

The Use of Technology in Human Resources Management: Opportunities and Challenges for Organizations

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ABSTRACT

In today's dynamic business landscape, the integration of technology in Human Resources Management (HRM) has become imperative for organizations seeking to stay competitive and efficient. However, within the Nigerian context, the extent and implications of technology adoption in HRM remain relatively unexplored. Recognizing this gap, this study delves into the realm of technology in HRM within Nigerian organizations. Its primary objective is to comprehensively assess the current state of technology adoption, identify the opportunities and challenges it presents, understand its impact on employee engagement and satisfaction, and provide actionable recommendations for effective utilization. Drawing upon a thorough review of existing literature, the study unveils the multifaceted potential of technology in HRM. From enhancing operational efficiency to facilitating talent acquisition and fostering employee engagement, technology offers a plethora of benefits for organizational success. Rooted in the Digital HR Revolution theory, the study adopts a theoretical framework that underscores the transformative role of technology in HRM. This framework serves as a guiding compass, illuminating key areas where technology can drive organizational efficiency and effectiveness. Employing a mixed-methods approach, the study combines literature review with qualitative interviews with HR professionals across Nigerian organizations. Through thematic analysis, patterns and insights emerge, shedding light on the current landscape of technology adoption and its implications. Findings from the study unveil a discrepancy between the recognized potential of HR technology and its current adoption status in Nigerian organizations. Challenges such as infrastructure limitations, implementation costs, and workforce digital literacy hinder widespread adoption. Nonetheless, opportunities abound for streamlining processes, enhancing collaboration, and improving employee experiences through strategic technology utilization. In response to these findings, the study offers actionable recommendations. These include investments in infrastructure, user-friendly platforms, comprehensive training programs, and robust cybersecurity measures. By heeding these recommendations and leveraging technology strategically, Nigerian organizations can unlock the full potential of HRM practices, driving efficiency, engagement, and success in the digital age.

Keywords: Technology Adoption, Human Resources Management, Nigerian Organizations, Opportunities, Challenges

INTRODUCTION

In the contemporary landscape of business and employment, the utilization of technology in Human Resources Management (HRM) has emerged as a pivotal force of transformation. This digital revolution has not only streamlined HR processes but has also provided organizations with unique opportunities to enhance efficiency, data-driven decision-making, and employee engagement.

According to the Global Human Capital Trends report published by Deloitte in 2020, organizations that adopt HR technology effectively can enhance productivity by up to 20% (Deloitte, 2020). By automating tasks such as resume screening, interview scheduling, and employee data management, HR departments can focus on strategic initiatives, such as talent development and workforce planning. This shift from manual to automated processes not only streamlines operations but also empowers HR professionals to take a more strategic role in

driving organizational growth. Another significant opportunity that technology offers in HR management is the ability to enhance employee engagement and satisfaction. With the advent of digital communication tools, social media platforms, and mobile applications, HR departments can establish effective channels for employee feedback, recognition, and collaboration. These technologies provide platforms for employees to voice their opinions, contribute ideas, and feel more connected to the organization.

Also, it has been seen that companies with highly engaged employees outperform their competitors by 147% in earnings per share (Gallup, (2021). And because technology-enabled platforms, such as employee recognition apps or social collaboration tools, foster a sense of belonging and promote a positive organizational culture, the use of technology is seen as the way to go for improving organisational performance. By leveraging technology for employee engagement initiatives, organizations can create an environment that motivates employees, encourages innovation, and improves overall employee satisfaction. Chawla and Prasad (2018) highlight the need for robust data encryption, secure cloud storage, and stringent access controls to mitigate the risks associated with HR technology. Organizations must implement proper data privacy policies and protocols to ensure that employee data is protected from unauthorized access or breaches. Additionally, organizations need to stay updated with evolving data protection regulations and maintain transparency in communicating their data security measures to employees.

However, the adoption of HR technology in the Nigerian context presents a distinctive set of opportunities and challenges, given the country's unique socio-economic and cultural characteristics. Nigeria, as the most populous country in Africa and a growing economic powerhouse, faces complex HRM demands. The rapid urbanization, expanding workforce, and globalization of business practices necessitate innovative solutions in HRM. This research embarks on a comprehensive exploration of the opportunities and challenges that technology presents to organizations practicing HRM in Nigeria, with the aim of shedding light on strategies for leveraging this transformative tool effectively.

Statement of the Problem

The integration of technology into HRM processes in Nigeria is at a critical juncture. While technology offers remarkable potential to improve HR functions, Nigerian organizations face distinct challenges in its adoption. These include issues related to infrastructure, digital literacy, cultural norms, and the need to balance technological advancement with the preservation of human elements in HRM. Furthermore, the implications of this adoption for organizational performance, employee satisfaction, and overall productivity remain underexplored.

Given these challenges, it is imperative to investigate how technology is being used in HRM in Nigeria and to identify the specific opportunities and challenges it presents to organizations in this context. Understanding these dynamics is essential for devising strategies that can harness the full potential of technology while addressing the unique challenges faced by organizations in Nigeria.

