers need to conduct a questionnaire pilot study when researching to determine the accuracy and reliability of the measurement instrument (Creswell & Plato, 2017). Hair et al. (2003) noted that the sample for the pilot test consisted of only 5 to 30 respondents. This means that a pilot study can be conducted on a minimum of five (5) samples to a maximum of thirty (30). Therefore, to determine the reliability of the questionnaire instrument, this study conducted a pilot study with 20 respondents and used Cronbach's alpha in the data analysis.

The results of the reliability test for the instrument show statistical values for the reliability of both the independent and dependent variables of the study. As indicated, the independent variable, human resource management, has a value within the range of 0.7 and 0.8, which implies that the scales are acceptable. The dependent variable, public sector performance, falls within the range of 0.9 and above, indicating excellent performance. This therefore shows that there is good internal consistency among the different items in the study.

DATA PRESENTATION AND ANALYSIS

A total of 286 questionnaires were administered to staff members of five ministries, departments, and agencies in Kaduna State. Out of these questionnaires, 261 were returned, representing a 91.3% response rate. The questionnaires were administered with the help of staff officers and other key staff in the organisations, which assisted in achieving a high response rate. Babbie (2007) suggests that a 50 per cent response rate is considered adequate for data analysis and reporting, whereas 60 per cent is good and 70 per cent is outstanding. Therefore, the present study's response rate is considered very good because it exceeds 70 per cent.

a. Preliminary Analysis

According to Pallant (2010), preliminary analysis is necessary to address specific research questions through a particular statistical analysis. Additionally, Hair et al. (2010) noted that underlying assumptions related to the application of multivariate techniques need to be thoroughly examined and the data screened to enable the researcher to understand the nature of the data used for analysis. However, to perform such preliminary analysis, the data needs to be encoded according to the research requirements and entered into a specific data file selected by the researcher (Aminu, 2015). Therefore, in this study, the researcher used SPSS 25 for data analysis.

b. Descriptive Statistical Analysis

This process involves summarising and organising data to facilitate understanding and interpretation. It focuses on what the data shows directly. This is presented based on the mean and standard deviation. The statistics of the latent variables in the study are presented in Table 5. This provides an immediate overview of the dataset, laying the foundation for further, more complex statistical analysis (Bluman, 2017).

Table 1. Mean and Standard Deviation

Variable	Mean	Std Deviation	N
Public Sector Performance	3.4682	0.81756	261
Human Resource Management	2.9584	0.6708	261

Source: Researchers' SPSS output, 2024.

The mean and standard deviation of all the latent constructs were computed based on the Likert 5-point scale, where 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. By implication, any mean response of 1 – 2.49, 2.50 – 3.49 and 3.50 – 5.00 may be rated below average, average and above average, respectively.

Evidence from Table 1 shows the mean and standard deviation of public sector performance to be 3.4682 and 0.81756, indicating that the level of agreement with the statement on public sector performance among the respondents is average. Additionally, the table still reveals that the mean and standard deviation of human resource management are 2.9584 and 0.6708, which indicates that the level of agreement with the statement on human resource management among the respondents is average. Therefore, on a 5-point Likert scale anchored at different degrees of agreement, all the study variables are rated high, indicating that the respondents agree with the statements on the construct. This suggested that, on average, the scores recorded on the study's variables largely agreed with the questions.

c. Inferential Statistical Analysis

This set of methods is used to make predictions or draw conclusions about a population based on data from a sample. While descriptive statistics summarise and describe the data at hand, inferential statistics go a step further to test hypotheses based on the collected data.

d. Regression Analysis

Regression analysis is a statistical method used to examine the relationship between variables, particularly to assess how the value of a dependent variable changes in response to changes in one or more independent variables. It helps determine the strength and type of relationships (Field, 2018).

e. Coefficient of Determination

The coefficient of determination is used to evaluate the amount of variance explained by independent variables in relation to the dependent variable.

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	0.642[a]	0.412	0.401	0.63278	1.583

Source: Researcher's SPSS Output, 2024
Predictor: (Constant), Integrating Technology in Human Resource Management.
Dependent Variable: Public Sector Performance.

