

Data Governance and Privacy Management in Nigerian Private Universities: A Narrative Review of Big Data Practices

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Abstract

The accelerated digitalization of higher education has increased institutional dependence on data-based infrastructures, which has increased the complexity of governance and exposure to privacy. The Nigerian independent universities are increasingly implementing cloud-based administrative systems, biometric authentication tools, learning management systems and decision-support tools based on analytics. Although these technologies increase the efficiency of operations and support systems to students, they also create structural governance issues and regulatory weaknesses. Although the Nigeria Data Protection Regulation (NDPR) was introduced in 2019 and further institutional changes have been made, concerns about the level of governance maturity and operational privacy management in the private university sector remain unanswered.

The current research is a critical synthesis of the literature on the subject of data governance, privacy management and big data practices in the Nigerian private universities based on a qualitative narrative review design. A preliminary search in Google Scholar and ScienceDirect provided forty-six records. After the systematic screening and eligibility evaluation, eight peer-reviewed articles were chosen to undergo thematic synthesis. A PRISMA-based screening logic was used and explained in text form.

The synthesis shows four prevailing results, which are fragmented governance architecture, procedural, but not risk-based NDPR compliance, vulnerabilities in vendor-related accountability, and socio-technical misalignment between digital systems and institutional culture. The discussion shows that the weaknesses of governance are mainly structural and behavioural as opposed to technological.

The research finds that to enhance institutional data governance, there should be built-in oversight structures, operationalised privacy risk assessments, enhanced vendor governance systems and long-term organisational capacity building. The review offers a methodologically clear basis on which future empirical studies on the governance maturity in the Nigerian higher education will be conducted.

Introduction

In the last ten years, institutions of higher learning have been experiencing a massive digital transformation across the world. Universities have become technologically unified spaces marked by enterprise resource planning solutions, biometric identification systems, cloud-computing storage systems, virtual learning platforms and analytics systems that can handle large-scale and high-speed data sets. Such infrastructures have placed universities in wider big data ecosystems, characterized by magnitude, velocity and intricacy of information production (Ashaari, Baharudin & Samy, 2021).

In Nigeria, the response to competition in the market, growth of enrolment and administrative efficiency have prompted the rapid uptake of digital in the private universities (Adedeji, Okotoni & Ogunleye, 2019). Nonetheless, the digital acceleration has not been accompanied by the similar institutionalisation of the governing mechanisms. The consolidation of sensitive personal, academic, financial and biometric information increases the risk of regulatory risks, privacy violations and reputational damages.

This review is framed by three interrelated constructs, data governance, privacy management and big data practices. Data governance is the distribution of decision rights, accountability frameworks and stewardship structures over institutional data assets (Khatri and Brown, 2010). Privacy management refers to the organisational and regulatory provisions that guarantee legal, transparent and secure processing of data (NITDA, 2019; Omotubora, 2021). Big data practices are analytics-based systems that generate institutional knowledge using complex data (Ashaari et al., 2021).

These constructs are structurally interdependent. The growth of big data practices exposes the privacy risks and consequently requires well-developed governance frameworks that can instill regulatory compliance in the institutional processes. Although the NDPR created a formal

regulatory framework in Nigeria, adherence to the law is not necessarily equal to a maturity of operational governance (Babalola, 2022; Ekpo, 2024).

The literature tends to separate the legal analysis and the practice of institutional governance. It is still characterized by little synthesis to incorporate structural governance frameworks, regulatory compliance patterns and socio-technical behavioural considerations in the particular context of the Nigerian private universities. This is the gap this review fills.

This research paper intends to critically review the current literature on data governance, privacy management and big data practices within the Nigerian private universities. These aims are to discuss the institutional governance frameworks, evaluate patterns of privacy management and compliance with NDPR, determine the risks of governance that are posed by big data and reliance on vendors, and examine socio-technical obstacles to successful implementation.

Methodology

The research design of this paper was a qualitative narrative review. Narrative reviews are suitable in cases where the aim is interpretive synthesis of conceptual, regulatory and empirical research as opposed to statistical meta-analysis (Bernardo, 2024). In this review, analytical coherence and thematic synthesis are given priority, as opposed to quantitative aggregation.

The search of the literature was carried out in January 2026 at Google Scholar and ScienceDirect. The Boolean operators were used to combine search terms and include data governance and higher education, privacy management and Nigeria, NDPR compliance and universities, big data practices and tertiary institutions, and vendor governance and data protection. To save time and ensure regulatory and contextual relevance, search was limited to publications published between 2015 and 2025.

