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Digital Records Governance through the Lens of Good University Governance: A Qualitative Case Study at Universitas Pendidikan Indonesia

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Abstract

Digital records have become part of the governance infrastructure of higher education institutions because they provide evidence for administrative actions, accountability, audit, accreditation, and decision-making. Nevertheless, the presence of digital applications does not automatically produce good governance when records remain dispersed across systems, shared folders, cloud storage, individual work devices, and physical files. This study analyzes digital records governance at Universitas Pendidikan Indonesia (UPI) through a Good University Governance (GUG) perspective. A qualitative case-study design was employed using semi-structured interview data from archival-management personnel and policy/leadership stakeholders. The data were analyzed through deductive thematic coding based on transparency and traceability, accountability, effectiveness and efficiency, compliance and standardization, and risk and continuity, followed by inductive analysis of cross-cutting governance gaps. The findings show that UPI has established important digital controls through SI-NERGI, electronic signatures, role-based access, user authentication, tracking, retention monitoring, and periodic archival evaluation. However, these controls are uneven across the broader records ecosystem. Hybrid physical-digital processes, multiple storage locations, manual re-entry, inconsistent metadata and naming practices, and uneven human-resource capability create what this study terms governance asymmetry: governance quality is relatively strong inside controlled applications but weaker when records move outside them. The study argues that digital records governance should be treated as an institution-wide governance architecture rather than an application-level administrative function. It proposes an integrated governance agenda combining lifecycle policy, interoperability, metadata standardization, accountability mapping, digital preservation, business continuity, and continuous capability development.

Keywords: Digital Records Governance; Good University Governance; Higher Education; Accountability; Transparency

JEL Classification: I23; H83; M10

1. Introduction

Digital transformation in higher education is no longer limited to teaching platforms or student-facing services. It increasingly affects the university's operating model, including administrative workflows, institutional evidence, compliance, internal control, auditability, and

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decision-making. Contemporary higher-education research therefore emphasizes that digital transformation involves coordinated changes in technology, organizational processes, capabilities, and governance rather than the mere adoption of applications (Gkrimpizi et al., 2024; Haug et al., 2024). Within this transformation, records are particularly important because they preserve evidence of institutional actions and provide the documentary basis for accountability, transparency, accreditation, legal compliance, and organizational memory (McLeod & Lomas, 2023).

Electronic records management has developed from a narrow focus on document storage toward a broader concern with information governance, lifecycle controls, metadata, authenticity, access, retention, preservation, and organizational responsibilities (Brooks, 2019; Oladejo & Hadžidedić, 2021). ISO 15489-1:2016 (International Organization for Standardization [ISO], 2016) highlights records, metadata, assigned responsibilities, monitoring, training, and controls across the creation, capture, and management of records. ISO 30301:2019 (International Organization for Standardization [ISO], 2019) further positions records management as a management system that should support an organization's mandate, strategy, objectives, performance monitoring, and continual improvement. In Indonesia, Peraturan Arsip Nasional Republik Indonesia Nomor 6 Tahun 2021 explicitly places electronic records management within the agenda of clean, effective, transparent, and accountable governance and applies the requirement to public universities (Arsip Nasional Republik Indonesia [ANRI], 2021).

The governance relevance of digital records is especially strong in universities. Universities combine public accountability, professional autonomy, complex authority structures, diverse information assets, academic and administrative processes, and long-term evidence requirements. Good University Governance (GUG) provides a useful lens for evaluating whether institutional processes are transparent, accountable, responsible, effective, efficient, and appropriately controlled (Risanty & Kesuma, 2019; Shattock, 2006). Recent systematic reviews also show that GUG research increasingly links governance quality with institutional performance, stakeholder trust, leadership, information systems, and digital transformation (Islami, 2025; Rukmana et al., 2024).

However, the existence of a digital records application should not be equated with mature digital records governance. A university may possess electronic signatures, user authentication, and tracking functions while simultaneously storing related records in shared drives, cloud repositories, personal devices, spreadsheets, and physical files. Such fragmentation can create duplicate versions, uneven access controls, incomplete audit trails, inconsistent metadata, additional workloads, and uncertainty over the authoritative record. This distinction is important because governance is an end-to-end property of the records ecosystem, not merely a feature of one application.

