E-GOVERNANCE AND PERFORMANCE OF PUBLIC SECTOR MANAGEMENT IN NIGERIA

CHIEKEZIE, OBIANUJU MARY[1]; ANIEKWE MARYROSE OBIAGELI[2]

Department of **Business Administration, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria [1 & 2]**

Abstract

The seeming absence of contemporary technology in many public sector organisations has affected administrative processes, increased bureaucratic inefficiencies, and reduced the accessibility and quality of public services. This study ascertained the relationship that exist between E-governance and the performance of public sector management in Nigeria. The specific objectives focused on ascertaining the degree to which technology infrastructure relates to policy implementation in the public sector management, determining the extent to which digital service availability correlates with the level of service delivery in public sector management and examining the level to which administrative efficiency relates to transparency and accountability in the public sector management. The study was anchored on change management theory that originated from the work of Kurt Lewin in the 1940s. The sample size was 20 (2 management staff from 10 public organisations in Anambra State, Nigeria) purposively obtained from the infinite population. Pearson`s Products Moment Correlation was used to test the formulated hypotheses. Findings revealed that technology infrastructure significantly relates to policy implementation in public sector management. Again, digital service availability significantly correlates with the level of service delivery in public sector management, while administrative efficiency significantly relates to transparency and accountability in public sector management at a 5% significance level. The study concluded that by investing in technology infrastructure, expanding digital service availability, and enhancing administrative efficiency, the government can leverage digital innovations to deliver better services, enhance governance outcomes, and promote inclusive and sustainable development. The study, therefore, recommended among others that the Nigerian government need to prioritise investments in upgrading and modernising digital

infrastructure, including internet connectivity, hardware, and software systems, and support more efficient policy implementation for quality public services.

Introduction

Nigeria which is Africa's most populous country with a large economy faces numerous challenges in its public sector management. Recently, there have been calls to resuscitate the machinery of Nigerian public sector management to make it conform to global standards or best practices, and in such a manner that national development can be achieved. Thus, Ogwola, and Uranta, (2022) maintained that certain ill-conceived reforms, personnel behaviour and practices have combined to constrain effective administration in government businesses in Nigeria. These include poor governance, inefficiency in resource allocation or utility, inadequate revenue mobilisation and allocation, lack of continuity in policy making and implementation, poor information asymmetry, downed morale, incompetent and inadequate human skills and capacity among others.

Historically, bureaucratic inefficiencies, corruption, and limited access to public services have hindered effective governance and impeded the socio-economic development of Nigeria. Hence, the Nigerian government has embarked on initiatives aimed at harnessing the power of technology to address these challenges and improve service delivery to its citizens.

In today's digital age, the effective use of technology has become increasingly important for governments worldwide. The application of E-governance to enhance the delivery of government services, improve administrative processes, and foster citizen engagement, has emerged as a key strategy for transforming public sector management.

E-governance is essential for addressing the interrelated complexities in the stride and actions of emerging technologies, international effects of technology and comprehensive

social impacts of these technologies. Besides, the administrative existence of technologies is complex, transforming and spreading in nature of the Artificial intelligence (AI) generation. E-governance is the supporting structure used to define a digital beingness in an organisation's duty, role, and decision-making authority (Wang, Medaglia, & Zheng, 2018), which includes websites, mobile applications, hardware, and other products or services available on the Internet.

 A well-designed E-governance arrangement will reduce the time lag in service delivery when what ought to be done through due process is imbibed. Transparency and accountability are duly sustained, and several policies are enforced by persons who have decision-making authority in the digital team in the following fields. Digital strategy articulates an organisation's approach to exploiting the Internet and the World Wide Web capacity. Guiding principles and success goals are the two aspects of digital strategy in the well-organised management of institutions (Tumbas, Berente, & Brocke, 2018). The Nigerian public sector currently needs to fully incorporate E-governance to succeed.

Inadequate technology infrastructure in Nigeria has long been recognised as a barrier to efficient governance, with limited access to reliable internet connectivity, insufficient technology infrastructure, and obsolete hardware and software systems in government offices. As a result, policy implementation often faces challenges such as communication blockages and delays in information dissemination. There seems to be poor policy implementation as well as a lack of transparency and accountability. Nigeria's public sector management appears to be in a struggle for survival, possibly due to the ineffective adoption of E-governance, leading to sub-standard service delivery. The perception of public sector management in Nigeria is of insufficient digital funding, absence of professionalism, and poor standard attributes of public service management. This situation need not be allowed to persist. A collective effort is imperative to nip these emerging challenges in the bud within the sector. This study was initiated in response to this urgent

call, aiming to prevent further harm to Nigeria's public sector. This urgency arises from the fact that the present and future prosperity of the country hinges on the quality of national public sector management. They are responsible for various crucial services such as public education, healthcare, national security, social insurance, and diplomatic relations, among others. This call to action is paramount and should instil a sense of duty and patriotism to address the shortcomings plaguing public sector management in Nigeria.

