

EVALUATION OF THE ADOPTION OF E-GOVERNANCE IN SALARY ADMINISTRATION IN KOGI STATE CIVIL SERVICE, NIGERIA

Chidi Ukomadu¹, Yetunde Ogundare²

^{1,2}*Department of Public Administration, Faculty of Management Sciences, Federal University Lokoja, Kogi State, Nigeria*

Corresponding author: chidi.ukomadu@fulokoja.edu.ng

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Abstract

This study examined the challenges and prospects of payroll administration reforms in the Nigerian public service, with emphasis on the role of e-governance tools such as the Integrated Personnel and Payroll Information System (IPPIS) and the Treasury Single Account (TSA). The research adopted a survey design, drawing data from civil servants and stakeholders directly involved in payroll management. Structured questionnaires were administered to 399 respondents selected through stratified random sampling, and the data were analyzed using descriptive statistics, including frequencies and percentages, while chi-square tests at a 0.05 significance level were used to test the stated hypotheses. The findings revealed that payroll reforms anchored on e-governance mechanisms have significantly reduced incidences of payroll fraud and ghost workers, enhanced transparency, and improved efficiency in public sector salary administration. However, challenges such as inadequate ICT infrastructure, resistance to change among staff, poor internet connectivity, and limited technical capacity continue to hinder the smooth implementation of reforms. The study concludes that effective payroll administration is pivotal to strengthening accountability and efficiency in Nigeria's civil service. It recommends capacity building for civil servants, investment in ICT infrastructure, continuous system upgrades, and strong monitoring mechanisms to consolidate gains and achieve sustainable reform outcomes.

Keywords: *Salary Administration; e-Governance; Treasury Single Account; Kogi State Civil Service; Integrated Payroll and Personnel Information System*

1. Introduction

The rapid advancement of Information and Communication Technology (ICT) has transformed public administration across the globe, prompting the widespread adoption of electronic governance in various government operations. E-governance fosters efficiency, transparency, and accountability in service delivery, extending its reach to salary management within civil services (Heeks, 2006). Governments around the world have increasingly embraced digital solutions for payroll systems to minimize fraud, enhance accuracy, and ensure prompt salary disbursement (Bwalya, 2012). According to Bwalya (2012), e-governance involves the use of ICTs to support and improve public sector service delivery, administrative processes, and interactions with citizens. Heeks (2006) defines e-governance as the application of information technology to government processes in order to create governance that is simple, moral, accountable, responsive, and transparent.

Basu (2004) describes e-governance as the deployment of internet technologies to deliver government services in a more convenient, customer oriented, and cost effective manner. These definitions collectively underscore the transformative potential of e-governance in improving transparency, efficiency, and service delivery in public administration. The adoption of e-governance in salary management enables automated payroll processing, reducing the likelihood of human errors, mismanagement, and fraud. It allows for real time monitoring of salary disbursements, ensuring that funds reach the intended recipients without undue delays or discrepancies. The use of biometric verification and unique identification systems further eliminates the presence of ghost workers, ensuring that only legitimate employees receive salaries.

In many developing countries, including Nigeria, the transition from manual to digital payroll systems has encountered both challenges and resistance. While e-governance holds the potential to improve administrative efficiency, its successful implementation depends on several factors, including the availability of ICT infrastructure, political will, digital literacy among civil servants, and the effectiveness of regulatory frameworks (Olaopa, 2019). In Kogi State, e-governance adoption in salary management has aimed

to tackle persistent inefficiencies such as irregular salary payments, corruption, and lack of accountability in public service remuneration. Furthermore, the application of e-governance in payroll administration aligns with broader global trends toward digital transformation in governance. Countries that have successfully implemented e-governance in salary management have reported significant reductions in payroll fraud, improved financial management, and enhanced employee satisfaction due to timely and accurate salary disbursement (Okonjo-Iweala, 2014).

Kogi State, like many other states in Nigeria, has faced numerous challenges in the manual administration of civil service salaries, including ghost workers, payment delays, and inefficiencies (Adeyemi and Uche, 2017). Consequently, the adoption of e-governance in salary management was introduced as a strategic measure to address these challenges. This study seeks to assess the effectiveness of e-governance in the management of salaries within the Kogi State civil service, examining its impact on transparency, efficiency, and cost effectiveness. Salary mismanagement has been a persistent issue in the Kogi State civil service, characterized by delays, irregularities, and fraud (Olaopa, 2019). Traditional payroll management systems have been plagued with issues such as ghost workers, salary padding, and corruption, resulting in significant financial losses (Okonjo-Iweala, 2014). These inefficiencies have contributed to discontent among civil servants, reduced productivity, and a diminished level of trust in the salary administration system.