Objective of Study

The primary objective of this study is to examine the use of technology in Human Resources Management in Nigeria, with a focus on identifying the opportunities and challenges that it presents to organizations. The study aims to achieve the following specific objectives:

1. To assess the current state of technology adoption in HRM in Nigerian organizations.
2. To analyze the opportunities that technology offers for improving HR processes and organizational performance.
3. To explore the challenges and barriers to effective technology utilization in HRM in the Nigerian context.
4. To understand the impact of technology on employee engagement, satisfaction, and overall productivity.
5. To provide practical recommendations for organizations in Nigeria to leverage technology effectively in HRM.

Research Questions

To achieve the stated objectives, the research will address the following research questions:

1. What is the current extent of technology adoption in HRM in Nigerian organizations?
2. What opportunities do technology solutions provide for enhancing HR processes and organizational performance in Nigeria?
3. What are the key challenges and barriers that organizations face in effectively using technology for HRM in Nigeria?
4. How does the integration of technology in HRM impact employee engagement, satisfaction, and overall productivity in Nigerian organizations?
5. What recommendations can be made to help Nigerian organizations leverage technology effectively in their HRM practices?

By addressing these research questions, this study seeks to contribute to a deeper understanding of the evolving landscape of HRM in Nigeria, where the fusion of technology and traditional practices presents both opportunities and challenges for organizations.

CONCEPTUAL CLARIFICATIONS

Human Resource Management

Human Resources Management (HRM) refers to the strategic approach and effective management of an organization's workforce (Farndale, Scullion, & Sparrow, 2010). It encompasses a range of activities and practices aimed at maximizing employee performance, ensuring the well-being of employees, and aligning their efforts with the organization's goals and objectives (Ulrich, & Dulebohn, 2015). HRM involves various functions, including recruitment, selection, training and development, performance management, compensation and benefits, employee relations, and workforce planning. At its core, HRM focuses on managing people as valuable assets and recognizing their crucial role in organizational success. It entails creating a work environment that fosters employee engagement, motivation, and productivity while addressing their needs and concerns. Effective HRM practices not only contribute to the growth and development of individual employees but also enable organizations to attract and retain top talent, enhance organizational performance, and maintain a competitive advantage. Gary (2020) offers an in-depth understanding of HRM principles, practices, and challenges. It covers essential topics such as job analysis, recruitment and selection, training and development, performance management, compensation and benefits, employee relations, and global HRM. It provides valuable insights into the evolving role of HRM in a dynamic business environment.

Armstrong (2014) explores the strategic aspects of HRM, highlighting the need to align HRM practices with organizational strategies to gain a competitive advantage. He discusses topics such as strategic planning, talent management, organizational development, and change management. While, Wright and McMahan, (2011) in the same vein highlighted the strategic role of HRM in managing human capital. They emphasize the need to view employees as valuable assets and emphasize the importance of aligning HRM practices with organizational strategies. Their work emphasizes the link between HRM and organizational performance and stresses the need for HR professionals to play a strategic role in managing human capital effectively.

Technology Adoption

Technology adoption refers to the process by which individuals, organizations, or societies accept and integrate new technological innovations into their existing practices, systems, or workflows (Sitorus, Govindaraju, Wiratmadja, & Sudirman, 2016). It involves the recognition of the potential benefits of a particular technology and the willingness to invest resources and effort in implementing and using it effectively. Technology adoption is a critical aspect of progress and development, as it enables individuals and organizations to stay competitive, improve efficiency, and achieve better outcomes. The concept of technology adoption can be understood in various contexts, such as individual, organizational, or societal levels (Leesakul, Oostveen, Eimontaite, Wilson, & Hyde, 2022). At the individual level, technology adoption involves the decision-making

process of an individual to adopt new technology for personal use. For instance, when a person decides to switch from a traditional cellphone to a smartphone, they are engaging in technology adoption. At the organizational level, technology adoption is a strategic process that involves the integration of new technologies into the organization's operations and workflows. It may include adopting new software systems, hardware, or digital platforms to enhance productivity, streamline processes, or improve customer experiences. Organizations must carefully evaluate the benefits and costs of technology adoption, assess potential risks, and plan for a smooth transition to ensure successful implementation.

Societal-level technology adoption involves the acceptance and use of technology on a broader scale, affecting multiple individuals and organizations. For example, the widespread adoption of the internet and smartphones has transformed the way people communicate, access information, and conduct business globally. The concept of technology adoption is closely linked to the Technology Acceptance Model (TAM), developed by Fred Davis in the 1980s (Sitorus, Govindaraju, Wiratmadja, & Sudirman, 2016). The TAM posits that an individual's intention to use technology is influenced by two primary factors: perceived usefulness and perceived ease of use. Subsequent research expanded on the TAM, incorporating additional factors such as social influence and facilitating conditions that impact technology adoption. One influential work on technology adoption is "Diffusion of Innovations" by Everett Rogers. In this book, Rogers introduces the diffusion theory, which explains how new ideas, technologies, or innovations spread through social systems. According to Rogers (2003), the diffusion process follows a bell curve, with different adopter categories, including innovators, early adopters, early majority, late majority, and laggards, based on their readiness to embrace new technologies.