Objective of the Study

The main objective of the study is to ascertain the relationship between E-governance and the performance of public sector management in Nigeria. The specific objectives are:

1) To ascertain the degree to which technology infrastructure relates to policy implementation in public sector management.

2) To determine the extent to which digital service availability correlates with the level of service delivery in public sector management.

3) To examine the level to which administrative efficiency relates to transparency and accountability in public sector management.

Research Questions

1) To what degree does technology infrastructure relate to policy implementation in public sector management?

2) How does digital service availability correlate with the level of service delivery in public sector management?

3) What is the relationship between administrative efficiency and transparency and accountability in public sector management?

Research Hypotheses

$H0_1$: Technology infrastructure does not significantly relate to policy implementation in public sector management.

$H0_2$: Digital service availability does not significantly correlate with the level of service delivery in public sector management.

H0₃: Administrative efficiency does not significantly relate to transparency and accountability in public sector management.

Review of Related Literature

Conceptual Review

E-governance

Digital governance or E-governance centres on public engagement and its position on people (Gao & Lee, 2017). E-governance is defined as the use of information technology in a government activity to grow the delivery of public services to people and other government service users, individuals and organisations (Twizeyimana & Andersson, 2019). The device of information and services electronically via the Internet or other digital methods is guaranteed in West Digital Governance under E-government (Sundberg, 2019). Digital governance or E-government can help, in (1) fundamental interaction between government, people and, corporations as well as in (2) internal government operations, delineated as the execution of electronic ways to modify and improve governance in the political, government and business aspects (Choi & Chandler, 2020). According to Kettl, "Governance" describes how the government links its broader political, social, administrative and environmental factors (Kettl, 2015).

Technology Information

Technology infrastructure refers to the underlying physical and virtual components that support and enable the functioning of information technology systems within an organisation or a broader context. It encompasses hardware, software, networks, data centres, and other related components. Chen and Zhang (2018) emphasised the importance of IT infrastructure flexibility in enabling organisational agility and enhancing competitiveness. They highlighted the need for organisations to invest in adaptable and responsive IT infrastructure to navigate the challenges of a rapidly changing business environment.. Again, Zhu, Kraemer, and Xu (2018) provided a comprehensive overview of digital transformation, highlighting its multidimensional nature and its implications for

organisations. They underscored the need for a holistic approach to digital transformation and outlined potential avenues for future research.

Digital Service

Service delivery is described as the process of providing and fulfilling services to customers (Fitzsimmons & Fitzsimmons, 2019). The authors emphasised that service delivery involves the execution and management of activities and tasks to ensure that the promised service is delivered efficiently, effectively, and to the satisfaction of the recipients. They emphasised the importance of understanding the service delivery process, which involves all the activities and interactions that occur between the service provider and the customer. They discussed dimensions of service quality, such as reliability, responsiveness, assurance, empathy, and tangibles. Similarly, Zeithaml, Bitner, and Gremler (2018) in their book provided a comprehensive understanding of service delivery, focusing on customer expectations, customer participation, service encounters, service guarantees, and service recovery. The authors highlighted the importance of timely resolution, empathetic communication, and compensatory actions in service recovery efforts**.**

Administrative Efficiency

Administrative efficiency refers to the effectiveness and productivity of administrative processes and systems within an organisation or government entity. It involves streamlining operations, reducing waste, optimising resources, and enhancing overall performance to achieve organisational goals and objectives in a timely and cost-effective manner. Christensen, Lægreid & Rykkj. (2020), provided a comprehensive overview of administrative efficiency within the context of contemporary public management practices, drawing on empirical research, case studies, and theoretical insights to inform readers about the challenges and opportunities in improving efficiency within public sector organisations.

