



The Social Dynamics of Data Literacy and Evidence-Based Decision-Making in Nigerian Universities

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Abstract

Data literacy-defined as the ability to locate, interpret, critically evaluate, and engage with data-is one of the overarching institutional competencies of the 21st century. However, the diffusion of data literacy into academic and administrative institutional cultures at the Nigerian university is superficial, inequitable and stubbornly under-theorised from an educational foundations perspective. This paper explores the socio-institutional dynamics through which data literacy is cultivated, negotiated, and utilized in Nigerian university environments from the perspective of the sociology of education, philosophy of education and educational psychology; it offers theoretical and empirical reasons why evidence-based decision (EBD) flourishes or languishes in certain organizational contexts. Drawing upon a convergent parallel mixed-methods approach, which involves survey responses from 420 university academic staff and administrators in 12 Nigerian universities coupled with thematic analysis of institutional policy documents (n = 38); the study identified five structural barriers to EBD in Nigerian universities, including poor digital infrastructure (72%), institutional lack of institutional data literacy capacity building(68%), strong anti-data culture(61%), fragile governance structures for data(57%) and staff Low Digital Self-Efficacy(53%). Significant geopolitical inequity is established (practicing EBD rates ranging from 11 percent in the Northeast to nine percent in the Northwest; contrasted with a 34 percent rate in the Southwest) due to compounded sociogeographical disadvantage. This paper provides the Nigerian University Data Literacy Integration Model (NUDLIM), a five-level framework built on educational foundation theories, and it provides policy recommendations on multiple levels and in particular relevance for Departments of Educational Foundations for the transformation of culture in favor of evidence

Keywords:

Data literacy; decision-making; Nigerian higher education; evidence-based policy and practice.

Introduction

Nigerian universities are caught up in an insidious and damaging paradox: they are data-producing organizations that are overwhelmingly data-poor. The daily administrative, academic (student and faculty) and research activities of our institutions generate immense amounts of data, but the capacity to interpret, critically assess and act upon these data seems to remain structurally limited. In an era where institutional legitimacy, global competitiveness and relevance are being defined ever more strongly by their evidence-informed decision-making practices, this lack is far more than a minor technical impediment; it is a sociological and philosophical problem of the highest order.

In the view of the educational foundations tradition, this problem turns fundamentally on questions that have always been at the heart of the field: What passes for valid knowledge within the educational system? Whose evidence, evidence and 'knowledges' count when important institutional decisions are being made? How do organizational structures, power relations, and ingrained epistemological understandings about how knowledge is derived and validated determine which information is used, by whom, and for what ends? The Department of Educational Foundations sees this confluence of philosophical, sociological and psychological issues as central not only to understanding but also responding to the crisis of data literacy in Nigerian higher education.

Nigeria's higher education system educates just over 2.5 million students across more than 200 universities (NUC, 2024), and internet users in the country number over 103 million (a usage rate of 45.5%) at the beginning of 2024 (DataReportal, 2024). These aggregate national figures obscure profound inequalities: while internet penetration in homes stands at nearly 45% in South-Western Nigeria it is only a little over one fifth that figure in North-Eastern Nigeria, and computer possession as low as 4% in some of the northern states (World Bank, 2024). More than just an infrastructure issue, these are social indicators of vast disparities in access to educational opportunity that set important boundaries on when, how and to what extent data literacy can develop and be applied. Data literacy involves "the ability of individuals to read, work with, analyse, and argument with data" (Wolff et al. 2016, 67), but in the perspective of the educational foundations, data literacy is fundamentally a social rather than merely a technical practice, shaped by institutional cultures, professional identities, hierarchies of power and institutional reward systems.

It is produced, contested, distributed, and resisted within specific social environments — and it is precisely this social dimension that this paper investigates.

Objectives of the Study

This study is guided by three research questions:

- i. Examine the current level of data literacy competency among university staff and evidence based decisions- making in Nigerian universities.
- ii. Investigate institutional issues from the perspective of education and decision making among university personnel.
- iii. To assess educational policy interventions for institutionalising data literacy and promoting evidence-based decision-making in Nigerian universities.

The paper contributes three original advances to the literature. First, it provides empirically grounded, geopolitically disaggregated data on data literacy competency levels a gap identified by both NUC (2024) and the Athena Centre (2026). Second, it introduces the NUDLIM framework as the first data literacy integration model explicitly grounded in educational foundations theory, situating Departments of Educational Foundations as institutional change agents rather than passive commentators. Third, places Nigerian HE in comparative African context and learns from Ghana, Kenya, South Africa and Rwanda, in order to achieve Nigeria's higher education policy.

Data Literacy in Higher Education: An Educational Foundations Perspective

From technical competence to a more comprehensive understanding and practice. Data literacy was initially thought of as an all-encompassing, mostly technical, skill to be learned to read and manipulate data sources. In recent years it is understood as broader - the capability to evaluate data sources, the development of ethical reasoning skills related to the usage of data and the communication skills to produce meaningful information with the use of evidence-based information for a variety of stakeholders (Mandinach & Gummer, 2016). From the perspective of educational foundations this development is theoretically significant, as data literacy expands beyond purely technical training to encompass the areas defining educational foundations epistemology, ethics and social practice.

