

Digitalization Readiness and Data Governance in Nigeria's Public Sector for AI-Driven Decision-Making

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Abstract

Artificial Intelligence (AI) technology has been acknowledged for its transformative potential to improve decision-making processes, efficiencies, and service delivery in the public sector. However, the successful implementation of the AI technology requires the existence of organizational preparedness and supporting institutional contexts. This study assessed the effects of digital infrastructure, human capital, leadership support, data governance, and government support on the readiness for digitalization, AI, and AI-based decision-making in the Nigerian public sector. An explanatory sequential mixed-method approach underpinned by the Technology-Organization-Environment (TOE) and the Resource-Based View (RBV) was used. For the collection of quantitative data, a total of 120 public sector staff from selected Federal Ministries, Departments, and Agencies (MDAs) completed a questionnaire, which was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Qualitative data were collected using interviews conducted with selected key informants and analyzed using reflexive thematic analysis. The quantitative analysis found that digital infrastructure, human capital, leadership support, data governance, and government support positively influenced the readiness for digitalization and AI, which in turn improved AI-based decision-making. Qualitative results indicated that digital infrastructure limitations, disjointed data governance, skills gap in AI, lack of leadership support, and poor institutional coordination continued to represent the major challenges to the implementation of AI in Nigeria's public sector organizations. On the other hand, investments in digital infrastructure, continuous learning and training programs, efficient data governance, active and committed leadership, and comprehensive policy on AI governance were recognized as the key drivers of organizational AI readiness. The current research makes an important contribution to academic knowledge by proposing the Organizational AI Readiness Framework based on the integration of TOE framework and RBV to

understand how organization resources and institutional factors enable organizations to make decisions via AI.

Keywords: Artificial Intelligence, AI Readiness, Digitalization Readiness, AI-Driven Decision-Making, Digital Infrastructure, Data Governance

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1.0 Introduction

Artificial Intelligence (AI) has become a revolutionary innovation that has the potential to change the way of doing things in the field of public administration. This is because it will be able to increase efficiency, enhance evidence-based decision-making process, improve services delivery and resource allocation. The use of AI technologies like machine learning, predictive analytics, natural language processing and intelligent automation by governments all over the world in order to make decisions is on the rise. These technologies help public organizations to analyze huge amounts of data and thus make better informed decisions.

The successful implementation of AI within the public sector, nevertheless, goes beyond the existence of sophisticated technology. It involves organisational preparedness which includes good digital infrastructure, human resource skills, leadership and proper data governance mechanisms. Digitalisation preparedness is an indicator that shows how much an

organisation is prepared to adopt and integrate digital technologies through the combination of technological, organisational and institutional capacities (Vial, 2019). Of these capacities, data governance has gained importance since AI technologies depend largely on high-quality, secure, interoperable and managed data to create useful insights for decision making (Janssen et al., 2017). Poor governance leads to fragmented information management, bad quality of data, privacy problems, biased algorithms, and loss of public trust in government AI services.

Several governments around the world have implemented digital transformation plans and AI governance frameworks for enhancing the institutional preparedness for AI implementation. Such countries as Singapore, Finland, and the United Kingdom have made huge investments in building up digital infrastructure, interoperable government platforms, regulatory structures, and developing AI capacity that made possible to implement AI throughout public-sector activities (Organisation for Economic Co-operation and Development, 2024; Oxford Insights, 2025). Many developing nations, in turn, still confront the number of obstacles associated with the lack of digital infrastructure, data governance frameworks, technical skills, finances, and ineffective policies (World Bank, 2025).

Digital transformation in Nigeria has been manifested through policies such as the National Digital Economy Policy and Strategy (NDEPS), the Nigeria Data Protection Act 2023, and the National Artificial Intelligence Strategy (NAIS). This is indicative of the Nigerian government's plan to use the capabilities of AI and other digital technologies in order to improve governance and service delivery. However, issues around inadequate digital infrastructure, data interoperability, cybersecurity, institutional capacity, change resistance, and digital skill gaps have continued to impede the proper implementation of AI (National Information Technology Development Agency [NITDA], 2024; United Nations, 2024).

While there has been increasing interest in AI-enabled governance, research based on the empirical analysis of the organisational factors that contribute to AI readiness among public sector organisations in Nigeria is lacking. Previous studies have mostly centred their research efforts around the adoption of e-governance, digital transformation or ICT implementation. There is relatively little knowledge on how digitalisation readiness and data governance impact AI readiness and AI-driven decision-making (Vial, 2021; Mergel, Ganapati & Whitford, 2021; Wirtz, Weyerer & Geyer, 2019). In addition, most previous studies have made use of either the qualitative or the quantitative methodology in their investigations, without gaining adequate insights into the organisational processes behind effective AI adoption.

