Artificial Intelligence in Records Management: Standardization Needs in Developing Countries: Case Study of Zimbabwe

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ABSTRACT

This conceptual research paper explored the standardization needs of Artificial Intelligence (AI) in records management within developing countries, with a particular focus on Zimbabwe. The study is grounded in the Technology–Organization–Environment (TOE) framework developed by Tornatzky and Fleischer (1990), which explains how technological, organizational, and environmental factors influence the adoption and implementation of innovations. Guided by this theoretical lens, the paper employed a qualitative, documentary review methodology to analyze existing literature, international standards (such as ISO 15489-1:2016 and ISO 23081-1:2019), and national policies relevant to AI and records management. The objectives of the study are to: (i) assess the current state of AI application in records management in Zimbabwe, (ii) analyze the adequacy of existing international standards in addressing AI-driven recordkeeping, (iii) identify key areas requiring standardization to enhance interoperability and compliance, and (iv) propose a framework for standardizing AI-based records management systems. Findings revealed that while AI adoption in Zimbabwe's records management sector is growing, it remains uncoordinated and unstandardized, with significant challenges in metadata consistency, legal compliance, and ethical governance. The study results further indicated that current ISO standards do not fully account for the complexities of AI-powered automation, leading to gaps in data integrity, algorithmic transparency, and interoperability. Drawing from the TOE framework, the paper proposed a context-sensitive standardization framework comprising four components: (i) data preparation and quality management, (ii) AI algorithm transparency and explainability, (iii) performance evaluation and ethical oversight, and (iv) policy alignment with international and national regulatory instruments. The study concluded that standardization is critical to ensuring the authenticity, reliability, and usability of AI-generated records in Zimbabwe and other developing nations. It recommended the development of localized AI standards, capacity building for records professionals, integration of AI governance in policy frameworks, and regional collaboration to harmonize AI-driven records management standards across Africa. The proposed framework provides a pathway toward trustworthy, efficient, and legally compliant records management systems in the era of the Fourth Industrial Revolution.

Keywords: Artificial Intelligence, Records Management, Standardization, Technology–Organization–Environment (TOE) Framework, ISO Standards, Zimbabwe, Developing Countries.

INTRODUCTION

The Fourth Industrial Revolution (4IR) is reshaping the global information environment through technologies such as artificial intelligence (AI), big data analytics, and automation. Among these, AI has emerged as a transformative force in records and information management (RIM) by enabling systems to learn, classify, retrieve, and preserve records intelligently (Kalid et al., 2020). AI applications in RIM—ranging from metadata extraction to predictive analytics—enhance efficiency, reduce human error, and improve the reliability of organizational decision-making processes (Marutha, 2021). In developing countries such as Zimbabwe, where public institutions are transitioning from manual to digital recordkeeping, the integration of AI presents both opportunities and challenges. While it offers improved efficiency and accountability, it also raises concerns about data integrity, ethical use, and compliance with existing records management standards (Mutsagondo, 2022). The absence of localized standards guiding AI-driven recordkeeping compromises the authenticity and

reliability of information, thereby threatening transparency and governance. To ensure trustworthy and interoperable record systems, standardization is vital. International standards such as ISO 15489-1:2016 and ISO 23081-1:2019 provide a foundation for managing records and metadata, yet they do not sufficiently address the complexities introduced by AI (International Organization for Standardization [ISO], 2016; 2019). This study explores the standardization needs for AI-powered records management in developing countries, with a focus on Zimbabwe, and proposes a framework to enhance consistency, accuracy, and trustworthiness in recordkeeping practices.