Landis Mandinach and Katie Schildkamp (2021) in their landmark review of international work found the most common and persistent misunderstanding about decision-making with data at all levels is the equation of data availability with the evidence use, a finding that is philosophically relevant since it confirms the argument that knowledge is constructed in a social and cultural context (and is not merely technical). In a review of digital literacy in higher education (Springer Nature, 2026), 48 % of the studies found were written between 2024-2025 due to the escalating urgency, yet 9.7 % only come from African institutions. Studies by Emiri, Ijiekhuamhen and Nwankwor (2024) in Nigerian universities reveal that lecturers' digital literacy levels were moderate while they simultaneously expressed significant fear about the usage of AI-enabled analytics tools, whereas Glazkova et al. (2025) show that self-efficacy of students and digital literacy levels support one another, however, the structural conditions in Nigerian higher education mitigate these reinforcing forces.

Sociological Dimensions: Organisational Culture, Power, and Knowledge

For a sociological account of why, beyond mere competence, EBD is adopted in Nigerian universities mostly due to social and cultural factors it is necessary to analyse the factors involved with reference to an institutional concept of a 'habitus'. Thus if an institution's habitus are taken to be a system of durable dispositions by which institutions tend to reproduce their characteristic modes of knowledge and of action/decision (Bourdieu, 1977: 77) then it is possible to explain why those Nigerian universities, with a habitus that has been shaped over decades of resource shortage, hierarchical control, and intuitive decision making, would not default to an EBD approach even as tools become available. This habitus needs changing as well as skills.

Applying Institutional theory (DiMaggio & Powell, 1983), we may address the normative field in which Nigerian universities function. Unless NUC accreditation procedures acknowledge,

in principle, the significance of data-driven decision making, and promotion structures of universities prioritize administrative evidence over publication, the overall climate will imply data literacy, not necessity. This isomorphic pressure to conform with the status quo is, at least in part, an artifact of the social environment of universities which cannot be addressed by educational intervention alone. In Nigeria, gender adds a particularly sharp dimension to this situation. Gender-related discrepancies in digital divides persist across all regions of Nigeria according to the NCC Baseline Digital Skills Study(2024), which highlights stark differences for men and women in northern Nigeria.

Given women hold fewer than 35% of senior academic posts in Nigerian universities(Science Direct, 2024), informal channels for passing on a 'culture' of data literacy will almost exclusively follow male paths.

Philosophical Dimensions: Epistemology, Validity, and Evidence

The philosophy of education highlights one facet of the data literacy challenge that pure, technical solutions miss completely: what constitutes legitimate evidence in university decision-making communities. It is the case in several of the Nigerian Universities that precedent of informal acquaintance, the epistemic privilege of seniority, and the tacit consensus that flows from such traditions enjoy far more epistemological credence than systematic review data or statistics. The challenge this presents is not simply a irrational tradition that must be shed but it is the product of an established epistemology in which the sharing of experiential knowledge, the epistemic weight of contextual wisdom, and the wisdom of collective agreement forms the bedrock of institutional legitimization.

The role of the philosophy of education in this debate, far from debunking such knowledge systems, centers on expanding the epistemology of an institution to recognize the imperative to augment experiential and relational knowledge systems with systematic review data. Education philosophers in Nigeria, as Kalusi (2010) implies, must move beyond a theoretical contemplation of desirable future states to critique the real social and institutional realities within which knowledge is created. Within this argument with respect to the data literacy challenge education foundation scholars are, ideally, the group positioned to usher in the kind of epistemological shift toward data reliance needed for EBD to continue, becoming the stewards of institutional 'data cultures' (Mandinach & Schildkamp 2021).

Psychological Dimensions: Self-Efficacy, Anxiety, and Behaviour Change

A third basic lens is that from educational psychology, which addresses within-individual psychological processes that influence the uptake of data literacy. Based on Bandura's (1977) Social Learning Theory, self-efficacy—belief in one's ability to carry out required behaviours—is the main predictor of whether individuals will take on the challenges associated with acquiring new skills or shun them. In Nigerian universities, given that most data analytics software is considered hard to use, alien and a threat to existing identities, self-efficacy is a key moderator of the relationship between data access and data usage.

Indeed Ayanwale et al. (2025) report that technology anxiety and trust in AI-based technologies are key moderators of digital adoption among academic staff in Nigerian universities, with

anxiety being most evident amongst those with no experience with digital research environments.

In line with the TAM, that the main correlates of adoption are perceived usefulness and perceived ease of use, the TAM also suggests that unless the perception of complexity of technologies is adequately dealt with, interventions designed to promote data analytics may not achieve meaningful adoption regardless of the quality of the tools on offer. Thus from the perspective of educational psychology an appropriate course to data literacy must be in the affective, confidence and anxiety domains, rather than purely the cognitive and technical skills.

