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Adapting to change: The intersection of digital literacy and employee engagement in technology-driven organizations

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Abstract - The study seeks to explore workplace technology adoption and organizational change in selected Nigerian Customs Service, South-South Zone. The specific objective is to assess the level of the relationship between digital literacy and employee engagement. The study used a correlational survey design and questionnaire to collect data. The total population of the study comprised 565 employees. The sample size was determined statistically using the Taro Yamane formula and calculated as 234. A proportional allocation formula determines the number of surveys for each stratum- River, Bayelsa, Edo, Akwa Ibom, and Delta State, Nigeria. Out of 234 copies of a questionnaire sent to the participants, only 205 were returned and utilized for the study while the remaining 29 copies were not used. The hypotheses were statistically tested and analyzed using Pearson correlation methods at a 5% significance level. The findings of the research hypothesis revealed that digital literacy level (skills) positively correlates with employee engagement. This result confirms a positive result with the value of (p= .000, r = .991, N = 205). The research recommends that organizations should increase investment in continuous technological upgrades. The Nigerian Customs Services should prioritize continuous investment in modern technologies that align with global best practices. These include blockchain for trade transparency, AI-powered analytics, and IoT for real-time tracking of goods. Regular training programs should be implemented to enhance staff digital literacy and ensure the smooth adoption of new technologies. Training should focus not only on technical skills but also on change management to overcome resistance

Keywords: Workplace Technology Adoption, Organizational Change, Digital Literacy Level, Employee Engagement, Diffusion of Innovation Technology

1. Introduction

In recent decades, workplace technology has become an essential driver of improved service delivery across government agencies, ministries, and parastatals. This growing demand for digital solutions has led to reforms aimed at enhancing operational efficiency, transparency, and public service accessibility. In

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Nigeria, the Nigeria Customs Service (NCS) has embraced this digital transformation to enhance revenue collection, curb smuggling, and facilitate international trade. The integration of technology in customs operations aims to streamline procedures, ensure more accurate data handling, and strengthen national security in cross-border trade (Aguila-Obra & Padilla-Meléndez, 2006). As Smitham (2022) notes, digital advancement has become indispensable for public institutions striving to meet modern expectations.

Digital platforms, such as e-auction services introduced by the NCS, have demonstrated great potential in terms of revenue generation, cost reduction, and operational effectiveness. According to Gartner (2023), by 2026, 60% of government organizations are expected to prioritize business process automation to enhance citizen services. Additionally, Activ-Trak (2024) reports a 50% increase in the use of AI tools among employees from Q1 to Q4 of 2023, signalling a sharp trend towards automation of routine tasks and data-driven decision-making. Bajwa (2023) underscores that automation is now central to improving administrative efficiency and eliminating redundant tasks.

While this trend is evident in government, other sectors are also leveraging artificial intelligence, cloud services, and big data analytics to reshape business models and consumer experiences (Buchanan, 2024). Gartner (2023) affirms that AI and data analytics not only support faster decisions but also increase the accuracy and relevance of organizational insights. The shift to cloud-based systems is especially transformative—by 2025, more than 75% of government workloads are projected to be hosted by hyperscale cloud providers, offering scalable infrastructure and significant cost savings.

This rapid transformation also demands organizational change, which Stobierski (2020) defines as the adjustment of internal structures, processes, and cultures to adapt to new technologies and models. Such transitions, if unmanaged, can be unpredictable and costly. Successful change management involves employee buy-in, strong leadership, and strategic communication. In this regard, digital transformation is not just a technical shift, but a cultural and structural evolution that influences employee performance and service delivery.

A number of studies have highlighted the importance of workplace technology in improving organizational outcomes. For example, Ugwu (2012) found that IT changes enhanced work processes at Pan Nordic Logistics in Sweden. Olanrewaju (2016) showed that technological innovation boosted profitability and customer satisfaction in Nigerian banks. Similarly, Chepkurgat et al. (2019) found that organizational improvements significantly enhanced performance in Kenyan chartered universities. Chan et al. (2021) reported a strong link between digitalization, innovation culture, and employee engagement in Malaysian enterprises. Studies by Ugwu et al. (2024) in Nigeria's telecom sector also confirmed positive impacts of IT adoption on service quality and staff responsiveness. Conversely, Sarachuk et al. (2021) in Germany reported minimal influence of ultra-high-speed internet on new business establishments, while Aguila-Obra & Padilla-Meléndez (2006) found that organizational characteristics did not significantly affect access to internet technologies in Spain.

