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DIGITAL SYSTEMS, ANALOGUE CAPABILITIES: DIGITAL LITERACY, ICT UTILISATION, AND THE COMPETENCY GAP IN NIGERIA'S PUBLIC SERVICE

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ABSTRACT

This study examines digital literacy and ICT utilisation among public servants in Nigeria. Despite investing in digital platforms over the years, many systems continue to operate below capacity, even with sustained policy attention and infrastructure investments. The study argues that a structural misalignment persists between increasingly digitised administrative systems and a public workforce whose digital competencies remain unevenly developed. The study is anchored on the Technology Acceptance Model (TAM), Institutional Theory, and Human Capital Theory. Collectively, these theories explain how digital uptake depends on perceived usefulness and ease of use, institutional incentives, and workforce capabilities. Using a qualitative, desk-based narrative synthesis design, this study synthesised evidence from Nigerian and comparative studies published primarily between 2020 and 2025. Findings indicate that digital literacy positively influences ICT utilisation and service delivery, while inadequate training, weak infrastructure, organisational resistance, and weak competency-based recruitment systems hinder effective digital transformation. The study concludes that capability-centred reforms are essential for improving digital outcomes and proposes policy interventions in recruitment, training, performance management, and institutional support.

INTRODUCTION

The digitisation of public service has become a central strategy for improving efficiency, transparency, accountability, and citizen-centred service delivery in contemporary public administration (Omotayo et al., 2025; ElKheshin & Saleeb, 2020). In Nigeria, successive governments have introduced digital reforms as well as invested resources aimed at modernising administrative processes, reducing bureaucratic inefficiencies, and enhancing public service delivery (Abimaje & Bagaji, 2026; Ayesha et al., 2025). Despite these reforms, a persistent gap exists between the availability of digital systems and the ability of many

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public servants to use them confidently and effectively in daily administrative work (Ishola et al., 2025; Okeke & Anaekwe, 2025; Adebayo & Bilquis, 2018). This gap undermines service efficiency, limits gains in transparency, and reduces the returns on digital investment in public service.

Studies have identified infrastructural deficits, corruption and poor policy implementation as major obstacles to the success of digital reforms (Ayesha et al., 2025). While these factors are evident, they may not fully explain why many digital systems continue to underperform even where basic infrastructure has been deployed (Egbeleo & Sodokin, 2025). This suggests that public institutions have become digitally designed faster than public servants have become digitally skilled.

The mismatch between the deployment of digital infrastructure and employees' skills is more pronounced in Nigeria's subnational units, or states. For instance, in Cross River State, investments in digitisation and ICT capacity building did not yield commensurate improvements in service delivery, partly because in-service training was inadequate and civil servants did not fully cooperate with the reform process (Inakefe et al., 2023). Dehinsilu-Isa and Amodu (2025) reported a link between weak e-governance effectiveness and digital illiteracy, inadequate infrastructure, and resistance to change in Lagos State. A similar pattern, in which governments digitise procedures faster than they develop the human capabilities needed to use those systems effectively, has been reported in comparative studies from Kazakhstan (Sabdenov et al., 2025) and Ukraine (Bilan et al., 2023), suggesting that the mismatch documented in Nigeria's subnational units is not unique to the Nigerian context, even though the comparative evidence base remains limited to a small number of country cases.

The central problem, therefore, is not just the availability of ICT infrastructure and other digital systems, but whether public servants possess the digital literacy and skills required to use them effectively within bureaucratic environments. The cardinal objective of this study is to document the relationship between digital literacy and ICT utilisation among public servants in Nigeria, identify institutional barriers that sustain competency gaps, and propose reforms to enable capability-centred digital utilisation in the public service.

This paper is positioned against two closely related strands of recent scholarship. Ayesha et al. (2025) systematically highlights the implementation challenges facing e-government in Nigeria, while Ishola et al. (2025) map the bibliometric structure of Nigerian digital-governance research. However, neither integrates a workforce-capability lens into an explanatory account of why the gap persists. This paper's contribution is therefore conceptual rather than empirical: it integrates the Technology Acceptance Model, Institutional Theory, and Human Capital Theory into a single capability-centred explanation of the competency gap and translates that explanation into specific human-resource policy levers. Accordingly, the study is best read as a narrative conceptual synthesis rather than a systematic review or a primary data study. It does not follow a PRISMA-style protocol, and its purpose is theoretical integration and policy translation rather than exhaustive coverage of the literature.