In this context, this study seeks to examine the impact of digitalisation infrastructure, data governance, human capital, organisational leadership and government policies on digitalisation readiness, AI readiness and AI-driven decision-making in Nigeria's public sector. This study employs an explanatory sequential mixed-methods approach to develop and empirically test an integrative model of organisational AI readiness by using the Technology-Organization-Environment (TOE) framework and the Resource-Based View (RBV).

Firstly, the study adds value to the existing body of knowledge through the consideration of digitalization readiness and data governance as complements to AI readiness in the context of a public sector organization in a developing country. Secondly, the study uses the TOE framework and the RBV theory to provide a comprehensive explanation of the determinants of AI adoption in the context of public organizations. Lastly, the adoption of the explanatory sequential mixed method approach is significant in that it provides deeper empirical data which is valuable for both theoretical and practical perspectives. The findings of the study can prove to be very helpful in guiding actions concerning institutional readiness, data governance, and AI adoption in the public sector in Nigeria.

3.0 Methodology

3.1 Research Design

The current study used an explanatory sequential mixed-methods design to study the organisational factors influencing AI-driven decision-making in Nigeria's public sector. This design included two sequential stages - namely, quantitative survey and qualitative semi-structured interviews. Specifically, the quantitative stage aimed at testing the hypothesized relationships between digital infrastructure, data governance, human capital, leadership support, digitalization readiness, AI readiness, and AI-driven decision-making. The next qualitative stage involved participants' experiences and organisational context to explain and expand the findings of the quantitative stage. Methodological triangulation was achieved through the combination of both datasets (Creswell & Creswell, 2023; Creswell & Plano Clark, 2018).

In its turn, the theoretical framework used in this research was developed on the basis of the Technology-Organization-Environment (TOE) framework (Tornatzky & Fleischer, 1990) and Resource-Based View (RBV) (Barney, 1991). While the TOE framework explains the process of technology adoption

under the influence of technological, organizational, and environmental environments, the RBV stresses the role of organizational resources.

3.2 Study Context and Participants

The research was carried out in selected MDAs in Nigeria responsible for digital governance, IT, planning, and public administration. These institutions constitute major stakeholders involved in the process of digital transformation and application of AI in Nigeria.

For the quantitative part, 120 respondents in various managerial, technical, and administrative positions such as ICT Directors, digital transformation officer, system administrator, planning officer, policy analyst, and senior administrative staff were interviewed. The respondents were selected using purposive and stratified purposive sampling method to obtain respondents who had extensive knowledge on digital transformation in their institutions.

Fifteen key informants were purposively chosen for semi-structured interview on the basis of their leadership, technical, and involvement in digital transformation and AI.

3.3 Data Collection

Data collection was done using two different methods. In the quantitative approach, there was use of a standardized questionnaire containing demographic items and multi-items for the variables Digital Infrastructure, Data Governance, Human Capital, Leadership Support, Digitalization Readiness, AI Readiness, and AI-Driven Decision Making. All variables were assessed using a five-point Likert scale based on previous work on digital transformation and technology adoption (Oliveira & Martins, 2011; Venkatesh et al., 2003; Zhu et al., 2006).

In the qualitative study, semi-structured interviews were used to get organizational insights on digital transformation, data governance, leadership commitment, institutional challenges, policy implementation and adoption of AI. Interviews lasted between 30 to 45 minutes and could be held in person or online through secure platforms.

3.4 Measurement Validation

The content validity was confirmed through an assessment by experts, namely specialists in the fields of information systems, public administration, and research methods. Pilot study was carried out on twenty respondents from the public sector who did not take part in the final sample group.

The measurement model was tested via Partial Least Squares Structural Equation Modelling (PLS-SEM). Internal consistency was verified via Cronbach's alpha and Composite Reliability (CR), while convergent validity - via Average Variance Extracted (AVE). Discriminant validity was tested through Fornell-Larcker criterion and Heterotrait-Monotrait (HTMT) ratio, according to the latest requirements for PLS-SEM (Hair et al., 2022).

3.5 Data Analysis

The quantitative data was analysed using descriptive statistics, which comprised of data screening, descriptive statistics and common measurement properties evaluation. The measurement model was first evaluated followed by estimation of the structural model. The qualitative data was analysed using the reflexive thematic analysis by Braun and Clarke (2022). The analysis process included re-familiarisation of the transcripts, coding, theme generation and refinement.