Despite these efforts, a major gap remains in existing literature. Prior research has not adequately explored how digital literacy, internet technology usage, and electronic platforms influence employee engagement, organizational restructuring, and leadership dynamics within the Nigerian Customs Service, particularly in the South-South Zone. Given the complex nature of customs operations and the growing demand for data-driven service delivery, understanding this intersection is critical for successful digital transformation.

Workplace technology has evolved from basic physical infrastructure to sophisticated digital systems, reshaping organizational operations and employee experiences. Ahmady et al. (2016) noted that earlier forms of workplace technology predominantly included physical hardware and basic software. However, the emergence of artificial intelligence (AI), machine learning (ML), cloud-based services, and Internet of Things (IoT) devices has revolutionized organizational functionality, enabling automation of routine tasks and data-driven decision-making.

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Contemporary workplace technology now includes an extensive range of hardware and software applications, such as project management tools, communication platforms, and cloud services (Ahmady et al., 2016). With the growing importance of digital workplaces, Advanced Commercial Interiors (2024) defined the concept as a modern virtual office environment comprising personalized services, mobile applications, cloud-based tools, and enhanced collaborative spaces. These digital tools are essential in increasing workforce efficiency, offering flexibility, and supporting hybrid work models.

Moreover, digital transformation has had a considerable impact on research and development (R&D) practices. AI-driven processes have streamlined various R&D stages, including product prototyping and market analysis, thus accelerating product innovation and enhancing market responsiveness (The Guardian, 2024; Jamali et al., 2024). For instance, SMEs that adopted AI systems reported increased efficiency and speed in internal operations (Huu, 2023).

Digital literacy encompasses the ability to navigate, evaluate, and communicate information using digital tools. According to Shalion (2022), digital literacy involves both cognitive and technical skills such as online communication, content creation, and responsible technology use. Twinkl (n.d.) highlights that digital literacy also includes ethical considerations like copyright adherence and information privacy.

In the context of workplace environments such as the Nigerian Customs Service, digital literacy is indispensable. Data-Reportal (2024) reports that digitally literate employees can better utilize learning platforms and contribute to enhanced productivity. Digital tools also facilitate communication, data analysis, and operational decision-making. Furthermore, FutureLearn (n.d.) emphasizes that digital literacy enables individuals to navigate online services, such as banking and e-governance, promoting broader digital inclusion.

Research by Chan et al. (2021) demonstrated that digital literacy significantly moderates the relationship between workplace digitalization and employee engagement. Employees with strong digital skills are more likely to embrace innovation, thus enhancing their work performance and participation in digital transformation processes. Lei et al. (2024) similarly found that digital literacy fosters collaboration and accelerates innovation, particularly in research-based environments.

Organizational change refers to adjustments in a company's structure, operations, or culture to meet evolving business needs. Stobierski (2020) emphasized that such changes are essential for growth, requiring organizations to adapt their internal processes and technologies. The University of Minnesota (2017) outlined that change initiatives often follow a three-phase process: preparation, implementation, and reinforcement of new behaviours.

Resistance to change remains a key barrier, often rooted in disrupted routines, fear of failure, or loss of control (Huy, 1999). Ugwu (2012), using a case study of Pan Nordic Logistics in Sweden, illustrated that technology-based changes such as the adoption of D-scan and checkpoint systems significantly improved work efficiency during a merger and acquisition process.

Recent studies have shifted attention to digital transformation, particularly in public sectors. Bozkus (2023) argued that transformation extends beyond technology adoption to include integration into institutional culture and strategy, leading to digital maturity. Similarly, Blackburn et al. (2021) and Yee et al. (2024) found that hybrid working models supported by technology enhance organizational resilience, reduce employee resistance, and foster seamless change adoption. Tools like video conferencing, cloud platforms, and project management software are instrumental in maintaining collaboration and productivity in such models.

Employee engagement refers to the psychological and emotional commitment of workers toward their organization. D'Alessandro (2024) defined engagement as a key driver of organizational success, influencing employee motivation, problem-solving abilities, and interpersonal relationships. Similarly, Smith et al. (2024) emphasized that engagement is tied to job satisfaction and morale, which in turn affect productivity.

