

Knowledge Sharing and Collaboration in Information System for Digital Preservation in Academic Libraries

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ABSTRACT

Digital preservation has become a strategic priority for academic libraries as they increasingly manage scholarly resources in digital formats. However, sustainable preservation extends beyond technological infrastructure and requires effective knowledge sharing and collaborative practices among library professionals and institutions. This study examined the extent of knowledge sharing and the level of collaboration in digital resource preservation among selected academic libraries in Zamboanga City, Philippines. Specifically, it investigated knowledge sharing in terms of digital collections, staff expertise, and technology infrastructure; assessed collaboration through shared knowledge, collaborative learning, and shared authority; determined the relationship between knowledge sharing and collaboration; identified institutional differences; and explored challenges and best practices that informed a sustainable digital preservation framework. A quantitative research design was employed involving 57 librarians, library personnel, information technology staff, and library administrators from six higher education institutions. Quantitative data were analyzed using descriptive statistics, Spearman rank-order correlation, and the Kruskal–Wallis test, while qualitative data were subjected to thematic analysis. The findings revealed a moderate extent of knowledge sharing and a high level of collaboration among participating academic libraries. Knowledge sharing was positively and significantly associated with collaboration, suggesting that stronger organizational knowledge exchange enhances collaborative digital preservation initiatives. Major challenges included limited technological infrastructure, inadequate funding, rapidly evolving technologies, and insufficient professional development opportunities. The study highlights the importance of institutional policies, continuous staff development, technological investment, and collaborative partnerships in promoting sustainable digital preservation within academic libraries.

Keywords: Academic Libraries, Collaboration, Digital Collection, Digital Preservation, Knowledge Sharing, Knowledge Management

1. INTRODUCTION

Academic libraries have undergone significant transformation over the past two decades as higher education institutions increasingly depend on digital information resources to support instruction, research, extension, innovation, and institutional governance. The rapid advancement of information and communication technologies has enabled libraries to digitize valuable collections, develop institutional repositories, provide electronic journals and databases, and expand access to scholarly resources beyond the limitations of physical collections. As digital collections continue to grow, academic libraries are expected not only to provide access to these resources but also to ensure their long-term preservation for future generations.

Unlike printed materials, digital resources are highly vulnerable to technological obsolescence, media deterioration, software incompatibility, cybersecurity threats, accidental data loss, and hardware failure. These challenges have made digital preservation an essential function of modern academic libraries. Sustainable digital preservation involves more than maintaining electronic files; it requires long-term planning, appropriate technological infrastructure, effective organizational policies, and continuous institutional support to ensure that digital resources

remain authentic, accessible, and usable over time. The sustainability of digital preservation likewise depends on the people and organizations responsible for managing digital resources. Academic libraries rely on librarians, information technology personnel, administrators, and institutional partners who contribute specialized knowledge and expertise in developing preservation strategies, implementing standards, and responding to technological changes. As preservation technologies continue to evolve, libraries must strengthen organizational learning and encourage the continuous exchange of professional knowledge to improve institutional capability.

Knowledge sharing has therefore become an important organizational practice within academic libraries. Through the exchange of information, professional experiences, technical skills, and best practices, library personnel are better equipped to implement preservation standards, manage digital collections, solve emerging technological problems, and improve service delivery. The collective use of organizational knowledge supports informed decision-making and enhances the institution's capacity to sustain digital preservation initiatives.

Collaboration also plays a vital role in strengthening digital preservation efforts. Because preserving digital resources often requires substantial financial investments, technical expertise, and specialized infrastructure, many academic libraries establish partnerships with other institutions, professional organizations, information technology specialists, and library networks. Collaborative initiatives promote resource sharing, professional development, standardized preservation practices, and coordinated solutions to common preservation challenges, thereby improving institutional resilience and long-term sustainability.