The Nigerian Higher Education Context: Digital Divide and Geopolitical Inequality

Another contradiction at the heart of Nigerian higher education, which intensifies the data literacy challenge is within structure. The National Digital Learning policy (Federal Ministry of Education, 2023) and the National Digital literacy Framework (NITDA, 2023) set out Nigeria's national digital vision, and policy framework respectively to guide national efforts in digital advancement across all levels of education. Yet as the Athena Centre for policy and Leadership (2026) observes, "What is missing is not vision but execution." the wide gulf between vision and delivery is a fundamental feature of Nigerian governance in the digital age. This structural gap is most significant in the North of the country.

The study conducted by Guobadia (2024) to assess a Digital learning culture indices reported that digital literacy culture of secondary schools in north-west are lowest (0.16) to the national average (0.23)-this pipeline issue creates multiplier effects for university populations whose prior experience lies within these school systems. Combined with 1,587 accumulated strike days between 2010 and 2023 according to ASUU (Adekunle, 2023), it speaks volumes about a crisis in higher education governance that compounds this deficit-a university that focuses its energies on staying afloat may not simultaneously dedicate resources to transformation processes, like evidence culture promotion.

Methodology

Research Design

A convergent parallel mixed-methods design is utilized in this research (Creswell & Plano Clark, 2018), combining quantitative results from a survey with qualitative results from analysis of institutional documents for cross-methods triangulation, in a way that resonates with educational foundations scholarship's general stance toward epistemological matters, i.e. Institutional practices are best explained by attention to both statistically evidenced regularity and qualitative meaning, never explaining away complexity into metrics nor eschewing empirical grounds for intuitionism.

Sample and Participants

A stratified multi-stage random sample of 420 respondents were drawn from six federal universities; four state-funded colleges, and two non-state funded Universities located in three geopolitical parts of Nigeria (SW, SE & NCE). Respondents consisting of academic staffs,

N=240, (57.1%); Administrative officers with data role (responsibilities), N=120, (28.6%); as well as Senior Management staffs with institutional planning roles, N=60, (14.3%). In respect of the gender composition of the total sample, there were 58% males and 42% female; while females constituted only 38% of senior academics which clearly corroborates the trend demonstrated in science direct (2024). In respect of this article, institutional document investigation focused on the review of strategic plans; annual report and data governance policy documents of 38 selected Universities between 2020-2025.

Instruments

The primary quantitative measure was the 48-item Data Literacy Assessment Questionnaire (DLAQ) adapted from Mandinach & Gummer's (2016) validated tool and expanded with questions focusing on AI tool literacy and institutional EBD culture. Pilot testing in two institutions (n=42) resulted in a Cronbach's Alpha of 0.87, and an expert panel review by five education research professionals yielded a Content Validity Index of 0.89. In-depth semi-structured interviews were conducted with 24 key informants (academic deans, administrative directors and department chiefs, respectively). These interviews were transcribed in full and analysed using Atlas.ti 24, with 30% of the transcripts double coded to ensure inter-rater reliability (Cohen's Kappa = 0.82).

Ethical Considerations

Ethical approval by the Institutional Review Boards of the 12 participating universities was sought and granted prior to the initiation of this study. Prior to commencement, each participant gave written informed consent. Confidentiality and anonymous reporting were guaranteed, and data management procedures were in adherence with Nigerian Data Protection Regulation (NDPR, 2019). The researcher acknowledges her positionality as an educational foundations scholar analysing institutional data culture which gives her particular insight and advantage but is a position that demands an active reflexivity about normative assumptions held by the discipline.

Results

Data Literacy Competency Profile: A Sociological Gradient

Figure 1 the aggregate proficiency profile of data literacy competency of 420 participants was presented. Based on data, it shows a significant competence progression of a distribution, which reflects broader Nigerian higher education sociological stratification: while basic consciousness is abundant and generalized (68% of faculty) higher competencies such as data analysis (37%), evidence-based practice (28%), and AI tool adoption (14%) are relatively few and highly centralized in few experts, not a stochastic profile, rather a social product that has much to do with relative availability/accessibility in terms of training, facility, professional community and institutional supports.