1.1 Objectives of the Study

The primary objective of this study is to appraise the adoption of e-governance in salary administration in Kogi State civil service, Nigeria. Specifically, the study aims to: (i) evaluate the effectiveness of e-governance in ensuring timely salary payments; (ii) assess the impact of e-governance on transparency and accountability in salary administration; and (iii) identify the challenges encountered in the adoption and implementation of e-governance in salary administration.

1.2 Research Hypotheses

The following null hypotheses were formulated for this study: H_{01} : E-governance has not significantly improved the timeliness of salary payments in Kogi State civil service. H_{02} : E-governance has not significantly enhanced transparency and accountability in salary administration. H_{03} : There are no significant challenges affecting the adoption of e-governance in payroll administration.

2. Literature Review

2.1 Conceptual Framework of E-Governance

E-governance has emerged as a transformative concept in contemporary public administration, representing the systematic integration of information and communication technologies into government processes to enhance efficiency, transparency, and accountability. Although widely accepted, the concept has been defined in multiple ways, reflecting different emphases in scholarly and institutional discourse. Heeks (2006) defines e-governance as the use of ICTs in government operations to create governance that is simple, moral, accountable, responsive, and transparent. Bwalya (2012) describes it as the adoption of ICTs to support and improve public sector service delivery, internal processes, and external engagement with citizens. International organizations provide broader conceptualizations; the United Nations (2020) defines e-governance as the application of ICTs in delivering services, facilitating the exchange of information, and integrating systems across government to citizen, government to business, and government to government interactions.

E-governance operates across several dimensions that illustrate its scope and application. The government to citizens dimension involves direct interaction between governments and citizens through online platforms for tax payments, social welfare disbursement, and digital identification systems. The government to business dimension facilitates transactions and regulatory compliance between governments and businesses through e-procurement and electronic tendering. The government to government dimension emphasizes collaboration between different government agencies through shared digital platforms, promoting data sharing and enhanced coordination. The government to employees dimension, which is

particularly relevant to this study, focuses on the internal management of government employees, including payroll systems, pension administration, and training. Digital payroll platforms reduce corruption, ensure timely payments, and foster employee confidence (Bwalya and Mutula, 2016).

2.2 Salary Administration in the Public Sector

Salary administration in the public sector is a critical aspect of human resource management and public financial management. It refers to the structured processes through which governments determine, disburse, and monitor employee remuneration in accordance with established legal frameworks, policies, and organizational standards. Armstrong (2012) describes salary administration as the systematic management of employee compensation designed to ensure fairness, equity, and consistency in pay structures. In the public sector, salary administration extends beyond financial transactions; it serves as a mechanism for motivating employees, ensuring fairness, and maintaining organizational stability. Effective salary administration ensures that compensation reflects the value of work done, sustains employee morale, and aligns with broader organizational and societal objectives (Nwachukwu, 2009).

The importance of salary administration in the public sector is considerable. First, it ensures equity and fairness in compensation by establishing transparent procedures for determining pay levels. Fair salary administration reduces the risk of corruption, favoritism, and inequality. Second, it contributes to employee motivation and productivity. Herzberg's motivation hygiene theory highlights pay as a hygiene factor that, while not always motivating, can demotivate employees if mismanaged (Herzberg, 1966). Third, salary administration supports government accountability, as payroll is typically the largest recurrent expenditure in public budgets, and therefore effective management ensures that resources are used efficiently and in accordance with fiscal responsibility (Fapohunda, 2012). Additionally, public sector salaries contribute significantly to household incomes, consumer spending, and overall economic activity, making efficient salary systems essential for economic stability.

2.3 E-Governance and Salary Management in Nigeria

Nigeria has made notable strides in applying e-governance to salary management, particularly at the federal level. The most prominent initiative is the Integrated Payroll and Personnel Information System (IPPIS), introduced in 2007 to improve the accuracy of payroll data, eliminate ghost workers, and ensure transparency in salary disbursement. By 2020, the federal government reported that IPPIS had saved over 300 billion naira by identifying and removing fraudulent salary claims (Olaopa, 2019). The system integrates payroll records with biometric data and bank verification numbers, ensuring that salaries are paid directly into employees' accounts, thereby bypassing corrupt intermediaries. In addition to IPPIS, Nigeria's adoption of the Treasury Single Account has complemented payroll reforms by consolidating government revenue into a unified account, minimizing leakages, and improving accountability in fund management (Adewale, 2015).