Within the Philippine higher education sector, academic libraries have increasingly adopted digitization initiatives, institutional repositories, and electronic library services to support teaching, learning, and research. Despite these developments, many institutions continue to encounter challenges related to technological infrastructure, financial resources, policy implementation, staff competencies, and the long-term sustainability of digital preservation programs. These challenges highlight the need to strengthen organizational practices that support effective preservation beyond technological investment alone.

The present study is anchored on the Socio-Technical Systems (STS) Theory of Trist and Bamforth (1951) and Knowledge Management Theory. The Socio-Technical Systems Theory explains that organizational effectiveness is achieved through the interaction of technological systems and social structures. In the context of digital preservation, sustainable outcomes depend not only on technological infrastructure but also on competent personnel, supportive institutional policies, and effective organizational processes. Knowledge Management Theory, on the other hand, emphasizes that organizational knowledge is a strategic resource that must be systematically created, shared, applied, and preserved to enhance institutional performance. Together, these theories provide a comprehensive framework for understanding how knowledge sharing and collaboration contribute to sustainable digital resource preservation in academic libraries. Although previous studies have extensively examined digital preservation technologies, institutional repositories, metadata standards, and archival systems, relatively few have investigated the combined influence of knowledge sharing and collaboration on sustainable digital preservation, particularly within Philippine academic libraries. Existing research has largely concentrated on technological solutions while giving comparatively less attention to organizational learning, collaborative governance, and institutional knowledge exchange as factors that support long-term preservation. This gap in the literature underscores the need for further investigation into the organizational dimensions of sustainable digital preservation. Accordingly, this study examined the extent of knowledge sharing and the level of collaboration in digital resource preservation among selected academic libraries in Zamboanga City. Specifically, it assessed knowledge sharing in terms of digital collections, staff expertise, and technology infrastructure; evaluated collaboration through shared knowledge, collaborative learning, and shared authority; determined the relationship between knowledge sharing and collaboration; identified institutional differences; and explored prevailing challenges and best practices that inform sustainable digital preservation. The findings of the study are expected to provide evidence-based insights that may assist library administrators, higher education institutions, and policymakers in strengthening organizational knowledge, collaborative partnerships, and sustainable digital preservation initiatives.

2. LITERATURE REVIEW

Digital Preservation in Academic Libraries

Digital preservation has become one of the foremost responsibilities of academic libraries as scholarly resources increasingly exist in electronic formats. Unlike printed materials, digital objects require continuous management to ensure their authenticity, accessibility, and usability over time despite rapid technological changes. Digital preservation encompasses a comprehensive set of organizational, managerial, and technical activities designed to maintain digital resources throughout their lifecycle (Conway, 2009).

According to Lavoie (2014), sustainable digital preservation extends beyond simply storing electronic files. Effective preservation programs require strategic planning, metadata management, technological migration, risk assessment, and institutional commitment. Libraries must continuously monitor technological developments to prevent data loss caused by obsolete hardware, software incompatibility, or deteriorating storage media.

Rosenthal et al. (2005) further emphasized that digital preservation is an ongoing institutional responsibility rather than a one-time technological solution. Since preservation technologies continually evolve, organizations must regularly invest in infrastructure upgrades, storage systems, and preservation strategies to ensure long-term accessibility of digital collections. Similarly, Hedstrom (2018) argued that successful preservation depends on organizational readiness, policy implementation, skilled personnel, and sustainable financial support in addition to technological capability.

Within academic institutions, digital preservation supports teaching, learning, research, and institutional memory by safeguarding electronic theses, research outputs, digitized archival materials, institutional repositories, multimedia collections, and other scholarly resources. Consequently, preserving digital assets has become essential in maintaining the continuity and accessibility of academic knowledge.

Knowledge Sharing in Academic Libraries

Knowledge sharing is recognized as a fundamental organizational process that enables institutions to maximize expertise, improve decision-making, and enhance organizational learning. In academic libraries, knowledge sharing facilitates the exchange of professional experiences, technical competencies, preservation techniques, metadata practices, and technological innovations among librarians and information professionals.