The interview evidence from Universitas Pendidikan Indonesia (UPI) illustrates this tension. Digital records are already embedded in administrative processes through SI-NERGI, electronic documents, electronic signatures, user accounts, and retention monitoring. At the same time, the interview corpus indicates continuing hybrid management, multiple storage media, manual metadata entry, duplicate storage, differences in naming and filing practices, and uneven integration among systems. These conditions create an empirical setting in which the benefits of digitalization coexist with governance gaps.

Prior studies in Indonesia have demonstrated that electronic records systems can strengthen

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educational accountability (Oktarina et al., 2023) and that integrated digital archiving can improve university document management and accountability (Kuswantoro et al., 2025). Recent higher-education evidence also shows that hybrid processes, incomplete SOPs, limited competencies, security weaknesses, and fragmented backup arrangements remain common challenges in institutional digital records transformation (Muttaqin et al., 2026; Setyawan & Baroroh, 2025). Yet fewer studies explicitly analyze the discrepancy between governance controls embedded in a formal records application and governance conditions across the wider organizational records environment.

This study addresses that gap by analyzing digital records governance at UPI through a GUG lens. It asks three questions: (1) How are GUG principles manifested in current digital records management practices at UPI? (2) What governance gaps emerge across systems, storage environments, lifecycle stages, and organizational roles? and (3) What governance priorities are required to strengthen an integrated and sustainable digital records ecosystem? The study contributes the concept of governance asymmetry to describe a condition in which transparency, accountability, security, and traceability are relatively strong within controlled applications but become weaker when records are handled outside those applications. This concept shifts the unit of analysis from the application to the institutional records ecosystem.

2. Literature Review

2.1 Digital Records Governance

Records governance refers to the policies, responsibilities, controls, technologies, and assurance mechanisms through which records are created, captured, maintained, accessed, retained, disposed of, and preserved as reliable evidence of organizational activity. The distinction between records management and information governance has become increasingly porous because contemporary records are embedded within broader digital information environments (Brooks, 2019). This means that effective governance requires coordination among archival functions, information technology, business units, compliance actors, and institutional leadership.

The literature identifies several recurrent requirements for trustworthy digital records. First, records must remain authentic, reliable, complete, and usable. Pacheco et al. (2023) emphasize metadata as a critical mechanism for demonstrating identity and integrity in digital archival descriptions. McLeod and Lomas (2023) similarly frame digital records as an evidence base whose future usability depends on preserving provenance, context, authenticity, and accessibility over time. Second, records governance requires lifecycle control. Retention, disposition, preservation, and migration must be planned rather than treated as post hoc technical activities. Third, governance requires organizational controls such as policies, assigned responsibilities, monitoring, training, and performance evaluation (ISO, 2016, 2019).

Digital transformation adds another layer of complexity. Technology can reduce retrieval time, accelerate distribution and approval, enable remote access, and improve traceability. At the same time, digitally induced change is organizational rather than purely technical; fragmented processes, weak capability, poor integration, and legacy work practices can limit transformation outcomes (Haug et al., 2024). In higher education, digital transformation includes administrative and back-office operating models as well as teaching and learning (Gkrimpizi et al., 2024; Ramadania et al., 2024). Therefore, digital records governance should be analyzed as a socio-technical governance system involving technology, people, policy, process, and institutional culture.

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2.2 Good University Governance as an Analytical Lens

Good University Governance adapts broader governance principles to the distinctive institutional environment of higher education. Although formulations vary, recurrent principles include transparency, accountability, responsibility, independence, fairness, effectiveness, efficiency, quality assurance, and stakeholder orientation (Risanty & Kesuma, 2019; Shattock, 2006). A recent systematic review of 221 publications confirms that transparency, accountability, and effectiveness remain central to the GUG literature while also identifying the need to connect governance with risk management and performance (Islami, 2025).

For digital records governance, GUG is operationally useful because records mediate the visibility and verifiability of administrative action. Transparency depends on whether authorized users can locate records, understand status, and trace process history. Accountability depends on whether responsibilities for creation, verification, storage, access, amendment, and disposition are identifiable. Effectiveness and efficiency depend on whether digital systems reduce cycle time, duplication, manual work, and search costs. Responsibility and compliance depend on adherence to archival law, institutional procedures, retention schedules, access rules, and preservation requirements. Sustainability depends on security, backup, migration, disaster recovery, and continuity of access.