BACKGROUND

The Fourth Industrial Revolution (4IR) is transforming global information ecosystems through emerging technologies such as Artificial Intelligence (AI), big data, and automation (Schwab, 2016). In records and information management (RIM), AI offers transformative opportunities to enhance efficiency, accuracy, and decision-making by automating metadata extraction, classification, and retrieval processes (Kalid et al., 2020). However, the adoption of AI in developing countries like Zimbabwe presents a dual-edged sword. While AI can address systemic challenges such as resource constraints and backlog management, its unregulated implementation risks compromising data integrity, accountability, and compliance with legal standards (Marutha, 2021; Mutsagondo, 2022). Zimbabwe, like many developing nations, is transitioning from manual to digital recordkeeping systems, yet the integration of AI remains nascent and uncoordinated. Public institutions face pressing issues such as inadequate infrastructure, skills gaps, and fragmented policies, which are exacerbated by the absence of localized AI standards (Ngoepe & Saurombe, 2021). Existing international frameworks, such as ISO 15489-1:2016 and ISO 23081-1:2019, provide guidelines for electronic records management but fall short in addressing AI-specific challenges like algorithmic bias, metadata inconsistency, and explainability (International Organization for Standardization [ISO], 2016; ISO, 2019). Without context-sensitive standards, AI-driven records systems risk undermining trust, interoperability, and compliance with legal requirements, particularly in high-stakes sectors like governance, healthcare, and finance. The Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990) provides a lens to analyze these gaps, emphasizing that successful AI adoption depends on aligning technological readiness, organizational capacity, and environmental (policy and regulatory) factors. This study addresses the critical need for standardization in AI-powered records management, proposing a framework tailored to Zimbabwe's context that ensures trustworthy, efficient, and legally compliant recordkeeping in the AI era.

Statement of the Problem

Despite the growing adoption of digital technologies in Zimbabwean institutions, the use of AI in records management remains largely unregulated and non-standardized. This gap creates risks such as inconsistent metadata capture, biased data classification, and compromised information authenticity (Ngoepe & Saurombe, 2021). While ISO standards exist, they were designed for traditional electronic records management systems (ERMS) and are not sufficiently adaptive to AI-driven automation and decision-making contexts (Marutha, 2021). As a result, institutions using AI tools for data capture, retrieval, and appraisal often do so without frameworks that ensure interoperability, transparency, and legal compliance. The lack of national guidelines or AI recordkeeping policies means that each organization may adopt fragmented approaches, undermining accountability, auditability, and public trust. There is therefore an urgent need for a standardized model that contextualizes global best practices to Zimbabwe's technological and regulatory realities.

Research Objectives

The main objective of this study is to examine the standardization needs of AI in records management within developing countries, focusing on Zimbabwe. Specifically, the study seeks to:

- Assess the current state of AI application in records management in Zimbabwean institutions.
- Analyze the adequacy of existing international standards in addressing AI-driven recordkeeping.
- Identify key areas requiring standardization to enhance interoperability and compliance.
- Propose a framework for standardizing AI-based records management systems in Zimbabwe.

LITERATURE REVIEW

The advent of the Fourth Industrial Revolution (4IR) has brought transformative technologies that are reshaping how information is created, managed, and utilized across sectors. Among these technologies, Artificial Intelligence (AI) has emerged as a major force driving innovation and efficiency in organizational operations, including records and information management (RIM**)**. AI's capabilities in automating processes, detecting patterns, and improving decision-making have made it a valuable tool for enhancing the accuracy, efficiency, and accountability of recordkeeping systems (Kalid et al., 2020; Marutha, 2021). In developing countries such as Zimbabwe, the integration of AI into records management offers significant potential to improve service delivery, promote transparency, and strengthen compliance with governance frameworks. However, this potential remains largely untapped due to limited standardization, infrastructural constraints, and lack of regulatory frameworks guiding AI adoption in the public and private sectors (Mutsagondo, 2022).

In Zimbabwe, both public and private institutions are increasingly adopting digital technologies for managing records, yet the absence of standardized AI-driven recordkeeping frameworks poses challenges to data integrity, authenticity, and long-term accessibility (Mabweazara, 2023). The National Archives of Zimbabwe (NAZ) and other government agencies have made strides in promoting electronic records management systems (ERMS), but AI integration introduces new complexities that existing standards—such as ISO 15489-1:2016 on records management and ISO 23081-1:2019 on metadata for records—do not fully address in the local context (International Organization for Standardization [ISO], 2016; 2019). Without a well-defined standardization approach, AI algorithms may compromise the authenticity, reliability, and usability of records by introducing bias, inconsistent classification, or opaque decision-making processes (Ngoepe & Saurombe, 2021).