Policy Implementation in the Public Sector

Policy implementation is a critical phase in the policy cycle that involves translating policy decisions into action and achieving desired outcomes. It encompasses the processes, mechanisms, and challenges associated with putting policies into practice within the public sector. This literature review aims to explore key themes and perspectives regarding policy implementation in the public sector. Howlett and Mukherjee (2019) discussed how effective policy design, particularly in the context of regulatory impact assessment, can influence the subsequent implementation of policies in the public sector. They explored how incorporating assessment mechanisms into the policy design process can improve the likelihood of successful implementation and address challenges that may arise during implementation,

Public Sector Management in Nigeria

The public sector is not simple to define for laps due to topics blanketed by it or preferably, incorporated into it. The 1999 Constitution as amended of the Federal Republic of Nigeria defines public service as Service of the federation in civil capability as staff of the office of the President, the Vice President, Ministry or Department of the Government of the Federation allotted with the duty for any business of the Government of the Federation (FRN, 1999). Therefore, the public sector is said to be an organisation owned by the office of the President, the Vice President, the Ministry or Department of the Government of the Federation. Management may refer to the activity of utilising human and material resources efficiently to execute organisational goals or objectives. The importance here is on efficient use of resources to accomplish goals. Bateman and Snell (2009) opined that management is the process of getting things done through other people.

Transparency

In governance, transparency denotes the accessibility of governmental proceedings, policies, and data to citizens. It enhances accountability and fosters trust between the government and its constituents. As Schillemans and Bovens (2011) assert, transparency ensures that decision-making processes are visible and comprehensible to citizens,

enabling them to hold authorities accountable for their actions. Transparency is the idea that government should provide citizens with access to information about the workings of government and the decisions that are made." (Hood & Heald, 2006).

Theoretical Review

This research is anchored on Kurt Lewin's change model of 1947. Kurt Lewin's model (unfreezing, changing, and refreezing) is widely accepted in psychology for implementing change as is the case in the public sector management in Nigeria. Organisational life has been made an inevitable feature by global, technological, and economic pace, and many models of organisational change have acknowledged the influence of implicit dimensions at one stage or more stages of the organisational change process (Burke, 2008), and these models imitate different levels affecting the process of organisational change, and each level identifies distinctive change implementation stages. The theory will reflect in properly developing the recommendation of this study through thorough findings by following the model stated to implement an enhanced change in managing Nigeria's public sector through e-governance.

Empirical Review

Castro and Lopes, (2022) analysed the impact of e-government on sustainable development in Brazil. Using a logit model, for a sample of 103 countries in the period 2003–2018, the results suggested that e-government development is a positive determinant for a country to attain sustainable development, proxied by adjusted net savings, that embraces a country's economic, social and environmental development. The study provided evidence that e-government increases the probability of attaining sustainable development mostly in developing and transition economies. The results also suggested that economic growth and gross national income per capita are significant positive influences in sustainable development in the whole sample and that countries with lower age dependency and natural resource rents are more likely to have sustainable

development. Developing e-government allows for promoting sustainable development, particularly in developing and transition economies.

Anas, Othman, and Fathey, (2020) reviewed the studies of e-government adoption in developing nations to come up with the factors that influence e-government adoption. The study was carried out in Malaysia. Secondary data was collected from the findings of other research. Systematically, two reputable databases; Scopus and IEEE Explored were searched to retrieve studies of e-government adoption in developing nations. Main Results: The theories and models applied in previous research were identified. Moreover, the frequency of factors investigated in these studies was identified. The results showed that many studies investigated trust as an important factor of e-government adoption in developing nations, while there are other critical challenges such as security and awareness got less attention.

Akaba, Norta, Udokwu, and Draheim, (2020) analysed the potential of blockchain-based systems to enhance effectiveness, ease, and transparency in public procurement in the case of Nigeria and identified the current challenges facing public procurement, i.e., lack of trust and transparency among critical stakeholders in the procurement process, systems that only weakly support transaction recording and documentation, complex process structures, corruption in institutions involved in the procurement process. To address these issues, a blockchain-based framework was developed to enable the interoperability of information systems involved in the procurement process, increase citizen participation in eliciting project requirements and enable a more transparent project monitoring and auditing. The study applied the framework to a case study for identifying on-chain activities that enable system interoperability, e-participation and project creditability.

Ojogiwa, (2021) contributed to existing albeit scarce literature on strategic leadership theory and practice in the context of the Nigerian public sector. It examined the features, responsibilities and critical roles of strategic leadership in improving the quality of performance delivered by public institutions. Data were gathered through a desk review

using secondary sources such as recent and relevant articles, papers, reports and books. Subsequently, data were analysed thematically. The results indicated that strategic leadership is a dimension of strategic management that has a positive connection with organisational effectiveness. Therefore, Nigerian public organisations need to pay particular attention to the fundamentals and transformational qualities of strategic leadership to achieve anticipated transformations. More so, the existing leadership channels and energies in the public sector should be redirected for increased efficacy and effectiveness of the public service delivery system.

