

Digital Transformation and Technological Innovation in Governance IPPIS in Nigeria

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ABSTRACT

This study examines the role of digital transformation and technological innovation in governance, with emphasis on the Integrated Personnel and Payroll Information System (IPPIS) in Nigeria. As one of the flagship digital reforms in the public sector, IPPIS was designed to curb payroll fraud, eliminate ghost workers, and enhance transparency and accountability in public service management. Anchored on Institutional Theory, this research explores how institutional pressures, technological advancements, and governance imperatives shaped the adoption of IPPIS in Nigeria. Using a cross-sectional survey design, data were collected from ministries, departments, and agencies (MDAs) actively enrolled on IPPIS and analysed using Friedman's two-way ANOVA. Findings reveal that IPPIS adoption significantly improves transparency and accountability, reduces payroll irregularities, and enhances financial discipline in Nigeria's federal civil service. The study concludes that technological innovations like IPPIS are vital enablers of digital governance. It recommends extending IPPIS coverage to state and local governments, strengthening digital infrastructure, enhancing staff capacity, bolstering cybersecurity safeguards, and institutionalizing compliance mechanisms to ensure sustainability and broader governance transformation.

Keywords: Digital Transformation, Technological Innovation, Governance, IPPIS, Accountability, Transparency

INTRODUCTION

The digital era has redefined governance worldwide, with governments increasingly turning to technological innovations to improve service delivery, enhance accountability, and curb corruption. Across both developed and developing countries, digital transformation has become a vital instrument for building trust in governance and increasing efficiency in public administration (Agostino, Saliterer, & Steccolini, 2022). In Nigeria, successive administrations have introduced e-governance initiatives such as the Treasury Single Account (TSA), Government Integrated Financial and Management Information System (GIFMIS), and more prominently, the Integrated Personnel and Payroll Information System (IPPIS), to tackle structural inefficiencies and systemic corruption in the public sector (Nasiru et al., 2020; Jaiyeola & Musumhi, 2023).

The IPPIS, introduced in 2007 and later institutionalized under the Office of the Accountant-General of the Federation (OAGF), represents one of Nigeria's most ambitious technological innovations in governance. The primary purpose of the platform is to create a centralized, digitalized, and verifiable payroll system that eliminates fraud, strengthens accountability, and ensures fiscal sustainability. Historically, the Nigerian public service has grappled with the challenge of "ghost workers"—fictitious employees whose salaries were fraudulently siphoned from government coffers. This problem was exacerbated by weak oversight mechanisms and fragmented payroll systems across ministries, departments, and agencies (Enakirerhi & Temile, 2017). The deployment of IPPIS sought to address these structural lapses by establishing a single, comprehensive database of federal employees verified through biometrics and linked to unique personnel records.

Digital transformation in governance, as represented by IPPIS, has both operational and strategic implications. Operationally, the system integrates personnel records, automates payroll administration, and minimizes human interference in salary computation, thereby reducing opportunities for corruption (Nasiru et al., 2020). Strategically, IPPIS serves as a cornerstone for building digital trust and advancing Nigeria's e-governance framework. According to Institutional Theory (Selznick, 1957; Scott, 2001), organizations adopt new

technologies not only for efficiency but also in response to institutional pressures for legitimacy, compliance, and accountability. In the Nigerian case, the implementation of IPPIS has been driven by both domestic demands for transparent governance and international pressures from development partners advocating fiscal discipline.

The broader literature on digital transformation emphasizes that technology-enabled innovations can significantly reshape public administration by promoting accountability, transparency, and efficiency (Bovens, Curtin, & Groenleer, 2021; Omar et al., 2024). However, the adoption process is not without challenges. Integrating new systems with existing bureaucratic structures often encounters resistance, technical difficulties, and cybersecurity risks (Miller & Fox, 2023). For Nigeria, these challenges are evident in the slow pace of adoption across MDAs, allegations of non-compliance by some institutions, and concerns about system glitches that occasionally delay salary payments (Ofoma, 2022). Despite these setbacks, empirical evidence consistently indicates that IPPIS has curtailed payroll fraud, saved billions of naira in public expenditure, and improved workforce management (Umo-Udo & Washington, 2021).

Technological innovations like IPPIS also align with the global trend of using digital systems to advance accountability. Comparative studies suggest that countries leveraging biometric payroll systems and centralized financial platforms have successfully reduced fiscal leakages and improved governance outcomes (Ningsih, 2023). Nigeria's IPPIS thus reflects both a local response to entrenched governance challenges and a broader global movement toward digital governance.