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The Society for Human Resource Management (SHRM, 2024) found that engaged employees significantly contribute to goal achievement and are less likely to leave their organizations. Linley et al. (2010) supported this, stating that engaged employees are 87% less likely to resign, thereby reducing recruitment and training costs.

In government institutions, Gupta and Sharma (2022) identified digital literacy as a major factor contributing to employee empowerment and engagement. Enhancing digital skills enables workers to adopt technologies confidently and improves their productivity. Consequently, investing in digital literacy training can result in higher job satisfaction and better performance outcomes.

Employee engagement reflects an individual's emotional and cognitive commitment to their job, organization, and colleagues (D'Alessandro, 2024). It includes thoughts, feelings, behaviours, and the emotional bond an employee forms with the workplace. Research suggests that engaged employees are more likely to demonstrate high performance, innovation, better interpersonal relationships, and long-term commitment to an organization. These outcomes are linked directly to measurable business performance indicators and organizational success.

According to Smith et al. (2024), employee engagement is defined as the level of enthusiasm and dedication a worker feels toward their job. They emphasize that employee engagement is critical to a company's success due to its connection with job satisfaction and morale. Employers can foster engagement through effective communication, rewards, and career development opportunities. The Society for Human Resource Management (SHRM, 2024) supports this view by showing that engaged employees contribute significantly to goal attainment. Linley et al. (2010) report that engaged employees are 87% less likely to leave their organization, resulting in reduced recruitment and training costs, and increased productivity.

In the public sector, digital literacy has emerged as a pivotal factor enhancing employee engagement. Gupta and Sharma (2022) found that employees proficient in digital tools tend to feel more empowered, which translates into increased productivity and openness to technological adoption. Investment in digital skills training fosters not only job satisfaction but also organizational performance.

Workplace technology plays a critical role in shaping organizational outcomes, particularly in relation to employee performance, productivity, and institutional transformation. A growing body of literature has addressed these dynamics across various global contexts. For instance, innovations such as D-scan systems and communication tools were found to improve work processes during organizational changes at Pan Nordic Logistics in Sweden (Ugwu, 2012). Similarly, research from Malaysia indicated that technological infrastructure positively correlates with organizational productivity; however, IT knowledge management was shown to have a negative effect (Dastane, 2020). These findings were echoed in a study of Yemeni NGOs, which highlighted that IT infrastructure enhances employee productivity, and that IT knowledge management exerts the most substantial influence (Al-Nashmi & Ame, 2024).

In the Nigerian financial sector, the adoption of technologies such as POS and ATMs positively impacted GDP, though mobile and web-based payment systems demonstrated negative individual effects, albeit significant in combination (Ugwu et al., 2022). Consistent with these findings, a study of Nigeria's telecommunications industry concluded that technology adoption plays a pivotal role in driving organizational performance (Ogundare et al., 2023). Reinforcing these results, Olanrewaju (2016) reported that IT innovations in Nigerian banks substantially improved employee performance, customer satisfaction, and organizational profitability. Similar results were found in Kenya's higher education sector, where institutional changes linked to digital transformation were associated with improved university performance (Chepkurgat et al., 2019). Moreover, Lakhwani et al. (2020) confirmed a positive relationship between technological change and productivity, though they, like Dastane (2020), identified a negative role for IT knowledge management.

In addition to technological infrastructure, digital literacy has emerged as a crucial determinant of employee engagement. Digital competence not only facilitates engagement but also enhances adaptability and readiness in evolving digital environments. A study conducted in Kuala Lumpur found that digital

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literacy acts as a moderator between employee engagement and workplace digitalization, especially in contexts characterized by innovative organizational cultures (Chan et al., 2021). At Beykent University in Turkey, digital literacy was found to significantly boost employees' readiness to adapt to technological changes (Ongel et al., 2021). A broader perspective offered through a systematic literature review demonstrated that digital competence strengthens the relationship between digital autonomy and innovative behaviour, ultimately fostering knowledge sharing and creativity among employees (Huu, 2023).

This study, therefore, seeks to fill that gap by assessing the relationship between digital literacy and employee engagement in selected NCS offices in Nigeria's South-South region. Understanding this link is crucial for enabling sustainable change, enhancing service delivery, and improving operational resilience in the public sector.