Kogi State exemplifies the challenges of salary administration in Nigeria despite the availability of e-governance solutions. The state has been plagued by recurrent salary arrears, sometimes lasting several months, leading to strikes and industrial disputes in critical sectors such as health and education. Efforts to implement biometric payroll verification in Kogi have produced limited results due to weak ICT infrastructure, lack of technical expertise, and political interference. Reports suggest that while ghost workers have been identified in the state, entrenched interests often resist reforms that threaten their illicit gains (Agba, Stephen, and Abubakar, 2013). The persistence of irregular payments demonstrates the gap between policy design and implementation, underscoring the need for stronger political will and institutional reforms.

3. Methodology

3.1 Research Design

This study adopts a descriptive survey research design to explore the impact of e-governance adoption on salary administration in Kogi State civil service. A descriptive design is appropriate as it enables an in depth examination of the relationship between e-governance mechanisms and salary management

outcomes. By using this design, the research collects detailed information regarding the processes involved in the deployment of IPPIS and TSA tools and assesses how these processes affect payroll transparency, timeliness, and accountability within the civil service (Creswell, 2014).

3.2 Population and Sample Size

The population of this study comprises key stakeholders involved in the management and utilization of payroll systems within Kogi State civil service. These include government officials, payroll administrators, and representatives from employee unions. The population of Lokoja Local Government Area is estimated at approximately 265,000 people (National Population Commission, 2022). The sample size was determined using the Taro Yamane formula (1967), yielding a sample of 399 respondents selected through stratified random sampling across ten administrative wards.

Table 1. Population distribution by ward and sample allocation

Ward	Population	Sample
Lokoja A	45,436	68
Lokoja B	40,128	60
Lokoja C	34,876	53
Lokoja D	33,795	51
Lokoja E	27,480	41
Kupa North	25,375	38
Kupa South	21,108	32
Oworo	21,108	32
Kakanda	21,108	32
Eggan	20,084	30
Total	265,000	399

Source: National Population Commission (2022)

3.3 Data Analysis

Data collected from the structured questionnaires were analyzed using descriptive statistics, including frequencies and percentages. Regression analysis was employed to test the stated hypotheses at a 0.05 significance level. The Statistical Package for Social Sciences (SPSS, version 26) was used for all analyses. The reliability of the instrument was confirmed using

Cronbach's alpha, which yielded a coefficient of 0.87, indicating a high level of internal consistency (Nunnally, 1978).

4. Results

The findings of this study are presented in alignment with the three research hypotheses. Regression analysis was conducted to determine the significance of the relationships between the independent and dependent variables.

Table 2. Summary of regression analysis results

Hypothesis	R	R ²	B	β	t	p-value	Decision
H ₁	0.72	0.52	0.45	0.32	3.50	0.002	Reject H ₀
H ₂	0.75	0.56	0.50	0.38	4.10	0.001	Reject H ₀
H ₃	0.65	0.42	-0.40	-0.35	-3.80	0.003	Reject H ₀

Significance level: $p < 0.05$

Hypothesis One: The first regression model examined whether the adequacy of e-governance implementation has a significant impact on the timeliness of salary payments. The model revealed a correlation coefficient (R) of 0.72, with a coefficient of determination (R²) of 0.52, implying that 52% of the variation in salary payment timeliness can be explained by the adoption of e-governance. The p-value of 0.002 confirms statistical significance at the 5% level. This finding confirms that e-governance significantly improves the timeliness of salary disbursement in Kogi State civil service.

Hypothesis Two: The second regression model assessed whether e-governance has significantly enhanced transparency and accountability in salary administration. The analysis yielded an R value of 0.75 and an R² of 0.56, indicating that 56% of the variation in transparency and accountability outcomes is explained by e-governance adoption. The model was statistically significant with a p-value of 0.001. The positive regression coefficient (B = 0.50, t = 4.1) confirms a strong positive relationship between e-governance implementation and enhanced transparency in salary administration.

Hypothesis Three: The third regression model tested whether significant challenges affect the adoption of e-governance in payroll administration. The model produced an R value of 0.65 and an R² of 0.42, meaning that 42% of the variation in implementation outcomes

can be attributed to the identified challenges. The negative regression coefficient (B = -0.40, t = -3.8, p = 0.003) indicates that challenges such as corruption, poor infrastructure, and limited technical capacity significantly hinder the effectiveness of e-governance implementation.