Kim and Abbas (2010) emphasized that organizations characterized by active knowledge exchange demonstrate greater adaptability to technological change and organizational innovation. Continuous sharing of expertise strengthens employees' competencies while improving institutional performance, particularly in rapidly evolving technological environments such as digital libraries.

Knowledge Management Theory explains that organizational knowledge constitutes an important strategic asset that should be systematically created, captured, shared, and applied to achieve institutional objectives (Dalkir, 2017). Rather than remaining with individual employees, knowledge becomes organizational capital through collaborative learning, documentation, and institutional memory.

Within digital preservation programs, knowledge sharing enables librarians to disseminate preservation standards, digital curation practices, metadata creation techniques, repository management skills, and technological solutions. Continuous professional interaction likewise promotes organizational learning that supports sustainable preservation initiatives.

Collaboration in Digital Resource Preservation

The complexity of digital preservation often exceeds the capacity of individual academic libraries, making collaboration an essential component of sustainable preservation programs. Collaborative initiatives allow institutions to share expertise, technological resources, financial investments, and preservation responsibilities.

Yakel (2007) noted that collaborative digital preservation strengthens institutional sustainability by promoting collective responsibility, resource sharing, and organizational learning. Through collaborative partnerships, libraries

are better able to respond to technological challenges while reducing operational costs associated with preservation activities.

Borgman (2015) likewise emphasized that collaborative infrastructures improve interoperability among institutional repositories and digital information systems. Shared preservation standards, common metadata practices, and coordinated technological frameworks facilitate broader access to scholarly resources while strengthening long-term preservation capabilities.

Collaboration also extends beyond institutional partnerships to include professional organizations, library consortia, information technology specialists, archivists, and higher education administrators. These collaborative relationships encourage innovation, continuous learning, and coordinated policy implementation that enhance preservation effectiveness.

Digital Preservation in Philippine Academic Libraries

Academic libraries in the Philippines have increasingly adopted digital repositories, institutional databases, electronic journals, and digitization initiatives to support higher education. These developments have expanded access to scholarly information while improving research dissemination and institutional visibility.

However, several studies indicate that Philippine academic libraries continue to experience challenges in sustaining digital preservation programs. Verzosa (2005) emphasized that strategic planning remains essential in strengthening library services and ensuring institutional responsiveness to emerging technological developments.

Similarly, Isip (2015) reported that many higher education institutions encounter limitations related to preservation infrastructure, funding availability, technological capability, and human resource competencies. Alayon and David (2016) likewise observed that organizational constraints continue to affect the implementation of sustainable digital preservation initiatives among Philippine academic libraries.

These findings suggest that although digitization efforts continue to expand nationwide, long-term sustainability depends upon institutional leadership, technological investment, knowledge sharing, collaborative partnerships, and supportive organizational policies.

The reviewed literature consistently demonstrates that sustainable digital preservation requires the integration of technological infrastructure, organizational knowledge, and collaborative institutional practices. Conway (2009), Lavoie (2014), Rosenthal et al. (2005), and Hedstrom (2018) collectively emphasize that preservation extends beyond technological storage and requires continuous planning, institutional commitment, and organizational preparedness.

Kim and Abbas (2010) and Dalkir (2017) highlight the importance of knowledge sharing as a mechanism for strengthening organizational learning and enhancing institutional capability. Meanwhile, Yakel (2007) and Borgman (2015) underscore the value of collaboration in promoting resource sharing, interoperability, and collective responsibility among academic libraries.

Within the Philippine context, studies by Verzosa (2005), Isip (2015), and Alayon and David (2016) reveal that although academic libraries have embraced digitization initiatives, challenges related to infrastructure, funding, policies, and staff competencies continue to affect preservation sustainability.

The literature suggests that knowledge sharing and collaboration are critical organizational factors that complement technological resources in achieving sustainable digital preservation. However, empirical studies examining the interaction of these variables within Philippine academic libraries remain limited, particularly in local higher education institutions. This gap provides the basis for the present study, which investigates how knowledge sharing and collaboration contribute to sustainable digital resource preservation among selected academic libraries in Zamboanga City.

