

Challenges and Opportunities in Records and Archives Management of the Legislative Departments in the Province of Antique: Basis for a Proposed Digitized Data Banking System

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ABSTRACT

This study determined the challenges and opportunities in records and archives management in the legislative departments of the 18 municipalities in the Province of Antique as a basis for a proposed digitized data banking system. A descriptive-quantitative design was employed using total enumeration of 18 records officers directly responsible for legislative records and archives. Data were gathered through a validated researcher-made questionnaire, pilot-tested for reliability, and analyzed using percentages and weighted means in IBM SPSS Statistics. Findings showed that the extent of implementation was weakest in data acquisition ($M = 3.22$), while data storage ($M = 4.00$) and data security ($M = 3.94$) were generally implemented but remained constrained by limited server capacity, environmental risks, absence of encryption, and insufficient cybersecurity training. The principal challenges were data acquisition ($M = 3.53$), data storage

($M = 3.43$), and data security ($M = 3.86$), with recurring concerns involving insufficient ICT infrastructure, financial limitations, staff capability gaps, and weak protection mechanisms. Respondents strongly supported opportunities for improvement in data acquisition ($M = 4.47$), data storage ($M = 4.21$), and data security ($M = 4.31$), particularly through ICT investment, standardized digital procedures, regular backups, scalable cloud systems, advanced cybersecurity measures, and staff training. The study concluded that legislative departments recognize the weaknesses of current records practices and demonstrate readiness for technological and procedural modernization. A phased digitized data banking system integrating digital acquisition, cloud-based storage, encryption, access controls, standardized procedures, and capacity-building was therefore proposed to strengthen efficiency, accessibility, accountability, and records security.

Keywords: *records management, legislative departments, digitization, data banking system, cybersecurity, cloud storage*

INTRODUCTION

Records are central to public administration because they preserve institutional memory, support decision-making, document official actions, and enable accountability. As public institutions enter increasingly digital work environments, administrative and legal systems are being reshaped by technological change and growing expectations for faster, more reliable access to information (Zhurkina et al., 2021; Björkdahl & Kronblad, 2021). Yet the transition from paper-based to digital records is uneven. Manual processes remain vulnerable to delay, duplication, retrieval difficulties, and inconsistent handling, while expanding volumes of administrative and legislative documents increase pressure on records systems (Government of British Columbia, 2019; Kamble & Trivedi, 2023).

Within local government settings, the quality of records management depends on how data are acquired, stored, and protected throughout their useful life. Philippine studies have identified persistent barriers involving labor-intensive procedures, insufficient ICT infrastructure, fragmented systems, inadequate training, funding constraints, and exposure of physical records to environmental hazards (Jayoma et al., 2020; Serzo, 2021; Yap & Velasco, 2024). Similar concerns have been documented in other public institutions, where limited facilities, insufficient formal policies, and uneven staff capability impede reliable records administration (Ajibola, 2022; Nyamheri et al., 2023). These challenges become more significant as institutions introduce electronic files without corresponding improvements in governance, storage architecture, and security.

Digital transformation also creates clear opportunities. Digitization and standardized acquisition protocols can strengthen accessibility and consistency; cloud-based systems can expand storage capacity and improve retrieval; and encryption, access controls, security audits, and staff development can reduce digital vulnerabilities (Lacuata, 2020; Alimboyong & Bucjan, 2021; Brown & Davis, 2022). Despite this potential, records and archives management in municipal legislative departments in Antique has received limited focused study. The present research therefore assessed the extent of current records-keeping practices, identified challenges and opportunities across data acquisition, storage, and security, and used the findings to formulate a digitized data banking system for the legislative departments of the province.

Literature Review

Records and archives management in digital public administration

The shift toward digital public administration has changed the way records are created, processed, accessed, and preserved. Digital transformation can improve organizational coordination and knowledge use when technology is integrated with appropriate management practices (Alvarenga et al., 2020). In legal and administrative settings, digital work arrangements have likewise demonstrated the importance of aligning new technologies with established institutional routines rather than treating digitization as a purely technical change (Björkdahl & Kronblad, 2021). Records management therefore requires both technological capacity and organizational processes that sustain authenticity, accessibility, and accountability.

Electronic government initiatives also depend on coherent information systems and reliable records infrastructures. Integrated e-government frameworks emphasize the interaction of technology, institutional processes, service delivery, and citizen-oriented governance (Malodia et al., 2021), while practical government digitization efforts demonstrate that fragmented or manual records processes can undermine efficiency and continuity (Government of British Columbia, 2019). These perspectives are relevant to legislative departments, where official records must remain traceable and usable across administrative cycles and leadership transitions.