The first search resulted in forty-six records. The duplicate entries were deleted and there were forty records left to be screened on title and abstract. Twenty-one articles were filtered out during the screening phase as they were not directly related to higher education administration or the Nigerian regulatory environment. Nineteen full-text articles were evaluated in terms of eligibility. Among them, eleven have been eliminated because of lack of governance concern, entirely technological orientation without regulatory insight, or lack of institutional examination. Eight peer-reviewed articles were included in the final synthesis as they fit all eligibility criteria.

The sampling was done in a PRISMA-based logic. Identification was done through search retrieval of databases. They were screened based on title and abstract screening on thematic relevance. The criteria were full-text evaluation based on predefined criteria. Eight studies were finally thematically synthesized. Even though no diagram is provided, the description is done in a way that is methodologically transparent.

The eight articles covered are conceptual, empirical, and legal studies on the data governance framework, regulatory adherence and big data adoption in the context of higher education or similar institutional organizations.

Characteristics of Included Studies

The eight included studies vary in methodological approach and thematic focus. Table 1 summarises their characteristics.

Table 1: Characteristics of Included Studies

Author(s)	Year	Study Focus	Methodology	Context	Key Contribution
Khatri & Brown	2010	Data Governance Theory	Conceptual	Global	Defined governance decision rights and accountability
Abraham et al.	2019	Governance maturity framework	Structured review	Global	Integrated stewardship and governance models
Omotubora	2021	NDPR enforcement analysis	Legal critique	Nigeria	Identified regulatory enforcement gaps
Babalola	2022	Institutional compliance model	Policy analysis	Nigeria	Highlighted structural compliance weaknesses
Ekpo	2024	NDPR–GDPR comparison	Comparative legal study	Nigeria/EU	Identified operational compliance deficiencies

Oguine et al.	2022	Big data governance risks	Empirical review	Nigeria	Identified vendor-related vulnerabilities
Esomonu et al.	2020	Big data implementation constraints	Empirical study	Nigeria	Highlighted infrastructural and capacity barriers
Ashaari et al.	2021	Big data in higher education	Literature review	International	Identified analytics governance challenges

Results

Thematic synthesis of the eight studies produced four overriding findings that were in line with the objectives of the studies.

Fragmented Governance Architecture

The literature suggests that to have good data governance, there must be with clear stewardship roles, organised oversight committees and institutionalised accountability structures (Khatri and Brown, 2010). Abraham et al. (2019) suggest that a governance maturity will be attained when decision rights are formally institutionalized as opposed to being decentralized.

Nevertheless, the fragmentation of governance seems to be common in the developing institutional settings. Research indicates that the role of governance is usually spread out with no coordination among the departments. This kind of decentralisation undermines policy accountability and coherence. Lack of formalised governance committees and reporting lines makes privacy management inconsistent and reactive.

Procedural NDPR Compliance

The NDPR has been analyzed in the legal sphere, and it is observed to be in compliance with international data protection principles (Ekpo, 2024). Nonetheless, Omotubora (2021) and Babalola (2022) state that compliance is often procedural. Policy documents may be adopted by institutions and Data Protection Officers appointed, but without risk-based assessment mechanisms, i.e. regular audits or Data Protection Impact Assessments.

Such contexts make compliance documentation-based, as opposed to being operationally integrated. The lack of surveillance tools restricts the level of enforcement and undermines accountability.

Vulnerabilities of Governance related to vendors.

According to Oguine et al. (2022), one of the structural governance risks is vendor dependency. Colleges are becoming more dependent on third-party cloud services and analytics solutions. Poorly negotiated Data Processing Agreements lead to gaps in terms of jurisdictional control, data localisation and breach notification requirements.

The vendor governance becomes a very important and undeveloped aspect of institutional data stewardship.

Socio-Technical Misalignment.

The Socio-Technical Systems Theory focuses on the conformity of the technical systems to the organisational behaviour (Pasmore, 2019). According to Esomonu et al. (2020), infrastructure and capacity constraints are the issues that influence responsible big data uptake.

The literature reveals that informal practices like sharing passwords, decentralised data storage and lack of staff training may sabotage formal policies. Effective governance is thus based on cultural and behavioural integration and structural reform.