3. METHODS

3.1 Research Design

This study employed a quantitative descriptive-correlational research design to examine knowledge sharing and collaborative practices in digital resource preservation among academic libraries. The descriptive component was

used to determine the extent of knowledge sharing in terms of digital collections, staff expertise, and technology infrastructure, as well as the level of collaboration in terms of shared knowledge, collaborative learning, and shared authority. The correlational component was employed to determine the relationship between knowledge sharing and collaborative practices and to examine differences in these variables among the participating academic libraries.

Data were collected using a structured survey questionnaire administered to library personnel directly involved in digital resource preservation. The responses were analyzed using descriptive statistics, including means and standard deviations, to summarize the variables under investigation. Inferential statistical techniques, specifically the Spearman rank-order correlation coefficient and the Kruskal–Wallis test, were used to determine significant relationships and differences among the variables. This quantitative approach enabled the systematic analysis of the research variables and provided empirical evidence regarding knowledge sharing and collaborative practices that support sustainable digital preservation in academic libraries.

3.2 Research Setting

The study was conducted in six selected academic libraries in Zamboanga City, Philippines, comprising both public and private higher education institutions. These libraries were selected because they maintain digital collections and have implemented various digital preservation initiatives to support instruction, research, and institutional knowledge management. Their varying institutional characteristics provided an appropriate context for examining knowledge sharing and collaborative practices in digital preservation.

3.3 Participants

The participants consisted of 57 library personnel, including librarians, library staff, information technology personnel, and library administrators directly involved in digital resource management and preservation. A total enumeration sampling technique was employed to ensure that all qualified personnel participated in the study. Their professional roles enabled them to provide informed responses regarding institutional preservation policies, technological infrastructure, collaborative activities, and knowledge-sharing practices.

3.4 Research Instrument

Data were collected using a researcher-developed questionnaire based on an extensive review of literature on digital preservation, knowledge management, and collaboration. The questionnaire comprised two major sections. The first measured knowledge sharing in terms of digital collections, staff expertise, and technology infrastructure. The second assessed collaborative practices through shared knowledge, collaborative learning, and shared authority.

The instrument underwent content validation by experts in library and information science and educational research to ensure relevance, clarity, and content adequacy. Revisions were incorporated based on expert recommendations. A pilot test was subsequently conducted to establish reliability, yielding Cronbach's alpha coefficients ranging from 0.78 to 0.89, indicating satisfactory internal consistency for all constructs. Responses were measured using a four-point Likert scale, where higher scores reflected greater levels of knowledge sharing and collaboration.

3.5 Data Collection Procedure

Prior to data collection, approval was obtained from the respective higher education institutions. Participants were informed of the purpose of the study, and informed consent was secured before questionnaire administration. The researcher personally distributed and retrieved the questionnaires to maximize the response rate.

To complement the quantitative findings, semi-structured interviews were conducted with selected library administrators and information technology personnel. Institutional documents, including digital preservation policies, repository guidelines, and library reports, were likewise examined to validate and enrich the survey results.

3.6 Data Analysis

Quantitative data were analyzed using both descriptive and inferential statistical techniques. Means and standard deviations were computed to determine the extent of knowledge sharing and the level of collaboration among academic libraries. The Spearman rank-order correlation coefficient was employed to examine the relationship

between knowledge sharing and collaborative practices, while the Kruskal–Wallis test determined significant differences among participating institutions.

3.7 Ethical Considerations

The study adhered to accepted ethical standards for educational and social research. Institutional permission was obtained from all participating higher education institutions before data collection. Participation was voluntary, and respondents provided informed consent after being informed of the study's objectives, procedures, and confidentiality measures. Participants were assured that their identities and institutional affiliations would remain anonymous and that all information collected would be used solely for academic research. Data were securely stored and reported only in aggregate form to protect participants' privacy.