1. Literature Review and Theoretical Framework

Conceptualising Digital Literacy

Digital literacy in public administration extends far beyond basic computer use. It includes a wide range of professional competencies required for effective governance. Public servants are expected to demonstrate skills in information and data handling, communication and collaboration, digital content creation, online safety, and problem-solving. They also

need managerial and policy-related abilities to integrate digital tools into administrative workflows and decision-making processes (Sabdenov et al., 2025). This broader skill set reflects the complex and varied nature of public service roles. Studies show that generic digital competence frameworks often emphasise basic skills rather than role-specific requirements (Gegedyush et al., 2022).

The European Commission's DigComp 2.2 framework structures digital competence into five key areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. It also serves as a benchmark for evaluating the digital skills of civil servants across eight proficiency levels (Vuorikari et al., 2022). Research using the earlier DigComp 2.1 version, involving 428 Ukrainian civil servants, revealed generally low levels of digital proficiency, with the weakest performance in digital content creation (Bilan et al., 2023). These findings highlight the need for flexible, role-based digital competency models aligned with specific job responsibilities, particularly in contexts such as Nigeria, where public service roles are highly diverse.

ICT Utilisation in Public Service

Effective utilisation of digital systems is essential for improving the efficiency and quality of public service delivery. Omotayo et al. (2025) found that digital literacy among public servants is significantly associated with improved public service delivery outcomes, a finding consistent with evidence from multiple Nigerian states (Oladimeji et al., 2024; Bolaji & Ibrahim-Raji, 2023). Digital literacy and ICT infrastructure should be viewed as complementary rather than substitutable factors that jointly influence the effectiveness of digital governance (Astuti & Ayinde, 2025; Omotayo et al., 2025). However, utilisation is often lower than system availability. A recent systematic review of e-government implementation in Nigeria found that more than 90% of included studies identified poor ICT infrastructure and unreliable power supply as major barriers, while 75% emphasised corruption and low digital literacy (Ayesha et al., 2025). The review concluded that Nigeria faces a significant gap between system availability and actual usage across ministries. This recurring pattern confirms that deployment does not guarantee use. Evidence also indicates that even where digital skills exist, poorly designed or unreliable systems can suppress utilisation (Pradana & Salamat, 2025; Adyaputra et al., 2025), suggesting that the literacy-utilisation relationship is not unconditional.

Theoretical Framework

Technology Acceptance Model

Technology Acceptance Model

The Technology Acceptance Model (TAM) explains technology adoption by emphasising the roles of perceived usefulness and perceived ease of use in shaping user behaviour (Davis, 1989; Scherer et al., 2019; Warsono et al., 2023). Individuals are more likely to adopt and use digital systems when they perceive them as beneficial and easy to operate. However, many digital systems in the Nigerian public sector, such as the Integrated Personnel and Payroll Information System (IPPIS), are implemented on a mandatory basis rather than through voluntary adoption. This mandatory context materially alters TAM's predictions: perceived usefulness and ease of use retain influence over the quality and depth of utilisation but no longer determine whether adoption occurs (Musa et al., 2024). In environments where adoption is compulsory, the key concern in the Technology Acceptance Model changes from whether a user will adopt a system to how effectively they will use it. In this context, digital literacy becomes the critical factor that determines successful use.

Public servants may still meet system requirements even when they do not fully understand how the system works, especially when training and skills development are inadequate (Nikou et al., 2022). This often results in surface-level compliance, where tasks are completed but the system is not used effectively. As a consequence, errors, inefficiencies, and institutional resistance can continue despite the availability of digital technologies. Age-related resistance compounds this dynamic, as older employees, who constitute a substantial proportion of Nigeria's civil service workforce, may be less confident with new digital processes (Inakefe et al., 2023). Accordingly, TAM's explanatory power in the Nigerian public sector is strengthened when digital literacy, workforce demographics, and organisational conditions are incorporated alongside its core constructs.

Institutional Theory

Institutional Theory suggests that organisations sometimes adopt reforms primarily to gain legitimacy and signal modernity rather than to improve internal efficiency (Jun & Weare, 2011). In many public-sector settings, digital initiatives may be implemented to satisfy government mandates, donor requirements, or modernisation agendas without corresponding investment in the capabilities needed to make those systems function.