Not all GUG dimensions are equally observable from records-management interviews. This study therefore concentrates on five dimensions directly supported by the empirical material: (1) transparency and traceability, (2) accountability and role clarity, (3) effectiveness and efficiency, (4) compliance and standardization, and (5) risk, preservation, and continuity. Principles such as fairness and participation remain conceptually important but are not assessed as stand-alone dimensions because the supplied interview data do not provide sufficient evidence for a defensible evaluation.

Table 1. Analytical framework for digital records governance based on GUG

GUG dimension	**Operational focus in digital records governance**	**Indicative evidence**
Transparency and traceability	Visibility of status, provenance, process history, authorized access	Tracking, audit trail, searchability, access logs, status information
Accountability and role clarity	Identifiable responsibility across the records lifecycle	Creator, verifier, records manager, IT administrator, approval authority, escalation
Effectiveness and efficiency	Reduction of time, duplication, repeated input, and physical handling	Retrieval speed, workflow acceleration, interoperability, single source of truth
Compliance and standardization	Consistent application of legal, policy, classification, metadata, retention, and disposition controls	SOP, classification code, JRA, metadata, monitoring, audit, digital-preservation rules
Risk, preservation, and continuity	Protection of authenticity, integrity, confidentiality, availability, and long-term usability	SSO, TTE, access control, backup, recovery testing, migration, preservation planning

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Source: Authors' synthesis.

The analytical framework presented in Table 1 provides the conceptual basis for examining digital records governance through five GUG dimensions. To translate this framework into the empirical inquiry, the dimensions were operationalized through a structured interview guide. Table 2 presents the interview-guide dimensions and their mapping to the analytical framework. This mapping clarifies how the interview questions connect the broader governance principles with specific aspects of records-management practice, while allowing the analysis to capture both operational implementation and policy-level oversight.

Table 2. Interview-guide dimensions and analytical mapping

Interview-guide dimension	Interview focus	Analytical category
Division of responsibilities	Actors and handoffs across record lifecycle	Accountability and role clarity
Transparency and auditability	Visibility, tracking, logs, and process history	Transparency and traceability
Access control	Authentication, authorization, confidentiality	Risk, preservation, and continuity
Accountability	Responsibility, verification, oversight, escalation	Accountability and role clarity
Effectiveness and efficiency	Retrieval, workflow time, duplication, repeated entry	Effectiveness and efficiency
Compliance and standardization	Rules, SOPs, classification, filing standards	Compliance and standardization
Authenticity and metadata	Identity, integrity, provenance, completeness	Risk, preservation, and continuity; compliance
Retention and preservation	JRA, transfer, disposition, long-term access	Compliance and standardization; risk and continuity
Human-resource capacity	Training, competencies, workload, user practice	Cross-cutting inductive theme
Risk	System disruption, security, loss, recovery	Risk, preservation, and continuity
Improvement priorities	Integration, policy, capability, controls	Cross-cutting managerial implications

Source: Authors' synthesis of the interview guide and GUG analytical framework.

3. Research Method

3.1 Research Design and Setting

This study uses a qualitative case-study approach to examine digital records governance within the institutional context of Universitas Pendidikan Indonesia. A case-study design is appropriate because the research problem concerns the interaction of governance principles, organizational roles, digital systems, archival procedures, and everyday administrative practices in a bounded institutional setting (Creswell & Poth, 2018; Yin, 2018). The unit of analysis is the digital records governance ecosystem rather than a single software application.

The empirical material was generated through semi-structured interviews directed at two role groups: archival-management personnel who handle operational records processes and

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policy/leadership stakeholders who oversee administrative governance. The supplied interview corpus contains detailed evidence concerning systems and media used, role allocation, access and authentication, audit trails, retention and disposition, monitoring, integration, duplication, human-resource capability, technical constraints, and improvement priorities.

3.2 Informants and Data Collection

Semi-structured interviews were conducted between 24 and 30 August 2026 with ten key informants purposively selected based on their direct involvement in digital records governance at Universitas Pendidikan Indonesia (UPI). The informants represented two principal stakeholder groups: archival-management personnel responsible for the operational management of records and policy/leadership representatives involved in governance, supervision, and strategic decision-making related to records management.The interview guide covered the current condition of digital records management; division of responsibilities; transparency and auditability; access control; accountability; effectiveness and efficiency; compliance and standardization; authenticity and metadata; retention and preservation; human-resource capacity; risk; and improvement priorities. The interview questions were designed to elicit both current practices and perceived gaps rather than only normative expectations.