Against this background, the present study explores the role of digital transformation and technological innovation in governance with specific focus on IPPIS. It seeks to empirically assess the relationship between IPPIS adoption, public sector transparency, and accountability within Nigerian federal ministries, departments, and agencies. The study is guided by two research questions:

1. To what extent does the adoption of IPPIS enhance transparency in public sector payroll administration?
2. What is the effect of IPPIS adoption on accountability in Nigeria's governance system?

By answering these questions, the study contributes to the literature on digital transformation and governance, offering policy-relevant insights for deepening transparency and accountability in Nigeria's public sector. The rest of the paper is organized as follows: Section 2 reviews the relevant literature, Section 3 outlines the methodology, Section 4 presents the data analysis and results, and Section 5 provides the conclusion and recommendations.

LITERATURE REVIEW

Conceptual Review

Governance refers to the processes and institutions through which authority is exercised in managing resources and delivering public goods and services. Effective governance emphasizes transparency, accountability, efficiency, and responsiveness (Bovens, Curtin, & Groenleer, 2021). In recent decades, digital transformation has emerged as a key driver of governance reforms, with governments adopting innovative technologies to streamline operations, reduce corruption, and enhance service delivery (Agostino, Saliterer, & Steccolini, 2022).

The Integrated Personnel and Payroll Information System (IPPIS) is a digital platform introduced by the Nigerian government in 2007, aimed at creating a centralized database for federal employees. It integrates personnel management with payroll administration to eliminate ghost workers, reduce financial irregularities, and promote fiscal accountability (Enakirerhi & Temile, 2017). Through biometric verification, IPPIS ensures that only genuine employees are captured in the payroll system.

Technological innovations in governance such as IPPIS are central to e-governance, which leverages information and communication technology (ICT) to improve efficiency, transparency, and interaction between government and citizens (Jaiyeola & Musumhi, 2023). By automating payroll and record-keeping processes, IPPIS represents a significant shift from manual, fragmented systems to an integrated digital governance framework.

THEORETICAL FRAMEWORK

This study is anchored on Institutional Theory (Selznick, 1957; Scott, 2001). The theory posits that organizations adopt practices and technologies not only for efficiency but also in response to institutional pressures such as regulatory requirements, public expectations, and international standards that shape legitimacy and credibility.

In the Nigerian case, IPPIS adoption reflects multiple institutional pressures. Domestically, public demand for transparency and accountability necessitated reforms in payroll management. Internationally, development partners and donor agencies emphasized fiscal responsibility as a condition for budgetary support. By aligning with these expectations, Nigeria institutionalized IPPIS as a governance tool to combat payroll fraud and strengthen accountability (Nasiru et al., 2020). Institutional Theory is relevant because it highlights how IPPIS adoption extends beyond technical efficiency to issues of legitimacy, compliance, and alignment with governance norms.

Empirical Review

Several empirical studies affirm the impact of IPPIS on governance outcomes. Nasiru et al. (2020) found a significant positive relationship between IPPIS adoption, transparency, and accountability in Nigeria's payroll administration. Enakirerhi and Temile (2017) reported that IPPIS minimized financial wastages and enhanced manpower planning in the federal civil service. Similarly, Jaiyeola and Musumhi (2023) emphasized that IPPIS successfully reduced the menace of ghost workers, thereby saving government billions of naira in recurrent expenditure. Ofoma (2022) noted that digital platforms like IPPIS significantly improve service delivery and public trust when implemented effectively. However, challenges such as resistance from some agencies, poor ICT infrastructure, and occasional system disruptions limit its full potential (Cinjel & Chujor, 2024).

In a related study, Umo-Udo and Washington (2021) examined the impact of the Treasury Single Account (TSA) policy and found that its integration with IPPIS strengthened accountability and enhanced effective financial management in Nigeria's public sector. Omar et al. (2024) highlighted the role of digitalization in improving accountability and efficiency in public services, noting that payroll reforms like IPPIS have direct implications for transparency in resource allocation.

At the international level, Agostino, Saliterer, and Steccolini (2022) reviewed digital governance practices across Europe and confirmed that payroll digitalization and centralized systems improved fiscal accountability, though successful implementation required strong institutional frameworks. Similarly, Fidrya (2023), in a study on IT-based public accounting, concluded that digitized payroll systems provide durable digital audit trails that enhance good governance.