The need for standardization in AI-powered records management in Zimbabwe is therefore urgent. Standardization ensures interoperability, legal compliance, and ethical AI use, especially in sectors such as education, health, and governance, where records are vital for accountability and public trust (Mujinga & Chipangura, 2020). Developing countries often lack clear policies and technical capacity to ensure that AI applications in RIM adhere to global best practices while addressing local realities such as limited digital infrastructure and data protection regulations. As Zimbabwe moves toward digital transformation aligned with **Vision 2030**, establishing AI and data management standards is critical for ensuring sustainable and trustworthy information governance systems (Government of Zimbabwe, 2018).

This study examines the state of AI applications in records management in developing contexts with a focus on Zimbabwe, identifying key areas requiring standardization to support reliable, efficient, and legally compliant information management. It further proposes a framework for standardizing AI-powered records management, including guidelines for data preparation, algorithm selection, ethical considerations, and performance evaluation. The ultimate goal is to enhance the accuracy, consistency, and trustworthiness of records, aligning Zimbabwe's recordkeeping practices with global standards in the 4IR era.

AI Applications in Records Management

AI technologies such as machine learning (ML) and natural language processing (NLP) are increasingly applied in managing digital records, automating classification, retention, and appraisal processes (Kalid et al., 2020). AI supports metadata generation, document retrieval, and fraud detection, significantly improving efficiency and accessibility (Marutha, 2021). However, improper implementation may lead to algorithmic bias, poor data quality, and legal uncertainties in evidentiary contexts (Ngoepe & Saurombe, 2021). AI algorithms can analyze content, context, and metadata to classify records automatically, reducing manual effort and improving accuracy (Kalid et al., 2020). For example, ML models trained on historical data can predict retention schedules, flagging documents for archiving or disposal based on organizational policies. NLP enables semantic search capabilities, allowing users to retrieve records using natural language queries. This is particularly valuable in large-scale archives, where AI-powered systems improve accessibility for auditors, compliance officers, and researchers (Marutha, 2021). AI tools can identify anomalies in transactional data (for example, financial records) to detect fraud or non-compliance with regulatory frameworks. ML algorithms learn patterns from past records to flag suspicious activities, strengthening accountability in sectors like finance and healthcare (Ngoepe & Saurombe, 2021).

In Africa, particularly in Zimbabwe, the implementation of AI in information governance is constrained by inadequate infrastructure, digital policy gaps, and limited professional capacity (Mutsagondo, 2022). The National Archives of Zimbabwe has promoted electronic recordkeeping, but most institutions lack robust digital preservation and AI oversight mechanisms (Mujinga & Chipangura, 2020). This highlights the need for context-sensitive AI standardization that aligns with national data protection frameworks and the country's Vision 2030 goals (Government of Zimbabwe, 2018).

Importance of Standardization

Standardization in records management ensures authenticity, reliability, integrity, and usability of records (ISO, 2016). Standards such as ISO 23081-1:2019 emphasize the need for structured metadata to ensure interoperability across systems. Established frameworks, such as ISO 23081-1:2019, mandate structured metadata schemas to ensure interoperability, traceability, and compliance across systems and organizational boundaries (ISO, 2019). However, the integration of Artificial Intelligence (AI) in records management introduces complexities—such as automated decision-making, predictive classification, and algorithmic opacity—that existing standards do not fully address (Mabweazara, 2023; Marutha, 2021). However, AI introduces new dimensions—such as automated decision-making and predictive classification—that require updated frameworks for accountability and ethical governance (Mabweazara, 2023). AI systems generate metadata differently from traditional systems, often lacking human-readable explanations. Without standardized schemas, AI-driven records may become incompatible with legacy systems, risking data silos and audit failures (Kalid et al., 2020).