To make the conceptual basis of the ten interviews explicit, the interview guide translated the GUG-based framework into eleven operational dimensions: (1) division of responsibilities; (2) transparency and auditability; (3) access control; (4) accountability; (5) effectiveness and efficiency; (6) compliance and standardization; (7) authenticity and metadata; (8) retention and preservation; (9) human-resource capacity; (10) risk; and (11) improvement priorities. We treated these dimensions as interview prompts rather than independent variables. During analysis, we grouped related prompts under the five analytical dimensions in Table 1, while retaining cross-cutting evidence through inductive coding. This mapping enabled the interviews to capture both operational implementation and governance oversight without assuming that every dimension was equally mature.

The analysis used the completed interview records supplied by the research team and compared evidence from archival-management and policy/leadership roles. Personal names are not reported because the governance interpretation depends on organizational roles and institutional processes rather than individual identity.

3.3 Data Analysis and Trustworthiness

The interview material was analyzed through a two-stage thematic procedure. First, deductive coding was conducted using the five analytical dimensions in Table 1 and the eleven interview-guide dimensions mapped in Table 1A. Second, inductive coding identified cross-cutting patterns that could not be reduced to a single GUG dimension, including fragmented storage, hybrid work, manual metadata re-entry, governance differences between controlled applications and peripheral storage environments, and dependence on staff discipline. The analysis compared operational and policy/leadership perspectives to identify convergence, divergence, and implementation gaps.

Analytical trustworthiness was strengthened through source triangulation across role perspectives and by retaining negative or qualifying evidence. For example, evidence of strong audit trails and role-based access within SI-NERGI was not generalized to all digital records because other interview material explicitly reported weaker traceability for records held in local or shared storage. Similarly, digitalization benefits were interpreted alongside evidence of

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continued physical processing and duplicate work. This approach reduces the risk of equating formal system capability with institution-wide governance maturity.

The comparison was conducted by reading each thematic category across the two stakeholder groups. Archival-management accounts were used to identify how controls were enacted in filing, metadata entry, storage, retention, and retrieval, whereas policy/leadership accounts were used to interpret formal responsibility, oversight, compliance expectations, and institutional priorities. Where accounts converged, the pattern was treated as a shared governance condition; where they differed, the difference was interpreted as a possible implementation or visibility gap rather than resolved by privileging one group. The findings below therefore distinguish system-level controls and policy intentions from operational conditions reported in day-to-day records work.

4. Findings and Discussions

4.1 A Digitally Enabled but Hybrid Records Ecosystem

The first finding is that UPI should not be characterized as having an undeveloped digital records environment. The interview corpus shows that digital administration is already institutionalized in meaningful areas. SI-NERGI is used to create, route, and process official correspondence; electronic signatures are used for selected official documents; user identities and permissions are linked to accounts; and retention is monitored through archival lists. Another operational account identifies SI-NERGI and SIMKERMA as systems used in administrative records processes. These arrangements demonstrate that digital records are already part of university governance rather than a marginal experiment.

At the same time, the records ecosystem remains hybrid. Interview evidence indicates that digital records may be stored in SI-NERGI, Google Drive, unit folders, and individual work computers, while certain documents continue to require physical originals, wet signatures, hardcopy evidence, or parallel retention. The archival-management perspective explicitly describes the current condition as hybrid: physical and digital records operate side by side, and not all lifecycle stages—from creation and filing to maintenance and disposition—are managed digitally within one integrated environment.

This hybrid architecture has two implications. First, it is a transitional response to legal, operational, and evidentiary requirements rather than necessarily a governance failure. Some records legitimately require preservation of physical originals. Second, the absence of clear boundary rules between authoritative digital records, working copies, backups, scanned derivatives, and physical originals can create governance ambiguity. When the same document is held in several environments, the organization must specify which version constitutes the official record, what metadata must travel with it, and which retention and access controls apply.