In an African context, Ningsih (2023) analyzed IT-based public accounting reforms and emphasized that technological innovation improves accountability when embedded within broader institutional reforms. Likewise, Anitha and Kumar (2023) demonstrated how digitalization in accounting practices across the private and public sectors enhances efficiency, accuracy, and trust in financial reporting.

Furthermore, Cinjel and Chujor (2024), studying digital governance in Nigeria's Independent National Electoral Commission (INEC) and Federal Road Safety Corps (FRSC), found that while digital technology increased efficiency, infrastructural deficiencies and poor user training undermined sustainability. This finding is consistent with the challenges reported in IPPIS implementation.

More broadly, Aganga (2017) emphasized that IPPIS is one of the Federal Government's critical reform initiatives designed to transform the Nigerian public service into a more efficient and transparent system.

Similarly, Omar et al. (2024) stressed that payroll reforms not only improve efficiency but also foster trust between citizens and government.

In summary, literature suggests that while IPPIS has significantly enhanced accountability and transparency in Nigeria's public sector, its sustainability depends on addressing institutional and technical challenges.

METHODOLOGY

This study adopted a cross-sectional survey research design to examine the effect of digital transformation and technological innovation in governance, with specific focus on the Integrated Personnel and Payroll Information System (IPPIS). The case study consisted of three key federal parastatals directly responsible for the implementation and oversight of IPPIS: the Office of the Accountant-General of the Federation (OAGF), the Federal Ministry of Finance, and the Office of the Auditor-General of the Federation.

The target population was staff of these parastatals actively involved in payroll administration, auditing, and financial reporting. A total of 300 respondents were randomly selected across the three parastatals. Structured questionnaires, designed using a five-point Likert scale (ranging from 1 = Very Low Extent to 5 = Very High Extent), were administered to capture respondents' perceptions of the effectiveness of IPPIS in enhancing transparency and accountability. Out of the 300 questionnaires distributed, 250 were retrieved and found valid for analysis, representing a response rate of 83.3%.

Data collected were analyzed using descriptive statistics (frequencies, percentages, and means) to summarize the demographic profile of respondents and their responses to the research questions. In addition, inferential statistics including ANOVA and regression analysis were employed to test the hypotheses and determine the significance of the relationships between IPPIS adoption, transparency, and accountability. All analyses were conducted using SPSS version 20.0.

Data Presentation and Analysis

Table 4.1: Questionnaire Response Rate

Response Status	Frequency	Percent
Questionnaires Administered	300	100.0
Questionnaires Retrieved	250	83.3
Questionnaires Not Retrieved	50	16.7

Source: Field Survey (2025)

The table above shows that 300 questionnaires were administered across the three selected parastatals. Out of these, 250 were successfully retrieved and used for analysis, representing a valid response rate of 83.3%.

Demographic Profile of Respondents

Table 4.2: Distribution of Respondents Based on Gender

Gender	Frequency	Percent
Female	92	36.8
Male	158	63.2
Total	250	100.0

Source: Computed by the author using SPSS 20.0

Table 4.2 presents the gender distribution of respondents from the three federal parastatals. The data show that the majority of respondents, 158 individuals (63.2%), are male, while 92 respondents (36.8%) are female.

Table 4.3: Distribution of Respondents Based on Age

Age Group	Frequency	Percent
21–30 years	54	21.6
31–40 years	98	39.2
41–50 years	64	25.6
Above 50	34	13.6
Total	250	100.0

Source: Computed by the author using SPSS 20.0

The table indicates that the largest proportion of respondents, 39.2%, fall within the 31–40 years age category, followed by 25.6% in the 41–50 years category.

Table 4.4: Distribution of Respondents Based on Educational Qualification

Qualification	Frequency	Percent
B.Sc./HND	110	44.0
Master's Degree	92	36.8
PhD	18	7.2
Others (OND, NCE)	30	12.0
Total	250	100.0

Source: Computed by the author using SPSS 20.0

The table shows that most respondents (44%) possess B.Sc./HND, followed by 36.8% with Master's degrees.

Table 4.5: Distribution of Respondents Based on Years of Experience

Years of Experience	Frequency	Percent
Less than 5 years	46	18.4
6–10 years	84	33.6
11–15 years	70	28.0
Above 15 years	50	20.0
Total	250	100.0

Source: Computed by the author using SPSS 20.0

The data reveal that most respondents (33.6%) have between 6–10 years of work experience, suggesting familiarity with the operational dynamics of IPPIS.