AI's "black-box" nature conflicts with the principle of auditability. For example, an AI classifying emails as confidential must explain its logic; otherwise, organizations risk non-compliance with regulations (e.g., GDPR) (Kemshall, 2022; Ngoepe & Saurombe, 2021). Biased algorithms may violate fairness principles (for example, discriminatory access controls). Current standards (such as, ISO 15489) do not address AI-specific risks like algorithmic bias or data provenance, leaving institutions vulnerable to litigation (Chigona & Chigona, 2020; Mutsagondo, 2022). Global standards (such as, ISO) may not align with local contexts. In Zimbabwe, AI systems must comply with the Data Protection Act (2021), requiring localized standards to balance innovation and compliance (Zimbabwe Government, 2021). \

Key areas require standardization to enhance interoperability and compliance.

To ensure AI-driven records management systems are trustworthy, interoperable, and compliant in developing countries like Zimbabwe, standardization is critical in the following areas (Marutha, 2021; Ngoepe & Saurombe, 2021; ISO, 2016):

i. Metadata Consistency and Interoperability

AI systems generate metadata differently, risking fragmentation and incompatibility with existing systems (Kalid et al., 2020). Without standardized metadata schemas, records may be misclassified or inaccessible across platforms. Adopt ISO 23081-1:2019 guidelines for metadata management, with extensions for AI-specific attributes such as, algorithm version, training data, decision logic (ISO, 2019). For example, AI classifying emails should embed metadata like: "Classification: Confidential; ISO (2019) emphasizes consistent metadata to ensure records are understandable and usable across contexts.

ii. Algorithmic Transparency and Explainability

AI's "black box" nature undermines accountability, especially when decisions affect legal or financial records (Kemshall, 2022). Without transparency, organizations cannot audit or justify AI-driven decisions. Mandate explainability protocols for AI decisions (ISO, 2020), systems must log: (a) Why a record was classified (rationale), (b) Data sources used, (c) Human oversight points. This aligns with GDPR's "right to explanation" principle (European Union, 2016). Kemshall (2022) argues explainability is essential for ethical AI governance in recordkeeping.

iii. Data Quality and Bias Mitigation

Biased training data leads to discriminatory classification (for example, mislabeling records from marginalized groups) (Chigona & Chigona, 2020). Poor data quality compromises AI reliability. The solution is to enforce data quality standards (ISO 8000-1:2020) and bias audits and to train AI on diverse, representative datasets (such as, local languages, cultural contexts in Zimbabwe). Include bias flags in metadata (for example, "Warning: Model trained on 80% English data; Shona records may be underrepresented"). Mabweazara (2023) highlights AI's ethical risks in African contexts without localized, unbiased datasets.

iv. Legal and Regulatory Compliance

AI may conflict with laws if decisions lack human oversight (for example, Zimbabwe's Data Protection Act, 2021, requires accountability for automated decisions). Align AI systems with national laws and ISO 15489-1:2016 for legal admissibility. Mandate human review for high-stakes decisions (such as, record disposal, access restrictions). Document audit trails to prove compliance (Ngoepe, 2023). Zimbabwe's Data Protection Act (2021) requires transparency in automated processing; ISO (2016) stresses records must meet legal evidentiary standards.

v. Ethical Governance and Accountability

Lack of clear accountability when AI errors occur such as wrongful disposal of critical records and the solution is to establish roles for AI custodians (records managers, IT teams) to oversee ethics and compliance. Develop AI ethics policies aligned with UNESCO's AI ethics framework (UNESCO, 2021). Saurombe (2022) calls for African records professionals to proactively shape AI governance frameworks.

iv. Interoperability and Vendor Lock-In

Proprietary AI tools may create silos, limiting data exchange (Mutsagondo, 2022). Solution is to enforce open standards such as ISO 16175-2:2020 for digital records exchange that require vendors to use interoperable formats (for example, PDF/A for documents, JSON for metadata). ISO (2020b) advocates open standards to prevent vendor dependency in digital ecosystems.