Data acquisition and digitization

Data acquisition is the point at which records enter an organizational system, making accuracy, completeness, consistency, and standardized capture procedures essential. Philippine records initiatives have shown that manual acquisition and archiving processes can be labor-intensive and susceptible to fragmented indexing and retrieval, particularly when ICT resources and technical expertise are limited (Jayoma et al., 2020; Yap & Velasco, 2024). Serzo (2021) similarly noted that fragmented data environments and insufficiently standardized collection procedures can weaken the reliability of records and complicate retrieval and cross-office coordination.

Digitization provides an opportunity to reduce these weaknesses through standardized templates, structured indexing, and electronic capture. Lacuata (2020) highlighted the role of digitization in improving access to institutional resources, while Matlala and Maphoto (2020) emphasized systematic records models that preserve accessibility and relevance across the records lifecycle. However, digitization depends on infrastructure and trained personnel. Ajibola (2022) and Nyamheri et al. (2023) identified inadequate facilities, technology limitations, and uneven professional capacity as continuing obstacles in public records environments, reinforcing the need to combine digital tools with staff development and clear operating procedures.

Data storage, preservation, and cloud systems

Storage systems must maintain the integrity, retrievability, and continuity of records while accommodating increasing information volume. In the Philippine setting, big-data and digital storage initiatives have underscored the difficulty of maintaining consistent data management across institutions with differing technical capacity (Bersales et al., 2021). Altes et al. (2024) further showed that cloud-storage adoption is influenced by perceived usefulness, value, and risk, suggesting that technical modernization must also consider user confidence and organizational readiness.

Cloud computing offers scalable storage and can reduce dependence on physical space, but its benefits depend on reliable implementation and governance. Philippine studies have described cloud platforms as useful for expanding digital capacity and academic or organizational productivity (Alimboyong & Bucjan, 2021; Arellano et al., 2022). For legislative departments, cloud-based storage can support organized retrieval, backup, and continuity, yet it should be introduced with structured indexing, redundancy, access controls, and contingency arrangements so that digital preservation does not create new points of failure.

Data security and cybersecurity governance

As public records move into electronic environments, data security becomes inseparable from records management. Government offices may face vulnerabilities when security policies, personnel preparation, or technical controls lag behind digitization (Ceniza et al., 2023). Centralized digital systems can be exposed to cyber threats and unauthorized access when protection is weak (Mallaboyev et al., 2022), while encryption remains a principal mechanism for protecting data stored or transmitted through cloud environments (Yang et al., 2020).

A secure records system therefore requires a combination of technical and organizational safeguards. Brown and Davis (2022) emphasized data integrity and confidentiality as core information-security priorities, and Manun-og and Flores (2024) showed the growing importance of structured digital records systems in local governance. These approaches are consistent with the need for encryption, role-based access, audit trails, regular vulnerability assessment, and continuous cybersecurity education, especially when legislative records contain information that must remain authentic, traceable, and protected from unauthorized modification or disclosure.

Records continuum perspective and study framework

The study adopted a records-continuum perspective in which records are treated as dynamic resources that move through creation, capture, organization, and broader use rather than as static documents stored only at the end of an administrative process. This perspective is consistent with the study variables because data acquisition concerns how records are created and captured, data storage concerns their organization and continuing accessibility, and data security protects their integrity as they are used within and beyond the originating office. The framework therefore links day-to-day records practices with accountability, transparency, and long-term institutional value.

Within this framework, the current challenges and the perceived opportunities for improvement in data acquisition, data storage, and data security converge on the need for strategic recommendations for a digitized data banking system. The operational paradigm retained from the thesis depicts these two sets of conditions as interconnected inputs that inform a centralized modernization strategy for the legislative departments of Antique. This formulation preserves the study's original logic: modernization should address documented weaknesses while building on the respondents' readiness for improvement.

