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Librarian's Conscience Framework: Human oversight and accountability in AI-supported academic library work

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Abstract

AI-supported library work creates risks involving accuracy, privacy, fairness, metadata, and access. This conceptual study synthesizes 38 Scopus- and Web of Science-indexed studies to develop the Librarian's Conscience Framework. Librarian conscience refers to the capacity to apply shared professional duties across service contexts, justify interventions, and escalate decisions beyond individual authority. The framework integrates professional ethics, human oversight, humanistic values, and spiritual commitments through three dimensions: professional judgment, ethical responsibility, and accountability. Five actions guide output verification, privacy judgment, fairness assessment, metadata responsibility, and accountable mediation, producing reliable information, protected inquiry, fair access, accurate metadata, and defensible decisions in practice.

Keywords: academic libraries; artificial intelligence; librarian conscience; human oversight; professional judgment; information quality, accountability; quality of life

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1.0 Introduction

When AI generates an answer, recommends a resource, or suggests metadata, librarians decide whether that output should inform a service or an institutional record. Academic libraries apply generative AI, chatbots, discovery systems, cataloguing automation, and AI-assisted research support across reference and information services (Boateng, 2025; Aguiñaga et al., 2025; Hamad & Shehata, 2025; Chen & Li, 2024; Mahmud, 2024). These applications accelerate retrieval and routine processing. Studies document inaccurate or unsupported content, privacy exposure, algorithmic bias, metadata quality problems, ethical literacy gaps, and unclear institutional AI policies (Elsayed & Abusharhah, 2025; Sousa, 2025; Adewojo, 2025; McCusker & Michalak, 2025). Empirical studies of AI-assisted description and classification link these applications to contextual accuracy, representation, and discoverability (Chen & Li, 2024; Mahmud, 2024; Dover & Grzegorski, 2025). Existing studies do not specify how librarians translate these risks and professional duties into justified decisions for specific library services. These decisions also have implications for users' quality of life by shaping access to reliable information, protected inquiry, fair access, and meaningful participation in academic life.

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Professional ethics defines shared duties that guide librarians' conduct (Budd, 2006; Wilkinson, 2014). Wilkinson (2014) argues that professional codes leave some service-level dilemmas to librarians' reasoned moral judgment. A study of Iranian public libraries reports associations among professional ethics, conscientiousness, and organisational accountability (Soltani-Nejad et al., 2022). That study's conscientiousness construct differs from the professional conscience developed in this framework. Research on AI accountability emphasises reviewing and challenging automated decisions (Cobbe et al., 2021). Accountability requires decision-makers to explain and justify their conduct to an appropriate forum (Bovens, 2007). The Librarian's Conscience Framework connects these functions by defining librarian conscience as the professional capacity to apply shared duties to a service context, guide review and intervention, justify decisions, and escalate cases beyond individual authority. Three dimensions organise this capacity: professional judgment, ethical responsibility, and accountability. The framework grounds the construct in professional ethics, human oversight, humanistic values, and personal spiritual commitments when they inform professional judgment; professional standards and respect for affected users' rights, dignity, and beliefs bound that judgment.

This study develops the Librarian's Conscience Framework through a conceptual synthesis of 38 studies indexed in Scopus and Web of Science. Its objectives are to (1) clarify the conceptual relationships among professional ethics, human oversight, professional judgment, accountability, and librarian conscience; (2) define librarian conscience and distinguish it from these related constructs; and (3) derive five review actions from the evidence map and specify their proposed links to governance conditions, service decisions, quality outcomes, and institutional learning.

2.0 Literature Review

2.1 AI-Supported Academic Library Work

Academic libraries deploy AI across access, reference, metadata, cataloguing, discovery, research support, and digital services. Studies describe generative AI as a tool for speeding responses and widening access and document its use in reference, information access, cataloguing, and classification (Aguiñaga et al., 2025; Boateng, 2025; Hamad & Shehata, 2025; Mahmud, 2024). These applications shape how libraries organise, describe, retrieve, and deliver academic information, placing AI outputs at the centre of routine decisions about service delivery and information quality.