3.6 Integration of Quantitative and Qualitative Findings

The integration process took place during the interpretive phase by means of joint display (Fetters et al., 2013). Statistical results were juxtaposed against qualitative themes in order to establish the areas where the findings overlapped, complemented one another, and contradicted each other. This helped enhance the interpretive power of the analysis because the statistical findings were interpreted with respect to the organisational and institutional contexts.

3.7 Ethical Issues

Ethical clearance was secured prior to the data collection process, and all respondents gave their informed consent. The participation in the study was entirely voluntary; confidentiality and anonymity were guaranteed; participants had the right to withdraw at any time they wanted without incurring any penalties.

4.0 Results

This section discusses the qualitative results obtained from the open-ended responses of the respondents about the factors that influence the adoption of Artificial Intelligence (AI), digitalization readiness, and AI-based decision-making in the Nigerian Federal Ministries, Departments, and Agencies (MDAs). The results supplement the quantitative results by offering additional information on the factors that affect the implementation of AI in organizations. Braun and Clarke's (2022) reflexive thematic analysis approach was used to categorize the respondents' answers under the

technology, organization, and environment as well as resource-based view (RBV) frameworks.

4.1 Overview of Qualitative Responses

Out of 120 individuals who answered the questionnaire, 114 respondents responded to at least one of the four open-ended questions, hence a response rate of 95.0 percent. The respondents held different positions within the Nigerian public service and included ICT directors, planning officers, system administrators, data analysts, administrative officers, and policy makers. The views expressed by the respondents captured the experiences of respondents in regard to the process of digital transformation, AI readiness, and policy implementation.

Six broad themes emerged from the thematic analysis conducted in this study, which capture the current state of AI readiness in Nigeria public institutions.

Table 4.1 Summary of Qualitative Dataset

Characteristic	Value
Total survey respondents	120
Respondents providing qualitative responses	114
Response rate	95.0%
Number of open-ended questions	4
Analytical approach	Reflexive thematic analysis
Guiding theoretical frameworks	TOE Framework and RBV

4.2 Barriers to Artificial Intelligence Adoption

Respondents consistently indicated that AI adoption in Nigerian MDAs remains constrained by multiple interrelated technological, organizational, financial, and institutional challenges. Four dominant themes emerged, suggesting that AI readiness extends beyond acquiring advanced technologies to developing complementary organizational capabilities.

Table 4.2 Major Barriers to AI Adoption

Barrier	TOE/RBV Dimension	Frequency (n)	Percentage
Digital infrastructure deficiencies	Technological Context	89	78.1
Human capital shortages	Organizational Context	82	71.9
Budgetary constraints and leadership inertia	Organizational Context	73	64.0
Regulatory and governance challenges	Environmental Context	52	45.6

The results show that poor digital infrastructure was the most common barrier, identified by 78.1% of the participants. The unstable power supply, inadequate broadband, fragmented information systems, and the reliance on manual records limit the effectiveness with which government agencies can implement AI applications.

As one respondent put it: "Our first barrier is simply power reliability and high prices for bandwidth. How can one agency utilize real-time predictive models when its servers fail all the time because of blackouts and its databases are separate paper-dependent silos?"

The results confirm the technological aspect of the TOE model, which highlights the importance of technological readiness as the basis of innovation implementation. Digital infrastructure plays a significant role in implementing AI solutions.

The second important barrier had to do with a lack of skilled personnel. About 71.9% of the participants indicated the lack of expertise in AI, machine learning, data engineering, and analytics within the public sector employees. While ICT skills are fairly popular, AI capabilities are rare.

One respondent stated: "Though most civil servants have basic knowledge about computer desktop applications, AI decision-making involves data pipelining, understanding machine learning, and evaluating models. Capacity building needs to be practical and experiential."

As can be seen from the above findings, human capital serves as a strategic resource for organizations, which is in line with the Resource-Based View theory. Organizations with highly qualified employees will more likely

implement sustainable AI than those that make investments only in technology.

Leadership support and financing were identified as critical organizational constraints. Almost two-thirds of the participants reported that most AI implementations are not sufficiently funded as leadership is focused on performing operational tasks rather than investing in digitalization. The respondents believed that implementation of AI requires constant investment in infrastructure, software, staff, and organizational learning.

One participant noted: "AI implementation is usually considered by the leadership as an unnecessary luxury. Without their support and proper budget allocation, digitalization is limited to pilots."

Environmental considerations have also affected AI adoption. More than half of the participants have mentioned uncertainty with regard to data management, data-sharing, and regulatory compliance as major barriers. While the participants have recognized the existing policies like the Nigerian Data Protection Regulation, they still feel that there are no enough guidelines available for AI implementation.