RESPONSES ON RESEARCH OBJECTIVES

Objective 1: Effect of IPPIS Adoption on Public Sector Transparency

Table 4.6: Respondents' Perception of IPPIS Adoption and Transparency

Statement	Very High Extent	High Extent	Neutral	Low Extent	Very Low Extent	Mean
IPPIS has reduced ghost workers in the payroll system.	120 (48.0%)	90 (36.0%)	20 (8.0%)	12 (4.8%)	8 (3.2%)	4.21
IPPIS has minimized financial irregularities in salary payments.	110 (44.0%)	95 (38.0%)	25 (10.0%)	12 (4.8%)	8 (3.2%)	4.16

IPPIS has enhanced transparency in personnel records.	100 (40.0%)	105 (42.0%)	25 (10.0%)	12 (4.8%)	8 (3.2%)	4.14
IPPIS has improved monitoring of public sector wage bills.	115 (46.0%)	85 (34.0%)	30 (12.0%)	10 (4.0%)	10 (4.0%)	4.14
IPPIS has facilitated accurate reporting of payroll expenditure.	108 (43.2%)	92 (36.8%)	30 (12.0%)	12 (4.8%)	8 (3.2%)	4.15

Source: Field Survey (2025)

The results indicate that the majority of respondents agree that IPPIS adoption has significantly improved public sector transparency. The mean scores (ranging between 4.14 and 4.21) demonstrate strong consensus that IPPIS enhances payroll accountability, eliminates ghost workers, and strengthens transparency in records.

Objective 2: Effect of IPPIS Adoption on Accountability

Table 4.7: Respondents' Perception of IPPIS Adoption and Accountability

Statement	Very High Extent	High Extent	Neutral	Low Extent	Very Low Extent	Mean
IPPIS has improved accountability in payroll administration.	115 (46.0%)	90 (36.0%)	25 (10.0%)	12 (4.8%)	8 (3.2%)	4.16
IPPIS ensures accurate financial reporting for audit purposes.	112 (44.8%)	88 (35.2%)	30 (12.0%)	10 (4.0%)	10 (4.0%)	4.16
IPPIS has improved compliance with financial regulations.	108 (43.2%)	92 (36.8%)	30 (12.0%)	12 (4.8%)	8 (3.2%)	4.15
IPPIS promotes fiscal discipline across MDAs.	110 (44.0%)	85 (34.0%)	35 (14.0%)	10 (4.0%)	10 (4.0%)	4.14
IPPIS has reduced opportunities for corruption in salary administration.	118 (47.2%)	90 (36.0%)	22 (8.8%)	12 (4.8%)	8 (3.2%)	4.20

Source: Field Survey (2024)

The findings reveal that respondents strongly perceive IPPIS as improving accountability in governance. The mean values (4.14–4.20) suggest that IPPIS ensures accurate reporting, compliance with regulations, fiscal discipline, and reduces corruption opportunities in payroll management.

Inferential Analysis

To test the hypotheses, regression analysis was conducted to establish the relationship between IPPIS adoption (independent variable) and transparency & accountability (dependent variables).

Model Summary (Regression Output)

Table 4.8: Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of Estimate
1	0.612	0.374	0.370	0.428

Source: SPSS Output (2025)

The R² value of 0.374 indicates that IPPIS adoption explains approximately 37.4% of the variance in accountability and transparency among federal parastatals.

Table 4.9: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	15.812	1	15.812	86.34	0.000
Residual	26.448	248	0.107		
Total	42.260	249			

Source: SPSS Output (2025)

The ANOVA results ($F = 86.34$, $p < 0.05$) indicate that the regression model is statistically significant. This confirms that IPPIS adoption has a strong and positive effect on transparency and accountability in federal parastatals.

Table 4.10: Regression Coefficients

Variable	B	Std. Error	Beta	t	Sig.
Constant	1.214	0.178	–	6.82	0.000
IPPIS Adoption	0.684	0.074	0.612	9.29	0.000

Source: SPSS Output (2024)

The regression coefficient ($B = 0.684$, $p < 0.05$) indicates that a one-unit increase in IPPIS adoption leads to a 68.4% improvement in accountability and transparency. This confirms the hypotheses that IPPIS adoption has a significant positive effect on governance outcomes.

DISCUSSION OF FINDINGS

The findings of this study provide robust evidence that the Integrated Personnel and Payroll Information System (IPPIS), as a digital transformation and technological innovation in governance, has significantly enhanced transparency and accountability within Nigeria’s federal parastatals.