4.2 Transparency and Traceability: Strong in the Core System, Uneven at the Ecosystem Level

Transparency in records governance is not synonymous with unrestricted access. The interview data consistently frame transparency as authorized visibility: records and process status should be discoverable by parties with legitimate duties while restricted information remains protected. Within SI-NERGI, this principle is relatively well supported. Respondents report account-based traceability, status tracking, process-stage visibility, activity logs, and role-based access. One operational account further specifies that audit trails capture time, IP information, and action type, while confidential records are controlled through role-based permissions.

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These controls align with the GUG principle that administrative actions should be traceable and explainable without compromising confidentiality.

The weakness appears when the unit of analysis is expanded beyond SI-NERGI. Records stored in shared folders, local computers, or other storage media do not consistently provide equivalent audit histories. In these environments, it may be difficult to determine who created, changed, accessed, or last handled a record. Interview evidence notes that manual tracing may be required, particularly when file naming is inconsistent, records are distributed across locations, or staff responsibilities have changed. Thus, transparency is location-dependent.

This pattern supports the study's concept of governance asymmetry. A formal application may embody robust transparency controls, yet the institution's overall transparency remains constrained if records routinely move into environments where those controls are not preserved. The key governance challenge is therefore not merely to improve tracking features inside SI-NERGI but to maintain traceability across the entire lifecycle and across interoperating systems. This finding is consistent with the broader records literature, which emphasizes metadata, context, provenance, and interoperability as conditions for trustworthy digital evidence (McLeod & Lomas, 2023; Pacheco et al., 2023).

4.3 Accountability: Roles Are Recognizable, but End-to-End Responsibility Needs Formalization

The interview material provides clear evidence that accountability has an organizational basis. Record creators are responsible for the substance and completeness of records; administrative or archival personnel register and manage them; authorized leaders verify or sign official documents; and IT administrators manage system-level functions. Policy-level responses likewise state that responsibility follows the business process and that archival personnel oversee filing, storage, maintenance, and retention. This division of work provides a strong governance foundation because it treats responsibility as more than an undifferentiated obligation.

However, role recognition is not the same as end-to-end accountability. Several empirical issues complicate the chain of responsibility: records may be stored in multiple locations; some processes have incomplete audit trails; supporting documents may be separated from the main record; and operational pressure may cause final filing to be delayed. One respondent also identifies the need for clearer service-level expectations for verification and electronic signature. These conditions can create accountability gaps at handoff points between record creator, verifier, records manager, system, and storage environment.

A stronger governance model should therefore convert existing role knowledge into explicit lifecycle accountability. A RACI-type matrix can assign who is Responsible, Accountable, Consulted, and Informed for creation, validation, registration, metadata completion, classification, access approval, finalization, retention, transfer, destruction, permanent preservation, and incident handling. Where workflow timeliness matters, service-level agreements should accompany role definitions. ISO 15489-1:2016 is relevant here because it treats assigned responsibilities, monitoring, and training as core records-management controls, not optional administrative additions.

4.4 Effectiveness and Efficiency: Significant Gains Are Offset by the Hybrid Burden

Interview evidence indicates clear efficiency gains from digital records. Respondents report faster search, distribution, approval, and retrieval; electronic records can be located by

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document number, keywords, year, sender, subject, or other metadata. One operational response describes a shift from searches measured in hours or days to searches completed in seconds for records available in the system. Electronic signatures allow leaders to approve documents remotely, while digital distribution removes the need for physical movement between units. These benefits support the GUG objective of effective and efficient administration.

Nevertheless, the efficiency effect is not uniform. Hybrid processes can require staff to perform substantially similar work twice: create or register a digital record, print it, obtain a physical signature or stamp, file the physical original, scan it again, and store the digital copy. Manual metadata re-entry is still required where systems do not exchange information automatically. Duplicate storage can also occur when the same document is retained in SI-NERGI and unit folders or backup locations. Interviewees associate these practices with increased workload and less-than-optimal time efficiency.

The finding is important because it distinguishes digitization from process redesign. Digital transformation produces stronger governance outcomes when the process architecture is redesigned so that a digital authoritative record can move through creation, validation, use, retention, and disposition without unnecessary re-entry or parallel handling. Haug et al. (2024) similarly show that digitally induced transformation in public organizations emerges from changes in processes and organizational arrangements, not technology adoption alone. In higher education, Gkrimpizi et al. (2024) likewise emphasize operating-model changes as part of digital transformation.