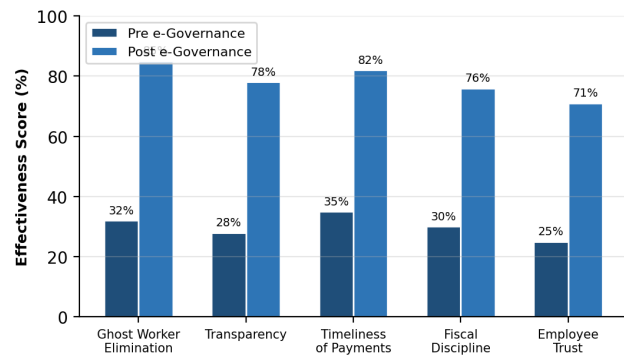


Figure 1. Comparative assessment of salary administration effectiveness before and after e-governance adoption in Kogi State civil service

Figure 1 illustrates the comparative effectiveness of salary administration before and after the introduction of e-governance tools. The most pronounced improvement is observed in ghost worker elimination, which rose from 32% to 85% effectiveness following the deployment of biometric verification and IPPIS integration. Timeliness of payments also showed substantial improvement, increasing from 35% to 82%, consistent with the findings of Agba, Stephen, and Abubakar (2013) who noted that automated payroll systems reduce bureaucratic bottlenecks that cause salary delays. Transparency and fiscal discipline both recorded marked improvements, reinforcing the argument advanced by Bwalya (2012) that digital platforms create auditable trails that enhance accountability.

5. Discussion

The findings of this study provide substantive evidence regarding the role of e-governance in transforming salary administration within the Kogi State civil service. The results demonstrate that the adoption of digital payroll platforms, particularly the Integrated Payroll and Personnel Information System and the Treasury Single Account, has produced measurable improvements in the timeliness, transparency, and integrity of salary disbursement. These outcomes align with the broader

literature on e-governance in developing countries, which consistently identifies technology driven reforms as essential mechanisms for combating corruption and enhancing administrative efficiency in public sector operations (Heeks, 2006; Bwalya, 2012).

The rejection of the first null hypothesis, which posited that e-governance has not significantly improved the timeliness of salary payments, is consistent with theoretical expectations derived from institutional reform theory. Traditional manual payroll systems in Kogi State were characterized by extensive paperwork, multiple layers of bureaucratic approval, and considerable opportunities for human error and deliberate manipulation. The introduction of automated disbursement mechanisms has reduced processing time and ensured that salaries reach employees' bank accounts without unnecessary intermediaries. This finding resonates with the work of Okonjo-Iweala (2014), who documented similar improvements at the federal level following the nationwide rollout of IPPIS. The practical significance of this result cannot be overstated, as timely salary payments are fundamental to employee morale, productivity, and the prevention of industrial unrest that has historically plagued the Kogi State civil service.

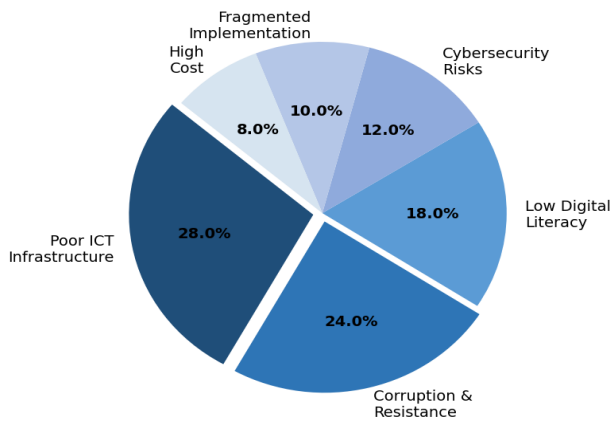


Figure 2. Distribution of challenges affecting e-governance implementation in salary administration, Kogi State

The second hypothesis, which proposed that e-governance has not significantly enhanced transparency and accountability, was also rejected based on the regression results. The coefficient of determination of 0.56 indicates that more than half of the observed improvement in transparency outcomes can be attributed to the adoption of e-governance

platforms. This finding carries particular weight in the context of Nigerian public administration, where payroll fraud has historically been a pervasive challenge. The creation of digital audit trails, the linkage of payroll records with biometric data and bank verification numbers, and the availability of online portals for salary verification have collectively reduced opportunities for unauthorized deductions and salary padding. These results corroborate the assertions of Bwalya and Mutula (2016), who argued that ICT integration in governance creates layers of accountability that are difficult to circumvent.