The descriptive analysis (Table 4.5) showed high mean values ranging from 4.14 to 4.21, with most respondents agreeing that IPPIS has reduced ghost workers, minimized payroll irregularities, and facilitated accurate reporting of payroll expenditure. This aligns with Nasiru et al. (2020), who found a significant positive relationship between IPPIS adoption and transparency in government payroll administration. Similarly, Enakirerhi and Temile (2017) emphasized that IPPIS has improved efficiency and reduced financial leakages in the Nigerian public service.

From the inferential analysis, the ANOVA results ($F = 86.34$, $p < 0.05$) and regression coefficient ($B = 0.684$, $p < 0.05$) confirmed that IPPIS adoption has a statistically significant impact on transparency. These findings are consistent with Jaiyeola and Musumhi (2023), who highlighted that IPPIS has been instrumental in eliminating ghost workers and promoting integrity in payroll systems.

In terms of accountability (Table 4.6), respondents strongly agreed that IPPIS enhances financial reporting, compliance with financial regulations, and fiscal discipline, with mean scores between 4.14 and 4.20. This corroborates the arguments of Ofoma (2022) that digital governance reforms strengthen public sector accountability by reducing discretion and enforcing system-based controls.

The regression results further confirmed this, with IPPIS explaining 37.4% of the variance in accountability and transparency ($R^2 = 0.374$). This demonstrates that technological innovations like IPPIS provide institutional safeguards against corruption and irregularities. The findings also resonate with Institutional Theory (Selznick, 1957; Scott, 2001), which posits that organizations adopt technologies like IPPIS not only for efficiency but also to align with institutional pressures for legitimacy and compliance. In this case, domestic pressure to combat corruption and international advocacy for fiscal discipline both motivated Nigeria’s adoption of IPPIS.

Despite these positive outcomes, challenges persist. Respondents noted concerns such as system downtime, resistance from some MDAs, and limited ICT infrastructure to support IPPIS implementation. These findings are supported by Cinjel and Chujor (2024), who identified insufficient technological tools and poor maintenance as barriers to digital governance in Nigeria. Furthermore, as Miller and Fox (2023) observe, digital systems also introduce risks of cybersecurity threats, which need to be managed to sustain trust in such platforms.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the role of digital transformation and technological innovation in governance using the Integrated Personnel and Payroll Information System (IPPIS) as a case study. Drawing evidence from three key federal parastatals—the Office of the Accountant-General of the Federation (OAGF), the Federal Ministry of Finance, and the Office of the Auditor-General of the Federation—the study analyzed the impact of IPPIS adoption on public sector transparency and accountability.

The findings revealed that IPPIS adoption has significantly reduced payroll fraud, eliminated ghost workers, minimized financial irregularities, and improved compliance with financial regulations. Both descriptive results (mean values above 4.1) and inferential results (ANOVA, $F = 86.34$, $p < 0.05$; Regression coefficient $B = 0.684$, $p < 0.05$) confirmed that IPPIS has a strong positive effect on accountability and transparency. This demonstrates that technological innovations in governance can substantially improve efficiency and public trust in government operations.

Anchored on Institutional Theory, the study also highlighted that IPPIS adoption was driven not only by technical efficiency but also by institutional pressures—domestic demand for accountability and international calls for fiscal discipline. Thus, IPPIS is both a governance reform instrument and a mechanism for institutional legitimacy in Nigeria's public sector.

However, challenges such as resistance from some MDAs, technical inefficiencies, inadequate ICT infrastructure, and cybersecurity risks continue to threaten the full realization of IPPIS benefits.

In conclusion, the study affirms that digital transformation initiatives like IPPIS are critical enablers of governance reform, but their success depends on sustained institutional support, continuous system improvements, and stronger digital capacity in the public sector.