4. RESULTS AND DISCUSSION

4.1 Knowledge Sharing in Digital Resource Preservation

Knowledge sharing is widely recognized as a critical organizational process that enhances institutional learning and strengthens digital preservation practices. It enables librarians and information professionals to exchange technical expertise, preservation strategies, and organizational experiences necessary for sustaining digital collections over time. The findings indicate that the participating academic libraries demonstrated a moderate extent of knowledge sharing across the three dimensions investigated, namely digital collections, staff expertise, and technology infrastructure.

Table 1 Knowledge Sharing in Digital Preservation

Dimension	Mean	Interpretation
Digital Collections	3.16	Moderate Extent
Staff Expertise	2.95	Moderate Extent
Technology Infrastructure	2.71	Moderate Extent
Overall	2.94	Moderate Extent

The overall mean of 2.94 indicates that knowledge sharing is generally practiced among participating academic libraries, although opportunities remain for strengthening institutional knowledge management. Among the three dimensions, digital collections obtained the highest mean (3.16), suggesting that libraries have implemented fundamental preservation activities such as metadata creation, digital organization, file backup, and repository management. These practices demonstrate institutional awareness of preserving the accessibility and authenticity of digital resources.

The relatively favorable rating for digital collections supports the assertion of Conway (2009) that digital preservation requires systematic organizational processes rather than merely storing electronic files. Likewise, Lavoie (2014) emphasized that sustainable preservation depends on continuous metadata management, preservation planning, and organizational commitment. The findings suggest that participating libraries have recognized these essential preservation principles and have incorporated them into their routine operations.

Knowledge sharing related to staff expertise also received a moderate rating ($M = 2.95$), indicating that librarians and information technology personnel regularly exchange professional knowledge and technical experiences. However, respondents likewise acknowledged limited opportunities for continuing professional development, indicating that knowledge exchange remains largely dependent on existing institutional activities rather than structured knowledge management programs.

This finding corroborates Kim and Abbas (2010), who concluded that continuous knowledge sharing enhances librarians' competencies in managing evolving digital preservation technologies. Similarly, Dalkir (2017) emphasized that organizational learning depends upon environments that encourage continuous communication, collaboration,

and professional development. The moderate rating observed in this study therefore highlights the need for sustained investment in staff training and organizational learning initiatives.

Among the three dimensions, technology infrastructure received the lowest evaluation ($M = 2.71$). Although respondents recognized the availability of digital preservation technologies, they identified limitations in storage capacity, preservation software, and collaborative technological platforms. These findings indicate that technological infrastructure remains one of the principal constraints affecting sustainable digital preservation.

The present findings support those of Rosenthal et al. (2005), who argued that digital preservation requires continuous institutional investment because technological systems inevitably become obsolete. Likewise, Hedstrom (2018) emphasized that sustainable preservation depends upon adequate technological infrastructure supported by organizational planning and institutional commitment. Thus, strengthening preservation infrastructure should remain a strategic priority among higher education institutions.

Collaborative Practices in Digital Resource Preservation

Collaboration enables academic libraries to maximize institutional expertise, share technological resources, and strengthen preservation capacity through collective organizational efforts. The study examined collaboration through shared knowledge, collaborative learning, and shared authority.

Table 2 Summary of Collaborative Practices in Digital Resource Preservation

Dimension	Mean	Interpretation
Shared Knowledge	3.54	High Level
Collaborative Learning	3.42	High Level
Shared Authority	3.31	High Level
Overall	3.42	High Level

The findings reveal a high level of collaboration among participating academic libraries. The overall mean (3.42) indicates that collaborative activities have become an important organizational strategy supporting digital preservation.

Among the three collaborative dimensions, shared knowledge received the highest evaluation ($M = 3.54$), suggesting that library professionals frequently exchange preservation techniques, metadata practices, institutional experiences, and technical expertise. Such collaborative interactions facilitate organizational learning and contribute to more effective preservation strategies.

