EDITORIAL

Behind the *LRTS* Curtain

Advice for Prospective Authors

Michael Fernandez and Rachel E. Scott

Among the many questions we receive from prospective *LRTS* authors, one of the most common is, "How long will it take for my manuscript to be published?" The concern over timeliness is perfectly understandable. Many of our authors are addressing timely topics and are engaging in a contemporaneous dialogue within the fast-paced world of technical services. Further, many of our authors are on a tenure track within their institution and have the consideration of including an article (or article proof) within their promotion package.

If the reasons for the request are perfectly clear, the response is, unfortunately and inevitably, "It depends." Depends on a myriad of factors that are consistent within the world of scholarly publishing and, invariably, not within the control of the *LRTS* editors. First and foremost is the peer review process itself. Assigning peer reviewers can take time. Although our Editorial Board is excellent at providing timely and thorough peer review, we take care not to overburden their finite bandwidth with too many peer review assignments. Given the volume of submissions, we regularly reach out to peer reviewers outside of the Editorial Board to lend their knowledge and expertise to the peer review process. To use the terminology of sales reps, these are effectively "cold calls." And so, many requests go days or even weeks without a response, and may be declined, or just ignored altogether. Assuming a peer reviewer call is accepted, there's a back and forth to make reviewers aware of our review guidelines and to get them established on the back end of our submission platform. All of this tacks on days, possibly weeks, to the publication pipeline.

The standard timeline for a peer reviewer to complete their review is thirty days. However, the editors are keenly aware and appreciative of reviewers taking on this additional workload, unpaid, in addition to their own busy professional lives. While we ask that reviewers confirm they can complete their review in the thirty-day time frame, we also know that work, life, and federal holidays can intervene and stretch out the timeline to the review's completion. Being appreciative of the contributions made by our reviewers, the least we can do is offer the grace of a deadline extension.

At this point in the manuscript's journey, we're likely well past the thirty-day mark, unless both reviewers turn around their reviews early (possible, but rare!). The peer-reviewed manuscript goes back to the authors to consider the reviewer feedback and make revisions. The extent of the revision is highly variable, but even the most polished submission can be improved following the input of peer reviewers. Here, the authors influence the publication timetable, and again, the variable of "it depends" reappears. The editors have seen manuscripts go six months (or more) before the revised manuscript comes in.

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Again, work, life, et cetera creeps in, and the author(s) may not have the same amount of bandwidth they did when they originally submitted the manuscript. Conversely, the editors have also seen turnaround times of twenty-four hours (or less) with re-submissions. The more polished papers may indeed require only minor revisions, though we may question how much the authors have engaged with the reviewer feedback if we get a revised manuscript back before we've finished our morning coffee.

This is all before we even get into the potential of a second round of peer review (or third, or more). The path to publication for a peer-reviewed manuscript will rarely be described as quick; however, the academic rigor and expert feedback of our peer reviewers is what allows us to continue publishing a high-caliber journal.

In the best case, a publication that goes through one round of peer review, requires minimal revision, and is quickly returned to the editors for any additional revision requests by editorial would already be about two months out from initial submission. If the stars align with our publication schedule (*LRTS* is published quarterly), the accepted manuscript goes out to production services right before the issue deadline. At that point, there's formatting, proofreading, and review of publication proofs—multiple rounds in some cases. The editors appreciate the work of ALA Production, who dependably deliver on time and turn the finalized issue around in a two- to three-month time frame.

Adding it all up, the quickest journey from submission to publication will still be at least four to five months. A more likely estimate is six to eight months. If timeliness is of greater import to the authors than peer review, the editors are happy for them to consider our Communications on Practice (CoP) section, which goes straight to editorial review. CoP pieces can in theory get to publication in under three months. Even there, numerous variables can come into play, and so our TL;DR answer to the question of publication timelines is, and will remain, "It depends."

In this issue, we're pleased to publish pieces initially submitted to *LRTS* between July 9 and September 30, 2025.

Communications on Practice

In "Recommendations for Small Shops: Managing Collection Services in Small Libraries," Kaci Resau and Elizabeth Anne Teaff leverage their experiences managing collections at a variety of smaller libraries to outline major considerations and provide guidance.

Features

Sungmin Park and Yuji Tosaka present "Marking Gender: A Critical Analysis of Gender Representation in Library of Congress Subject Headings." Park and Tosaka analyze the representation of gender across headings for classes of persons within Library of Congress Subject Headings, finding a significantly disproportionate number (91.4 percent, 2,142 terms) of feminine demographic terms. The study offers

clear methodology and a nuanced discussion of the normalization of male-as-default within Library of Congress Subject Headings.