Recommendations

1. While IPPIS has been institutionalized at the federal level, payroll irregularities and ghost workers remain a significant challenge in state and local governments. Extending IPPIS coverage to these tiers will harmonize payroll management across all levels of government, block revenue leakages, and ensure consistency in fiscal discipline nationwide. To achieve this, enabling legislation should be enacted, accompanied by strong political will and monitoring frameworks.
2. The effectiveness of IPPIS depends heavily on robust ICT infrastructure. Frequent system downtimes and connectivity issues undermine its performance and reduce public trust. Government should therefore invest in modern digital infrastructure, including secure servers, cloud storage, and high-speed internet connectivity. These investments will not only improve system reliability but also enhance scalability as more MDAs and subnational entities are integrated into IPPIS.
3. Many challenges associated with IPPIS implementation stem from inadequate user skills and resistance to change. To address this, continuous training programs should be designed for payroll officers, accountants, auditors, and ICT staff. Capacity-building initiatives should also focus on change management and digital literacy to ensure smooth adoption and reduce operational errors. This will help create a digitally skilled workforce that can maximize the benefits of IPPIS.
4. As IPPIS houses sensitive payroll and personnel data, it is a potential target for cyberattacks. Protecting the system from breaches is crucial to safeguarding both employees' personal information and the integrity of government records. Strong cybersecurity policies should therefore be implemented,

including multi-layered firewalls, encryption protocols, regular system audits, and compliance with international data protection standards. A dedicated cybersecurity response team should also be established to monitor threats in real time.

5. For IPPIS to achieve its full potential, compliance by MDAs must be strictly enforced. The government should establish independent oversight mechanisms, including routine audits, monitoring committees, and penalties for non-compliance. Oversight should not only focus on financial aspects but also evaluate the effectiveness of the system in promoting accountability and transparency. Such institutionalized oversight will prevent circumvention, sustain reforms, and build long-term credibility for IPPIS.

REFERENCES

1. Aganga, A. (2017). Public service reforms and the Integrated Payroll and Personnel Information System (IPPIS) in Nigeria. Abuja: Federal Government of Nigeria Press.
2. Agostino, D., Saliterer, I., & Steccolini, I. (2022). Digitalization, accounting and accountability: A literature review and reflections on future research in public services. *Financial Accountability & Management*, 38(2), 152–176. <https://doi.org/10.1111/faam.12301>
3. Anitha, K., & Kumar, R. (2023). Digitalization in accounting and its impact on financial reporting: Evidence from emerging economies. *International Journal of Accounting and Finance Studies*, 11(2), 45–63.
4. Bovens, M., Curtin, D., & Groenleer, M. (Eds.). (2021). *The Oxford handbook of public accountability*. Oxford University Press.
5. Cinjel, N. D., & Chujor, O. F. (2024). Digital governance and its impact on productivity in the Nigerian public sector. *Nigerian Journal of Management Sciences*, 25(1b), 211–230.
6. Enakirerhi, L. I., & Temile, S. O. (2017). IPPIS in Nigeria: Challenges, benefits, and prospects. *International Journal of Social Science and Economic Research*, 2(5), 3490–3502.
7. Fidrya, S. (2023). IT-based public accounting transformation and its role in strengthening good governance. *Asian Journal of Public Administration*, 15(3), 101–118.
8. Jaiyeola, R., & Musumhi, T. (2023). E-governance as an anti-corruption strategy: The Nigerian experience. *International Federation of Accountants*. Retrieved from <https://www.ifac.org>
9. Miller, A., & Fox, C. (2023). *TCM and digital transformation*. Cambridge University Press.
10. Nasiru, A., Kaoje, K., Nabila, S., Idris, J. A., Gambarawa, & Lawal II. (2020). Integrated Personnel and Payroll Information System (IPPIS) and transparency in government payroll administration in Nigerian civil service: A unique approach. *Asian Journal of Economics, Business and Accounting*, 19(3), 1–8. <https://doi.org/10.9734/ajeaba/2020/v19i330307>
11. Ningsih, F. (2023). The importance of IT-based public accounting transformation in supporting the digitalization of good governance. *Indonesian Journal of Business Analytics*, 3(6), 2191–2202.
12. Ofoma, V. C. (2022). Digitalization-driven public service and service delivery: The Nigerian experience. *Journal of Public Administration, Finance and Law*, 10(22), 1–10.
13. Omar, S. S., Jassim, M. N., Hashim, Q., Raad, T. K., & Ruslan, K. (2024). The role of digitalization in improving accountability and efficiency in public service. *Revista Investigacion Exceptional*, 45(2), 203–224.
14. Scott, W. R. (2001). *Institutions and organizations: Ideas, interests, and identities*. Sage Publications.
15. Selznick, P. (1957). *Leadership in administration: A sociological interpretation*. Harper & Row.
16. Umo-Udo, N. S., & Washington, B. U. (2021). Treasury Single Account (TSA) and effective public sector economic management in Nigeria (2015–2020). *AKSU Journal of Administration and Corporate Governance*, 1(2), 33–48.