Nwinyokpugi and Bestman, (2020) examined the effect of e-governance on administrative efficiency of the public sector in Rivers State. A stratified random sampling technique was used to select 210 employees and a convenient sampling technique was used to select 10 Rivers State Public Ministries. 5 research questions and 9 hypotheses guided the study. Null hypotheses were used to test the relationship between e-governance and the Administrative Efficiency of the Public Sector in Rivers State. A structured questionnaire was used to collect the data while a simple percentage, mode, mean and standard deviation were used to analyse the responses. 210 copies of answered questionnaires out of the 250 copies that were distributed were returned. Findings revealed that the application of e-governance eases document storage and retrieval, and data security, and facilitates faster information dissemination thereby reducing delays. The descriptive statistics showed to a very high extent how E-Participation, E-Record, E-Communication and E-Procurement are effective tools in enhancing the Administrative Efficiency of Public Sectors in Rivers State. Modu, (2021) assessed the effect of e-governance on the performance of civil servants in Jigawa State. The population of the study is 4273 respondents while the sample size is 366 respondents which were obtained using Yamane's formula, however, only 352 were retrieved as valid and used for analysis. Data were collected through the use of structured questionnaire which were administered to the civil servants in the selected ministries. The

study used inferential tools for data analysis. The hypotheses were tested using ANOVA analysis. The finding of the study revealed that e-governance has enhanced the skills of civil servants in the performance of their statutory responsibilities. It has also positively enhanced official communication among civil servants in Jigawa state as well as positively impacted the administration salary in the state.

Methodology

This study adopted a survey research design and sourced data from both primary (questionnaire) and secondary sources (textbooks, journals, and online published articles). The sample consists of 20 respondents, two (2) management staff each from ten (10) public organisations in Anambra State randomly selected. The questionnaire was structured through a five-point Likert Scale of Strongly Agree (5), Agree (4), Undecided (3), Disagree (2), and Strongly Disagree (1). The questionnaire was analysed using tables, percentages and mean, while the hypotheses were tested using Pearson Product Moment Correlation (PPMC) at 0.05 level of significance with the aid of Statistical Package for the Social Sciences (SPSS, V. 23). The mathematical formula for Correlation Coefficient is stated as;

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2]}}$$

Where: N = number of pairs of scores

$\sum xy$ = Sum of the products of paired scores

$\sum x$ = Sum of x scores

$\sum y$ = Sum of y scores

$\sum x^2$ = Sum of squared x scores

$\sum y^2$ = Sum of squared y scores

Decision rule: To accept the alternative hypotheses when the probability value is less than the alpha value, otherwise reject

Test of Hypothesis One

H0$_1$: Technology infrastructure does not significantly relate to policy implementation in public sector management.

Table 1: Test of Hypothesis One

Correlations

		Technology Infrastructure	Policy Implementation
Technology Infrastructure	Pearson Correlation	1	.845
	Sig. (2-tailed)		.000
	N	20	20
Policy Implementation	Pearson Correlation	.845	1
	Sig. (2-tailed)	.000	
	N	20	20

Source: SPSS V. 23

The result shows that there is no significant relationship between technology infrastructure and policy implementation in public sector management. The correlation analysis in Table 1 indicates a strong positive correlation of .845, with a p-value of .000. This coefficient suggests a robust and statistically significant correlation between technology infrastructure and policy implementation. Consequently, the null hypothesis is accepted, indicating that there is indeed a significant positive relationship between technology infrastructure and policy implementation.

Test of Hypothesis Two

$H0_2$: Digital service availability does not significantly correlate with the level of service delivery in public sector management.

Table 2: Hypothesis 2

 Correlations

		Digital Service	Service Delivery
Digital Service	Pearson Correlation	1	.794
	Sig. (2-tailed)		.000
	N	20	20
Service Delivery	Pearson Correlation	.794	1
	Sig. (2-tailed)	.000	
	N	20	20

Source: SPSS V. 23

The test of the second hypothesis that there is no significant correlation between digital service availability and the level of service delivery in public sector management is shown in Table 2. It displays a Pearson correlation coefficient of .794, with a p-value of .000. Once again, this coefficient demonstrates a strong and statistically significant correlation between digital service availability and service delivery. Thus, an increase in digital service availability enhances service delivery. Since the *p*-value is less than 0.05, the alternate hypothesis was accepted that there is a significant positive correlation between digital service availability and the level of service delivery in public sector management.