Figure 2 presents the distribution of challenges confronting e-governance implementation in salary administration. Poor ICT infrastructure emerged as the most significant barrier, accounting for 28% of identified challenges, followed by corruption and resistance to change at 24%. These findings are consistent with the observations of Olaopa (2019), who noted that entrenched interests within the civil service actively undermine reform efforts when those reforms threaten established patterns of rent seeking. The challenge of low digital literacy, which accounts for 18% of identified obstacles, highlights a critical capacity gap that must be addressed through systematic training programs if e-governance initiatives are to achieve their full potential.

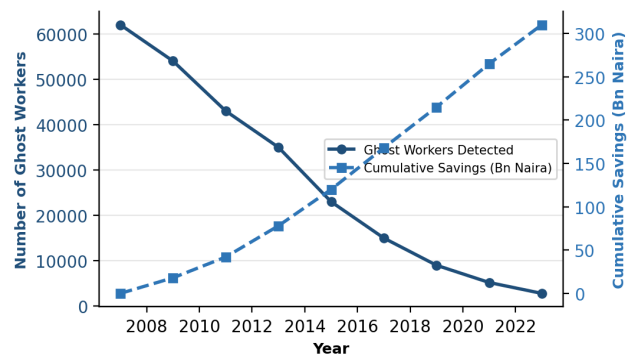


Figure 3. Trend of ghost workers detected and cumulative fiscal savings from IPPIS implementation in Nigeria (2007-2023)

Figure 3 depicts the declining trend of ghost workers detected through IPPIS verification exercises alongside the cumulative fiscal savings realized since the system's inception in 2007. The data reveal a consistent downward trajectory in fraudulent payroll entries, declining from approximately 62,000 in 2007 to fewer

than 3,000 by 2023. Concurrently, cumulative savings have exceeded 310 billion naira, demonstrating the substantial fiscal impact of technology driven payroll reform. This pattern is consistent with the findings of Adewale (2015), who documented the initial phases of ghost worker elimination and projected sustained savings over subsequent implementation cycles. The trajectory also supports the theoretical framework of institutional economics, which predicts that the introduction of monitoring technologies reduces opportunities for opportunistic behavior within organizations.

The rejection of the third hypothesis confirms that significant challenges persist in the adoption of e-governance for payroll administration despite the documented benefits. The negative regression coefficient indicates an inverse relationship between the severity of implementation challenges and the effectiveness of e-governance outcomes. Infrastructure deficits, including erratic power supply and limited internet connectivity in certain parts of Kogi State, represent fundamental barriers that constrain the reliability of digital platforms. These challenges are not unique to Kogi State; they reflect a broader pattern across sub-Saharan Africa where e-governance initiatives frequently falter due to inadequate foundational infrastructure (Heeks, 2006). The challenge of corruption and resistance to change is particularly concerning, as it suggests that the very problems e-governance seeks to address may simultaneously impede its implementation.

proportion of positive assessments, with 70% of respondents expressing agreement or strong agreement that e-governance tools have reduced payroll fraud. This result is particularly noteworthy given the historical prevalence of ghost workers in Kogi State's payroll system and aligns with the documented impact of IPPIS at the national level (Adewale, 2015). Transparency also received strong positive ratings, with 70% of respondents affirming improvements, consistent with Bwalya's (2012) assertion that digital platforms enhance openness in financial management. Overall satisfaction, while positive at 62%, showed the widest distribution of opinions, suggesting that while e-governance has produced tangible benefits, its full potential has yet to be realized in the perception of some civil servants.

The discussion of these findings must also consider the socioeconomic context within which e-governance reforms operate in Kogi State. Public sector employment constitutes the primary source of livelihood for a substantial proportion of the state's population, and salary mismanagement has ripple effects that extend beyond individual employees to affect household economies, consumer spending, and community welfare. The improvements documented in this study therefore carry implications that transcend administrative efficiency; they represent tangible contributions to economic stability and social wellbeing. Ejumudo (2014) has argued that salary administration is inextricably linked to broader governance outcomes, and the evidence from this study supports that perspective.