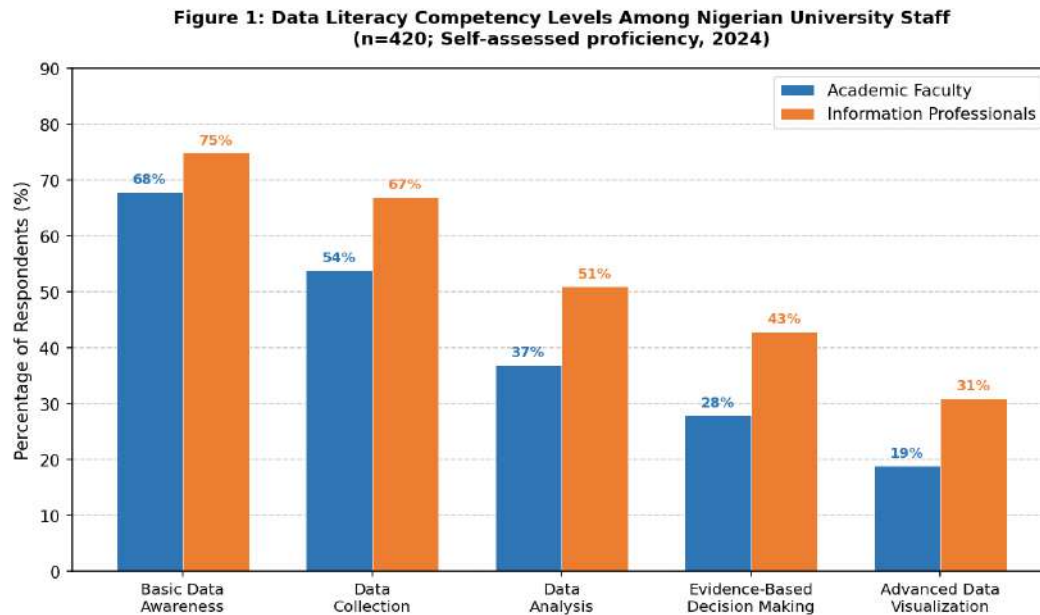


Figure 1: Data Literacy Competency Levels Among Nigerian University Staff (n=420; Self-assessed proficiency, 2024)

The multidimensional profile is presented in Figure 4, where evidence of findings is disaggregated according to the role of staff. Faculty members show higher interaction with analysis of data within their domain; while administrative officers, despite their low profile of the digital realm, appear to exhibit more EBD practice. This was attributed, in the qualitative findings, to demands for evidence which institutions need to use for their reporting requirements, even if they have not received formal training. This is an important finding about the sociological aspect of educational foundations scholarship: Evidence use is not determined solely by the competency of individuals, but by position-specific needs for and accountability in evidence-use, a sociological phenomenon that training may need to consider when planning interventions

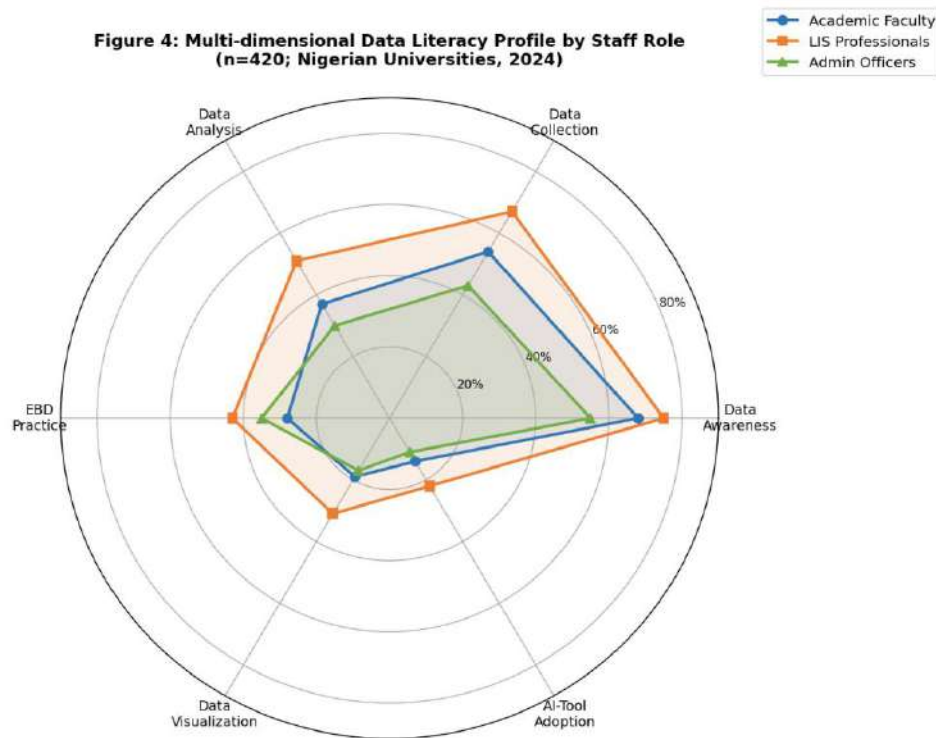


Figure 4: Multi-dimensional Data Literacy Profile by Staff Role (n=420; Nigerian Universities, 2024)

Table 1: Summary of Key Studies on Data Literacy and Evidence-Based Decision-Making — An Educational Foundations Review