These findings agree with Yakel (2007), who emphasized that collaborative preservation networks strengthen institutional resilience by promoting collective expertise and resource sharing. Likewise, Borgman (2015) argued that collaborative infrastructures improve interoperability and increase the sustainability of digital repositories through shared organizational responsibility. The high rating for collaborative learning demonstrates that librarians actively participate in seminars, workshops, and professional development activities that enhance preservation competencies. This finding aligns with Farnese et al. (2019), who observed that collaborative learning promotes innovation through continuous organizational interaction. Similarly, Nonaka and Takeuchi (1995) explained that organizational knowledge is created through social interaction that transforms individual expertise into institutional capability. Although shared authority likewise received a high evaluation, interview participants indicated that collaborative decision-making continues to depend largely upon institutional policies and administrative structures. While academic libraries demonstrate willingness to collaborate, formal governance mechanisms for shared preservation initiatives remain relatively limited. Strengthening institutional agreements and collaborative governance frameworks may therefore further improve sustainable digital preservation.

Relationship Between Knowledge Sharing and Collaboration

One of the primary objectives of this study was to determine whether knowledge sharing significantly influences collaborative practices in digital preservation.

Table 3 Relationship Between Knowledge Sharing and Collaboration

Variables	Spearman's rho	p-value	Decision
Knowledge Sharing and Collaboration	(Insert rho from thesis)	< .05	Reject Ho

The analysis revealed a statistically significant positive relationship between knowledge sharing and collaboration. This finding indicates that institutions demonstrating stronger knowledge-sharing practices likewise exhibit higher levels of collaborative engagement in digital preservation activities.

The result implies that organizational knowledge sharing serves as an enabling mechanism for collaboration. As librarians exchange technical expertise, preservation experiences, and professional knowledge, they become better equipped to participate in collaborative projects, institutional partnerships, and shared preservation initiatives.

This finding supports Knowledge Management Theory, which views organizational knowledge as a strategic institutional asset that enhances collaboration and organizational performance (Dalkir, 2017). Likewise, the findings reinforce the assumptions of the Socio-Technical Systems Theory (Trist & Bamforth, 1951), which proposes that organizational effectiveness depends upon the interaction between technological systems and human collaboration. The significant relationship observed in this study demonstrates that technological infrastructure alone cannot sustain digital preservation without active organizational knowledge sharing and collaborative engagement.

5. CONCLUSION

This study examined the extent of knowledge sharing and the level of collaboration in digital resource preservation among selected academic libraries in Zamboanga City. Specifically, it investigated knowledge sharing in terms of digital collections, staff expertise, and technology infrastructure; assessed collaboration through shared knowledge, collaborative learning, and shared authority; determined the relationship between knowledge sharing and collaboration; identified institutional differences; and explored prevailing challenges and best practices that contribute to sustainable digital preservation.

The findings demonstrated that participating academic libraries exhibited a moderate extent of knowledge sharing, indicating that knowledge exchange practices are present but remain insufficiently institutionalized. Among the dimensions examined, digital collections showed the strongest performance, reflecting the implementation of metadata management, repository maintenance, and digital storage practices. However, staff development and technological infrastructure require further enhancement to sustain long-term preservation initiatives.

The study likewise revealed a high level of collaboration among participating libraries. Shared knowledge, collaborative learning, and shared authority were consistently evident, demonstrating the willingness of institutions to exchange expertise and engage in collaborative preservation activities. These collaborative efforts strengthen institutional learning and improve organizational capacity for managing digital resources.

A significant positive relationship was found between knowledge sharing and collaboration, confirming that institutions promoting greater knowledge exchange likewise demonstrate stronger collaborative practices. This finding reinforces the importance of integrating organizational learning with collaborative governance in developing sustainable digital preservation programs.

Qualitative findings further revealed that financial limitations, technological obsolescence, inadequate infrastructure, and insufficient professional development remain significant barriers to sustainable digital preservation. Despite these challenges, participating institutions continue to adopt preservation strategies that promote organizational learning, metadata management, institutional repositories, and collaborative partnerships.

The study demonstrates that sustainable digital preservation requires a balanced integration of organizational knowledge, collaborative institutional practices, technological capability, and strategic leadership. Strengthening

these interrelated components will enable academic libraries to preserve digital resources more effectively while supporting teaching, research, and institutional memory.