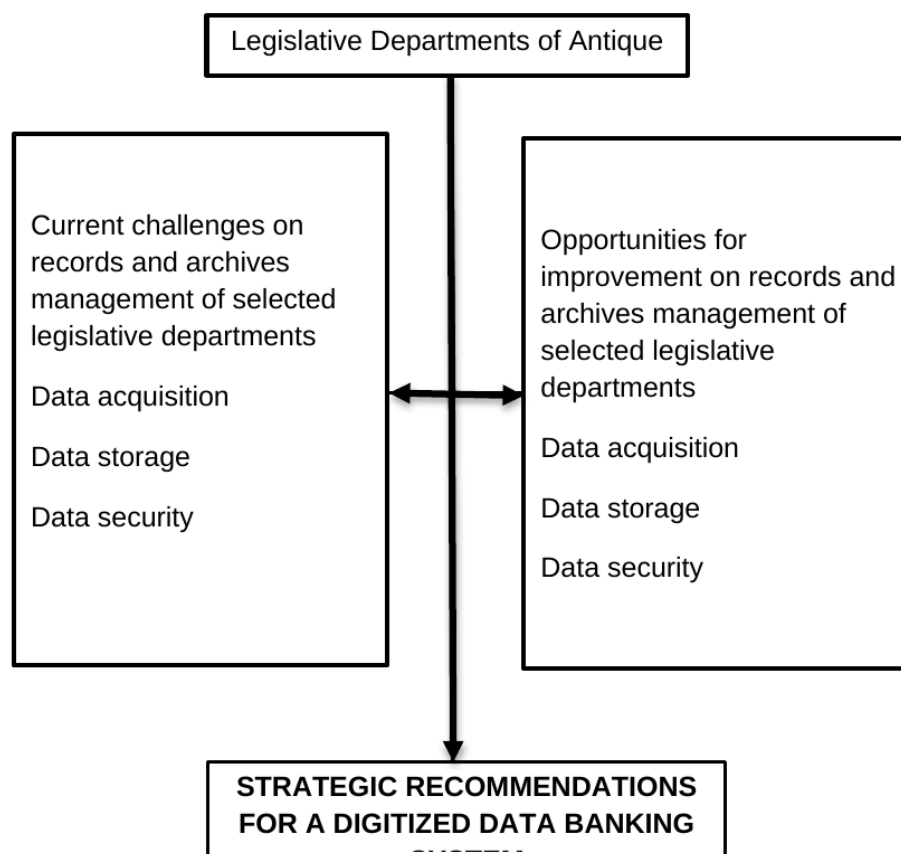


Figure 1

Operational Paradigm of the Study

METHODS

Research Design

The study employed a descriptive-quantitative research design. The design was used to describe the extent of implementation of records-keeping practices and to assess the challenges and opportunities in records and archives management without manipulating the study conditions. The assessment focused on data acquisition, data storage, and data security, and the results served as the empirical basis for the proposed digitized data banking system.

Research Locale

The study was conducted in the Province of Antique in Western Visayas, Philippines. Antique is composed of 18 municipalities, each with a local government legislative department responsible for the creation, maintenance, retrieval, and preservation of legislative records and archives. The provincial setting enabled the study to examine records management practices across all municipal legislative departments rather than limiting the inquiry to a single local government unit.

Participants and Sampling Technique

Total enumeration was used because each of the 18 municipalities had one records officer directly responsible for legislative records. Accordingly, all 18 records officers were included. Eligible participants were required to hold the records-officer function and to be directly involved in records and archives management in their respective legislative departments; personnel from non-legislative offices or those without direct records responsibilities were excluded.

Research Instrument

Data were collected using a researcher-made questionnaire developed from the literature reviewed in the thesis. The instrument gathered demographic information and measured the extent of implementation, challenges, and opportunities for improvement in data acquisition, data storage, and data security through Likert-type statements. Content validation was conducted by two specialists, one in records management and one in research. The instrument was refined based on their assessment of clarity and representativeness, then pilot-tested with three records officers. Cronbach's alpha was computed to evaluate internal consistency; the thesis described the reliability procedure and interpretive thresholds but did not report a single aggregate alpha value.

Data Gathering Procedure

Following approval of the research proposal, the researcher coordinated with the legislative departments of the 18 municipalities, secured the necessary permissions, explained the purpose of the study, and scheduled questionnaire administration. After expert validation and pilot testing, the final questionnaire was distributed to the records officers. Completed responses were collected, checked for completeness and inconsistencies, organized, cleaned, and prepared for statistical analysis.

Data Analysis

IBM SPSS Statistics was used for data processing. Frequencies and percentages summarized the demographic characteristics of the respondents. Weighted means were computed to describe the respondents' assessments of the extent of implementation, the challenges encountered, and the opportunities for improvement in records and archives management. Interpretation followed the five-point agreement scale used in the original instrument.

Ethical Consideration

Participation was voluntary and preceded by informed consent. The survey informed participants of the study purpose, expected completion time, minimal risks, absence of monetary compensation, and their right to withdraw without penalty. Responses were treated confidentially in accordance with the Data Privacy Act of 2012; personal information was anonymized, study results were reported in aggregate form, and access to collected data was limited to the research team for the stated research and publication purposes.