2. Method

The researchers employed a **correlational survey design** as the most suitable approach for this study. This design enables the examination of relationships among variables without manipulating them, thereby allowing for the natural observation of existing associations. The purpose of adopting this design was to ensure that the investigation produces insightful and practically useful information, particularly in understanding the factors that influence employee behavior and organizational outcomes within the Nigerian Brewery Plc.

The target population for this study consisted of employees of Nigerian Brewery Plc, specifically those located in the South-South geopolitical zones of Nigeria. The total population comprised five hundred and sixty-five (565) staff members who are employed across five states: Rivers, Bayelsa, Edo, Delta, and Akwa Ibom. These states were purposefully selected due to their significant contribution to the operations of Nigerian Brewery Plc and their representation of diverse organizational and economic settings.

Table 1 Population Distribution of Nigerian Customs Service in South-South Zones, Nigeria

S/N	Offices	Number of Employees
1.	River State	123
2.	Bayelsa State	106
3.	Edo State	113
4.	Delta State	109
5.	Akwa-Ibom State	114
	Total	565

Source: (Personal Records of Nigerian Customs Services Plc)

A sample size is the portion of the population chosen specifically for the research project. For the results to be accurately generalized, the sample needs to be typical of the population. By providing a manageable representation of the population, the sample size allows the researchers to investigate, analyze, and draw conclusions without having to look at every aspect of the population. Choosing the right sample size is essential since it affects the validity and dependability of the study's conclusions. Three hundred and thirty-six (336) people from five South-South zones—Rivers, Bayelsa, Edo, Delta, and Akwa Ibom State—make up the study's sample size. The sample size for this investigation is likewise determined using Taro Yamane's (1968) formula.

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Yamane formula:

$$n = \frac{N}{1 + N(e)^2}$$

Were,
n = sample size to be determined
N = population size
e = the error of sample at 5% or 0.05 significant level
The Yamane formula is stated as follows:
n = The total sample size; N = The population.

$$n = \frac{565}{1 + 565 * (0.05)^2}$$

$$n = \frac{565}{1 + 565 * 0.0025}$$

The sample size is = 234
Bowler's proportional allocation method was used as a sampling technique to allocate appropriately the questionnaire to the selected states and firm.

The Bowlers proportional allocation formula is stated below as follows:
nh = nNh
N

Where nh = Bowley's allocation formula
Nh = Number of items in each stratum in the population.
n = Sample size
N = Population size

Applying the formula, we have:
i). Rivers, State - Office nh =
234* 123 = 50.94
565
ii). Bayelsa State – Office nh =
234* 106 = 43.90
565
iii). Edo State – Office nh =
234* 113 = 46.8
565
iv). Delta State – Office nh =
234* 109 = 45.14
565
v). Akwa Ibom State – Office nh =
234* 114 = 47.21
565

The study employed a questionnaire and survey approach. Adapting to change, the intersection of digital literacy and employee engagement in selected Nigerian Customs Service, South-South Zone. The questionnaires were divided into distinct parts. The following interval scales were used in all the questions using five-point Likert scales: "Strongly Agree, SA" = 5, "Agree" AG = 4, "Undecided" UN = 3, "Disagree" DA = 2, and "Strongly Disagree, SD = 1.

3. Results and Discussion

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3.1 Results

The aim of this study focuses on adapting to change, the intersection of digital literacy and employee engagement in the selected Nigerian Customs Service, South-South Zone. To achieve this objective, the data were presented following the order of the research questions. Data was collected, tabulated, and analyzed using the Statistical Package for Social Sciences (SPSS Version 25). Out of 234 copies of the questionnaire distributed to the respondents, only 205 were filled out and returned, while the remaining 29 were not returned and used for the analysis.

Table 2: Schedule of Questionnaire Administered and Returned for Selected Nigerian Custom Services

S/N	Offices/ States	Population	Copies Distributed	Copies filled and returned
1.	River State	123	51	45
2.	Bayelsa State	106	44	38
3.	Edo State	113	47	41
4.	Delta State	109	45	40
5.	Akwa-Ibom State	114	47	41
	Total	565	234	205

Source: (Field Survey, 2024)

Analysis of Research Question One

How does digital literacy level impact employee engagement in Selected Nigerian Custom Services, South-South Zone?