North (1990) distinguishes between formal institutions such as laws, policies, and administrative mandates, and informal institutions, including norms, habits, and organisational culture. Formal institutions in Nigeria have increasingly mandated digital systems, but informal institutions often remain unchanged. In the Nigerian public service, paper-based documentation, manual record-keeping, and face-to-face authorisation remain associated with professional authority and trust. The result is a behavioural gap: civil servants may comply formally with digital requirements while continuing to rely on analogue practices for substantive work. This gap is visible in Cross River State, where civil servants did not fully internalise digital reform norms even after formal mandates were issued (Inakefe et al., 2023), and in Lagos State, where resistance to change persisted alongside widespread awareness of e-governance benefits (Dehinsilu-Isa & Amodu, 2025). From this perspective, successful digital transformation requires not only new technologies and policies but deliberate strategies to shift the informal institutional environment.

Human Capital Theory

Human Capital Theory views digital literacy as a valuable form of productive capacity that enhances individual and organisational performance (Awu et al., 2025; Becker, 1993). Investment in skills development improves employees' ability to perform effectively and adapt to changing workplace demands. However, recruitment into Nigeria's public service has traditionally prioritised academic qualifications over demonstrated digital competence (Abasilim et al., 2022). This means many individuals enter the civil service without having their digital skills assessed, creating a workforce with heterogeneous proficiency levels and making consistent digital utilisation difficult to achieve.

The absence of minimum digital competency standards at recruitment also reproduces existing skills gaps over time: each cohort of new civil servants enters without verified digital capabilities, and in-service training alone cannot compensate for structural deficiencies in the selection process. From a human capital perspective, addressing the competency gap requires not only continuous training but also the integration of competency standards into recruitment, promotion, and performance appraisal systems (Sabdenov et al., 2025).

2. Methodology

Research Design

This study employs a structured narrative review of secondary literature (Madden et al., 2017). The approach is appropriate because the research problem concerns a broad body of evidence on skills development, institutional arrangements, ICT utilisation, and public service outcomes, rather than a single measurable intervention. In contrast to a systematic review, this approach does not involve formal meta-analytic synthesis. However, it follows a predefined and documented search and selection process designed to reduce unsystematic coverage and minimise confirmatory bias (Ahmad, 2025). This study is a narrative review and does not claim to establish causal relationships. All findings are reported as associations or patterns consistent with the existing literature.

Data Sources

Data were drawn from peer-reviewed journal articles, systematic reviews, mixed-methods studies and conceptual literature on digital literacy, e-governance, ICT adoption, civil service reform and digital transformation. Literature was identified through Google Scholar, Semantic Scholar, Consensus, publisher websites, and reference-list tracing. Search terms combined subject terms and Boolean operators as follows: ("digital literacy" OR "digital competence" OR "ICT literacy") AND ("public service" OR "civil service" OR "public administration" OR "e-governance" OR "e-government") AND ("Nigeria" OR "sub-Saharan Africa" OR "developing country").

Due to limited access to subscription-based databases such as Scopus and Web of Science, the search relied on openly accessible academic sources and citation tracking. Although this may not have captured all relevant studies, it provided sufficient evidence for a robust narrative synthesis.

3. Results

Digital Literacy and ICT Utilisation

Evidence consistently suggests that digital literacy is associated with higher levels of ICT utilisation and public service effectiveness. Omotayo et al. (2025) found, using ordered logistic regression with a sample of Nigerian public servants and citizens, that digital literacy among public servants was significantly associated with improved service delivery outcomes ($\beta = 0.108$; $p = 0.007$). Oladimeji et al. (2024) similarly found that digital literacy was associated with improved productivity among local government employees in Ilorin West. These findings are consistent with evidence from sub-Saharan Africa showing that digital technologies yield performance benefits primarily when users possess adequate competencies (Egbeleo & Sodokin, 2025). However, the association is not unconditional. Bolaji and Ibrahim-Raji (2023), studying education-sector workers in Kwara State, found that although digital literacy was associated with administrative task performance, many staff still lacked proficiency for routine digital tasks, resulting in productivity shortfalls despite formal digital literacy. Umunakwe et al. (2025) similarly reported that agricultural extension officers in Imo State demonstrated mostly foundational levels of digital proficiency, with skills gaps that constrained service delivery even among workers who met minimum literacy benchmarks. These findings suggest the presence of threshold effects, whereby digital literacy contributes to utilisation only once a certain level of competence has been attained. However, below this threshold, the relationship appears considerably weaker.