At the system level, studies identify inaccurate outputs, opaque system logic, privacy exposure, algorithmic bias, weak metadata quality, and security threats as risks in AI-supported library work (Adewojo, 2025; Chen & Li, 2024; Dover & Grzegorski, 2025; Elsayed & Abusharhah, 2025; Khan et al., 2026; Sousa, 2025). A cross-regional survey of 305 academic library professionals found perceived risks to privacy, intellectual freedom, and fairness in generative-AI adoption (Khan et al., 2026). A review of AI-powered library recommender systems identified data poisoning and inference attacks as technical security threats (Chen & Grzybowicz, 2025). Khan et al. (2026) measured librarians' risk perceptions, whereas Chen and Grzybowicz (2025) reviewed security threats. Neither study estimates the incidence of harm across deployed academic library systems.

At the institutional level, policy clarity and staff preparation shape librarians' capacity to address those risks. McCusker and Michalak's (2025) analysis of AI policies and resources at 50 US universities found gaps in policy clarity and consistency. Fewer than half of the university AI task forces in their sample included library staff. Elsayed and Mohammed Abusharhab's (2025) survey of 272 academic librarians across 17 Arab countries found that 96% reported a need for AI ethics training. These studies document conditions in their respective samples; their findings do not establish prevalence across all academic libraries.

User-focused studies connect system and policy conditions to service experience. Fruehauf et al. (2026) link transparent sourcing, clear statements of system limits, and access to human assistance with user trust. Cao et al. (2026) associate retrieval quality and resource coverage with user resistance. These findings connect quality of life with access to reliable information, protected inquiry, and participation in academic work. They also link environment–behaviour relations to service conditions that shape searching, help-seeking, source evaluation, trust, and resistance (UNESCO, 2022; Fruehauf et al., 2026; Cao et al., 2026). Across these levels, service quality depends on technical performance and librarians' capacity to assess user risks against institutional guidance.

2.2 Professional Accountability Across Library Work

Metadata and cataloguing expose key accountability questions. Chen and Li (2024) describe metadata professionals' expertise in machine-supported description; Mahmud (2024) examines automation in cataloguing and classification; and Dover and Grzegorski (2025) assess AI against the *Cataloguing Code of Ethics*. Metadata shapes discoverability, intellectual access, representation, and information quality—AI-generated descriptions without professional review risk inaccurate records and uneven resource visibility. Studies address professional duties through ethical guidance, institutional policy, librarian decision-making, and human review (Cobbe et al., 2021; McCusker & Michalak, 2025; Yang et al., 2024). A review of responsible-AI resources in libraries found greater attention to accuracy and human-in-the-loop measures than to wider ethical issues (Mannheimer et al., 2024). Table 1 distinguishes the roles of professional ethics, human oversight, professional judgment, and accountability, and identifies where their connections require clarification.

Table 1. Professional Roles and Connections in AI-Supported Library Work

Concept and key sources	Professional function	Connection requiring clarification
Professional ethics (Sousa, 2025; UNESCO, 2022)	Sets shared duties concerning fair access, privacy, and information rights.	How duties shape review criteria and service decisions.

Human oversight (Cobbe et al., 2021; Mannheimer et al., 2024)	Enables review, challenge, correction, escalation, or refusal.	Who has the authority to intervene when vendor systems are opaque?
Professional judgment (Adewojo, 2025; Yang et al., 2024)	Interprets AI outputs in subject, metadata, and user contexts.	How context-specific decisions align with shared standards.
Accountability (McCusker & Michalak, 2025; Olson, 2026)	Establishes who answers for decisions and their effects.	How answerability is assigned when vendors control system design, and librarians carry service responsibility.

Source: Author's synthesis and conceptualisation based on the reviewed literature.