Notes on Operations

In "Investigating High-Cost Ebooks Purchasing Workflows to Support Course Reserves," Kerri Goergen-Doll and Taylor Ralph report on a three-year study conducted at Oregon State University that analyzed the usage of high-cost ebooks purchased by the library. The authors found that the number of titles purchased and the overall costs for these materials were relatively low, but their usage was higher than most other ebooks. These findings empowered the library to remove steps from their approval process, streamlining the acquisitions workflow and improving students' timely access to these texts.

Book Reviews

Books reviewed include *The Organization of Information*, Fifth Edition by Daniel N. Joudrey, assisted by Emily Baldoni, and *Neal-Schuman Library Technology Companion: A Basic Guide for Library Staff,* Seventh Edition by Robin Hastings.

COMMUNICATIONS ON PRACTICE

Recommendations for Small Shops

Managing Collection Services in Small Libraries

Kaci Resau and Elizabeth Anne Teaff

Introduction

Managing collection services in small libraries presents unique challenges and opportunities. This Communications on Practice piece combines insights from two authors with extensive experience in various library environments with limited staff, including small academic institutions and specialized libraries. The goal of this piece is to provide practical recommendations for effective collection services in small libraries, focused on day-to-day operations, project management, emerging technologies, training, and communication. By harnessing these strategies, department managers and technically focused library staff can create responsive, efficient, and practical collection service practices, particularly in resource-constrained environments.

Background

Elizabeth Anne Teaff works in a small academic library at a rural private liberal arts university with an undergraduate population of approximately 1,800. They have led the collections services team for three years, in addition to supporting access services, including circulation, interlibrary loan, stack maintenance, and building and event logistics. Over the past twenty years, the size of their library's technical services unit has diminished, evolving into the current Collection Services team of three staff members who handle acquisitions, cataloging, database management, and the library's discovery layer. The team manages a print collection of approximately 650,000 volumes, millions of ebooks, various databases, streaming video, and other media. The library uses Alma for resource management, Primo VE for its discovery service, and OpenAthens for authentication management. Kaci Resau, DPA, has worked in a range of library environments, including small academic liberal arts institutions, libraries serving large user populations with limited staff, a for-profit online institution, a medical school library, and a corporate information center. Staffing sizes in collection management roles across these institutions have ranged from one to four dedicated employees. In 2023, Resau completed a dissertation focused on succession and workforce planning in small to mid-sized academic libraries in the United States, highlighting the need for agile and flexible strategies when managing collections in small library teams.

Training and Day-to-Day Operations

In both authors' experiences, collection management staff play a pivotal role in maintaining and enhancing access to library resources. Daily tasks include troubleshooting access issues, managing

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holdings and entitlements, updating link resolvers, reviewing usage statistics, and coordinating or interpreting licensing terms from vendors. Staff also handle acquisitions, monitor fund allocations, participate in weeding projects, and work across integrated library systems and discovery layers.

Since joining the collections services team, Teaff has secured funding for vendor-led training, which proved valuable when a new acquisitions staff member was hired. Staff also use self-created checklists, videos, and documentation for training. Additionally, the chat feature embedded in Alma allows personnel to engage ExLibris staff and address day-to-day issues. Because no current employees participated in the migration to Alma/Primo in late 2017, they depend on and enhance the documentation created by previous staff as well as vendor-supplied resources. Staff members also regularly take classes from organizations such as Library Juice Academy. This past fall, Teaff and the Cataloging and Metadata manager took classes in MarcEdit because the tool was new to them. Taking the course together allowed them to discover how the tool might best fit into their current workflows.

Across various institutions where they were employed, Resau has also coordinated vendor-supported training. Staff can benefit from training sessions that offer direct insight into platform functionality, administrative tools, and troubleshooting workflows. Attending and organizing these sessions helps ensure that staff remain current with vendor platforms. Resau has worked in institutions where these sessions are for staff only and at institutions where the vendor provides the training to the end-user population. Although both types of training can be beneficial, training specifically for the library staff allows employees to speak to the experts directly.

Another valuable approach to supporting staff training is to encourage employees at all levels to engage with professional standards and guidelines. One such document, The Core Competencies for Cataloging and Metadata Professional Librarians, was developed in 2017 by the Association for Library Collections & Technical Services, now part of ALA Core.[1] This resource outlines essential knowledge and skills for metadata and cataloging professionals, and serves as a foundational guide for professional development. The competencies have since been revised; in a 2023 article, Evans et al. discuss the results of a survey they conducted to gather feedback on the competencies. They offer recommendations for revising and maintaining the document to ensure its continued relevance and effectiveness.[2] Additionally, the article emphasizes the importance of promoting competencies as a tool for ongoing professional growth and training within the field. Core competencies can also be found in the NASIG documents. NASIG is an organization dedicated to the management of information, serials, and electronic resources, is an important tool for collection management leaders and staff. The core competencies provide an important framework around developing position descriptions, highlighting the skills needed to excel in the field, and how the competencies can be used to evaluate excellence in job performance.[3]