Training Deficits and Competency Development

A recurring pattern across the reviewed literature is the inadequacy of in-service digital training. In Cross River State, insufficient ICT training significantly constrained the effectiveness of e-governance reforms and reduced service delivery gains (Inakefe et al., 2023). Comparative evidence from Kazakhstan found that 54.5% of surveyed civil servants experienced difficulties with government digital systems due to inadequate training or limited experience, while 56.5% had never received formal digital training after recruitment (Sabdenov et al., 2025). The literature further indicates that training effectiveness depends not only on availability but on quality, relevance, intensity, and continuity (Inakefe et al., 2023). One-off workshops and fragmented capacity-building initiatives rarely produce sustainable improvements in digital competence. Chohan et al. (2020), in a quasi-experimental study of e-government ICT training programmes, confirmed that cohesive, structured training significantly improved self-efficacy and digital literacy outcomes, whereas fragmented interventions did not. However, even structured training shows limited durable gains where managerial reinforcement and incentive systems do not support ongoing digital practice (Inakefe et al., 2023).

Institutional and Infrastructure Constraints

Infrastructure remains a significant contextual determinant of ICT utilisation, but evidence positions it as a complementary rather than a substitute explanation. Nigerian studies consistently identify inadequate ICT infrastructure and unreliable electricity supply as barriers to digital transformation (Ayesha et al., 2025). In Cross River State, insufficient digital tools and inadequate financing constrained service delivery outcomes despite reform efforts (Inakefe et al., 2024). Across sub-Saharan Africa, Astuti and Ayinde (2025) found that both human capital and infrastructure significantly influence digital adoption rates, but that improvements in one domain yield diminishing returns in the absence of the other. Importantly, some evidence suggests that infrastructure improvements alone do not resolve the competency gap. Ayesha et al.'s (2025) systematic review found that even in Nigerian ministries with relatively better infrastructure, utilisation deficits persisted where digital literacy remained low.

Organisational Resistance and Institutional Culture

The literature consistently identifies organisational resistance as a barrier to digital transformation. In Cross River State, civil servants' noncooperation undermined the effectiveness of digital reforms despite investments in infrastructure (Inakefe et al., 2023). In Lagos State, resistance to change persisted despite strong awareness of the benefits of e-governance (Dehinsilu-Isa & Amodu, 2025). North's (1990) distinction between formal and informal institutions remains highly relevant in the Nigerian context. While formal mandates can introduce new systems and procedures, deeply rooted informal practices, such as a preference for paper-based processes, face-to-face approvals, and manual record-keeping, continue to influence how people work. As a result, digital systems often struggle to gain full acceptance because mandates alone are not enough to change established behaviours and routines. Evidence also identifies conditions that moderate resistance. Sabdenov et al. (2025) found that managerial support and institutional incentives significantly influenced technology utilisation, with civil servants who perceived leadership commitment to digital processes showing higher utilisation rates. This suggests that although resistance persists, it is not fixed. With well-targeted institutional changes that reshape incentives and managerial practices, its impact on utilisation can be reduced.

Recruitment and Competency Standards

Evidence reveals systemic weaknesses in the integration of digital competencies into recruitment and career development. Sabdenov et al. (2025) found in Kazakhstan that 66.9% of public-sector job advertisements in Kazakhstan omitted digital competency requirements and 60% of respondents reported that digital skills were not mandatory for employment. While directly comparable Nigerian data are limited, Abasilim et al. (2022) documented that Nigeria's civil service recruitment has historically privileged academic qualifications over demonstrated functional competencies, including digital skills. However, having digital competency requirements on paper does not always mean they are applied in practice. Sabdenov et al. (2025) found that although digital skills were often listed in job advertisements, they were not consistently assessed during recruitment. This suggests a gap between what organisations expect and how candidates are actually selected. Therefore, improving recruitment requires more than simply adding digital competency criteria. It also requires reliable assessment methods and stronger institutional commitment to ensure that these standards are applied consistently.

User Acceptance, Usability, and Trust

ICT utilisation is influenced by both individual capabilities and system-related perceptions. The reviewed studies indicate that ICT utilisation depends not only on competence but also on user perceptions of usefulness, ease of use, trust, security, and system quality (Pradana & Salamat, 2025; Adyaputra et al., 2025). This shows that even when users are digitally competent, their willingness to engage with ICT can be limited if systems are perceived as difficult to use, unreliable, or insecure. In such cases, technical skill alone is insufficient to drive adoption and sustained use. Therefore, improving ICT utilisation requires a dual approach that combines digital literacy development with continuous improvements in system design and user experience rather than treating them as separate or sequential interventions.