Table 2 shows that integrating technology in human resource management explains 41% variance in public sector performance. Ozili (2023) categorises R-squared as negative, low, and acceptable. He explained that linear model that reports a negative R-Squared should be rejected because the model shows that the explanatory variables do not predict the changes in the dependent variable; R-squared between 0 and 0.09 (0% to 9%) is too low for an empirical model in social science research and this range of R-squared is not acceptable, so it should be rejected; R-squared that is between 0.10 and 0.50 (10% to 50%) is acceptable only under the condition that some or most of the explanatory variables are statistically significant; and R-squared between 0.50 to 0.99 is acceptable especially when most of the explanatory variables are statistically significant.

In line with the view of Ozili (2023), the R-Square value explained by independent variables on public service performance which stood at 41% is acceptable because it is within the acceptance range of 10-50% and three out of five explanatory variables are statistically significant (see Table 4.4), which fulfills the condition for the acceptance of R-Square within this range.

f. Auto Correlation Test

Another requirement of linear regression is the assumption of no autocorrelation of the error terms. Norusis (1995) opined that Durbin-Watson can be used to test the independence of error terms. He further explained that the general rule of thumb is that if the Durbin-Watson value is between 1.5 and 2.5, the assumption of independence of the terms is not violated. The result revealed that the Durbin-Watson coefficient stood at 1.583, as shown in Table 5.9, which falls within the benchmark. This indicates the absence of harmful serial correlation. Therefore, this fulfils one of the assumptions of linear regression.

g. F-Statistics

Table 3. ANOVAa

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	71.682	5	14.336	35.805	0.000[b]
Residual	102.104	255	0.400		
Total	173.786	260			

Source: Researcher's SPSS Output, 2024
Dependent Variable: Public Service Performance
Predictor: (Constant), Technology in Human Resource Management.

Table 3 presents the F-statistics, which were 35.805, with a p-value of 0.000, indicating significance at a 95% confidence level, as the p-value is less than 0.05. This implies that the model is fit and the variables are not wrongly selected. Hence, we can proceed with the regression analysis.

Table 4 Regression Table

Variables	B	Std. Error	Beta	t-Statistic	P-Value
(Constant)	-0.205	0.316		-0.648	0.518
Human Resource Management	0.318	0.067	0.261	4.736	0.000

a. Dependent Variable: Public Sector Performance
Source: Researcher's SPSS Output, 2024

Hypothesis

H0: There is no significant impact of integrating technology in human resource management on public sector performance in Kaduna State.

The coefficient is 0.318, which is positive; this indicates that integrating technology and public sector performance are positively related. However, the significance of this can be justified in the t-statistic and p-value. The t-statistic is 4.736, with a p-value of 0.000, indicating that the relationship depicted by the model is significant at a 95% confidence level. This implied that there is no evidence to accept the null hypothesis, which states that "there is no significant impact between integrating technology in human resource management and public sector performance". The null hypothesis is hereby rejected.

DISCUSSION OF FINDINGS

This study examined the impact of technology integration on human resource management (HRM) performance in the public sector of Kaduna State. The empirical findings provide strong evidence that technology-driven HRM practices significantly and positively influence public sector performance. The rejection of the null hypothesis, supported by a positive regression coefficient ($\beta = 0.318$), a high t-statistic (4.736), and a statistically significant p-value ($p < 0.001$), confirms that improvements in HRM technology adoption are associated with measurable gains in public sector performance.

From a theoretical perspective, these findings strongly support the assumptions of New Public Management (NPM) theory, which advocates the adoption of private-sector management techniques—such as innovation, performance measurement, and technology-driven systems—to improve efficiency and results in the public sector. The positive relationship identified in this study suggests that integrating technology into HRM processes—particularly payroll management, personnel records, and administrative controls—enhances efficiency, reduces leakages, and improves accountability. This aligns with the NPM emphasis on results-oriented management and the use of modern tools to overcome bureaucratic inefficiencies.