Organization

An organization refers to a structured and coordinated group of people who work together towards common goals, driven by a shared purpose and governed by established rules and hierarchies (Zoltan & Vancea, 2015). Organizations can take various forms, such as corporations, government agencies, non-profit entities, educational institutions, and more. They exist to achieve specific objectives and functions, and they typically have distinct roles, responsibilities, and processes to ensure efficient operations. Organizations play a crucial role in modern society, providing a framework for individuals to collaborate, specialize in their roles, and contribute to the larger collective effort. The concept of organization is fundamental to understanding how complex tasks are accomplished and how resources are effectively utilized since by establishing clear structures and processes, organizations can optimize productivity, coordinate efforts, and adapt to changing environments (Zoltan & Vancea, 2015).

At the heart of an organization lies the notion of hierarchy and division of labor, which allocates specific responsibilities to different individuals or departments based on their expertise and skills. This division of labor promotes efficiency and specialization, as each member focuses on their designated tasks, leading to increased productivity and output. Furthermore, the concept of organization involves the establishment of formal and informal systems of communication, decision-making, and governance. These systems ensure that information flows effectively, decisions are made promptly, and organizational activities are aligned with the overall objectives (Borghans & Ter Weel, 2006).

In a nutshell, Daft (2019) helps to understand the evolution of organizational thought and the diverse approaches to designing and managing organizations. So that one can understand the concept of organization as a structured group of individuals working together to achieve common goals. It involves the establishment of clear roles, communication channels, and decision-making processes. Various authors have contributed to our understanding of organizations by exploring different aspects, such as organizational structure, culture, and design, and providing valuable insights into how organizations function and succeed in dynamic environments.

Use of Technology in Human Resource Management: Current Trends in Nigeria

Technology has significantly transformed Human Resource Management (HRM) practices globally, and Nigeria is no exception. In recent years, Nigerian companies have increasingly embraced technological

solutions to streamline HR processes, enhance employee engagement, and improve overall organizational performance. Technology has revolutionized the way companies recruit and hire talent in Nigeria (Adedoyin & Soyode, 2019). Online job portals, social media platforms, and applicant tracking systems (ATS) have become essential tools for sourcing candidates, managing applications, and streamlining the hiring process (Olanrewaju & Okorie, 2021). For instance, platforms like Jobberman and Hot Nigerian Jobs provide a vast database of job seekers and enable employers to reach a broader pool of candidates efficiently.

With the help of technology, organizations in Nigeria can deliver seamless onboarding experiences and provide continuous training and development opportunities to their employees (Adekoya & Salimonu, 2020). Learning management systems (LMS), virtual training platforms, and e-learning modules are widely used to deliver training programs efficiently (Adegboyega & Olaleke, 2019). Companies like SeamlessHR offer HR software solutions tailored to the Nigerian market, including features for onboarding and training. Also, traditional performance appraisal methods are being replaced by technology-driven performance management systems that enable continuous feedback, goal tracking, and performance evaluation in real-time (Okafor, 2021). Nigerian companies are adopting performance management software such as TalentBase and HRM Thread to automate performance reviews and foster a culture of ongoing feedback and improvement (Adeniji & Oladipo, 2020).

Moreover, effective communication and engagement are crucial for maintaining a motivated and productive workforce (Olatunji & Adeniji, 2020). In Nigeria, HR departments are leveraging technology to facilitate communication and collaboration among employees through internal communication platforms, employee engagement surveys, and mobile apps. Platforms like Slack, Microsoft Teams, and Groupee are gaining popularity for fostering communication and collaboration within Nigerian organizations (Akinyemi & Kolawole, 2018). And technology enables HR professionals in Nigeria to leverage data analytics tools to gain insights into employee performance, engagement levels, and workforce trends (Olawepo & Ogunkoya, 2021). By analyzing data, HR departments can make informed decisions related to talent management, retention strategies, and resource allocation. Nigerian companies are increasingly investing in HR analytics software such as PeopleHR and BambooHR to optimize HR processes and drive business outcomes.

These trends indicate a growing recognition among Nigerian organizations of the importance of leveraging technology to modernize HRM practices, improve employee experiences, and achieve strategic business objectives. As technology continues to evolve, it is expected that HRM in Nigeria will further embrace innovative solutions to meet the dynamic needs of the workforce and the business landscape.

Potentials of Technology in Human Resource Management

Technology has become an indispensable tool in Human Resource Management (HRM), offering organizations numerous opportunities to enhance efficiency, effectiveness, and decision-making processes. Bondarouk and Ruel (2019) highlight how technology integration in HRM has revolutionized traditional practices, enabling automation of routine tasks and implementation of advanced analytics. This automation reduces manual errors and allows HR professionals to focus on strategic initiatives. One major area where technology has made significant strides is in talent acquisition and recruitment. Parry and Tyson (2018) discuss how technology has expanded the reach of organizations, enabling them to attract talent from diverse geographical locations and employ data-driven approaches for candidate selection. This contributes to building a diverse and inclusive workforce, ultimately enhancing organizational effectiveness.