Discussion

The results demonstrate that a digital competency gap exists within the Nigerian public service. While digital platforms and e-governance systems continue to expand, staff skills have not kept pace. This limits the impact of these investments. Therefore, improvements in efficiency, transparency, and service delivery remain constrained. This highlights the need to focus not only on technology but also on strengthening workforce capabilities.

The findings are consistent with the Technology Acceptance Model, which emphasises perceived usefulness and ease of use as key factors influencing ICT utilisation. Public servants are generally more likely to adopt and use digital systems effectively when they perceive them as easy to use and beneficial to their work. However, the results also suggest that technology adoption is shaped by more than just individual perceptions. Organisational culture, leadership support, incentives, and prevailing workplace norms significantly influence the acceptance and use of ICT systems (Sabdenov et al., 2025). This indicates that while users' attitudes towards technology matter, they are often shaped by the broader institutional environment, which can either facilitate or constrain effective ICT utilisation. Consequently, efforts to improve ICT use should focus not only on developing user-friendly systems but also on creating organisational conditions that encourage and support technology adoption.

Human Capital Theory reinforces the view that digital literacy is a critical organisational resource. The findings show that without sustained investment in skills development, digital systems remain underutilised regardless of their technological sophistication. This suggests

that workforce capability is not static but must be continuously developed to ensure that employees can effectively engage with evolving digital tools and processes. Consequently, digital transformation strategies must prioritise ongoing capacity building as a core component of reform.

The study highlights the importance of integrating digital competencies into human resource management systems. Recruitment processes should include digital competency assessments, while promotion and appraisal systems should reward continuous digital skill development, alongside differentiated competency frameworks that reflect varying job requirements (Gegedyush et al., 2022). This ensures that digital capability is embedded throughout the employee lifecycle, strengthening both entry-level standards and long-term professional development within the public service. Embedding digital skills into HR systems helps institutionalise capability development rather than treating it as an ad hoc training intervention.

Effective digital governance requires coordinated investment across infrastructure, capability, institutional reform, and system design. The findings show that policy frameworks such as Nigeria's National Digital Literacy Framework (National Information Technology Development Agency [NITDA], 2023) and the Digital Literacy for All initiative already provide a foundation for addressing these challenges. However, their impact depends on how well they integrate recruitment standards, performance management reforms, and institutional support mechanisms to address the competency gap more directly. This highlights that sustainable digital transformation depends on aligning multiple policy levers rather than relying on isolated interventions.

Limitations

This study has some limitations. It relies mainly on published sources and a government policy document, excluding unpublished data and grey literature that may offer additional insights. Source selection and thematic analysis were conducted by a single author, which may introduce selection bias. The Nigerian evidence base is also geographically uneven, with several findings drawing heavily on studies from Cross River State. Future research should use primary data to validate and extend these findings.

4. Conclusion

This study examined digital literacy and ICT utilisation among public servants in Nigeria. The evidence demonstrates that digital literacy is a critical determinant of ICT utilisation and the effectiveness of service delivery. However, inadequate training, infrastructure deficiencies, organisational resistance, weak competency-based recruitment systems, and usability challenges continue to limit the benefits of digital transformation. The study concludes that Nigeria's e-government challenges reflect not only technological limitations but also a persistent mismatch between digital systems and workforce capabilities. Addressing this mismatch requires capability-centred reforms that prioritise continuous training, competency-based recruitment, performance-linked digital learning, improved infrastructure, and supportive institutional cultures. Future research should employ primary data and large-scale empirical surveys to measure digital competency levels across different tiers of government.

Disclosure Statements

1. **Conflict of Interest**: The author declares no conflict of interest

2. **Artificial Intelligence (AI) use**: The author used ChatGPT (OpenAI) and Grammarly to assist with language editing and structural refinement. All content, analysis, and interpretations remain the responsibility of the author.