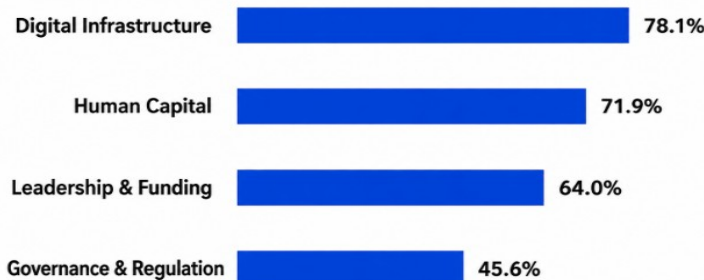


Figure 4.1 Major Barriers to AI Adoption

4.3 Organizational Requirements for Digitalization and AI Readiness

Beyond identifying challenges, respondents proposed several interventions that would significantly strengthen digitalization readiness and facilitate AI adoption across Nigerian public institutions.

Table 4.3 Organizational Readiness Priorities

Organizational Intervention	Frequency (n)	Percentage
Continuous AI capacity development	94	82.5
Enterprise interoperability and API integration	85	74.6
Institutionalized data governance	70	61.4

Continuous training and development in the field of artificial intelligence was considered the most common measure to be implemented. In excess of four-fifths of respondents pointed out that digital competencies should be integrated into civil servants' careers. Instead of taking part in ad-hoc ICT workshops, respondents suggested following structured certification programs in machine learning, data analytics, prompt engineering, AI governance and digital transformation.

In a similar way, respondents identified the necessity of connecting scattered government databases using the help of interoperable digital platforms. In excess of three-quarters thought that APIs, data formats and enterprise information systems would greatly help to achieve better preparation for AI implementation through effective information exchange among organizations.

Another valuable measure to be taken was strengthening institutional data governance. Respondents believed that there should be Data Governance Committees and Data Stewards to help with AI deployment.

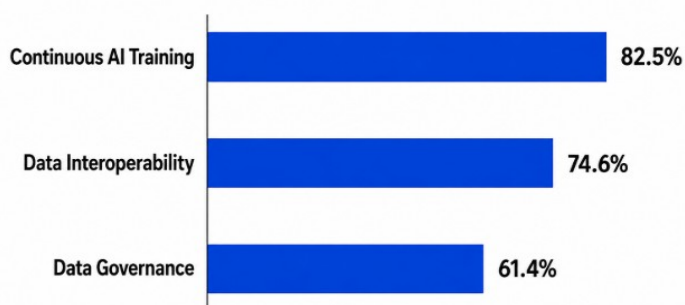


Figure 4.2 Organizational Priorities for AI Readiness

4.4 Strategic Policy Priorities

Participants also identified several policy initiatives that should be prioritized by the Federal Government to accelerate AI adoption across MDAs.

Table 4.4 Policy Priorities for AI Adoption

Policy Initiative	Support (%)	Rank
Operationalization of E-Governance legislation	85.1	1
Shared national AI infrastructure	76.3	2
Sustainable AI funding and public-private partnerships	68.4	3
Ethical AI governance and transparency	57.0	4

Most support was registered for the introduction and implementation of e-governance legislation. It was believed that legal requirements for digital processing will enable better data sharing, interoperability, and digital transformation in all government organizations.

Additionally, there was strong support for the centralization of AI infrastructure in the government's digital platforms. It was believed that cloud computing facilities are cheaper compared to each MDA purchasing AI infrastructure on its own.

Also, it was mentioned that sustainability of funding and partnership with private technology companies will increase the capacity of organizations without any financial constraints.

4.5 Emerging Cross-Cutting Themes

Two further themes arose consistently from the participant responses. The first one referred to the perceptions of the AI technology by the workforce. Almost half of the respondents perceived AI as a positive tool that can help improve decision-making processes, speed up administration, and improve the delivery of public services. However, at the same time, respondents were aware of the negative consequences, such as the possibility of job loss. Therefore, the respondents stressed the need to introduce AI technology in order to enhance rather than replace the work of public servants.

The second theme was the existence of the regional digital divide. Participants maintained that the policies of digital transformation should not be limited to the headquarters of the federal government in Abuja but, rather,

be extended to state ministries and agencies to ensure digital development of Nigeria.

All these results show that AI readiness in the Nigerian public sector is a complex phenomenon. Not only are significant technological investments necessary but organizational learning, organizational commitment, data governance, regulatory support, and coordinated digital policy at the national level are also important. The interplay of all these factors allows applying the TOE framework and Resource-Based View, which will be explained in the next section.