Moreover, technology has transformed learning and development initiatives within organizations. Kowalski and Swanson (2017) note the emergence of e-learning platforms and virtual training tools, which provide employees with flexible and personalized learning experiences. This fosters a culture of continuous learning and development, addressing skill gaps effectively and contributing to organizational growth. Data-driven decision-making has also been empowered by technology-driven data analytics. Laumer, Eckhardt, and Weitzel (2019) argue that predictive analytics has become crucial in talent management, employee performance analysis, and workforce planning. By leveraging analytics capabilities, organizations can proactively identify issues and optimize HR strategies, leading to better organizational outcomes.

Furthermore, technology offers opportunities for improving employee engagement and collaboration. Ingham (2017) highlights how communication platforms and digital collaboration tools facilitate real-time communication and knowledge sharing among employees. This strengthens employee relationships, encourages innovation, and fosters a sense of belonging within the organization. Overall, technology presents extensive opportunities for revolutionizing organizational HRM practices. From automating routine processes to enabling data-driven decision-making and fostering employee engagement, technology offers a wide range of benefits. Organizations that strategically embrace and leverage these opportunities can gain a competitive edge, attract top talent, and drive organizational success in the ever-evolving business landscape. Staying abreast of technological advancements and effectively integrating them into HRM practices is essential for creating a future-ready workforce and ensuring long-term organizational success.

The Challenges Presented by Technology in Human Resource Management

The integration of technology in Human Resource Management (HRM) has introduced significant advancements, but it also presents a set of unique challenges that organizations must address to maximize its benefits. Bhattacharya & Shrivastava (2018), Jiang, Chen, & Li (2019), and Al-Dmour, Bani-Ahmad, & Al-Dmour (2020) highlight these challenges. Firstly, data privacy and security concerns arise as organizations handle sensitive employee information. Mishandling such data can lead to legal consequences and reputational damage. Robust cybersecurity measures, such as secure HRIS systems and data encryption, are essential to protect against cyber threats and unauthorized access (Jiang, Chen, & Li, 2019).

Secondly, the rapid pace of technological advancements often surpasses the digital literacy of the workforce. Employees may struggle to adapt to new HR technologies, resulting in resistance and reduced productivity. HR departments must provide comprehensive training programs to enhance employees' digital skills and confidence in using HR technology effectively (Al-Dmour, Bani-Ahmad, & Al-Dmour, 2020). Additionally, integrating multiple HR systems for various functions poses a complex challenge. Lack of integration may lead to data discrepancies and inefficiencies. Collaboration between HR and IT teams is crucial to implement integrated HR solutions that streamline processes and provide a holistic view of employee data (Bhattacharya & Shrivastava, 2018).

Moreover, there's a risk of overreliance on technology, potentially diminishing human connections in HR interactions. Maintaining personalized and empathetic communication is vital for employee engagement. HR professionals must strike a balance between technology-driven efficiency and human interaction (Lee & Hong, 2019). Also, AI-driven tools may perpetuate bias present in historical data, leading to unintentional discrimination. Thorough auditing and validation of AI algorithms are necessary to ensure fairness in recruitment and performance management (Barocas & Selbst, 2016).

Finally, resistance to change from employees comfortable with existing processes can hinder the adoption of new HR technologies. HR leaders must communicate the benefits of technology, involve employees in decision-making, and address concerns proactively to foster a culture of acceptance (Kryscynski & Shi, 2018). So, while technology offers significant opportunities in HRM, organizations must navigate challenges such as data privacy, workforce digital literacy, system integration, overreliance on technology, AI bias, and resistance to change to fully realize its benefits.

Future Projections in the Application of HR Technology in Organizations

The future of Human Resources (HR) is set to be profoundly influenced by technology, with significant transformations expected in traditional HR practices. Key projections in HR technology include automation and AI, enhanced employee experiences, remote work and collaboration, data analytics, and ethical considerations. Bersin and Willingham (2020) anticipate that automation and AI will play pivotal roles in HR technology, streamlining routine tasks such as recruitment and onboarding, thus enabling HR professionals to focus on strategic initiatives. Cascio (2018) emphasizes AI's potential in analyzing vast employee data for predictive insights, aiding talent management and workforce planning.

Deloitte (2019) predicts a revolution in employee experiences through personalized HR platforms tailored to individual needs and preferences, leveraging data analytics for personalized learning, feedback, and career guidance. This personalization is expected to enhance employee engagement, retention, and productivity. The COVID-19 pandemic has accelerated remote work adoption, a trend expected to persist. Liakopoulos, Tsinakos, and Papavlasopoulou (2020) foresee HR technology evolving to support virtual collaboration and project management, utilizing tools like video conferencing and virtual reality to facilitate seamless communication among remote teams.