Author(s) & Year	Focus Area	Methodology	Setting	Key Finding
Mandinach & Schildkamp (2021)	Misconceptions in data-based decision making	Systematic review	Global	Data availability does not produce data use; culture matters more
Onwujekwe et al. (2020)	Evidence-informed policy capacity, Nigeria	Survey (n=118)	SE Nigeria	Capacity building measurably improves evidence-based culture
Emiri, Ijiekhuamhen & Nwankwor (2024)	Digital literacy among Nigerian lecturers in AI era	Case study	Delta State, Nigeria	Moderate digital literacy; significant AI anxiety among staff
Akinola & Oni (2025)	Digital literacy as predictor of university rankings, SW Nigeria	Quantitative survey	SW Nigeria	Lecturers show moderate-high DL; analytics skills lagging behind
Ekanem & Emejulu (2025)	AI governance & digital literacy gaps, Nigerian HE	Stakeholder analysis	Nigeria	Policy reform and AI ethics education essential for equity
Oguejiofor et al. (2024)	Data governance & decision making in Africa	Mixed methods	Nigeria/Africa	Governance gaps critically undermine institutional decisions

Glazkova et al. (2025)	Digital literacy & academic self-efficacy, Nigeria	Quantitative survey	Nigeria	Digital literacy and academic confidence mutually reinforce
Osaat & Anagwo (2018); updated by Kalusi (2024)	Philosophy of education & institutional governance, Nigeria	Conceptual	Nigeria	Educational foundations philosophy must underpin institutional decision culture

Institutional Barriers: A Sociological and Philosophical Analysis

Figure 2 illustrates the main six barriers in EBD based on the convergences from document and survey analyses. The number one barrier, lack of digital infrastructure (72%), involves a simultaneous technically and social dimension. Deprivation of infrastructure is not random; in fact it is disproportionately present in institutions that provide service for marginal communities and reproduce systemic inequalities in the educational domain that the sociology of education has been pointing out for many years now. According to Athena Centre (2026), this is a crisis of implementation: Nigerian policies are already established and exist in written document form, but sources of revenue and funds are in uneven supply and political determination (and accountability) are also scarce and unevenly available.

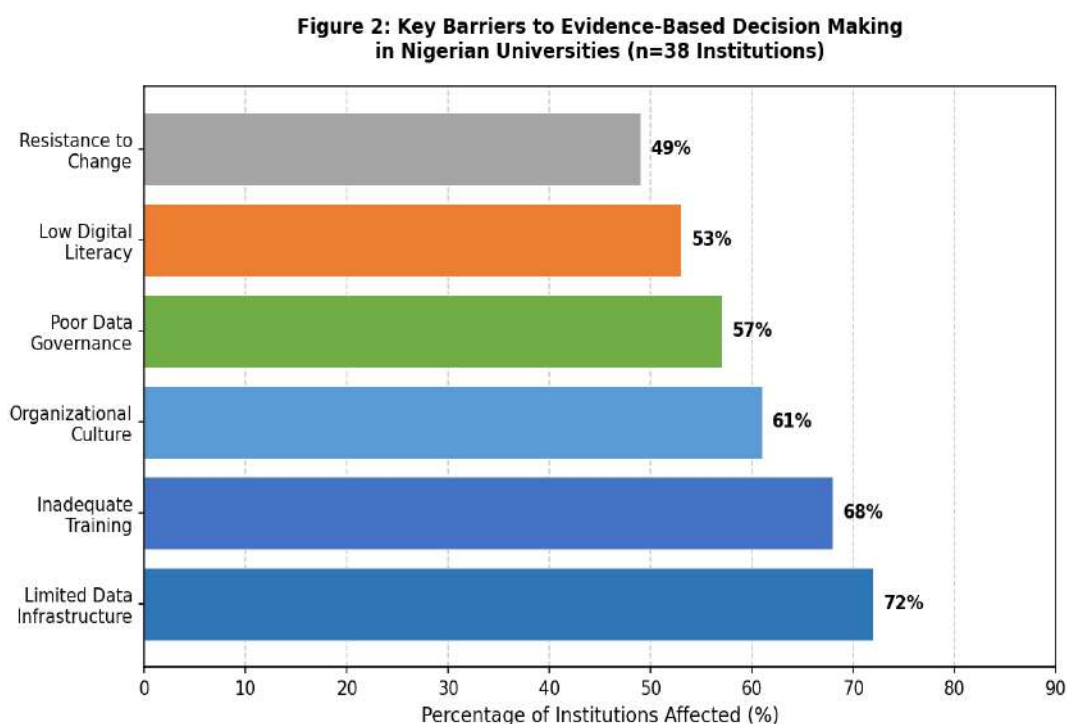


Figure 2: Key Barriers to Evidence-Based Decision-Making in Nigerian Universities (n=38 Institutions, 2024)

The two and three aforementioned obstacles, training deficit (68%) and organisational culture resistance (61%), are conceptually related and most readily explained from the theoretical underpinnings of educational psychology. Following Bandura's (1977) self-efficacy theory, those staff with little or no formal data literacy education hold a self-efficacy that is a powerful barrier to attempting the introduction and implementation of practice. Low staff self-belief that

attempts at empirical input can be fruitful serve to perpetuate existing institutional culture with authority understood to reside in institutional expertise. The majority (63% of those) had no training scheme in place, while only 37% provided some training (see Figure 5) so it would appear for most, the challenge of gaining data literacy competencies would fall entirely upon their individual agency to address within contexts that were discouraging and did not promote empirically.