6. IMPLICATIONS OF THE STUDY

The findings of this study have several implications for academic libraries, higher education institutions, policymakers, and researchers seeking to strengthen sustainable digital preservation.

First, academic library administrators should institutionalize knowledge-sharing mechanisms by establishing regular professional development programs, technical workshops, mentoring systems, and communities of practice. Strengthening organizational learning will enhance librarians' competencies in digital preservation technologies and promote the consistent implementation of preservation standards. Library administrators should also develop comprehensive digital preservation policies that clearly define institutional responsibilities, preservation workflows, metadata standards, and technology migration strategies to ensure the long-term accessibility and integrity of digital collections.

Second, higher education institutions should recognize digital preservation as a strategic institutional priority rather than solely a library responsibility. Adequate financial resources should be allocated for repository development, cloud storage, preservation software, cybersecurity, and infrastructure modernization. Universities should likewise strengthen collaboration among libraries, information technology offices, archives, and research units to maximize institutional expertise, improve resource utilization, and enhance the sustainability of digital preservation initiatives.

Third, government agencies and policymakers responsible for higher education and library development should formulate national guidelines that promote standardized digital preservation practices across academic institutions. Financial assistance programs, technical support, and collaborative preservation initiatives may further strengthen institutional capacities, particularly among smaller higher education institutions with limited technological and financial resources. Professional organizations should likewise expand training programs focusing on emerging digital preservation technologies, metadata standards, cybersecurity, and repository management to improve the competencies of library professionals.

Finally, future researchers should extend this line of inquiry by examining sustainable digital preservation using larger samples of academic libraries from different regions of the Philippines. Comparative studies involving public, private, and international higher education institutions may provide broader insights into institutional preservation practices. Researchers may also investigate additional organizational and technological factors influencing digital preservation, such as organizational culture, leadership practices, digital governance, information security, artificial intelligence applications, and cloud-based preservation technologies. Longitudinal studies may likewise provide a deeper understanding of the long-term effectiveness of institutional preservation strategies.

REFERENCES

- [1] Alayon, J. C., & David, R. T. (2016). Digital library initiatives in Philippine higher education institutions. (Complete publication details from your thesis should be retained.)
- [2] Borgman, C. L. (2015). Big data, little data, no data: Scholarship in the networked world. MIT Press.
- [3] Conway, P. (2009). Preservation in the age of Google: Digitization, digital preservation, and dilemmas. *The Library Quarterly*, 80(1), 61–79.
- [4] Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd ed.). Sage Publications.
- [5] Dalkir, K. (2017). Knowledge management in theory and practice (3rd ed.). MIT Press.
- [6] Farnese, M. L., Barbieri, B., Chirumbolo, A., & Patriotta, G. (2019). Managing knowledge in organizations: A review of collaborative learning and knowledge sharing. *Journal of Knowledge Management*.
- [7] Hedstrom, M. (2018). Digital preservation: A time bomb for digital libraries. *Computers and the Humanities*.
- [8] Isip, M. (2015). Digital preservation practices among Philippine academic libraries. (Complete publication details from your thesis should be retained.)
- [9] Kim, Y., & Abbas, J. (2010). Adoption of library 2.0 functionalities by academic libraries and users: A knowledge-sharing perspective. *The Journal of Academic Librarianship*.

- [10] Lavoie, B. (2014). The Open Archival Information System (OAIS) Reference Model: Introductory guide.
- [11] Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company. Oxford University Press.
- [12] Rosenthal, D. S. H., Robertson, T., Lipkis, T., Reich, V., & Morabito, S. (2005). Requirements for digital preservation systems. D-Lib Magazine, 11(11).
- [13] Trist, E. L., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal getting. Human Relations, 4(1), 3–38.
- [14] Verzosa, F. M. (2005). Strategic library management in Philippine higher education. (Complete publication details from your thesis should be retained.)
- [15] Yakel, E. (2007). Digital curation. OCLC Systems & Services, 23(4), 335–340.