Moreover, HR technology will continue advancing in data analytics, as noted by Boudreau and Cascio (2018), enabling organizations to extract insights for strategic workforce planning, recruitment, and talent development. Ethical considerations, highlighted by Fisher, Oswald, and Newell (2018), are paramount. Robust data protection policies must safeguard employee privacy and mitigate biases in algorithms. HR professionals are crucial in ensuring the ethical use of AI, promoting fairness and transparency throughout HR processes. Therefore, the future of HR technology promises significant advancements, from automation and AI-driven efficiencies to personalized employee experiences, remote collaboration support, data-driven decision-making, and ethical considerations. Staying at the forefront of these developments will be essential for organizations aiming to thrive in the digital era.

The Digital HR Revolution theory, proposed by Bersin and Martens and elaborated upon by Bersin and Willingham (2020), explores the profound impact of technology on Human Resources (HR) practices, emphasizing its transformative role in talent acquisition, employee engagement, learning and development, and HR analytics. The theory underscores how technology has revolutionized recruitment processes, enabling organizations to reach a broader talent pool and automate screening and selection processes efficiently (Bersin and Willingham, 2020). Furthermore, the theory emphasizes technology's crucial role in fostering employee engagement through digital tools like collaboration platforms and feedback apps. It highlights the importance of utilizing technology to create a positive employee experience and promote a culture of engagement and productivity. Additionally, technology's impact on learning and development initiatives is discussed, citing the rise of online platforms and personalized training content accessible anytime and anywhere (Bersin and Willingham, 2020).

Contextual application of this theory reveals its relevance in studies exploring communication within organizations. Technologies like email, instant messaging platforms, and video conferencing tools have transformed communication, enabling real-time interaction and improving responsiveness (Kane, Gallagher, & Ransbotham, 2017). Similarly, enterprise social media platforms facilitate knowledge sharing and innovation, fostering effective collaboration and open communication (Leonardi & Meyer, 2015). Moreover, the theory's application extends to operational efficiency through decision-making processes. Enterprise Resource Planning (ERP) systems integrate various functions, enabling efficient data management and supporting informed decision-making (Nah, Tan, & Teh, 2016). Additionally, technologies like Robotic Process Automation (RPA) automate repetitive tasks, improving productivity and resource utilization (Davenport & Ronanki, 2018). So, the Digital HR Revolution theory provides a comprehensive framework for understanding the transformative impact of technology on HR practices.

RESEARCH METHODS

The research philosophy is one of the fundamental and initial decisions to be taken in the research process (Saunders, Lewis, and Thornhill, 2019). Consequently, this study adopts the interpretivist philosophy to ascertain the ideas and opinions of staff of the organisations under study, particularly those in the human resources management division. And since there is still scarce knowledge regarding the opportunities and challenges facing the use of technology in human resources management, this study's process is aided by the participants' first-hand knowledge (George, 2023). Therefore, the participatory action strategy and the inductive method is deemed the best. This strategy is employed to study a subject that is largely unknown and about which there is little information (Jansen, 2023a).

The population of the study is made up of all the staff working at the human resources management department of the three purposively selected organisations in Umuahia at the time of this study, which is rounded up to 27. Based on Mason (2010) as well as Adler and Adler (2012) assertions that studies with as few as 10 participants might yield worthwhile and practical findings, this study utilises the whole population for data collection.

The study used primary sources of data which was acquired through interviewing methods. The themes derived from the study's objectives will serve as the framework for the interview, with participants' responses allowing for the formation of subthemes. Dawadi (2020b) asserts that the thematic technique of data analysis is a qualitative analytic methodology used in the analysis of data gathered from interviews, focus groups, or open-ended survey questions, consequently this method is utilized in this study because data is gathered through interview. The steps outlined in Braun and Clarke (2013, 2019), which include data transcription and organization, familiarization, coding, coding and theme generation, review and refining of themes, and data interpretation and reporting is adopted.

Data Presentation, and Analysis

Using the reflexive approach to thematic analysis, which is a technique of theme analysis that stresses the researcher's active involvement in knowledge development (Braun and Clarke, 2019). In Braun and Clarke (2019) the steps for conducting reflexive thematic analysis are outlined to include data transcription and organization, familiarization, coding, coding and theme generation, review and refining of themes, and data interpretation and reporting.

Data transcription and organization

By comparing the written and audio-recorded responses, the study double-checked to transcribe, confirm, and ensure that all relevant information was acquired. To ensure anonymity, each item is given a unique identity before being arranged in a spreadsheet system that is only used to properly organize and understand the flow of data. Having done that the data was seen fit for other analytical actions such as familiarisation.

Familiarization

By reading the written responses a couple of times taking notes, and emphasizing important aspects in accordance with the study questions, the researcher became comfortable with the data. As can be seen in table 4.2, the original codes were recorded as they appeared during this procedure.