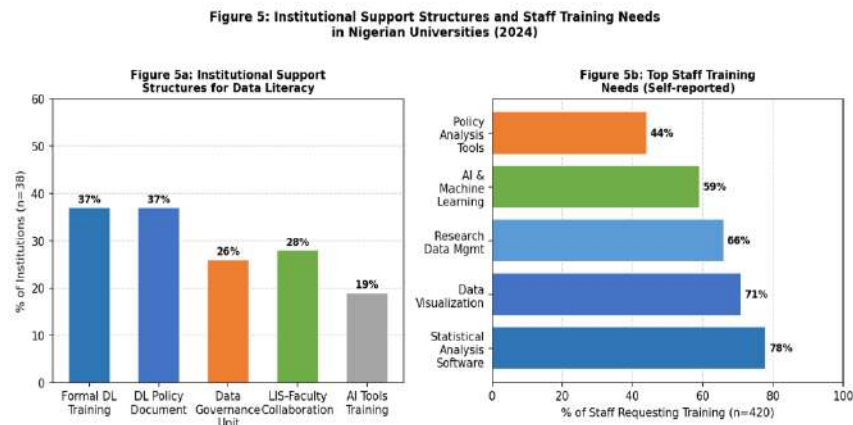


Figure 5: Institutional Support Structures and Staff Training Needs in Nigerian Universities (2024)

The fourth barrier - weak institutional approaches to data governance (57%) - reflects a more conceptual rather than structural impediment to using evidence in an organization. Without guidelines on institutional ownership and stewardship of the data, measures for its quality, and parameters of its access, the epistemological question of what constitutes credible evidence for an institution cannot be definitively answered. Staff cannot use evidence if there is not agreement on who owns it, how reliable it is, or how it should be interpreted. This suggests support for the earlier expressed reasoning on the use of evidence in education in arguing for a view of data governance not just as a process but an epistemological issue.

Geopolitical Disparities: Sociology of Educational Inequality

The more profound sociological insight from the research, however, might be the extent of geopolitical variation that exists in levels of data literacy skills and practice in EBD (Figure 3; Table 2). Four-fold difference in reported practice between the two poorest regions and four-fold difference on every account of practice is not driven by technological access – this is social inequality in access and utilization rooted in accumulated historical disadvantage, lack of investment, conflict-driven disruptions and gender exclusions that mark the history of Nigeria's development processes.

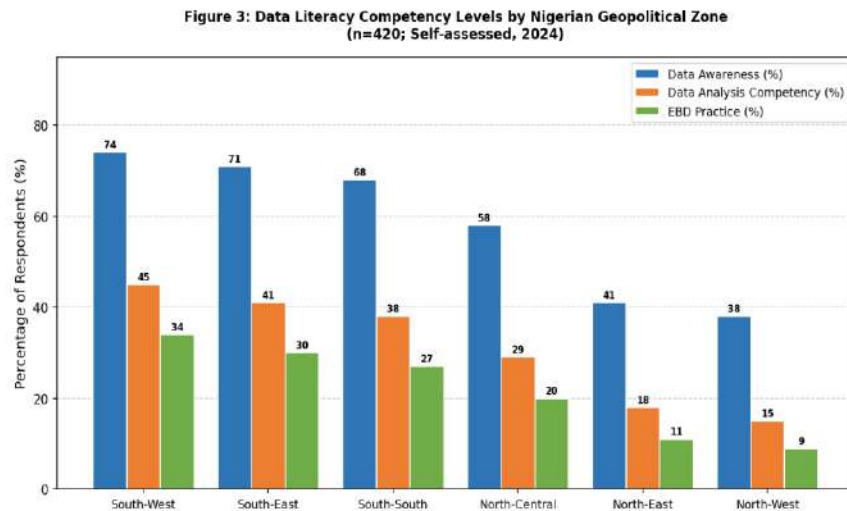


Figure 3: Data Literacy Competency Levels by Nigerian Geopolitical Zone (n=420; Self-assessed, 2024)

Table 2: Digital Access and Data Literacy by Geopolitical Zone — A Sociological Profile (2024)

Geopolitical Zone	HH Internet Access (%)	HH Computer Ownership (%)	Data Awareness (%)	EBD Practice (%)	Key Sociological Challenge
South-West	45	14	74	34	Urban-rural divide; unequal institutional investment
South-East	38	12	71	30	Erratic power supply; post-conflict reconstruction demands
South-South	33	10	68	27	Oil-region funding inequity; environmental marginalisation
North-Central	27	7	58	20	Conflict disruptions; limited higher education density
North-East	21	4	41	11	Security crises; chronic underfunding; campus instability
North-West	23	5	38	9	Gender digital divide; lowest female academic representation
NATIONAL AVERAGE	31	9	60	23	Policy-execution gap undermines all zones

From a sociology of education standpoint, this disparity is both a symptom and a cause. It is a symptom of Nigeria's broader pattern of unequal educational investment, which reproduces regional stratification across generations of educational institutions. It is also a cause: universities with lower EBD capacity produce graduates with lower data literacy competencies, who return to regional economic and governmental positions with reduced capacity to demand or produce evidence-informed policy — perpetuating the very structural conditions that produced the gap. Breaking this cycle requires targeted, differentiated interventions that the NUDLIM framework is designed to support.