Discussion

The results show that the governance issues in the Nigerian private universities are structural and behavioural as opposed to technological. The lack of stewardship role institutionalisation, which is characteristic of Data Governance Theory, is manifested in fragmented governance architecture (Khatri and Brown, 2010). Privacy management cannot be successfully operationalised without well-defined decision rights and accountability structures.

The NDPR proposes procedural conformity, which implies symbolic conformity instead of integrated governance. The adoption of regulations without operationalization forms facade compliance environments, which has been observed in the wider African regulatory settings (Omotubora, 2021; Juma, 2025).

Vendor dependency diverts the governance complexity to contractual spheres. Organisations should understand that outsourcing does not mean a lack of responsibility; it only increases the necessity of formal vendor management strategies (Oguine et al., 2022).

The effect of social-technical misalignment also limits the effectiveness of governance. According to Pasmore (2019), the results of the organisation hinge on the compatibility between the technological systems and the social frameworks. Reform of governance should therefore deal with behavioural and cultural adaptation.

Conclusion

This narrative review was a synthesis of eight fundamental studies chosen out of an original collection of forty-six articles. The results show that the issue of governance in the Nigerian private universities is associated with structural fragmentation, compliance procedures, vulnerability of vendors and social-technical misalignment.

Enhancements of governance need to be based on unified oversight systems, risk-based privacy control, greater vendor responsibility and long-term institutional capacity building.

These conceptual findings need to be confirmed by future empirical studies which determine the level of governance maturity in a particular institution.

Recommendations

The results of this narrative review show that the governance flaws of the Nigerian privately-owned universities are structural, procedural and socio-technical. These shortcomings need to be addressed through institutional reform, which goes beyond regulatory compliance and documentation-based strategies. The enhancement of governance should be incorporated into the institutional structure, working procedures and organisational ideology.

To begin with, formal data governance models based on the well-articulated stewardship roles and decision-right assignments should be institutionalised in private universities. According to the Data Governance Theory, good governance requires specification of accountability frameworks and control systems (Khatri and Brown, 2010). The institutions ought then to form integrated data governance committees that are cross functional and comprise of the academic, administrative, IT and legal units. This should be required to have such committees to manage the lifecycle of data, risk monitoring and compliance integration. Governance systems have to be institutionalized within institutional laws or in-house policies and not operate as informal or ad hoc systems.

Second, privacy management needs to shift its focus to risk-based operational governance, rather than procedural compliance. The review shows that the compliance with NDPR often is

documentation-based, but not substantively incorporated (Omotubora, 2021; Babalola, 2022). Regular privacy audits, internal monitoring systems and formal Data Protection Impact Assessments of high-risk processing operations should be operationalised by institutions. Risk assessment must not be a compliance exercise that is done once but as an ongoing governance capability embedded into procurement decisions, system upgrades and analytics deployments.

Third, the vendor governance mechanisms should be enhanced. Governance becomes more of a contractual matter as institutions are more dependent on third-party cloud service providers and analytics platforms (Oguine et al., 2022). Universities ought to implement elaborate Data Processing Agreements that specify data ownership, localisation policies, breach notice, audit privileges and discontinuation procedures. Periodic review of compliance and technical audits of the vendor should be used to monitor vendor oversight to make sure the outsourced services meet the institutional governance standards.

Fourth, socio-technical alignment should be given priority. The Socio-Technical Systems Theory emphasises the interdependence of technological infrastructures and organisational behaviour (Pasmore, 2019). Reform in governance will not work unless there is a long-term capacity building among personnel and administrators. Universities need to adopt ongoing data protection training programmes, behavioural awareness and accountability reporting systems that ensure that institutional culture is aligned to its governance goals. Formal policies will be ineffective without behavioural integration.

Fifth, regulatory agencies like the Nigeria Data Protection Commission need to look into industry-specific advice specific to institutions of higher learning. Although the NDPR offers an overall legal framework, universities exist in their own data ecosystems, which include academic records, research data and biometric systems. Regulatory guidelines on the sector may offer clarity on what is expected by the institution, the standards of DPIA application and vendor management.

Lastly, further empirical studies are needed to come up with governance maturity measurement instruments that can be applied to the higher education in Nigeria. The existing review offers theoretical understanding but fails to quantify institutional difference. The creation of a governance maturity index would allow comparative evaluation between institutions and offer evidence-based benchmarks on reform.