Table 4.2: Initial codes

Study Themes	Initial codes
Current state of technology adoption in HRM in Nigerian organisations	adoption, technology, levels, rates, implementation, success, resistance, assessment, types, prevalence, technology, usage, HRM, software, analyses, integrated, impact, functions, low, reasons
Opportunities that technology offers for improving HR processes and organizational performance.	gains, decisions, efficiency, data, remote work, talent, learning, development, enablement, streamlines, tasks, workflows, leveraging, planning, virtual work, top talent, tech platforms, e-learning, enhancement.
Challenges and barriers to effective technology utilization in HRM in Nigeria	Constraints, limitations, infrastructure, cost, budgetary, implications, implementation, skills Gap, expertise, advanced tech, culture,

	resistance, approaches, security, cybersecurity, threats
Impact of technology on employee engagement, satisfaction, and overall productivity	employee, sentiment, feedback, work-Life, workload, balance, productivity, changes post-tech, implementation, metrics, retention, rates, satisfaction, effect, job
Practical recommendations to leverage technology effectively in HRM	training, programs, initiatives, development, upskill, HR, staff, tech, strategic, approach, integration, user-centric, solutions, design, needs, partnerships, collaboration, experts, guidance, continuous, evaluation, adapting, strategies

It is expected that the first codes will give rise to major codes, which are words, phrases, and sentences related to the research issues (Braun and Clarke, 2016). The major codes listed in table 4.3 were formed during the categorization phase when a few more codes from the basic codes emerged.

Table 4.3: Emergent Codes

Study Themes	Categories	Major Codes	Sample Excerpts
Current state of technology adoption in HRM in Nigerian organisations	Adoption Rates	Levels of Adoption, Rates of Adoption	“For me, I believe the level of adoption is still low...”
	Technology Types	HRM Software, Integrated Systems	“the use of the integrated system have made communication among staff easier”
	Resistance Factors	Reasons for Resistance, Cultural Resistance	“...the thing is that I don’t see any inefficiency in our present HRM system that needs technology to settle”
Opportunities that technology offers for improving HR processes and organizational performance.	Efficiency Gains	Streamlining Tasks, Workflow Optimization	“kiss flow, for instance, helps me supervise even remotely” “of course work performance have improved by the introduction of these software”
	Data-Driven Decisions	Leveraging Data Analytics, Decision-Making Support	“with remote work technologies, we can make policy decisions without seeing our staff physically”
	Remote Work Enablement	Virtual Work Platforms, Remote	“it has become easy to collaborate with other

		Collaboration Tools	firms remotely”
Challenges and barriers to effective technology utilization in HRM in Nigeria	Infrastructure Constraints	Lack of IT Infrastructure, Connectivity Issues	“one major challenge with ICT in Nigeria is network connectivity”
	Cost Implications	Budgetary Constraints, Cost of Implementation	“...maybe because its new, the cost of installations are still very high”
	Skills Gap	Lack of Technical Expertise, Training Needs	“there is still few professionals with technical knowledge in this field”
Impact of technology on employee engagement, satisfaction, and overall productivity	Employee Feedback	Technology Impact, Feedback Mechanisms, Employee Sentiment Analysis	“...the software we use have made it easy for me to report problem to my supervisor, on the spot”
	Work-Life Balance	Impact on Workload Management, Flexible Work Arrangements	“...with remote work technology I can work at home, while doing my home chores”
	Productivity Metrics	Measurement of Productivity Changes, Post-Implementation Performance Metrics	“...yes, my supervisor often test some technology with us before it is fully applied”
Practical recommendations to leverage technology effectively in HRM	Training Initiatives	Technology Training Programs, Upskilling HR Staff	“due to lack of technical skills, there is need for technology training”
	Strategic Implementation	Aligning Technology with HR Strategy, Phased Implementation Approach	“there is need to gradually implement these technology in order to carry everybody along”
	User-Centric Design	Designing Solutions Around User Needs, Enhancing User Experience	“more research is necessary to know what the staff think about these technologies”

Theme generation

The codes were then carefully applied to the entire dataset in order to identify patterns, correlations, and recurring themes for additional theme construction through the grouping of comparable codes. Examining the codes for themes revealed that some categories are already covered in some others and were collapsed as a result. This was because Richards & Morse (2012) claimed that categorizing reflects how we improve from the range of data to the forms of data and the kinds of items depicted. Consequently, the primary codes evolved into the themes listed in table 4.4.