The NUDLIM Framework: An Educational Foundations Contribution

Drawing upon the convergent empirical evidence and the pedagogical foundations theory that form the nexus of Section 2 this paper offers the Nigerian University Data Literacy Integration Model (NUDLIM) a five-tiered educationally grounded methodology designed for institution-wide, coherent adoption and integration of data proficiency. NUDLIM departs from other international initiatives in three ways: by explicitly aligning each tier of skills with the sub-disciplines within the foundations of education (namely the philosophy, sociology, history and psychology of education); by providing gender-responsive strategies at all levels of implementation, and; by identifying the Departments of Foundations of Education as the co-lead partners of this reform at the institutional level.

Table 3: NUDLIM — Nigerian University Data Literacy Integration Model (Educational Foundations Version)

Tier	Competency Domain	Core Indicators	Educational Foundations Link	Institutional Action Required
1	Data Awareness	Identifies types, sources & relevance of educational data	Philosophy of Ed: epistemological grounding of knowledge production	Mandatory orientation in staff induction; data literacy module in all Edu. Foundation courses
2	Data Collection & Design	Designs research instruments; ensures data integrity	History of Ed: contextualising data within Nigerian policy evolution	Research methods training embedded in faculty development programmes
3	Data Analysis & Interpretation	Applies SPSS/NVivo; derives sociologically meaningful insights	Sociology of Ed: power, inequality & institutional culture in data interpretation	Analytics software licences; interdisciplinary data workshops across faculties
4	Evidence-Based Practice	Integrates findings into academic planning and policy decisions	Ed. Psychology: behavioural dimensions of EBD adoption & resistance	Data-informed KPIs for departmental planning; accountability to Senate
5	Data Communication	Presents dashboards; communicates evidence to stakeholders	Sociology of Ed: democratising knowledge access across institutional hierarchies	Institutional data dashboards for registry, research, finance; annual Senate evidence report

The essential originality of the NUDLIM framework is to ground all the tiers in the theory of education. Anchoring Tier 1 (Data Awareness) in educational foundations' epistemological questions about the constitution of educational knowledge, anchoring Tier 3 (Data Analysis) in the sociology of education's critical interest for power and inequality in data analysis, and anchoring Tier 4 (Evidence-Based Practice) in the educational psychology explanation of the psychological conditions for evidence-based decision-making practice; the NUDLIM framework re-figures data literacy from a training agenda and technician approach to a mission for educational foundations. This move decanters education foundations from the periphery to the core of institutional transformation: into departments/disciplines that compose it.

Comparative African Perspective

Table 4 presents a 5-country comparison of African higher education systems' data literacy and EBD adoption profiles. A clear trend emerges. The countries which have experienced a higher rate of EBD adoption are also those that incorporated expectations of data literacy into their teacher and educational leader training - just the type of role that the Departments of Educational Foundations have the potential to fulfil in Nigerian universities.

Table 4: Comparative Analysis of Data Literacy and EBD Adoption — Selected African HE Systems, Role of Educational Foundations (2024-2025)

Country	DL Policy Framework	HEI Data Governance	Ed. Foundations Role in EBD	Internet Access (%)	EBD Adoption
Nigeria	NDLF 2023 (weak execution)	Fragmented; ad hoc; siloed	Peripheral; rarely embedded in governance	31	Low-Moderate
South Africa	Comprehensive; digitally integrated	Structured; most HEIs centralised	Education faculties lead pedagogical EBD training	68	Moderate-High
Kenya	ICT Authority Framework (2023)	Emerging; EMIS pilots active	Curriculum reform includes EBD in teacher training	46	Moderate
Ghana	National DL Strategy 2022-2025	Moderate; NUC-equivalent oversight	EBD modules in select education faculties	53	Moderate
Rwanda	National ICT & DL Plan (advanced)	Centralised government EMIS	Embedded in national teacher education standards	62	High

Rwanda's success-starting from similar conditions-at becoming Africa's leader in EBD adoption was less a matter of advanced technology than that of policy co-ordination, political will, and the intentional weaving of evidence-based practice into teacher education programmes and university management. South Africa's example of establishing education faculties which include training in EBD into foundational teaching programs has developed a generation of teachers entering the teaching profession with evidence-informed orientations, providing a

pipeline that Departments of Educational Foundations-at UNIPORT and indeed in all of Nigerian universities-can beginning to build into current undergraduate coursework, including within the foundational curriculum modules currently being taught. Table 5 lays out the key recommendation for six key stakeholders, emphasizing the critical contribution by Departments of Educational Foundations, to a sequentially and educationally-driven and multi-stakeholder policy agenda for data literate integration into Nigerian universities