5.0 Discussion

The outcomes of the research allow one to get the required information concerning the requirements that need to be met in order to have a successful implementation of Artificial Intelligence (AI) in the Nigerian Federal Ministries, Departments, and Agencies (MDAs). The qualitative results, which have been analyzed by applying the TOE framework and RBV, demonstrate that being ready for AI involves much more than just technical questions and represents a multifaceted organizational competence involving different aspects, such as infrastructure, personnel, management, data management, and other policies.

5.1 Digitalization Readiness as the Foundation for AI Readiness

One of the major findings of this research is the fact that digitalization readiness is the critical foundation for AI readiness. All respondents have been indicating that insufficient digital infrastructure such as the lack of stable electricity supply, fragmented information system, poor internet connection, and paper administration processes hinder the capability of MDAs to implement decision support systems using AI technology. It is evident from these findings that AI cannot be implemented in an organization without taking digitalization into account.

These results support the technological aspect of the TOE framework where technological innovations have higher chances of being adopted if an organization has sufficient technological infrastructure and information systems. Based on the findings of this research, it can be said that many public institutions in Nigeria have different levels of digitalization and that implementing AI on a large scale in such institutions may not be easy. To derive meaningful insights, AI algorithms need quality data and computing infrastructure among others.

These results are in line with recent literature pointing out digital infrastructure as an enabling factor for AI-based public sector transformation. Prior literature has established that organizations with

developed digital ecosystems have an advantage in applying the tools of predictive analytics, intelligent automation, and evidence-based policy systems since their operations are capable of supporting digital information exchange. These results thus confirm the hypothesis that digitalization readiness acts as a portal channeling technological resources into AI capabilities.

The findings are in favor of the sequence suggested and prove that digital infrastructure increases digitalization readiness, which in turn improves AI readiness and eventually makes possible AI-based decision-making. Thus, the use of AI can be seen as a step-by-step process where one phase creates the base for the next.

This sequence means that digital transformation can be understood as a process of accumulation rather than as a technological change. Without prior investment in digital infrastructure and organization modernization, investments in AI will hardly make any sustainable changes in an organization.

5.2 Human Capital as a Strategic Organizational Resource

Yet another noteworthy result is associated with the importance of human capital in adopting AI solutions. In the course of interviews, respondents highlighted deficiencies in skilled staff endowed with relevant skills in such areas as data analytics, machine learning, artificial intelligence, and digital transformation. While most civil servants have a basic level of computer literacy, it was noted by participants that skills in AI are comparatively rare among MDAs.

This result can be seen to correlate with the concept of the Resource-Based View, according to which sustainable organization performance is contingent on valuable, rare, difficult-to-imitate, and organized resources. In the context of AI adoption, highly-skilled employees may be seen as valuable resources, which help to convert technological investment into enhanced organization performance. AI technologies do not work autonomously; instead, they require individuals who will design data pipelines, validate algorithms, interpret results, and integrate findings into decision-making.

It was also indicated by the respondents that capacity development in AI should be made at an institutional rather than individual level. Instead of conducting occasional ICT seminars, respondents suggested creating a learning trajectory, in which the skills in AI would be included in the career path of civil servants.

The results further add to the existing knowledge by showing that the level of AI readiness does not only depend on the acquisition of technology but also on organizational learning. Under the RBV approach, organizations with the capability of continually building employee skills are better poised for innovation than organizations that depend on technology acquisitions alone.

5.3 Leadership Commitment and Organizational Transformation

Support from leaders became yet another important determinant of AI readiness. The participants noted that many digital transformation projects failed to advance beyond the pilot phase because executives viewed AI as an expensive technological experiment as opposed to a business investment. As a result, digital transformation projects face inadequate funding and organizational backing.

These findings support the organizational dimension of the TOE model since one of the characteristics of organizations that determine technology adoption is the commitment of the leadership. It is the executives who define the organizational priorities through strategic planning and policy development. In the absence of executive commitment, employees will not see initiatives as organizational priorities.

Finally, the findings revealed that leadership affects the organizational culture. Respondents reported that supportive organizational cultures are generally open to experiments, innovations, and technology changes. However, risk-averse leadership cultures hinder digital transformation even if the organizations recognize its benefits.

Hence, organizational leaders' commitment goes beyond financial investment. It also includes organizational vision, communication, employee involvement, and change management. Thus, public-sector leaders should foster a supportive organizational culture that will encourage innovations and address employee concerns about technological change.

5.4 Data Governance as an Institutional Capability

Some of the most significant results include the importance of data governance in ensuring that AI systems can be adopted. According to the participants, inconsistencies in databases, inconsistencies in the standards used in data, and lack of interoperability reduce the effectiveness of AI systems. The suggested solution is to have dedicated Data Governance Committees and appointing Data Stewards to ensure the quality of data, its safety, and compliance with the regulation.