Table 4.4 Emergent Themes

Study Themes	Categories	Emergent Themes
Current state of technology adoption in HRM in Nigerian organisations	Adoption Rates	Perception of low levels and rates of adoption
	Technology Types	Integration for improved communication
	Resistance Factors	Perception of current efficiency
Opportunities that technology offers for improving HR processes and organizational performance.	Efficiency Gains	Remote supervision and performance improvement
	Remote Work Enablement	Remote policy decisions, and collaborations
Challenges and barriers to effective technology utilization in HRM in Nigeria	Infrastructure Constraints	Network connectivity challenges
	Cost Implications	High installation costs
	Skills Gap	Lack of technical expertise
Impact of technology on employee engagement, satisfaction, and overall productivity	Employee Feedback	Improved reporting mechanisms
	Work-Life Balance	Facilitating flexible work arrangements
Practical recommendations to leverage technology effectively in HRM	Training Initiatives	Need for technical skills training
	Strategic Implementation	Gradual implementation for adoption
	User-Centric Design	Importance of user feedback

Review and refine themes

As indicated in table 4.5 below, some of the themes were modified, rearranged, or combined, while others were retained because they faithfully captured the facts they represented.

Table 4.5 Refined Themes

Research Questions	Categories	Refined Themes
What is the current extent of technology adoption in HRM in Nigerian organizations?	Adoption Rates	Capturing the perception of slow progress
	Technology Types	Uniting teams for efficiency
	Resistance Factors	Challenging perceptions of current systems

What opportunities do technology solutions provide for enhancing HR and organizational performance in Nigeria?	Efficiency Gains	Empowering remote performance oversight
	Remote Work Enablement	Enabling decisions and partnerships remotely
What are the key challenges and barriers that organizations face in effectively using technology for HRM in Nigeria?	Infrastructure Constraints	Tackling Nigeria's network challenges
	Cost Implications	Confronting high installation costs
	Skills Gap	Bridging the talent gap in tech proficiency
How does the integration of technology in HRM impact employee engagement, satisfaction, and overall productivity in Nigerian organizations?	Employee Feedback	Streamlining reporting channels
	Work-Life Balance	Cultivating flexibility for work-life balance
What recommendations can be made to help Nigerian organizations leverage technology effectively in their HRM practices?	Training Initiatives	Addressing the need for tech proficiency
	Strategic Implementation	Gradual adoption for lasting improvement
	User-Centric Design	Crafting solutions tailored to user insights

Data interpretation and reporting

Investigating one's own interpretation of a given phenomena is often given priority in an experiential approach to data interpretation. This necessitates looking at the respondent's significance for the phenomenon as well as the meaning they assign to it (Byrne, 2021). Although the participant's interpretation of these ideas, emotions, and experiences is subjective and inter-subjective, the researcher would nevertheless accept it (Braun and Clarke, 2014). This study employs an experiential approach to data interpretation in order to highlight the relevance and worth that participants attribute to their experiences.

Tech Adoption Rate: This theme addresses the first research question concerning the current extent of technology adoption in HRM in Nigerian organizations. It reveals the perception of slow progress in adopting HR technology solutions.

Communication Integration: still on the first research question, this theme emphasizes the place of technology in uniting teams for efficiency through the integration of communication technologies in HR processes.

Efficiency Misconceptions: This theme continues to explore the first research question by highlighting the challenging perceptions of current HR systems' efficiency and demonstrating the potential benefits of technology adoption. This finding is better captured in the following excerpts:

“...truth is people are welcoming the use of technology in HRM, but there are still many challenges that reduces the rate of adoption” (Participant 2)

“the challenge we have always had is network; so the Nigerian internet infrastructure is presently not effective for HRM technology” (Participant 21)

Boosting Efficiency: This theme addresses the second research question by discussing the opportunities provided by technology solutions to empower remote performance oversight, thereby enhancing HR processes and organizational performance.

Remote Collaboration Hub: This theme, also related to the second research question, underscores the potential of technology solutions to enable remote decision-making and partnerships, contributing to organizational effectiveness as seen the excerpt below

“though I work remotely, my supervisor still have a hold on what I do” (Participant 12)

“remote work has been made possible through technology, and does not limit communication with HR” (Participant 18)

Connectivity Conundrum: Addressing the third research question, this theme identifies the key challenges organizations face in effectively using HR technology, particularly regarding Nigeria's network infrastructure.

Cost Barrier Breakdown: Also on the third research question, this theme highlights the financial hurdles organizations encounter when implementing HR technology solutions, including high installation costs.

Skills Quest: Continuing with the third research question, this theme emphasizes the importance of bridging the talent gap in tech proficiency to effectively utilize HR technology as the following excerpts goes to portray

“major challenges facing the effective execution of HR technology are amongst others, cost of implementation and limited technical experts” (Participant 7)

Feedback Evolution: Addressing the fourth research question, this theme explores how the integration of technology in HRM streamlines reporting channels, potentially enhancing employee engagement and satisfaction.

Work-life Balance: Also dealing with the fourth research question, this theme discusses how technology integration can cultivate flexibility for employees, contributing to a better work-life balance and potentially improving overall productivity. The following excerpts captures the prevailing view of the participants

“...sure I can supervise my staff while at home doing other domestic chores” (Participant 14)

Training Initiatives: Addressing the fifth research question, this theme suggests recommendations to help organizations leverage technology effectively by addressing the need for tech proficiency through training initiatives.

Strategic Implementation: Also on the fifth research question, this theme emphasizes the importance of gradual adoption for lasting improvement, highlighting the significance of strategic planning in HR technology implementation.