Table 5: Multi-Stakeholder Policy Recommendations for Data Literacy Integration — An Educational Foundations Agenda

Stakeholder	Priority	Recommended Action	Expected Outcome
Federal Ministry of Education	HIGH	Mandate data literacy training within NUC minimum academic standards across all faculties of education	Systemwide uplift in data competency among education faculty
National Universities Commission (NUC)	HIGH	Include institutional data governance quality ratings in accreditation criteria for faculties of education	Incentivises universities to invest in data governance infrastructure
University Management (Senate & Registry)	HIGH	Establish institutional data analytics units; deploy real-time Education Management Information Systems (EMIS)	Coordinated, evidence-based institutional planning culture
Departments of Educational Foundations	HIGH	Lead data literacy training across faculties; integrate sociological and philosophical analysis of EBD into foundational courses	Educational Foundations positioned as drivers of institutional evidence culture
Academic Faculty (all departments)	MEDIUM	Integrate data analysis and evidence-based practice into all levels of course design, delivery, and assessment	Improved research quality, relevance, and institutional impact
Development Partners (World Bank, NITDA, UNESCO)	MEDIUM	Fund gender-sensitive data literacy training; support broadband infrastructure in underserved geopolitical zones	Reduced digital divide; equitable EBD capacity across all zones

There are three cross-cutting implementation principles the scholar of educational foundations has good reason to highlight. The first is epistemology before technology, which means that technical skills will not be put to use unless institutional culture is first transformed epistemologically to ensure a shared epistemological paradigm of evidence value, evidence quality assessment and authority for institutional data interpretation and use, which is the core work of philosophical foundations and a strength that the scholarship of educational foundations is primed to assist with. Second, the sociology of educational inequity must be a key framework for any allocation decision, a fact that a national data literacy program with uniform dissemination across geographical boundaries has ignored, reinforcing it.

Differential allocation-heavy, external investment in the North East and North West in concentrated interventions-while politically sensitive, is the same as structural equity from a sociological standpoint, a fact supported by a proof-of-concept EMIS real-time study from Ogun State FUDMA (2025) in demonstrating gains in accuracy and responsiveness when investments are made.

Third, a commitment to gender-responsive design is the minimum educational foundations can offer- USAID's Nigeria Gender Analysis (2024) affirms higher barriers to digital literacy for women across all fields, meaning data literacy without intentionality for gender equity that

prioritizes safe learning environments, women-centered mentoring, and diverse instructional delivery modalities could result in meaningful technical results for a few in academia but ignore a majority in the teaching staff.

Conclusion

The argument of this paper has been that the poor uptake of EBD in Nigeria is primarily a sociological, philosophical, and psychological, not merely a technical, issue. From the sociology of education, data literacy is shown to be a socially produced and unevenly distributed resource that is always configured by institutional cultures, power hierarchies, and epistemic approaches within a given organizational environment. From the philosophy of education, evidence-based practice rests upon a foundational epistemic reorientation an institutional consensus about what counts as legitimate knowledge, who may produce and use knowledge, and under what conditions. From educational psychology, the effective adoption of data literacy depends upon the development of high levels of self-efficacy, reduced anxiety, and safe spaces for professional learning, conditions that are virtually absent in current Nigerian universities.

The NUDLIM framework presents a context-aware, theoretically-grounded, step-by-step practical implementation sequence that establishes the role of Departments of Educational Foundations as, not marginal theories of change, but agents of that change. Its five tiers align with the primary sub disciplines of educational foundations: the philosophy of education is utilized to ground data-awareness epistemologically; the history of education is leveraged to inform data interpretation in policy context; the sociology of education is engaged to sensitize interpreters to inequalities and power dynamics in interpreting data; and educational psychology addresses the behavioral processes to support effective adoption. Comparison with Rwanda, South Africa, and Kenya demonstrate higher levels of EBD uptake not in countries blessed with the highest level of resources, but those which effectively nested evidence-based practice within leadership training and teacher development- precisely the organizational territory of Departments of Educational Foundations. Nigerian universities have both the critical disciplinary mass and institutional capacity to spearhead the transformation. What is needed now is the political vision, commitment to resource development, and an interdisciplinary effort to enact-equitably, urgently, and with educational foundations-level rigor-the critical transformation of the evidence culture in Nigerian higher education institutions (Helsby 2013; Levin 2019).

Future research efforts should utilize longitudinal study designs in order to effectively measure the effect of interventions, informed by NUDLIM principles, on the quality of the decisions made at the institutional level. Also further research should focus on geographically broadening of these efforts beyond the south and west to the previously unexamined underresearched institutions in North-East and North-West regions; finally further research work should consider gender disaggregated outcomes analysis for data competency for better informed and targeted interventions.

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