Professional ethics establishes shared duties; human oversight provides procedures for reviewing, challenging, and intervening in AI-supported processes; professional judgment interprets outputs in relation to subject expertise, users, and service context; and accountability identifies who must explain decisions and their effects. The mapped studies report verification, contextual interpretation, escalation, and refusal, and show that these actions depend on training, institutional authority, and access to information about vendor systems (Grimes, 2026; McCrary, 2026; Jabeen, 2025; Olson, 2026). The literature treats these functions and conditions separately and does not explain how they combine in everyday library work. The Librarian's Conscience Framework integrates them in a library-specific model of accountable mediation: shared duties guide judgment, judgment directs review and service action, and accountability requires librarians to explain decisions and their effects on users. The framework specifies five actions—output verification, privacy judgment, fairness assessment, metadata responsibility, and accountable mediation—and defines conscience as the professional capacity that carries shared duties into contextual, answerable decisions.

Librarian conscience is the professional capacity through which librarians apply shared ethical duties to context-sensitive, accountable decisions affecting library users and others. Professional ethics and humanistic values ground this capacity; personal spiritual commitments inform judgment when they do not conflict with professional standards or respect for the rights, dignity, and beliefs of affected users. In AI-supported work, conscience guides librarians to verify outputs, protect privacy, assess fairness, safeguard metadata, and explain and justify service decisions before AI-generated information shapes services, records, or research support. Figure 2 places librarian conscience at the point where librarians assess AI-supported service inputs and select a response, with governance conditions shaping intervention and institutional learning feeding back into policy, training, and workflows.

3.0 Methodology

3.1 Conceptual Framework Development

Literature-based model development defined librarian conscience for AI-supported academic libraries. Jaakkola (2020) supports this conceptual design, and MacInnis (2011) explains construct relationships. The framework integrates professional ethics, human oversight, judgment, and accountability.