User-Centric Design: Continuing with the fifth research question, this theme suggests crafting HR technology solutions tailored to user insights, ensuring that the technology meets the specific needs and preferences of the users. The prevailing recommendations as summarised above is captured in the below excerpt:

“I believe that training will provide more technology friendly HR managers.” “...but beyond training, the software designers should find out what clients need in order to design user centered softwares” (Participant

20)

DISCUSSION, RECOMMENDATION AND CONCLUSION

Discussion

Assessing the current state of technology adoption in HRM in Nigerian organizations.

Previous research by Bondarouk & Ruël (2019) emphasizes the transformative impact of technology in HRM, yet the present study finds a slower adoption rate in Nigerian organizations due to network infrastructure limitations and high implementation costs. This juxtaposition highlights the gap between the recognized potential of technology and its current adoption status in the Nigerian context.

Analyzing the opportunities technology offers for improving hr processes and organizational performance.

The literature, as discussed by Parry and Tyson (2018), highlights the opportunities presented by technology for advanced talent acquisition and recruitment. Similarly, the study findings reveal the potential of technology solutions, such as remote collaboration hubs, in enhancing organizational effectiveness. This alignment underscores the multifaceted benefits technology offers for HR processes and organizational performance.

Exploring the challenges and barriers to effective technology utilization in hrM in the Nigerian context.

Jiang, Chen, & Li (2019) and Al-Dmour, Bani-Ahmad, & Al-Dmour (2020) point out data privacy and security concerns as significant challenges in technology utilization in HRM. These findings resonate with the challenges identified in the present study, such as Nigeria's network infrastructure limitations and high implementation costs. This juxtaposition highlights the consistent barriers organizations face in effectively leveraging technology in HRM.

Understanding the impact of technology on employee engagement, satisfaction, and overall productivity.

The literature, as discussed by Ingham (2017), emphasizes the role of technology in improving employee engagement and fostering collaboration. Similarly, the study findings reveal the positive impact of technology on employee engagement and satisfaction through streamlined reporting channels and improved work-life balance. This alignment underscores the importance of technology in enhancing employee experiences and organizational outcomes.

Providing practical recommendations for organizations in Nigeria to leverage technology effectively in HRM.

The literature suggests recommendations such as user-centric design (Leonardi & Meyer, 2015) and strategic implementation (Nah, Tan, & Teh, 2016) to maximize the effectiveness of HR technology. These recommendations align with the study's findings, which emphasize the importance of investing in training initiatives and adopting a user-centric approach to technology adoption in HRM. This juxtaposition underscores the relevance of these recommendations within the Nigerian context for overcoming challenges and driving technology utilization effectively.

Recommendation

1. Enhancing technology adoption in Nigerian organizations.

To address the slow adoption of technology in HRM, Nigerian organizations should prioritize investments in infrastructure development and cost-effective HR technology solutions. Collaborating with government agencies and technology providers can facilitate access to reliable network infrastructure and affordable technology platforms tailored to the Nigerian context.

2. Maximizing the benefits of HR technology.

Organizations should focus on leveraging HR technology to streamline processes, enhance collaboration, and improve employee experiences. This entails investing in user-friendly platforms, providing comprehensive training programs, and fostering a culture of innovation and continuous improvement. Embracing advanced features such as remote collaboration hubs and data analytics tools can further optimize HR processes and organizational performance.

3. Addressing challenges and barriers.

Nigerian organizations must address challenges such as data privacy concerns, workforce digital literacy, and integration issues to effectively utilize HR technology. Implementing robust cybersecurity measures, offering targeted training initiatives, and prioritizing system integration efforts can help overcome these barriers and create a conducive environment for technology adoption in HRM.

Conclusion

In light of the study on "The Use of Technology in Human Resources Management: Opportunities and Challenges for Organizations," which aimed to examine technology adoption in HRM within Nigerian organizations, several key insights have emerged. Through a comprehensive review of relevant literature, the study elucidated the transformative potential of technology in HRM, highlighting opportunities for enhancing efficiency, effectiveness, and decision-making processes. Employing a mixed-methods approach, the study assessed the current state of technology adoption, identified challenges and barriers, and explored the impact of technology on employee engagement and satisfaction.

Findings revealed a slow adoption rate of HR technology in Nigerian organizations, attributed to network infrastructure limitations, high implementation costs, and workforce digital literacy challenges. However, opportunities abound for leveraging technology to streamline HR processes, enhance collaboration, and improve employee experiences. To address these findings, recommendations are offered. Enhancing technology adoption requires investments in infrastructure and cost-effective solutions, while maximizing benefits necessitates user-friendly platforms, comprehensive training programs, and a culture of innovation. Addressing challenges requires robust cybersecurity measures, targeted training initiatives, and system integration efforts. By heeding these recommendations and leveraging technology strategically, Nigerian organizations can optimize HRM practices, foster employee engagement, and drive organizational success in the digital era.

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