RESULTS AND DISCUSSION

Profile of the respondents

The 18 records officers represented all municipal legislative departments included in the study. The largest age group was 30–39 years old (33.3%), followed by those aged 50–59 years (22.2%). Women comprised 77.8% of the respondents. In terms of tenure, 44.4% had served for 1–5 years, while 27.8% had more than 20 years of service. The resulting workforce combined relatively new personnel with long-serving staff, providing perspectives shaped by both traditional records practices and emerging digital approaches.

Table 1. *Demographic Profile of the Respondents (n = 18)*

Profile	Frequency	Percentage
Age: 20–29 years	3	16.7
Age: 30–39 years	6	33.3
Age: 40–49 years	2	11.1
Age: 50–59 years	4	22.2
Age: 60 years and above	3	16.7
Gender: Male	4	22.2
Gender: Female	14	77.8
Years in service: 1–5 years	8	44.4
Years in service: 6–10 years	3	16.7
Years in service: 11–15 years	2	11.1
Years in service: More than 20 years	5	27.8

The demographic pattern is relevant to digital transition because mixed-tenure workplaces can combine institutional memory with receptiveness to technological change. Digital transformation research suggests that public organizations often change gradually as established practices interact with new technologies and work routines (Björkdahl & Kronblad, 2021). This context supports the study’s emphasis on both technology investment and staff capability-building rather than treating modernization as a software-only intervention.

Extent of implementation of records-keeping practices

The overall mean for data acquisition was 3.22, indicating a neutral assessment and suggesting uneven implementation. Respondents agreed that lack of ICT infrastructure affected acquisition ($M = 3.72$), financial constraints limited modernization ($M = 3.61$), and manual processes were still used ($M = 3.56$). Training gaps received a neutral rating ($M = 2.94$), while respondents disagreed that acquisition commonly produced incomplete or inaccurate records ($M = 2.28$). These results point to a transitional system in which existing practices remain functional but are constrained by resources and modernization gaps.

Implementation was stronger for data storage ($M = 4.00$) and data security ($M = 3.94$), yet the underlying indicators show important weaknesses. Limited server capacity received the highest storage rating ($M = 4.44$), followed by environmental risks ($M = 4.22$), outdated systems ($M = 4.11$), and continued use of physical storage ($M = 3.94$). For security, absence of encryption and lack of cybersecurity training both obtained $M = 4.28$, while irregular audits received $M = 3.94$. These concerns are consistent with reports that Philippine records systems can be constrained by technology, fragmented digitization, and preparedness gaps (Jayoma et al., 2020; Yap & Velasco, 2024) and that storage modernization requires both capacity and user readiness (Altes et al., 2024).

Table 2. *Summary of Extent of Implementation of Records-Keeping Practices*

Domain	Overall Mean	Interpretation	Highest-Rated Concern
Data acquisition	3.22	Neither agree nor disagree	Lack of ICT infrastructure ($M = 3.72$)
Data storage	4.00	Agree	Limited server capacity ($M = 4.44$)
Data security	3.94	Agree	Absence of encryption and lack of cybersecurity training ($M = 4.28$ each)

Challenges in records and archives management

Respondents agreed that all three records-management domains presented substantive challenges. Data acquisition recorded an overall mean of 3.53, with ICT limitations and financial constraints both rated $M = 3.72$, inadequate training $M = 3.67$, and lack of standardized procedures $M = 3.50$. The pattern supports earlier observations that records acquisition can remain fragmented when institutions lack technical infrastructure, formal procedures, and staff development (Serzo, 2021; Ajibola, 2022; Nyamberi et al., 2023).

Data storage challenges received an overall mean of 3.43. Environmental threats were rated highest ($M = 3.78$), followed by the high cost of digital solutions ($M = 3.72$) and limited physical space ($M = 3.61$). Data

security challenges were stronger ($M = 3.86$), led by weak cybersecurity systems ($M = 4.00$), inadequate staff preparation ($M = 3.94$), and risks associated with digitization ($M = 3.89$). These results reinforce the literature that digital records are vulnerable when security policies, training, and technical controls do not mature alongside digitization (Ceniza et al., 2023; Mallaboyev et al., 2022; Yang et al., 2020).

Opportunities for improvement

The strongest results in the study concerned the respondents' readiness for improvement. Data acquisition opportunities obtained an overall mean of 4.47, with increased digital training and ICT investment both rated $M = 4.50$; digitization and standardized acquisition procedures were also strongly supported at $M = 4.44$. This level of agreement indicates a clear institutional appetite for moving beyond manual acquisition toward more consistent digital processes. Such priorities align with digitization strategies that emphasize structured capture, indexing, and continued accessibility (Lacuata, 2020; Matlala & Maphoto, 2020).