For UPI, the efficiency priority is therefore interoperability and single-source-of-truth governance rather than simply increasing the volume of scanned records. Integration should reduce duplicate entry while preserving legitimate backup and evidentiary requirements. Where duplicate copies are required, the system should distinguish authoritative records, controlled copies, backups, and convenience copies through metadata and policy.

4.5 Compliance and Standardization: A Strong Regulatory Base but a Digital-Specific Governance Gap

UPI's records management does not operate in a regulatory vacuum. Interview responses refer to national archival rules, UPI procedures, classification, records retention schedules (Jadwal Retensi Arsip/JRA), and internal monitoring. One operational account explicitly cites Law No. 43 of 2009 on Archives and its implementing regulation (Republic of Indonesia, 2009, 2012), relevant ANRI rules, and UPI regulations concerning official correspondence, archival classification, and retention. Retention monitoring is operationalized through archival lists and spreadsheets that identify records to be retained, transferred, proposed for destruction, or preserved permanently.

The more important finding is not the absence of rules but the incomplete translation of existing archival rules into an integrated digital governance policy. A policy/leadership response indicates that, to the respondent's knowledge, a specific UPI regulation dedicated to digital records had not yet been established and that existing archival provisions were being adapted to digital media. Operational evidence also indicates that technical understanding is less uniform for classification, retention, preservation, file naming, metadata, and final storage than for routine correspondence processing.

This gap matters because digital records introduce governance questions that conventional

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filing rules do not fully resolve: authoritative version status, minimum metadata, system-of-record designation, audit-log retention, access inheritance, electronic-signature validation, migration, format obsolescence, cloud storage, backup architecture, deletion controls, and preservation responsibilities. ANRI Regulation No. 6/2021 and ISO 15489-1:2016 provide strong external reference points for developing a university-wide policy that covers the complete electronic records lifecycle.

The interview data also reveal that standardization is a behavioral as well as regulatory problem. Differences in naming, folder structures, metadata entry, filing discipline, and storage locations can undermine retrieval even when formal policies exist. This supports Daneshmandnia's (2019) finding that information-governance effectiveness in higher education is shaped by organizational culture as well as formal governance structures. Training, supervision, and workflow design therefore need to reinforce policy through daily practice.

4.6 Authenticity, Risk, Preservation, and Continuity

Authenticity controls are comparatively strong for records processed within the formal digital environment. Interview evidence identifies SSO-based authentication, electronic signatures integrated with certified services, role-based access, and audit trails. Electronic signatures support verification of signer identity and detection of unauthorized changes after signing. These mechanisms are consistent with the literature's emphasis on identity and integrity as core components of digital-record authenticity (Pacheco et al., 2023).

The wider risk picture is more complex. Respondents identify risks associated with server or network disruption, duplicate versions, incomplete attachments, incorrect coding or metadata, dependence on specific applications, technological change, and inconsistent user practices. One operational account records occasional delays in verification or electronic signatures when server or network problems occur. Another identifies difficulty in long-term preservation and the need to strengthen standardization of backup location, frequency, and recovery procedures.

There is also positive evidence of continuity practices. The interview corpus refers to system migration to address technological obsolescence and periodic recovery simulation by IT personnel. These practices should be institutionalized through documented recovery objectives, backup testing, preservation formats, migration triggers, custody rules, and responsibilities for long-term access. ISO 30301:2019 is particularly relevant because it links records policy to organizational objectives, monitoring, and continual improvement rather than treating preservation as an isolated technical task.

The risk findings reinforce the governance-asymmetry argument. Security and authenticity can be robust in the core application while records held elsewhere may depend on local folder permissions, individual storage choices, or manual controls. The governance objective should therefore be control equivalence: wherever an official digital record is stored or exchanged, the organization should maintain an appropriate level of identity, integrity, access, traceability, retention, and preservation control.

4.7 Human-Resource Capability as a Governance Control

The interviews consistently identify human-resource capability as both an enabling factor and a residual risk. Staff generally understand basic digital administrative operations, and archival personnel receive technical guidance and training, including periodic Bimtek. Some responses indicate training once or twice per year, while others describe annual or opportunity-based participation in UPI or ANRI programs. Training has reportedly supported a shift from paper-

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based habits toward application-based work.