Table 3: Investigative Questions on Digital Literacy Level and Employee Engagement

S/N	Questions	SA	AG	UN	DA	SD	Total
A.	**Digital Literacy Level (Independent Variable)**						
1	Our firm has significantly improved its digital literacy levels, leading to more efficient and streamlined operations.	92	84	8	7	3	205
2	Operations in our organization are now more streamlined and efficient because of a considerable improvement in digital literacy	88	97	10	6	4	205
3	An increasingly proactive and creative workforce has been fostered by increased digital literacy, which has increased employee engagement within our firm.	86	99	7	11	2	205
4	High levels of digital literacy have made it possible for our firm to minimize disruptions by responding to organizational changes more quickly and effectively.	90	93	9	8	5	205
5	Even with these advancements, there is still a technological gap in the NCS, with certain staff finding it difficult to stay up to date with emerging technologies.	91	94	5	7	8	205
6	Some employees exhibit resistance to digital transformations, hindering the full potential of organizational change initiatives.	92	95	10	6	2	205
7	Inadequate digital skills have hindered employee engagement, as some staff struggle to utilize digital platforms effectively.	100	96	8	0	1	205
B.	**Employee Engagement (Dependent Variable)**						

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1	We use various digital platforms (such as Zoom platform) to collaborate.	101	97	3	2	2	205
2	Employees with robust digital skills feel more confident in their roles, leading to higher engagement and active participation in organizational activities.	103	89	6	4	3	205
3	Strong digital skills afford us the chance to communicate more effectively with other staff.	100	86	8	9	2	205
4	Opportunities for learning and improving digital skills encourage employees to stay engaged, as they see a clear path for personal and professional growth.	92	99	1	6	7	205
5	Employees lacking digital skills may feel disengaged and overwhelmed, leading to reduced participation and productivity.	93	95	10	4	3	205
6	Sometimes, the pressure to acquire new digital skills quickly can lead to increased stress and burnout, reducing overall employee engagement.	98	93	7	1	6	205
7	Poor digital skills can result in some employees being excluded from key projects or initiatives, negatively impacting their engagement and morale.	94	99	3	1	8	205

Source: (Field Survey, 2024)

Test of Research Hypothesis One

- H_{A1}: Digital literacy level can impact significantly employee engagement in Selected Nigerian Custom Services, South-South Zone.

Given the total population, the researchers determined an appropriate **sample size** to ensure that the findings would be statistically valid and generalizable. A **sample** is a representative subset of the population selected for the purpose of the study. It enables researchers to gather data and perform analysis without surveying the entire population, which would be time-consuming and costly.

The sample size for this study was determined using **Taro Yamane's (1968) formula**, which is widely recognized for calculating representative samples in survey research. Based on this formula, the study selected a sample of **three hundred and thirty-six (336)** employees drawn proportionally from the five selected states. This sample is considered adequate to ensure the **validity, reliability, and generalizability** of the study's outcomes, and it allows for the effective analysis of correlations between key variables under investigation.

Table 4: Result of Pearson Correlation

		DLI	EEM
DLI	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.000
	N	205	205
EEM	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.000	
	N	205	205

Source: (SPSS Version 25)

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5: Descriptive Statistics

	N	Mini mum	Maxi mum	Mean	Std. Deviation

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DLI	205	.00	100.00	40.6857	43.20456
EEM	205	1.00	103.00	41.0000	45.41573
Valid N (listwise)	205				

Source: (SPSS Version 25)

3.2 Discussion

The primary objective of this study was to examine the relationship between digital literacy and employee engagement within the Nigerian Customs Service (NCS) in the South-South Zone. Utilizing the Pearson correlation method, the analysis revealed a significant positive correlation between digital literacy levels (DLI) and employee engagement (ERM), with a p-value of .000 and a correlation coefficient (r) of .991, based on a sample size of 205 respondents. This strong correlation suggests that higher levels of digital literacy among employees are associated with increased engagement in their roles.

This finding aligns with existing literature emphasizing the importance of digital literacy in enhancing employee engagement. For instance, Chan, Hooi, and Ngui (2021) conducted a study in Kuala Lumpur, Malaysia, which demonstrated that digital literacies significantly moderate the relationship between workplace digitalization and employee engagement. Their research found that employees with higher digital literacy levels were better equipped to adapt to digital transformations in the workplace, leading to increased engagement and productivity.

Furthermore, the study's results are consistent with the diffusion of innovation theory proposed by Rogers (2003), which posits that individuals' adoption of new technologies is influenced by their perceived ease of use and usefulness. Employees with higher digital literacy are more likely to perceive digital tools as beneficial and are thus more inclined to adopt and engage with them effectively.