Proposed Standardization Framework for Zimbabwe

i. Harmonize metadata schemas (ISO 23081) and validate datasets for local contexts (Shona, Ndebele languages).

ii. Mandate explainability for AI decisions; flag biased outputs and operational audit trails. Research in enterprise information management highlights the need for system-level logging that captures inputs, model outputs, operator interventions and retention/destruction actions to ensure reconstructability of automated processes (Zhang, 2024; Tsabedze, 2024). These audit trails can be standardized as part of records controls referenced in ISO 15489.

iii. Align AI systems with Zimbabwe's Data Protection Act and international standards (ISO 15489). Harmonize AI systems with Zimbabwe's Data Protection Act (2021) and ISO 15489-1:2016 for legal compliance (Zimbabwe Government, 2021; ISO, 2016).

iv. Establish AI Infrastructure, Data Governance and train records professionals to audit AI systems and enforce standards. This involves adoption of ISO 23081-1:2019 for metadata, with AI-specific extensions (algorithm ID, training data, decision rationale). AI classifying emails must embed metadata: "Classification: Confidential'. Train staff on AI ethics, metadata, and audit trails (Ngoepe & Saurombe, 2021).

v. Partner with SADC nations to develop shared AI standards for cross-border records (for example, healthcare, trade data).

To address gaps in AI adoption and ensure compliance, interoperability, and trustworthiness, we propose a context-sensitive standardization framework for AI-based records management systems (RMS) in Zimbabwe, grounded in the Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990) and aligned with international standards (ISO, 2016; ISO, 2019).

METHODOLOGY

This study adopted a qualitative, documentary review design, combining elements of a systematic literature review (SLR) and documentary analysis. The design was suitable because the study relied on existing academic literature, international standards, national policies, and organizational documents to identify standardization needs for AI-driven records management in Zimbabwe.

The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach, including a structured search, screening, selection, and synthesis of documents. A systematic search was conducted across multidisciplinary academic databases and policy repositories to gather literature related to:

- Artificial Intelligence in records management
- Standardization and ISO standards
- Records management in developing countries
- AI policy and governance
- Zimbabwean information management and regulatory frameworks

The search covered the period 2010–2025, aligning with the emergence of AI governance, the 4IR discourse, and the publication of key ISO standards. Searches were conducted in the following databases and sources:

- Google Scholar
- Scopus
- Web of Science
- PubMed (for AI standards applied in health records)
- IEEE Xplore (AI technologies and algorithm governance)
- ResearchGate
- African Journals Online (AJOL)
- National Archives of Zimbabwe publications
- Government of Zimbabwe policy portals
- ISO Standards database (ISO 15489, ISO 23081, ISO 8000, ISO 16175)

The following combinations were used:

- “Artificial Intelligence” AND “records management”
- “AI” AND “metadata standards” AND “ISO 23081”
- “AI governance” AND “Zimbabwe”

- "4IR" AND "information management" AND "developing countries"
- "AI" AND "digital preservation" AND "standardization"
- "records management" AND "developing countries" AND "standards"
- "ISO 15489" AND "AI" AND "compliance"
- "algorithmic transparency" AND "public records"
- "Zimbabwe" AND "ICT policy" AND "AI"

Grey literature searches included "AI policy Zimbabwe," "Digital transformation Act Zimbabwe," and "National Archives Zimbabwe electronic records."

Documents were included if they:

- Discuss AI in records or information management
- Address standardization, ISO standards, AI ethics, or metadata frameworks
- Focus on developing countries (with preference for Africa)
- Were published between 2010–2025
- Included government or international institutional policies
- Provided conceptual, empirical, or analytical insights relevant to the TOE framework

Table 1. Databases and Sources Searched for Systematic/Documentary Review

Database / Source	Platform	Search Terms / Keywords	Year Range	Initial Hits	Final Included Studies	Notes
Google Scholar	scholar.google.com	"AI in records management," "ISO 15489," "Zimbabwe AI governance"	2010–2025	620	28	Broadest coverage; included grey literature
Scopus	scopus.com	"AI" AND "metadata standards"	2010–2025	180	12	Peer-reviewed, high relevance
Web of Science	webofscience.com	"algorithmic transparency" AND "public records"	2010–2025	94	9	High-impact articles
IEEE Xplore	ieeexplore.ieee.org	"AI ethics," "algorithm governance"	2010–2025	85	6	Strong on technical AI governance
PubMed	pubmed.ncbi.nlm.nih.gov	"AI health records standards"	2010–2025	41	4	Used for AI metadata governance approaches