The result expands both technological and organizational aspects of the TOE framework by suggesting that organizational readiness includes both digital

and institutional arrangements for managing organizational data. AI systems operate on the basis of high-quality data; thus, any lack or imperfection of datasets considerably decreases the performance of algorithms.

The finding also confirms the growing significance of organizational data governance in the field of public administration. The respondents noted problems of interagency information exchange, algorithmic transparency, privacy, and compliance with regulations that become particularly relevant in terms of governmental institutions managing citizens' sensitive information.

In terms of the RBV approach, data governance constitutes a capability of organizations as opposed to a process. Organizations that are able to manage organizational data systemically have certain competitive advantages.

5.5 Government Support as an Environmental Enabler

Moreover, this study demonstrates the substantial role of environmental factors regarding organizational readiness to adopt artificial intelligence. All four areas of improvement, such as legislative framework, digitalization, financing, and governance in AI, received absolute consensus among all participants. The high level of approval in regards to E-Governance Bill adoption can be considered an indicator of the participants' opinion on the necessity of legislative certainty to promote digitalization.

These results coincide with the environmental element of the TOE framework which stresses the critical role of external institutional environment in facilitating organizational innovation. Policies developed by the government create the regulatory environment in which organizations function. Legislation creates less uncertainty, encourages investments and coordination between government agencies.

Participants were also keen on the development of centralized digital infrastructure in the public sector. Instead of making each MDA acquire costly computing infrastructure independently, it was suggested that national digital platform be extended and used as a basis for AI implementation throughout the government institutions. This will eliminate duplication and increase efficiency.

In other words, organizational readiness is not enough for AI implementation. Institutional environment is still necessary for the realization of organizational capacity.

5.6 Organizational Culture and Workforce Acceptance

One critical issue is the perception of AI among employees. Though most participants recognized the advantages of AI in making the administrative process more efficient and enabling decision-making based on empirical

evidence, there were also concerns about potential worker displacement. This point can be viewed in relation to the general discussion about automation and the future of work in public administration.

What is interesting is that respondents did not object to using AI as such. On the contrary, they suggested making AI the means of decision support and using it as a tool complementing the skills of professionals rather than replacing public servants. This aspect may be crucial in managing organizational change. The staff is more likely to welcome any innovations when they feel that the technology will improve their performance rather than put their jobs at risk.

The above-mentioned findings imply that proper communication strategy has to focus on interaction between human expertise and artificial intelligence.

5.7 Theoretical and Practical Implications

Overall, these results indicate that AI readiness is an interconnected organizational capability resulting from the integration of technological capabilities, organizational competencies, and favorable institutional contexts. The results add to the TOE framework in terms of illustrating the way in which technological capabilities, organizational competencies, and institutional contexts interplay rather than act individually to affect AI implementation in the public sector. In addition, the results support the RBV framework, as they confirm that strategic organizational resources such as capable personnel, competent leaders, and adequate data governance are required to turn technological capabilities into organizational performance.

The findings offer certain implications for policymakers and public sector managers in practice. To begin with, any AI implementation efforts must follow digital transformation programs aimed at developing digital capabilities and organizational information systems. Second, continuous efforts to develop AI capabilities should become an important element of civil service reform. Third, government organizations should institutionalize their data governance through the development of formalized structures, standardized processes, and appointed stewards. Fourth, the process of legislative and institutional development should focus on the facilitation of inter-organizational cooperation, responsible governance of AI, and investments in public sector digital innovation.

From the above analysis, one can conclude that the attainment of AI-enabled decision-making in the public administration of Nigeria involves much more than mere technological innovation. The attainment involves a combination of technological capacity building, organizational capability building, good leadership, data governance and conducive policy environment.

5.8 Policy Implications

These results of the current study are very important for policymakers who aim at increasing the adoption of AI in the Nigerian public sector. Although the Nigerian government has implemented various initiatives for digital transformation such as the National Digital Economy Policy and Strategy (NDEPS), the Nigeria Data Protection Act (2023), and the National Artificial Intelligence Strategy, the current research indicates that policy implementation remains fragmented in relation to MDAs. According to the respondents, institutional coordination, sustainable funding, and governance mechanisms need to be addressed to ensure the achievement of the set goals.

First, it is necessary to focus on the improvement of digital infrastructure of the government institutions. Implementation of AI requires stable access to electricity, cloud computing, internet connection, databases, and enterprise information systems. Therefore, digital infrastructure development should be considered as critical infrastructure rather than ICT development. The funding mechanisms of the federal government should include infrastructure development as well.