3.2 Source Identification, Screening, and Evidence Mapping

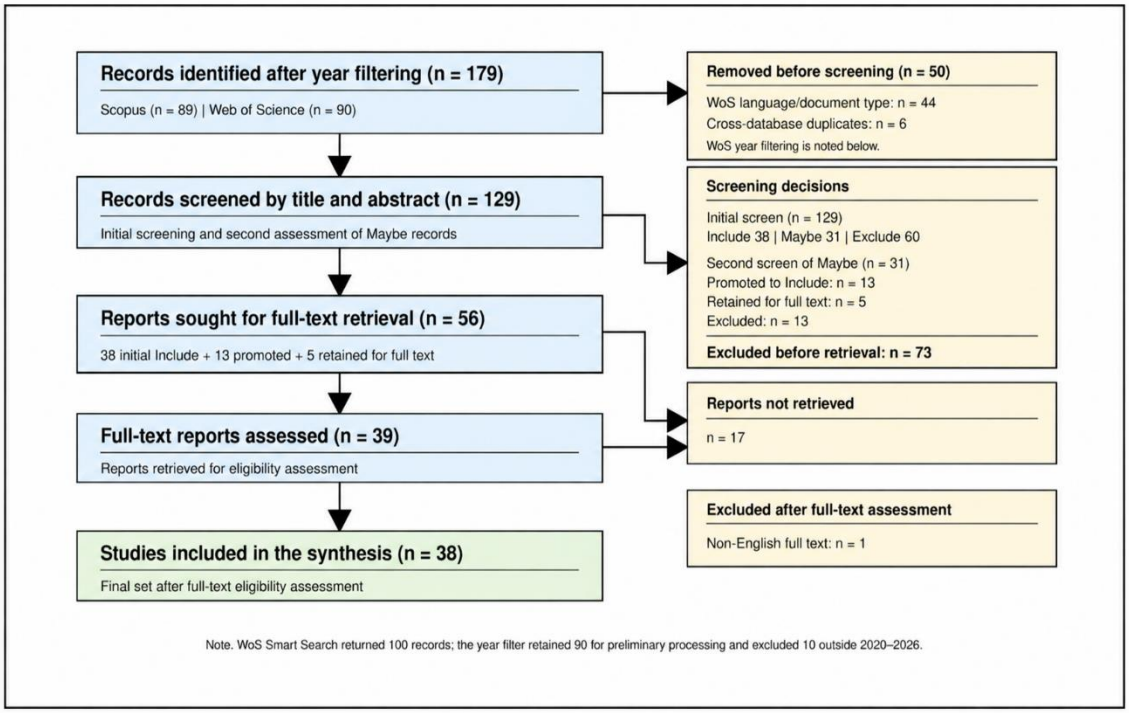


Fig. 1**:** *PRISMA 2020 flow diagram of study selection.*

Scopus served as the primary database, with Web of Science Core Collection complementing coverage (Baas et al., 2020; Gusenbauer & Haddaway, 2020; Aksnes & Sivertsen, 2019). On 11 September 2026, Scopus searched Title, Abstract, and Keywords for English Articles published in 2020–2026. Terms covered artificial or generative AI, academic or university libraries, ethics, accountability, fairness, privacy, transparency, human oversight, human-centred AI, and professional judgment. Web of Science returned 100 records, 90 after date filtering. Scopus returned 89, producing 179 records. Web of Science contributed 46 eligible records and 44 exclusions. Six duplicates left 129 records for screening. Eligibility required AI in academic or university library work plus an ethical, professional, metadata, or information-quality issue. A Malaysian MyCite paper informed context but remained outside corpus counts. AI-assisted tools organised records and mapped evidence. Authors made eligibility decisions. Screening classified 38 records as Include, 31 Maybe, and 60 Exclude. Of Maybe records, 13 entered Include, five underwent full-text assessment, and 13 were excluded. Following 73 exclusions, 56 reports were sought, 17 unavailable, and 39 assessed. One non-English paper was excluded, leaving 38 studies. Figure 1 presents PRISMA 2020 flow (Page et al., 2021). Included studies were charted by service context, ethical risk, metadata responsibility, governance, librarian judgment or oversight, and quality outcomes. Comparison produced five professional actions, with evidence in Table 2.

For evidence mapping, we charted each included study by service context, ethical risk, metadata responsibility, policy and governance, librarian judgment or oversight, and reported quality outcomes. Cross-study comparison grouped responses addressing shared decision demands while retaining distinct responsibilities as separate categories. This synthesis yielded five professional actions, with representative supporting evidence presented in Table 2.

4.0 Findings

4.1 Librarian's Conscience Framework

Across the 38 included studies, the synthesis identified five recurring professional demands in AI-supported academic library work: verifying generated information, protecting user privacy, assessing fairness, maintaining metadata integrity, and taking responsibility for service decisions. The included studies report concerns about inaccurate or unsupported generated claims (McCrary, 2026; Grimes, 2026), privacy risks in AI-supported services (Elsayed & Abusharhah, 2025; Sousa, 2025), and bias affecting representation and visibility (Adewojo, 2025; Elsayed & Abusharhah, 2025). Table 2 maps representative evidence and professional responses for all five demands. The synthesis organises these demands into five actions: output verification, privacy judgment, fairness assessment, metadata responsibility, and accountable mediation. The first four actions review information accuracy, user privacy, fairness and representation, and metadata integrity. Accountable mediation integrates assessments required by each service event and justifies the librarian's response: accept, correct, restrict, explain, escalate, or reject an AI-supported output. Figure 2 presents the actions within the framework's professional dimensions and governance conditions. Table 3 sets out the proposed quality contributions; this review does not evaluate their effects.