ResearchGate	researchgate.net	"AI records," "4IR Africa"	2010–2025	88	7	Useful for African contextual studies
AJOL	ajol.info	"records management Africa"	2010–2025	52	8	Regional insights
ISO Standards Repository	iso.org	"ISO 15489," "ISO 23081," "ISO 8000"	2010–2025	12	7	Included relevant standards
Government of Zimbabwe Policy Repository	gov.zw	"AI policy," "Data Protection Act," "ICT Policy"	2010–2025	18	5	National policies and Acts
National Archives of Zimbabwe	naz.gov.zw	"electronic records," "AI RMS"	2010–2025	13	3	Official archival guidance

Total initial records: 1,243

Final included documents: 62

FINDINGS

The findings indicate that AI adoption in records management in Zimbabwe remains in its nascent stages, characterized by limited integration within public institutions and a lack of unified implementation frameworks. While national initiatives such as the National ICT Policy Framework (2020) and the E-Government Strategy (2021–2025) emphasize digital transformation and data-driven governance, AI-specific applications in records management have not yet been systematically developed or standardized (Government of Zimbabwe, 2020).

Most Zimbabwean public institutions continue to rely on traditional Electronic Document and Records Management Systems (EDRMS) that automate filing and retrieval processes but lack intelligent capabilities such as machine learning-based classification, metadata extraction, or predictive analytics (Mutsagondo, 2025). Private sector organizations, particularly in the financial and telecommunications industries, have made some progress in using AI for document scanning, fraud detection, and workflow automation. However, these systems often operate **in silos** and lack interoperability with national archival standards, posing long-term preservation and authenticity challenges (Tsabedze, 2024).

From a regional comparison, countries such as South Africa, Kenya, and Nigeria have begun piloting AI-driven record management models and policy sandboxes, while Zimbabwe remains policy-ready but implementation-deficient (Alaoui, 2025). This uneven progression underscores the importance of establishing standardized frameworks to guide responsible and consistent AI adoption in the management of records.

Under the technological dimension of the TOE framework, findings reveal that the primary barriers to AI adoption in Zimbabwe's records management include limited digital infrastructure, inadequate metadata standards, and data fragmentation. Many public institutions operate legacy systems that are incompatible with AI-powered tools, making integration complex and costly (Mutsagondo, 2025).

The absence of standardized metadata schemas consistent with ISO 23081-1:2019 results in inconsistent data labeling and poor interoperability between systems. Without machine-readable metadata and consistent record identifiers, AI algorithms cannot effectively perform classification, appraisal, or retrieval tasks (ISO, 2019). Additionally, concerns about data integrity and algorithmic transparency impede the deployment of AI applications in public records management, where accountability and auditability are paramount (O'Shaughnessy, 2023).

These findings suggest that Zimbabwe's technological environment requires capacity-building in digital infrastructure, metadata design, and algorithmic governance to support standardized AI integration. Moreover, national-level standardization could help reduce vendor lock-in, promote interoperability, and ensure that AI systems comply with global best practices for data provenance and integrity.

While awareness of AI's potential benefits in automating records workflows exists, many records management units lack skilled personnel capable of configuring, auditing, and maintaining AI-powered systems (Mutsagondo, 2025). Training in AI ethics, algorithmic accountability, and digital preservation remains minimal. Moreover, most organizations do not have formal AI governance policies or clear data quality protocols aligned with international records management standards such as ISO 15489-1:2016, which emphasizes the reliability, authenticity, and usability of records (ISO, 2016). Institutional structures are often hierarchical, which slows innovation and limits inter-departmental collaboration required for AI implementation.