Test of Hypothesis Three

$H0_3$) Administrative efficiency does not significantly relate with transparency and accountability in the public sector management.

Table 3: Hypothesis 3

		Administrative Efficiency	Transparency and Accountability
Administrative Efficiency	Pearson Correlation	1	.372
	Sig. (2-tailed)		.003
	N	20	20
Transparency and Accountability	Pearson Correlation	.372	1
	Sig. (2-tailed)	.003	
	N	20	20

Source: SPSS V. 23

The test of the third null hypothesis that there is no significant relationship between administrative efficiency and transparency/accountability in public sector management is shown in Table 3. It shows a correlation coefficient of .372, with a p-value of .003. Although this coefficient indicates a positive correlation, it is relatively weaker compared to the previous hypotheses. However, it is still statistically significant, suggesting a meaningful relationship between administrative efficiency and transparency/accountability. In other words, an increase in administrative efficiency leads to an increase in transparency/accountability in public sector management.

DISCUSSION OF FINDINGS

1. Technology infrastructure significantly and positively relates to policy implementation in public sector management: The correlation analysis revealed a strong positive and statistically significant relationship between technology infrastructure and policy implementation in the public sector management of

Nigeria. This finding suggests that the presence of adequate technology infrastructure, such as reliable internet connectivity, hardware, and software systems, facilitates the effective implementation of government policies. The rationale behind this result lies in the enabling role of technology infrastructure in enhancing communication, data management, and decision-making processes within government agencies. With robust technology infrastructure in place, public sector officials are better equipped to access information, coordinate activities, and monitor progress, thereby contributing to more efficient and successful policy implementation efforts, corroborating with the result found by Castro and Lopes (2022).

2. Digital service availability significantly correlates with the level of service delivery in public sector management: Similarly, the analysis uncovered a significant positive correlation between digital service availability and the level of service delivery in Nigeria's public sector management. This finding underscores the importance of digital services, such as online portals, mobile applications, and electronic platforms, in enhancing the accessibility, responsiveness, and quality of public services. By offering citizens convenient and user-friendly channels to interact with government agencies, digital service availability helps streamline service delivery processes, reduce bureaucratic barriers, and improve overall customer satisfaction. Moreover, digital services enable government entities to gather feedback, monitor performance, and adapt service delivery strategies in real time, leading to more effective and responsive public service provision. This finding agrees with those of Modu, (2021); Nwinyokpugi and Bestman (2020).

3. Administrative efficiency significantly relates to transparency and accountability in public sector management: Lastly, the analysis revealed a significant positive relationship between administrative efficiency and transparency/accountability within Nigeria's public sector management. This result highlights the

interconnectedness of administrative practices with principles of transparency and accountability, which are essential for fostering public trust and confidence in government institutions. Efficient administrative processes, characterized by streamlined workflows, clear roles and responsibilities, and timely decision-making, contribute to greater transparency by ensuring that information flows smoothly within organisations and to external stakeholders. Moreover, administrative efficiency facilitates accountability mechanisms by enabling authorities to track performance, allocate resources judiciously, and hold individuals accountable for their actions. Therefore, improving administrative efficiency can enhance overall transparency and accountability in public sector management, thereby strengthening governance and promoting integrity. This result aligns with the submission in Nwinyokpugi and Bestman (2020).

SUMMARY OF FINDINGS

Reports showed the following results;

1) Technology infrastructure significantly relates to policy implementation in public sector management at a 5% significance level.

2) Digital service availability significantly correlates with the level of service delivery in public sector management at a 5% significance level.

3) Administrative efficiency significantly relates to transparency and accountability in public sector management at a 5% significance level.

CONCLUSIONS

Given the findings, the study concludes that the performance of public sector management in Nigeria depends on quality e-governance. This implies that by investing in technology infrastructure, expanding digital service availability, and enhancing administrative efficiency, governments can leverage digital innovations to deliver better services, enhance policy implementation, boost public sector management and promote transparency and accountability.

Recommendations

The following recommendations will be useful for better management of these public organisations:

1) The Nigerian government need to prioritise investments in upgrading and modernising digital infrastructure, including internet connectivity, hardware, and software systems, to support more efficient policy implementation.

2) Government agencies and departments need to actively leverage digital platforms and technologies to expand the availability and accessibility of public services, thereby improving service delivery to citizens.

3) It is important for public sector institutions to adopt e-governance tools and practices to streamline administrative processes, enhance transparency, and strengthen accountability mechanisms, thereby promoting integrity and efficiency.

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