Secondly, the results point to the necessity of developing an all-encompassing national strategy for AI capacity building for civil servants. Digital literacy programs currently concentrate on basic skills associated with ICT, but AI implementation demands certain expertise in machine learning, data analytics, algorithmic governance, cybersecurity, and data engineering. The Office of the Head of the Civil Service of the Federation, together with NITDA, PSIN, and educational institutions, should develop a system of continuous training in AI.

Thirdly, the findings show the necessity of developing robust data governance practices within the public sector. Lack of standardized practices for data management was consistently mentioned by the respondents. Developing national standards for metadata management, interoperability, data quality management, information sharing, and AI governance would greatly help to increase organizational preparedness and increase transparency and trust in the process.

Fourth, the government should promote strategic partnerships between public agencies, universities, research institutions, and private companies developing technologies. These partnerships would allow knowledge

exchange, acceleration of innovations, cost savings, and indigenous research and development in AI. Public-private partnerships could also help implement AI pilot projects that would be able to demonstrate the benefits of AI-based decision-making prior to its widespread implementation in the country.

5.9 Proposed Organizational AI Readiness Framework

Based on the results of the qualitative analysis and grounded in the theoretical underpinnings of the TOE framework and RBV, this paper develops an Integrated Organizational AI Readiness Framework for the Nigerian public sector. In contrast to the current models of AI adoption, which emphasize technology-based components, the proposed framework conceives AI readiness as a dynamic process of interaction between technology, organization, and institutions.

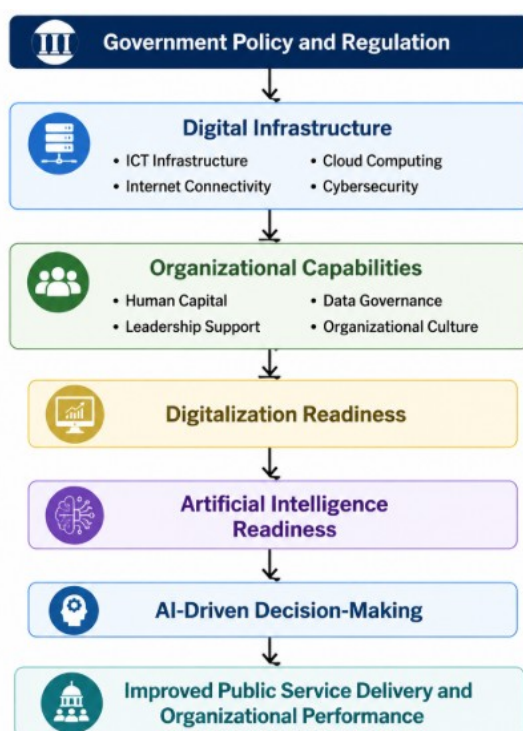


Figure 5.1 Proposed Organizational AI Readiness Framework

Digital infrastructure and capabilities within the organization are believed to be key determinants of digital readiness. Digital readiness then promotes AI readiness, resulting in improved evidence-based decision-making and organizational performance. Government policy is the external enabling factor affecting all the stages of the change process.

5.10 Integration of Quantitative and Qualitative Findings

The research methodology adopted in this study that involved the application of explanatory sequential mixed methods allowed for combining quantitative and qualitative results to make meta-inferences. Quantitative results revealed statistically significant relationships between the constructs of the study, whereas the qualitative data provided an explanation of the organizational processes behind those relationships.

Table 5.1 Joint Display of Integrated Findings

Quantitative Finding	Qualitative Explanation	Integrated Inference	Meta-
Digital infrastructure significantly predicts digitalization readiness	Respondents emphasized inadequate ICT infrastructure, unstable electricity, fragmented databases, and poor connectivity	Digital infrastructure is the foundational capability required for AI adoption.	
Human capital positively influences AI readiness	Participants consistently reported shortages of AI skills and recommended continuous professional development	Skilled personnel represent strategic resources necessary for sustainable AI implementation.	
Leadership support significantly affects digitalization readiness	Respondents highlighted inadequate executive commitment and inconsistent funding	Leadership commitment is essential for organizational transformation and innovation.	
Data governance significantly predicts readiness	Participants stressed interoperability, data quality, and standardized governance practices	Effective data governance strengthens organizational trust, accountability, and AI effectiveness.	
Government support positively influences AI adoption	Respondents recommended stronger legislation, funding mechanisms, and institutional coordination	External policy environments significantly shape organizational readiness.	

The merging of the results from quantitative and qualitative studies increases the validity of the research by providing triangulation through methodology. The qualitative results support the statistical associations and offer more information about the organizations' artificial intelligence uptake in Nigerian public entities.