Opportunities for storage obtained an overall mean of 4.21, led by regular backups ($M = 4.39$) and scalable systems ($M = 4.22$), while cloud storage and modern platforms were positively assessed. Data security opportunities received an overall mean of 4.31, with advanced cybersecurity measures ($M = 4.39$), regular staff training ($M = 4.33$), routine audits ($M = 4.28$), and encryption ($M = 4.22$) all strongly supported. Cloud adoption can expand storage capacity and flexibility (Alimboyong & Bucjan, 2021; Arellano et al., 2022), while security controls and strong data-governance practices are necessary to preserve confidentiality and integrity (Brown & Davis, 2022).

Table 3. *Summary of Challenges and Opportunities for Improvement*

Domain	Challenges Mean	Opportunities Mean	Priority Improvement
Data acquisition	3.53	4.47	ICT investment, digital training, digitization, standardized procedures
Data storage	3.43	4.21	Regular backups, scalable/cloud storage, modern digital platforms
Data security	3.86	4.31	Advanced cybersecurity, training, audits, encryption

Proposed digitized data banking system

The proposed Data Banking System translates the empirical findings into a phased modernization plan. For data acquisition, the proposal replaces manual forms with digital tools, standardizes data-entry templates, and connects municipal record units through a centralized input platform. For storage, it converts physical records into organized digital formats, uses scalable cloud services, introduces regular backups and audit logs, and supplements equipment through portable scanners. For security, it adds encryption, written security protocols, access auditing, staff training, and vulnerability checks. These interventions reflect the study's finding that respondents are ready for modernization but require both infrastructure and organizational support.

The proposal also anticipates unequal device availability, unstable connectivity, limited cloud familiarity, weak security knowledge, inconsistent local procedures, equipment shortages, and limited technical staffing. Contingency actions include offline-capable forms, hybrid cloud-and-physical storage, common standard operating procedures, assigned data custodians, pilot implementation in three municipalities, government cloud subsidies, and external cybersecurity support. The system therefore combines technology, process standardization, and capacity-building rather than relying on a single technical solution. This approach is consistent with wider e-government research that emphasizes integrated organizational and technological reform (Alvarenga et al., 2020; Malodia et al., 2021) and with local digital records initiatives that prioritize structured governance and accountability (Manun-og & Flores, 2024).

Table 4. *Core Components of the Proposed Digitized Data Banking System*

Area	Key Interventions	Expected Direction
Data acquisition	Digital acquisition tools; standardized templates; centralized input platform	More accurate, accessible, and unified record capture

Data storage	Cloud-based folders; portable scanners; scheduled backups; audit logs	Improved retrieval, preservation, scalability, and reduced physical congestion
Data security	Encryption; written protocols; access audits; cybersecurity training; vulnerability checks	Stronger protection, accountability, and reduced unauthorized access

CONCLUSION

The findings show that records and archives management in the legislative departments of Antique is situated between established manual practices and a clear readiness for digital transformation. Data acquisition was the least consistently implemented area, while storage and security practices were more established but still constrained by limited server capacity, environmental exposure, inadequate encryption, irregular audits, and insufficient cybersecurity preparation. Across the three domains, respondents identified infrastructure, funding, standardized procedures, training, and security governance as the principal weaknesses affecting the reliability and sustainability of records management.

At the same time, respondents strongly supported modernization through digitization, ICT investment, standardized data procedures, cloud-based and scalable storage, regular backups, encryption, security audits, and continuing staff development. The study therefore establishes a practical basis for a digitized data banking system that integrates acquisition, storage, and security within a unified records-management approach. Its contribution lies in translating the conditions reported by records officers from all 18 municipalities into an evidence-based modernization framework tailored to the legislative departments of Antique.

Recommendation

The legislative departments of Antique should pursue phased implementation of the proposed digitized data banking system, beginning with pilot municipalities before province-wide deployment. Priority actions should include standardizing digital acquisition procedures, improving ICT equipment and connectivity, establishing organized cloud and backup arrangements, implementing encryption and role-based access controls, assigning data custodians, and conducting regular cybersecurity and records-management training. LGUs should coordinate with provincial authorities, DICT, DILG, local ICT teams, and qualified technical partners to address infrastructure, funding, cybersecurity, and implementation support.

Implementation should be accompanied by clear procedural manuals, regular system and access audits, monitoring of retrieval efficiency and security incidents, and structured feedback from records officers. Future research may evaluate the system after implementation by examining user satisfaction, data-retrieval performance, compliance, audit results, cybersecurity outcomes, and sustainability across municipalities. Comparative studies in other provinces or government departments may also determine whether the proposed approach is transferable to other public-sector records environments.

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