References

Abasilim, U. D., Durojaiye, J. O., & Gberevbie, D. E. (2022). Challenges of those in leadership in the digitalisation of Nigeria's government organisations. *JPPUMA: Jurnal Ilmu Pemerintahan dan Sosial Politik UMA (Journal of Governance and Political UMA)*, 10(2), 281–289. https://doi.org/10.31289/jppuma.v10i2.8350

Abimaje, E. E., & Bagaji, A. S. Y. (2026). E-governance reforms and service delivery efficiency in sub-national revenue administration: Evidence from Kogi State, Nigeria. *International Journal of Research and Innovation in Social Science*, *9*(12), 2962–2977. https://doi.org/10.47772/IJRISS.2025.91200225

Adebayo, F., & Bilquis, M. (2018). E-Governance and effective bureaucratic practices in Nigeria Civil Service. *International Journal of Business and Administrative Studies, 4*(3), 105-121. https://dx.doi.org/10.20469/ijbas.4.10003-3

Adyaputra, R., Imtihan, K., & Saleh, M. (2025). Assessing user satisfaction of local government websites through iso 25010 and technology acceptance model (TAM). *Journal of Information and Organizational Sciences*, *49*(2), 291–312. https://doi.org/10.31341/jios.49.2.8

Astuti, H. M., & Ayinde, L. A. (2025). Uneven progress: Analyzing the factors behind digital technology adoption rates in Sub-Saharan Africa (SSA). *Data & Policy*, *7*, e23. https://doi.org/10.1017/dap.2024.89

Awu, E., Darius, B., & Chimele, M. P. (2025). Human capital theory: viewing employees as organizational asset. *International Journal of Academic Management Science Research*, *9*(3), 370–375. https://ijeais.org/wp-content/uploads/2025/3/IJAMSR250330.pdf

Ayesha, A. D., Ahlan, A. R., Ibrahim, N. M., & Ahmed, M. (2025). Impact and Challenges of E-Government Implementation in Nigeria: A Systematic Literature Review. *International Journal on Perceptive and Cognitive Computing*, *11*(2), 42–57. https://doi.org/10.31436/ijpcc.v11i2.567

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press. https://doi.org/10.7208/chicago/9780226041223.001.0001

Bilan, Y., Mishchuk, H., & Samoliuk, N. (2023). Digital Skills of Civil Servants: Assessing Readiness for Successful Interaction in e-society. *Acta Polytechnica Hungarica*, 20(3), 155 – 174. https://doi.org/10.12700/aph.20.3.2023.3.10

Bolaji, H. O., & Ibrahim-Raji, T. B. (2023). ICT-Based Literacy Evaluation in Nigeria Educational Sector: Case Study in Kwara State. *International Journal of Informatics, Information System and Computer Engineering (INJIISCOM), 4*(1) 1–10. https://doi.org/10.34010/injiiscom.v4i1.9274

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Dehinsilu-Isa, M., & Amodu, A. (2025). Assessing the effectiveness of e-governance in enhancing transparency in public service delivery in Lagos State's education districts. *Journal of African Resilience and Advancement Research, 9*(2), 13–25. https://doi.org/10.70382/hujarar.v9i2.020

Egbeleo, E., & Sodokin, K. (2025). Digital transformation, institutional quality and productivity in Sub-Saharan Africa. *Cogent Economics & Finance, 13*(1), 1–21. https://doi.org/10.1080/23322039.2025.2519924

ElKheshin, S., & Saleeb, N. (2020). Assessing the adoption of e-government using TAM model: Case of Egypt. *International Journal of Managing Information Technology, 12*(1), 1–14. . https://doi.org/10.5121/ijmit.2020.12101

Gegedyush, N. S., Maslennikova, E. V., & Osipov, V. A. (2022). Models of civil servants' digital competence: approaches to formation and evaluation. *Vestnik Universiteta*, (10), 18–30. https://doi.org/10.26425/1816-4277-2022-10-18-30

Inakefe, G. I., Bassey, V. U., & Amadi, J. O. (2024). Evaluation of the policy and institutional implications of digital tools in e-governance reforms implementation for service delivery in Cross River State civil service, Nigeria. *Sage Open*, 14(4) 1–22. https://doi.org/10.1177/21582440241297047

Inakefe, G. I., Bassey, V. U., Ikeanyibe, O., Nwagboso, C., Agbor, U. I., Ebegbulem, J., Mbonu, F. I., & Ike, G. U. (2023). Digital literacy and e-governance adoption for service delivery in Cross River State civil service. *International Journal of Electronic Government Research, 19*(1), 1–23. https://doi.org/10.4018/ijegr.328327