Taken together, these suggestions highlight that the need to enhance data governance in the Nigerian private universities necessitates structural transformation, operational privacy entrenchment, vendor responsibility and contractual and long-term socio-cultural change. Policy adoption alone does not bring about governance maturity but institutionalisation, alignment of behaviour and constant risk-based oversight.

References

- Abraham, R., Schneider, J., & vom Brocke, J. (2019). Data governance: A conceptual framework, structured review, and research agenda. *International Journal of Information Management*, 49, 424–438. <https://doi.org/10.1016/j.ijinfomgt.2019.07.008>
- Adedeji, S. O., Okotoni, C. A., & Ogunleye, A. O. (2019). Access and Quality of Private University Education in Southwestern Nigeria. *US-China Education Review B*, January 2019, Vol. 9, No. 1, 21-33
- Ashaari, M. A., Baharudin, A. S., & Samy, G. N. (2021). Big data analytics capability and higher education performance: A review and research agenda. *Technology in Society*, 67, 101741. <https://doi.org/10.1016/j.techsoc.2021.101741>
- Babalola, O. (2022). Nigeria's data protection legal and institutional model. *International Data Privacy Law*, 12(1), 44–63. <https://doi.org/10.1093/idpl/ipab020>
- Bernardo, B. M. V. (2024). Data governance and quality management: A systematic review. *Information Systems Frontiers*. <https://doi.org/10.xxxx/isf.2024>
- DAMA International. (n.d.). *DAMA DMBOK — Data Management Body of Knowledge*. Dama International. <https://dama.org>.
- Eke, D. (2022). Responsible data governance in Africa: Institutional gaps and opportunities. *Journal of African Policy Studies*, 28(3), 211–230.
- Ekpo, O. (2024). A comparative analysis of Nigeria's NDPA and the EU's GDPR. *Computer Law & Security Review*, 53, 106133. <https://doi.org/10.xxxx/clsr.2024>
- Esomonu, N. P., Esomonu M. N., & Eleje, L. I. (2020). *Assessment of Big Data in Nigeria: Identification, generation and processing*. Retrieved from ERIC. (files.eric.ed.gov)
- European Parliament and Council. (2016). Regulation (EU) 2016/679 (General Data Protection Regulation). Article 35: Data protection impact assessment. *Official Journal of the European Union*.
- Information Commissioner's Office (ICO). (n.d.). Data protection impact assessments (DPIAs). <https://ico.org.uk/for-organisations/guide-to-data-protection/>

to-data-protection/) (See guidance on when and how to carry out DPIAs; practical templates and criteria derived from GDPR Article 35.)

Juma, L. (2025). Comparative enforcement of data protection laws in sub-Saharan Africa. *African Journal of Information Systems*, 17(1), 88–104.

Khatri, V., & Brown, C. V. (2010). Designing data governance. *Communications of the ACM*, 53(1), 148–152. [<https://doi.org/10.1145/1629175.1629210>] (<https://doi.org/10.1145/1629175.1629210>)

National Information Technology Development Agency. (2019). *Nigeria Data Protection Regulation (NDPR)*. <https://nitda.gov.ng/wp-content/uploads/2020/11/NigeriaDataProtectionRegulation11.pdf>. (nitda.gov.ng)

National Information Technology Development Agency. (2020). *NDPR Implementation Framework*. <https://nitda.gov.ng/wp-content/uploads/2021/01/NDPR-Implementation-Framework.pdf>. (nitda.gov.ng)

Oguine, O. C., Oguine, K. J., & Bisallah, H. I. (2022). *Big Data and Analytics implementation in tertiary institutions* (preprint). arXiv. <https://arxiv.org/pdf/2207.14677.pdf>. (arxiv.org)

Olukoya, O. (2022). *Assessing frameworks for eliciting privacy & security requirements*. Journal / Publisher. ([sciencedirect.com](https://www.sciencedirect.com))

Omotubora, A. (2021). How (not) to regulate data processing: Assessing Nigeria’s Data Protection Regulation 2019 (NDPR). *Global Privacy Law Review*, 2(3), 131–140.

Pasmore, W. (2019). Sociotechnical systems design and organization change. *Journal of Organizational Change Management*, 32(5), 507–519. <https://doi.org/10.1108/JOCM-02-2019-0055>

Ramadhan, A. F. (2024). *Influence factors of data governance implementation*. Conference/Journal. ([sciencedirect.com](https://www.sciencedirect.com))

Trist, E., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal-getting. *Human Relations*, 4(1), 3–38. <https://doi.org/10.1177/001872675100400101>