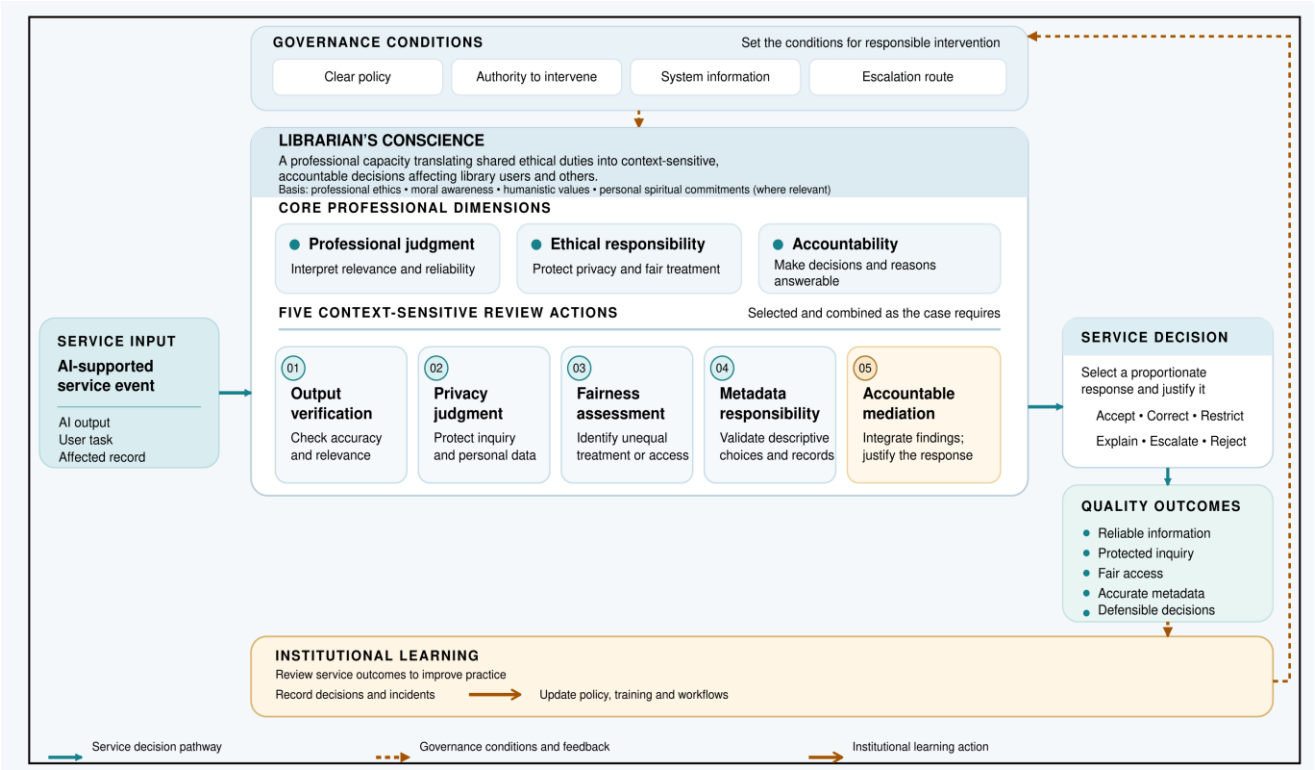


Fig. 2: Accountability of the Librarian's Conscience Framework for AI-Supported Academic Library Work

Table 2 links each of the five actions to representative evidence patterns and the professional responses synthesised from the included studies.

Table 2. Evidence-to-Action Mapping for the Librarian's Conscience Framework

Framework action and key sources	Evidence reported in the studies	Professional response
Output verification McCrary (2026); Grimes (2026)	AI-generated content may include inaccurate or unsupported claims.	Check claims against reliable sources and correct errors before delivering the service.
Privacy judgement Elsayed & Abusharhah (2025); Sousa (2025)	AI-supported services raise risks of user-data exposure and confidentiality breaches.	Decide what information to enter, retain, or share through an AI service.
Fairness assessment Adewojo (2025); Elsayed & Abusharhah (2025)	Studies report bias, discrimination, unequal representation, and uneven information visibility.	Assess how AI outputs affect representation, visibility, and access.
Metadata responsibility Chen & Li (2024); Mahmud (2024); Dover & Grzegorski (2025)	AI-supported description and classification raise risks to accuracy, representation, and discoverability.	Check AI-supported descriptions and classifications for accuracy, representation, and discoverability.
Accountable mediation Yang et al. (2024); McCusker & Michalak (2025); Olson (2026)	Policy gaps and decisions about AI-generated content raise questions about intervention and responsibility for service outcomes.	Explain decisions, intervene when needed, and account for service outcomes.

Note. The professional responses are this study's synthesis of the mapped evidence. The cited studies are illustrative and do not indicate how many included studies support each action.

4.2 Conscience Actions and Proposed Quality Contributions

The five conscience actions link distinct professional responsibilities to proposed quality contributions and identify the areas of AI-supported academic library work each address.