However, capability remains uneven for more specialized tasks such as media conversion, metadata, digital filing, classification, retention, disposition, security, and long-term preservation. Workload and technical disruptions can also weaken consistency in final filing. This means that competence should be treated as part of the internal-control architecture. A technically sound system can still produce weak governance if users create inconsistent metadata, store records outside controlled environments, or delay finalization.

The finding aligns with studies showing that successful digital transformation in higher education depends on organizational readiness, user capability, and governance rather than infrastructure alone (Gkrimpizi et al., 2024; Joshi & Srivastava, 2025). It also echoes recent Indonesian evidence that digital archive systems can improve accountability when accompanied by participatory commitment and user acceptance (Kuswantoro et al., 2025).

Table 3. GUG-based assessment of digital records governance at UPI

Dimension	Evidence of strength	Observed gap	Interpretation	Priority action
Transparency & traceability	Tracking, user accounts, status visibility, audit trails in SI-NERGI	Audit history not equivalent in shared/local storage	Moderately strong in-system; uneven ecosystem-wide	Extend traceability and metadata across repositories; define system of record
Accountability	Roles of creators, verifiers, archival managers, and IT are recognized	Handoffs, multiple storage locations, and timing expectations can blur responsibility	Sound role foundation, incomplete lifecycle formalization	RACI matrix, SLA for approvals, incident ownership, lifecycle accountability
Effectiveness & efficiency	Faster retrieval, distribution, approvals, remote TTE	Hybrid handling, manual re-entry, duplicate storage and scanning	Clear gains, but hybrid burden reduces net efficiency	Interoperability, process redesign, authoritative-record rules
Compliance & standardization	JRA, classification, monitoring, audits/Bimtek, national rules	Digital-specific policy and technical standardization need strengthening	Regulatory base exists; operational standardization uneven	Institution-wide digital records policy, metadata schema, naming and filing standard
Risk, preservation & continuity	SSO, TTE, access control, migration/recovery practices	Server/network dependence, duplicate versions, backup/recovery	Controls developing but fragmented	Business continuity, tested backups, preservation

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Dimension	Evidence strength of	Observed gap	Interpretation	Priority action
		standardization, preservation capability		roadmap, control equivalence across storage

Source: Authors' analysis based on interview data.

4.8 Governance Asymmetry as the Central Theoretical Finding

Across the five dimensions, the central pattern is not a simple contrast between good and poor records management. Instead, governance quality varies according to the technological and organizational environment in which the record is located. Controlled workflows within SI-NERGI can provide identity, authorization, tracking, and electronic-signature assurance. Yet records that are exported, duplicated, scanned, stored in shared drives, or retained on individual devices may not inherit the same controls. The same institution therefore contains different governance regimes for records that may belong to one administrative process.

This study labels this condition governance asymmetry. The concept refers to uneven governance capability across the records ecosystem, where different storage or processing environments provide different levels of transparency, accountability, integrity, security, lifecycle control, and evidentiary reliability. Governance asymmetry explains why a university can report strong digital capabilities while still facing persistent difficulties with version control, retrieval, duplication, standardization, and responsibility.

The concept extends existing work in two ways. First, it moves assessment from system functionality to ecosystem governance. Evaluating whether an application contains an audit trail is insufficient if official records routinely leave that environment. Second, it links records-management quality directly to GUG outcomes. A missing metadata field is not only an archival inconvenience; it can weaken traceability. An unclear authoritative version is not only a storage problem; it can weaken accountability. Duplicate manual and digital workflows are not only operational inefficiencies; they can undermine the efficiency dimension of university governance.

4.9 Governance Improvement Framework and Managerial Implications

The findings support an integrated improvement framework consisting of five mutually reinforcing pillars. The first pillar is institutional lifecycle policy. UPI should establish a digital-records governance policy that explicitly covers creation, capture, classification, metadata, validation, access, storage, version status, retention, transfer, destruction, permanent preservation, migration, backup, recovery, and incident management. The policy should distinguish authoritative records from working copies and backups and align with national archival rules and institutional regulations.

The second pillar is an integrated and interoperable records ecosystem. Interviewees repeatedly prioritize system integration because disconnected applications create re-entry and duplication. Integration does not require every university function to be collapsed into one application; it requires common identifiers, metadata standards, exchange mechanisms, and clearly designated systems of record. API-based exchange or controlled integration can reduce repeated entry while maintaining distributed business applications.