In the context of the NCS, the adoption of digital tools and platforms has been a strategic priority to enhance operational efficiency and service delivery. The Comptroller-General of Customs, Bashir Adewale Adeniyi, has emphasized the importance of embracing digital innovation to improve customs operations, highlighting initiatives such as data analytics integration and the development of e-transaction monitoring systems (Journalng, 2023). These advancements necessitate a workforce that is proficient in digital skills to fully leverage the benefits of such technologies.

The positive correlation between digital literacy and employee engagement observed in this study underscores the need for targeted digital skills training within the NCS. By investing in comprehensive digital literacy programs, the NCS can empower its employees to effectively utilize digital tools, leading to improved information sharing, collaboration, and overall performance. This approach is supported by initiatives such as the National Information Technology Development Agency's (NITDA) Digital States Initiative, which aims to enhance digital literacy among Nigerian youth and civil servants (Wikipedia, 2025).

Moreover, the findings resonate with the broader context of digital transformation in Nigeria's public sector. Studies have shown that digital literacy is a critical enabler of successful digitalization efforts, as it equips employees with the necessary skills to adapt to technological changes and contribute meaningfully to organizational objectives (ResearchGate, 2024).

In conclusion, the significant positive relationship between digital literacy and employee engagement within the NCS highlights the importance of fostering digital competencies among employees. By prioritizing digital literacy development, the NCS can enhance employee engagement, drive organizational performance, and effectively navigate the ongoing digital transformation in the public sector.

4. Conclusion

This research examined the relationship between digital literacy and employee engagement within the broader context of organizational change, using the Nigerian Customs Service (NCS) in the South-South

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Zone as a case study. The findings reveal that higher levels of digital literacy among employees significantly contribute to greater engagement, adaptability, and productivity. Digital literacy not only supports the transition during organizational change but also enhances employees' ability to collaborate, communicate, and navigate digital workspaces effectively. The study reinforces the understanding that digital competence is a strategic enabler in modern public institutions, facilitating smoother adaptation to technological transformation and fostering a more innovative and responsive workforce.

These results are consistent with prior research, such as the study by Chan et al (2021), which emphasizes the role of digital literacy in strengthening employee engagement in digitally transforming environments. Hence, digital proficiency should be recognized not merely as a technical skill but as a critical factor in shaping organizational culture and sustaining employee morale and innovation. In view of these findings, it is recommended that the NCS and similar public sector organizations prioritize digital learning and development by establishing partnerships with e-learning platforms and investing in continuous professional training. Promoting a workplace culture that supports digital experimentation and usage is essential. This can be achieved through initiatives such as peer mentoring, recognition programs, and access to modern digital tools.

Additionally, upgrading ICT infrastructure is vital to support hybrid or remote work models. Providing stable internet connectivity and equipping teams with reliable platforms like Slack, Microsoft Teams, or Zoom will enable effective collaboration and real-time communication. To ensure inclusive and streamlined communication with external stakeholders, the NCS should adopt integrated digital platforms that support seamless engagement with importers, exporters, and other regulatory bodies. The implementation of mobile applications, intranets, and digital dashboards can foster greater transparency and responsiveness. It is also crucial for departments within the organization to establish monitoring and evaluation systems for digital initiatives. Through the use of performance metrics, feedback mechanisms, and digital analytics, organizations can track outcomes, optimize strategies, and scale successful digital interventions.

Future research should delve into the long-term impact of digital literacy and upskilling initiatives on employee engagement and retention across diverse sectors, such as healthcare, education, finance, and logistics. It is particularly important to explore how digital capabilities contribute to sustaining engagement in hybrid and fully remote work settings. Longitudinal studies and mixed-method research designs could provide a richer understanding of how employees' digital skills evolve over time and how such growth translates into tangible organizational benefits.

This study contributes to the existing literature by offering empirical evidence of how digital literacy enhances employee engagement within the public service context, specifically in a transitional environment like the Nigerian Customs Service. By highlighting key challenges such as digital skill gaps and resistance to change, this research underscores the importance of building digital capacity as a foundation for institutional transformation. It offers practical insights and strategic recommendations for improving workforce engagement, adaptability, and performance in the face of rapid digitalization. As such, it adds significant value to the discourse on digital transformation in public sector organizations and serves as a valuable reference for policymakers, organizational leaders, and scholars.

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