Table 3. Conscience Actions, Key Sources, and Intended Quality Contributions in AI-Supported Academic Library Work

Conscience action and key sources	Professional responsibility	Intended quality contribution	AI-supported library work affected
Output verification — McCrary (2026); Grimes (2026)	Check generated claims for accuracy, source support, relevance, and suitability to the service context.	Reliable, appropriately supported information.	Reference and research support, user queries, AI-generated answers and summaries.
Privacy judgement — Elsayed & Abusharhah (2025); Sousa (2025)	Decide what user prompts, personal information, and search behaviour to share with an AI service, and whether that service retains them.	Protected inquiry and responsible handling of user information.	Chatbots, AI-assisted reference, discovery systems, user-facing digital services.
Fairness assessment — Adewojo (2025); Elsayed & Abusharhah (2025)	Examine how bias, exclusion, and unequal visibility affect representation and access.	Fair access and responsible representation.	Search results, recommendations, discovery, resource visibility.
Metadata responsibility — Chen & Li (2024); Mahmud (2024); Dover & Grzegorski (2025)	Review AI-supported descriptions and classifications for accuracy, context, representation, and discoverability.	Accurate, contextually appropriate metadata and intellectual access.	Cataloguing, classification, metadata creation, institutional repositories.
Accountable mediation — Yang et al. (2024); McCusker & Michalak (2025); Olson (2026)	Bring relevant assessments together; choose whether to accept, correct, restrict, explain, escalate, or reject an output; record the reasons.	Defensible decisions and answerable service practice.	Service decisions, user guidance, metadata workflows, research assistance.

Note. The citations identify illustrative studies from the evidence map; they do not indicate how many studies support each action. The framework sets out intended quality contributions, and this review did not measure their effects.

5.0 Discussion

5.1 From AI Adoption to Professional Accountability

Studies of academic libraries document AI applications in reference, metadata, discovery, and research support (Boateng, 2025; Hamad & Shehata, 2025; Yang et al., 2024). Research on these applications identifies risks involving output reliability, privacy, bias, metadata integrity, and responsibility for service decisions (Aguiñaga et al., 2025; Chen & Li, 2024; Dover & Grzegorski, 2025; Hassan & Becker, 2025). Studies of AI readiness focus on librarians' skills, ethical awareness, and institutional support (Elsayed & Abusharhah, 2025; Mahmud, 2024; McCusker & Michalak, 2025). The framework locates the central issue in the professional decision that determines whether and how an AI-supported output enters a particular library service.

The framework connects professional ethics, human oversight, contextual judgment, and accountability at that decision point. Schön's (1983) account of reflective practice explains how professionals interpret complex situations and adjust their actions. Bovens (2007) locates accountability in an actor's obligation to explain and justify conduct to a forum. Cobbe et al. (2021) connect automated decision-making with reviewability, and UNESCO (2022) emphasises meaningful human oversight. The framework links these perspectives to academic librarianship and explains how professional judgment connects risk assessment to a reasoned, reviewable

service decision. Librarian conscience differs across these foundations: professional ethics establishes duties, oversight enables intervention, judgment interprets the case, and accountability makes the decision answerable.

5.2 Human–AI Quality Governance in Academic Library Services

Library managers translate this framework into governance by assigning decision authority across AI-supported services. Before procurement or deployment, managers identify the service owner, define the librarian's review authority, set data-use boundaries and establish escalation routes. During operation, staff record consequential corrections, restrictions, referrals, and metadata changes, along with the reasons for each decision. Managers then review recurring cases and revise institutional guidance based on documented practice.

McCusker and Michalak (2025) document gaps in policy clarity and library participation in institutional governance. Elsayed and Mohammed Abusharhab (2025) report strong demand for AI ethics training among the librarians in their study. These studies describe institutional and professional conditions; they do not evaluate the governance measures proposed here. The framework directs managers to connect policy, decision authority, and staff development to the workflows where librarians assess AI-supported outputs.

Training should develop professional decision-making alongside technical knowledge. Scenario-based exercises help librarians assess uncertain outputs, identify risks to inquiry and representation, explain interventions, and escalate cases beyond their authority. Collaboration among library leaders, technical teams, and relevant institutional offices aligns these decisions with data governance, accessibility, research integrity, and metadata standards. These proposals derive from the framework and require empirical evaluation.