5.11 Contributions to Theory

Several theoretical contributions have been made to the AI adoption and digital government literature through this study.

First, the current study enriches the Technology-Organization-Environment (TOE) framework by revealing that digitalization readiness serves as an intermediary organizational capability through which technological resources influence AI readiness. Most studies on AI adoption have considered the effect of technological or organizational factors in AI adoption while the current study shows that digitalization readiness is a critical intermediary capability.

Second, the study further supports the Resource-Based View by finding that human capital, commitment of leaders, and data governance are some strategic resources of the organization which create sustained competitive advantages for the organization. In other words, instead of considering AI technologies as sources of organizational capabilities, the study highlights that organizational resources determine the outcome of AI investments in the public sector.

Third, combining TOE with RBV results in a richer theoretical explanation of AI adoption compared to individual use of frameworks. As the findings show, AI readiness is a result of the interaction between technological, organizational, and environmental factors rather than organizational factors.

Finally, this study adds empirical data from a developing country to the literature, as there has not been much literature on AI readiness in African public administration.

5.12 Practical Contributions

The study has significant practical implications for the key stakeholders participating in the digital transformation of the public sector. For MDAs, the findings offer guidance based on evidence for allocating resources towards investments in digital infrastructure, staff development, leadership commitment, and data governance in order to improve their AI readiness. For

policymakers, the findings point out institutional changes and policy interventions that will enable faster adoption of AI technologies and enhance digital transformation of the public sector in general. The results also call for including competencies in AI governance, machine learning, cybersecurity, data analytics, and digital transformation into the curricula of higher education and professional training institutions in order to better prepare the future public servants. Moreover, the proposed model will enable the development partners and donor agencies to design capacity development and digital governance interventions that will build institutional and organizational readiness rather than acquiring technology alone.

As shown in the present study, AI readiness within the Nigerian public sector is a multidimensional organizational capability instead of the mere presence of cutting-edge technology. It can be stated that the success of AI implementation is predicated on the combined effect of the digital infrastructure, human capital, leadership commitment, efficient data governance, organizational culture, and favorable governmental policies. In other words, all mentioned factors altogether determine digitalization readiness which ensures organizations' ability to implement AI technologies in decision-making.

Through the integration of both quantitative and qualitative evidence via an explanatory sequential mixed-methods research design, the present study sheds light on organizational processes underlying AI adoption among Nigerian public institutions. As the findings from both phases converge in terms of the proposed Organizational AI Readiness Framework, the credibility of the theoretical model becomes enhanced and proves the benefit of mixing statistics and qualitative research methods.

In general, the contribution of the study is theoretical and practical as it extends the Technology-Organization-Environment (TOE) framework and Resource-Based View (RBV). At the same time, the recommendations presented in the study can be used by policymakers and public-sector managers aiming to promote responsible AI adoption.

6.0 Conclusion

The study looked at organizational factors influencing readiness for Artificial Intelligence (AI) and the use of AI in decision-making in the Nigerian public sector using an explanatory sequential mixed-methods design based on the Technology-Organization-Environment (TOE) framework and Resource-Based View (RBV). The study findings show that adoption of AI is not only about the technology itself but requires a symbiotic relationship among

technological factors, organizational capabilities, and enabling institutional settings. In particular, it was found that digital infrastructure, human capital, leadership support, data governance, and government policy are key drivers of digitalization readiness, leading to AI readiness and AI-based decision-making.

While the quantitative findings were supported by the qualitative findings, the latter provided insight into the organizational processes mediating the relationships identified in the quantitative analysis. Respondents mentioned lack of digital infrastructure, scarcity of skills related to AI, insufficient data governance, lack of commitment from leaders, and poor institutional coordination as the key factors hindering AI adoption in Ministries, Departments, and Agencies (MDAs). On the other hand, continuous workforce training, good data governance, adequate digital infrastructure, commitment of executive leadership, and supporting policy were recognized as the key factors in successful AI adoption.

The study makes contributions to the literature through the introduction of the Organizational AI Readiness Framework, which views AI readiness as a multidimensional organizational capability and not just a product of technology. The research adds to previous studies in AI adoption through the demonstration that digitalization readiness acts as a mediating factor between organizational resources and AI-enabled decision making. The study also provides empirical data on the subject matter from the perspective of Nigeria.

Recommendation

Finally, further research on the topic of interest should take the present investigation a step further by validating the Organizational AI Readiness Framework through larger sample sizes from a number of developing nations at varying levels of government. Longitudinal investigations on the development of AI readiness over time would add greater value in terms of sustainability and impacts of decision-making based on AI on the public sector.

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