The findings also align with earlier empirical studies that document the performance-enhancing impact of integrating HRM technology. For instance, Albrecht (2022) found that digital

HR systems enhance employee engagement and organisational performance by increasing transparency and reducing administrative bottlenecks. Similarly, Strohmeier and Piazza (2022) demonstrated that technology-enabled HRM strengthens service delivery outcomes by improving decision-making, data accuracy, and workforce coordination. The consistency between these studies and the present findings suggests that the positive effects of HRM technology are not context-specific but reflect a broader pattern observable across different public sector environments.

However, this study advances the literature by highlighting that technology integration alone is insufficient to optimise public sector performance fully. While quantitative results show a significant positive impact, qualitative evidence from interviews reveals persistent institutional and human challenges—such as irregular training, delayed promotions, weak incentive structures, and payroll management issues. These challenges moderate the effectiveness of HRM technology reforms by undermining staff morale and limiting the translation of technological efficiency into sustained performance gains. This observation introduces a critical nuance often underemphasized in NPM-driven reforms: technology must be complemented by human-centred policies to achieve lasting improvements.

This finding also provides a critical reflection on NPM theory itself. While NPM emphasises efficiency and technological innovation, critics argue that insufficient attention to employee motivation and capacity building can weaken reform outcomes. The Kaduna State experience supports this critique by demonstrating that, although technology enhances administrative efficiency, its full performance potential is limited by gaps in training, incentives, and welfare management. Thus, the study underscores the importance of integrating human resource development and motivation frameworks alongside NPM-inspired technological reforms.

Additionally, the correlation between quantitative and qualitative findings enhances the validity of the study's conclusions. Interviews with officials from the Office of the Head of Service confirm that HRM technology has improved personnel management and accountability, particularly in reducing payroll irregularities and enhancing record accuracy. However, the continued existence of challenges such as delayed entitlements for retired staff indicates systemic weaknesses that require institutional reforms beyond technological adoption.

In summary, the findings demonstrate that integrating technology into HRM processes has a statistically significant and theoretically grounded impact on public sector performance in Kaduna State. The results support NPM theory and align with existing empirical studies, while also extending the literature by emphasising the conditional nature of technology-led reforms. Sustainable improvements in public sector performance require not only technological innovation but also consistent training, effective incentive systems, and timely compensation mechanisms. Addressing these complementary factors will enable Kaduna State to realise the performance benefits of technology-driven human resource management fully.

CONCLUSION

The findings of this study provide strong empirical evidence that integrating technology into human resource management has had a significant and positive impact on the performance of the public sector in Kaduna State. This demonstrates that digital tools and technological innovations in HRM processes - such as recruitment, training, performance appraisal, and employee engagement- can enhance efficiency, accountability, and service delivery in public institutions.

However, the study also highlights that, despite these promising outcomes, persistent challenges, such as inadequate technological infrastructure, limited staff capacity, resistance to change, and insufficient policy support, continue to constrain the full realisation of technology's potential in HRM. Addressing these challenges through targeted interventions, including capacity-building programs, investment in ICT infrastructure, and the development of robust change management strategies, will be essential for maximising the benefits of HRM technology in the public sector.

The broader implication of this study is that technology is not merely a tool but a strategic enabler for transforming public sector operations. By leveraging technology effectively, public institutions in Kaduna State and potentially other states with a similar context can achieve

enhanced organisational performance, improved service delivery, and greater responsiveness to citizens' needs. This underscores the need for policymakers to adopt a holistic and proactive approach to integrating technological innovations into HRM processes, driving sustainable development and institutional effectiveness. The results obtained in the study provide empirical evidence that the integration of technology in the human resource management process has significantly impacted public sector performance in Kaduna State. It therefore submits that while the area shows promise, persistent challenges need to be addressed to fully leverage the potential of technology in the human resource process, and targeted interventions will be essential for improving public sector performance in Kaduna State.

RECOMMENDATIONS

Based on the results derived from the significant findings of this study, the recommendations to address the identified issues and leverage the strengths of integrating technology in human resource management were made:

In addition to the successes achieved in digitising human resource management, it is recommended that further integration of technology in human resource processes, such as digital performance appraisal systems and employee data management, should be enhanced. Furthermore, consider introducing performance-linked incentives to motivate staff further. The positive impact of technology on public sector performance suggests that further modernisation and digitisation of HR processes will enhance staff engagement, retention, and productivity.

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