Ishola, A. A., Maramura, T. C., & Gumbo, T. (2025). Charting digital governance: A bibliometric analysis of information and communication technology research in Nigeria's public administration using Scopus. *Frontiers in Sustainable Cities, 7*, 1605736. https://doi.org/10.3389/frsc.2025.1605736

Jun, K. N., & Weare, C. (2011). Institutional motivations in the adoption of innovations: The case of e-government. *Journal of Public Administration Research and Theory, 21*(3), 495–519. https://doi.org/10.1093/jopart/muq020

Madden, A., Bailey, C., Alfes, K., & Fletcher, L. (2017). Using narrative evidence synthesis in HRM research: An overview of the method, its application, and the lessons learned. *Human Resource Management, 29*(1), 123–141. https://doi.org/10.1002/hrm.21858

Musa, U., Jaafar, M., & Raslim, F. M. (2024). E-procurement adoption in Nigeria: perceptions from the public sector employees. *Arab Gulf Journal of Scientific Research*, 42(3), 1130–1149. https://doi.org/10.1108/agjsr-10-2022-0224

National Information Technology Development Agency (NITDA). (2023). *National digital literacy framework* (July 2023). Federal Ministry of Communications, Innovation and Digital Economy. https://nitda.gov.ng/wp-content/uploads/2023/07/Digital-Literacy-Framework.pdf

Nikou, S., Reuver, M., & Kanafi, M. M. (2022). Workplace literacy skills—How information and digital literacy affect adoption of digital technology. *Journal of Documentation*, *78*, 371–391. https://doi.org/10.1108/jd-12-2021-0241

North, D. C. (1990). *Institutions, institutional change and economic performance.* Cambridge University Press.

Okeke, M. N., & Anaekwe, V. B. (2025). E-administration and employee service delivery in selected government ministries in Anambra state: 2015–2023. *Humanities Horizon*, *2*(2), 109–121. https://doi.org/10.63373/3047-8014/35

Oladimeji, K. A., Abdulkareem, A. K., & Adejumo, A. (2024). From tech skills to performance gains: How digital literacy drives productivity improvements in the public sector. *Institutiones Administrationis, 4*(1), 56–73. https://doi.org/10.54201/iajas.v4i1.93

Omotayo, O. A., Kehinde, O., & Alaba, J. S. (2025). E-governance and public service delivery: Evidence from Nigeria. *Global International Journal of Innovative Research, 3*(1), 27–41. https://doi.org/10.59613/global.v3i1.374

Pradana, H. A., & Salamat, M. (2025). Analysis of public acceptance of e-government services using the TAM model (Technology Acceptance Model). *MSJ: Majority Science Journal, 3*(4), 105–115. https://doi.org/10.61942/msj.v3i4.468

Sabdenov, R., Abdrakhmanova, G., & Pussyrmanov, N. (2025). Assessing the integration of digital competencies into civil service recruitment and training in Kazakhstan. *Problems and Perspectives in Management, 23*(2), 561–571. https://doi.org/10.21511/ppm.23(2).2025.40

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education, 128*, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

Umunakwe, P. C., Madukwe, M. C., Anaeto, F. C., Nwakwasi, R. N., & Aja, O. O. (2025). Proficiency in Digital Extension Service Delivery among Public Agricultural Extension Personnel in Imo State, Nigeria. *Journal of Agricultural Extension*, *29*(1), 63–75. https://doi.org/10.4314/jae.v29i1.7

Warsono, H., Yuwono, T., & Putranti, I. R. (2023). Analyzing technology acceptance model for collaborative governance in public administration: Empirical evidence of digital governance and perceived ease of use. *International Journal of Data and Network Science, 7*(1), 41–48. https://doi.org/10.5267/j.ijdns.2022.12.008

Ahmad, M. N. (2025). Narrative Literature Reviews in Scientific Research: Pros and Cons. *Jordan Journal of Agricultural Sciences, 21*(1), 1–4. https://doi.org/10.35516/jjas.v21i1.4143

Vuorikari, R., Kluzer, S. and Punie, Y., *DigComp 2.2, The Digital Competence framework for citizens – With new examples of knowledge, skills and attitudes*, Publications Office of the European Union, 2022, **https://data.europa.eu/doi/10.2760/115376**

Chohan, S. R., & Hu, G. (2020). Strengthening digital inclusion through e-government: cohesive ICT training programs to intensify digital competency. Information Technology for Development, 28(1), 16–38. https://doi.org/10.1080/02681102.2020.1841713