The study also found that records managers and archivists often lack decision-making authority in technology procurement processes, resulting in the adoption of tools that do not align with archival standards or preservation requirements. This organizational misalignment weakens compliance and undermines standardization efforts (Alaoui, 2025).

Addressing these challenges requires a holistic capacity-building strategy that empowers records professionals to engage in AI governance, metadata standardization, and performance evaluation. Institutional policies should mandate adherence to recognized standards and frameworks to ensure consistent, trustworthy recordkeeping. The National Archives of Zimbabwe operates under the *National Archives Act (1986),* which predates the digital era and does not explicitly address electronic or AI-generated records (National Archives of Zimbabwe, 2023). Consequently, there is a regulatory vacuum regarding accountability for AI-generated metadata, algorithmic bias, and digital preservation responsibilities.

While Zimbabwe is a signatory to several regional ICT cooperation frameworks, such as the Smart Africa Alliance and SADC Digital Transformation Strategy (2021–2030), these initiatives have yet to translate into national AI standardization protocols for recordkeeping. The lack of harmonization between global standards (such as ISO 15489 and ISO 23081) and local policy frameworks exacerbates fragmentation and compliance risks (Mutsagondo, 2025; Tsabedze, 2024). Furthermore, privacy and data protection laws such as the Data Protection Act (2021) primarily focus on cybersecurity and personal data but do not address AI-generated or automated decision-making records. This legal gap creates uncertainty around record authenticity, accountability, and long-term preservation (O'Shaughnessy, 2023). The findings highlight a pressing need for policy modernization, specifically, the incorporation of AI governance principles and metadata standards into national archival and information management legislation.

DISCUSSION

The findings demonstrated that while Zimbabwe exhibits growing policy interest in AI and digital transformation, its records management ecosystem remains underdeveloped in terms of AI standardization. Applying the TOE framework reveals systemic weaknesses: insufficient technological infrastructure, limited organizational readiness, and outdated regulatory environments. AI initiatives are implemented without formal standardization guidelines. Major findings include:

- Lack of Local Standards**:** Existing standards (e.g., ISO 15489) are not customized for AI contexts in Zimbabwe.
- Inconsistent Metadata Practices: Institutions apply varying metadata models, leading to poor interoperability.
- Weak Legal and Ethical Frameworks**:** Absence of AI governance mechanisms results in privacy and accountability concerns.
- Capacity and Infrastructure Gaps**:** Many records officers lack training in AI technologies and data analytics.

These challenges underscore the need for national-level coordination and contextualized standards to regulate AI-powered recordkeeping systems. The findings are consistent with global trends observed in other developing countries, where AI integration outpaces regulatory adaptation (Alaoui, 2025; UNESCO, 2024). Standardization thus emerges as both a technical and governance imperative. Without it, AI applications risk undermining the authenticity, reliability, and long-term usability of records—the core principles of professional recordkeeping (ISO, 2016). The study's findings affirmed the urgent need to establish a national standardization framework for AI-powered records management in Zimbabwe, integrating technological best practices, institutional capacity-building, and regulatory reform.

CONCLUSION

This study underscores the critical need for tailored standardization frameworks for AI in records management within developing countries. The findings indicate that the current landscape of AI applications in Zimbabwe is characterized by significant challenges that hinder effective records management. The lack of localized standards exacerbates issues related to data integrity, governance, and ethical use. By leveraging the insights gained from this systematic literature review, the proposed framework offers a pathway to improving the credibility and efficiency of AI-driven records management systems. It emphasizes the importance of developing context-sensitive standards, enhancing the capacity of records professionals, integrating ethical considerations, and aligning international regulatory instruments. The study also advocates for collaborative efforts among stakeholders to promote standardized approaches across the African continent, ultimately fostering trust and interoperability in records management in the age of the Fourth Industrial Revolution. Future research should focus on empirical validation of the proposed framework and explore its implementation across various sectors to measure its effectiveness in real-world applications. A standardized, context-sensitive AI-RMS framework will enable Zimbabwe to leverage AI while ensuring ethical, compliant, and interoperable records management. Collaboration with regional bodies and ISO updates will future proof the system.

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