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The third pillar is traceability, authenticity, and access by design. SSO, electronic signatures, role-based permissions, audit logs, and tracking already provide a useful foundation. These controls should be extended or preserved when records move across systems. Minimum metadata should include creator, date, unit, classification, record status, approval state, retention category, authoritative-version indicator, access category, and key lifecycle events. Audit-log retention and access-review procedures should be formally governed.

The fourth pillar is preservation and continuity. Digital records with long-term value require a preservation roadmap covering sustainable formats, migration, integrity checks, backup architecture, recovery testing, and custody. Business continuity should define recovery objectives for critical records services and procedures for operating during system disruption. The existence of backups should be verified through periodic recovery tests rather than assumed.

The fifth pillar is capability and compliance assurance. Technical training should move beyond basic application use toward metadata quality, digital filing, retention, disposition, security, preservation, and incident response. Governance metrics can include retrieval time, percentage of records with complete metadata, duplicate-rate indicators, unresolved records incidents, timeliness of verification, percentage of records in approved repositories, retention compliance, backup-recovery test results, and audit findings. These indicators would convert GUG principles into measurable records-governance performance.

Table 4. Proposed priority roadmap

Priority	Governance action	Primary GUG outcome	Illustrative implementation indicator
1	Define institution-wide digital records policy and lifecycle ownership	Accountability; compliance	Approved policy; RACI coverage for lifecycle stages; clear system-of-record designations
2	Integrate systems and standardize metadata	Transparency; efficiency	Reduced manual re-entry; metadata completeness; fewer duplicate authoritative versions
3	Extend tracking, access, and authenticity controls across repositories	Transparency; accountability; security	Percentage of official records with auditable lifecycle history and role-based access
4	Strengthen backup, recovery, migration, and digital preservation	Risk management; continuity	Successful recovery tests; documented migration plans; integrity-check coverage
5	Institutionalize capability development and performance monitoring	Effectiveness; responsibility	Training completion; compliance scores; retrieval time; audit finding closure rate

Source: Authors' analysis based on interview data.

5. Conclusion

This study finds that digital records governance at UPI has moved beyond basic digitization. The university already possesses important governance mechanisms, including SI-NERGI workflows, electronic signatures, authenticated user access, role-based permissions, tracking, archival lists, retention monitoring, and periodic evaluation. These mechanisms contribute

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directly to transparency, accountability, administrative efficiency, and evidentiary reliability.

The principal weakness lies in the uneven extension of these controls across the broader records ecosystem. Hybrid physical-digital workflows, multiple storage media, manual metadata entry, duplicate copies, inconsistent filing practices, and incomplete integration mean that governance quality depends partly on where and how a record is handled. The concept of governance asymmetry captures this condition: institutional governance can be strong inside a controlled application while weaker at the ecosystem level.

Accordingly, the next stage of digital transformation should not focus only on adding applications or scanning more documents. It should build an institution-wide records governance architecture that integrates policy, lifecycle responsibility, interoperability, metadata, authenticity, access, retention, preservation, continuity, and human capability. Such an architecture would allow digital records to function consistently as trustworthy institutional evidence and as infrastructure for Good University Governance.

The study also shows that GUG can serve as a practical evaluative framework for digital records management. Transparency can be operationalized through traceability; accountability through lifecycle responsibility; efficiency through process redesign and integration; compliance through standardization and retention controls; and sustainability through preservation and continuity. This governance-oriented framing offers a stronger basis for university decision-makers than evaluating digital records only in terms of storage technology or application availability.

This study is a qualitative case analysis and should not be interpreted as a statistical measure of institutional maturity. The interview evidence is rich in archival-management and policy perspectives but does not directly capture all GUG dimensions, particularly fairness, broad stakeholder participation, and user satisfaction. Future research could extend the design through interviews across multiple faculties and directorates, system-log analysis, document audits, service-time measurement, and surveys of record creators and users.

A second avenue is to operationalize governance asymmetry as a measurable construct. Future studies could compare governance controls across systems and repositories using indicators for metadata completeness, auditability, access consistency, version control, retention compliance, and preservation readiness. Comparative research across Indonesian public universities would also help determine whether governance asymmetry is a transitional feature of digital transformation or a persistent structural characteristic of decentralized university information environments.

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