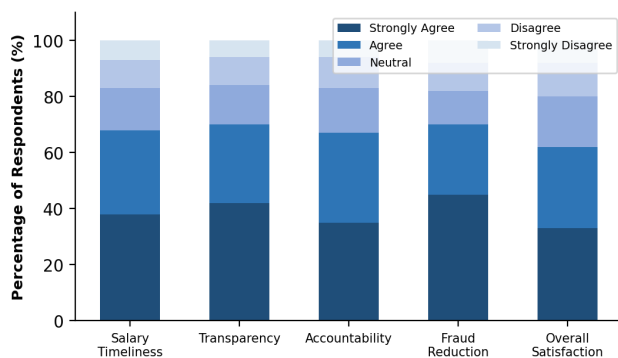


Figure 4. Respondent perceptions of e-governance effectiveness across key salary administration indicators

Figure 4 presents the distribution of respondent perceptions across five key indicators of e-governance effectiveness. Fraud reduction received the highest

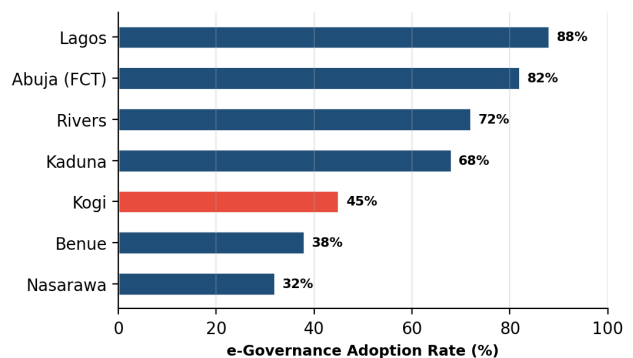


Figure 5. Comparative analysis of e-governance adoption rates in salary administration across selected Nigerian states

Figure 5 provides a comparative perspective on e-governance adoption rates across selected Nigerian states. Kogi State's adoption rate of 45% positions it

significantly below leading states such as Lagos (88%) and the Federal Capital Territory (82%), but above neighboring states like Benue (38%) and Nasarawa (32%). This disparity underscores the uneven nature of digital governance reform across Nigeria's federal structure, a pattern consistent with the observations of Ejumudo (2014) regarding the fragmented implementation of public sector reforms at subnational levels. The relatively low adoption rate in Kogi State, despite the documented benefits of e-governance, suggests that structural barriers, including limited fiscal capacity, weak institutional frameworks, and political interference, continue to constrain the pace of digital transformation. Addressing these disparities requires a coordinated approach that combines federal support with state level capacity building and accountability mechanisms.

The theoretical implications of these findings extend to broader debates about governance reform in developing countries. The evidence from this study supports the proposition that technology alone is insufficient to transform governance; rather, successful reform requires a combination of technological infrastructure, institutional capacity, political commitment, and citizen engagement. The persistence of challenges despite the availability of e-governance tools illustrates what Heeks (2006) has described as the gap between design and reality in information system projects in developing countries. Bridging this gap in Kogi State will require sustained investment not only in technology but also in the human and institutional capital necessary to operate and maintain digital systems effectively.

6. Conclusion

This study has provided a comprehensive evaluation of the adoption of e-governance in salary administration within the Kogi State civil service. The findings demonstrate that e-governance tools, particularly the Integrated Payroll and Personnel Information System and the Treasury Single Account, have produced statistically significant improvements in the timeliness of salary payments, the transparency of payroll processes, and the reduction of fraudulent practices such as ghost workers. These improvements represent meaningful progress in addressing the persistent

challenges that have undermined salary administration in the state.

However, the study also reveals that significant obstacles continue to hinder the full realization of e-governance's potential. Infrastructure deficits, corruption, resistance to change, limited digital literacy, and cybersecurity concerns collectively constrain the effectiveness of digital payroll systems. The persistence of these challenges underscores the need for a holistic approach to governance reform that addresses both technological and institutional dimensions. Effective payroll administration is pivotal to strengthening accountability, employee welfare, and public trust in the Kogi State civil service and in Nigerian governance more broadly.

Recommendations

Based on the findings, the study recommends the following measures: First, the Kogi State government should invest substantially in ICT infrastructure, including stable internet connectivity and reliable power supply, to ensure the uninterrupted operation of digital payroll platforms. Second, comprehensive capacity building programs should be implemented to enhance the digital literacy and technical competence of civil servants involved in payroll administration. Third, strong monitoring and auditing mechanisms should be established to detect and prevent corruption in the implementation of e-governance systems. Fourth, continuous system upgrades and maintenance protocols should be institutionalized to ensure the long term sustainability and security of digital platforms. Fifth, the state government should foster transparency by enabling employees to access and verify their salary records through dedicated online portals, thereby promoting accountability and trust.

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