AI preparation in LIS curricula requires more than technical competence. Bridges et al. (2025) identify uneven integration of critical AI literacy and fragmentation across LIS syllabi. Xing et al. (2026), drawing on curriculum mapping of 28 LIS programs and 25 interviews, report uneven AI integration and an instrumental emphasis that weakens reflective learning. Hossain (2025) advances a human-centred approach to AI literacy in LIS education, and Bilal et al. (2025) report gains in participants' AI knowledge, skills, and confidence following the IDEA Institute. Together, these studies support stronger ethical, critical, and reflective preparation for future LIS graduates.

This study proposes a core curricular strand that pairs professional conscience with introductory consciousness science in AI and automation education. Professional conscience prepares graduates to justify decisions about AI-supported library services. Consciousness science equips them to assess scientific claims about machine awareness, distinguish observable system performance from evidence of subjective experience, and consider the ethical implications of future systems that might warrant moral consideration (Butlin et al., 2023; Zuo et al., 2025). The two strands address distinct questions and serve complementary educational purposes.

5.3 Limitations and Future Research

The evidence map covers the databases, search terms, and eligibility criteria reported in Section 3. It includes English-language articles indexed in Scopus and Web of Science Core Collection from 2020 to 2026. Database coverage and search-system performance vary (Aksnes & Sivertsen, 2019; Gusenbauer & Haddaway, 2020), so the corpus represents records retrieved through the specified searches, not the full range of research, policy documents, or professional standards. The authors could not retrieve seventeen full-text reports, and the Malaysia/MyCite paper informed contextual discussion outside the formal corpus.

The Methods section describes author-led eligibility decisions and AI-assisted record organisation and evidence mapping. It provides no details on independent duplicate screening or agreement statistics, limiting readers' ability to assess screening reproducibility. A further limitation is the conceptual design: we developed the framework through literature-based model building (Jaakkola, 2020; MacInnis, 2011) and did not empirically assess construct clarity, decision consistency, or service outcomes.

Empirical validation needs three stages. First, expert review and scenario-based interviews with academic librarians refine the construct boundaries, action definitions, and escalation criteria. Second, multi-institution pilots assess how consistently librarians apply the framework across reference, discovery, and metadata workflows, and how the actions fit institutional procedures. Third, comparative service evaluations test the proposed links between professional decisions and information reliability, privacy protection, fair representation, metadata integrity, and accountable service. This sequence will assess the framework's practical clarity and identify the institutional conditions that support its application.

6.0 Conclusion and Recommendations

The Librarian's Conscience Framework, developed through a conceptual synthesis of 38 studies, defines librarian conscience as a context-sensitive professional capacity grounded in professional ethics and human values, with personal spiritual commitments informing judgment when they shape professional decisions. It organises this capacity through three dimensions—professional judgment, ethical responsibility, and accountability—and five review actions that guide librarians' responses to AI-supported service events. The framework proposes five quality outcomes: reliable information, protected inquiry, fair access, accurate metadata, and defensible decisions; this review does not test whether the actions improve these outcomes. Library leaders should define intervention authority, provide system information needed for review, establish escalation routes, and use documented cases to inform policy, staff training, and workflows. Empirical studies should test the construct's clarity, the consistency of librarians' decisions, and the proposed links between the review actions and quality outcomes across services and institutions. Expert review and scenario interviews are suggested to refine the framework before multi-institution pilots and comparative service evaluations. Post-quantum cryptography extends this research agenda to privacy, data integrity, information provenance, and long-term access to digital records. Research

should examine how librarians can use the framework's governance conditions to identify and escalate technical risks to cybersecurity specialists. NIST's post-quantum cryptography program provides a policy context for this work (NIST, 2026).

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Paper Contribution to Related Field of Study
For academic librarianship, the framework articulates librarian conscience as a professional construct connecting ethical duties, human oversight, contextual judgment, and accountability to AI-supported library decisions. For Information Management, it links information quality, privacy, equitable access, and metadata stewardship with librarians' responsibility for those decisions and their implications for user's quality of life. The framework specifies how librarians review, justify, and document interventions when AI-supported outputs shape access to academic information.

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