Creating effective onboarding and training materials is crucial in collection management units, particularly given the technical complexity and systems involved. When developing training plans for staff, it is essential to analyze roles and document processes and procedures.[4] It is also important to capture as much useful institutional knowledge as possible during this phase. Resau recommends

developing modular, role-based training tools that can be reused and easily updated over time. These materials can include annotated screenshots, video tutorials, flowcharts, and live training sessions. Tools such as OneNote, LibGuides, screen capture, or software like Snagit or Camtasia can be useful in building accessible and adaptable training materials. Resau has documented policies, procedures, and processes in digital courses, enabling staff and students to complete training asynchronously and review content as needed.

Utilizing Technology

Although it is important to stay abreast of technological advancements, relying on established technology can also benefit small libraries. Emerging technologies, including artificial intelligence (AI) tools, have begun to influence collection management workflows and vendor products. AI can assist with title deduplication, license comparison, usage pattern analysis, and metadata generation for new acquisitions. In a recent study, Dobreski and Hastings performed tests to determine how effective ChatGPT, Gemini, and Copilot were in assigning Dewey Decimal Classification (DDC) and Library of Congress Subject Headings (LCSH). Their findings showed that AI may have potential for assigning LCSH, but it was unsuccessful with DDC. This study demonstrated that although AI may improve technical services in the future, there is still room for growth.[5] When using AI, it is also important to be cautious, ensuring data privacy, understanding algorithmic bias, considering the environmental cost of AI tools, and reviewing vendor license restrictions.

Resau has experience working with Scopus AI and Primo Research Assistant. They also have familiarity with platforms such as PatSnap, IEEE, and *The Wall Street Journal*, which include AI tools for end users. Libraries should monitor which resources utilize AI methods, the types of models used, the data on which the models are trained, how these services can benefit users, and what features can be excluded per the license. In some cases, it may be desirable to disable AI features to protect patron or institutional privacy. For both authors, AI has become an essential tool for addressing issues with Excel KBART files, standardizing files for usage statistics, helping with the XLOOKUP function, improving metadata and cataloging processes, and resolving challenges with analytics and data visualization tools. AI can also be helpful with building custom codes for products like LibGuides and discovery layers. AI can also craft vendor emails when asking complex questions about platform functionality. It can also be used to communicate with internal information technology (IT) departments, ensuring librarians speak the same language as their colleagues, easing friction, and improving communication.

Older tools such as MarcEdit are essential for batch-editing MARC records and preparing files for ingestion into discovery systems. MarcEdit is invaluable for performing global changes, correcting data inconsistencies, and converting between formats like MARCXML and MARC21. The tool is helpful for libraries with limited access to cataloging tools, offering an open-source, flexible system for editing records. Resau has used MarcEdit in lieu of other proprietary software to complete cataloging tasks such as record manipulation, batch processing records, creating regular expressions, and as a “Find and Replace” tool for updating fields in bulk.

Project Management

Both authors have experience managing complex projects, such as transitioning from EZProxy to OpenAthens. These projects require changes to systems and workflows, impact user behavior, and depend on coordination across multiple internal departments and external vendors. Early definition of project scope and stakeholder engagement is critical, as is careful assessment of staff capacity to determine whether internal teams can manage the workload or if external support is required. Teaff's library uses the Primo Customization Package for library-specific branding and to display floor locations for print materials. Working with this product requires knowledge of CSS, HTML, and JavaScript. JavaScript is a language with which no one on the current team is familiar. This presents a great opportunity to leverage tools like ChatGPT for code recommendations. The switch to NDE (Next Discovery Experiences) may mitigate some of this work, however, as there may be expanded configuration tools within Alma. They plan to contract ExLibris for their Premium Services to collaborate with their team of consultants and developers for more complex projects, such as building import profiles for external vendors. The decision to transition from EZproxy to OpenAthens for Teaff was made before their promotion to their current position and occurred within the first month of their new role. During the initial phase of the transition, EBSCO assisted with many of the vendor changes, and they continue to work closely with them for ongoing OpenAthens support. Because the library no longer has a dedicated systems librarian, the support from their IT department and vendors has become crucial, especially for integration with OKTA, a Single-Sign-On application that supports SAML for authentication and network access.

Resau comanaged multiple authentication transitions, including a year-long migration from EZproxy to OpenAthens, and a shorter-term shift from EZproxy to OKTA SSO in a subsequent role. The decision to transition from EZproxy to OpenAthens was driven by institutional security concerns, limited internal IT support for managing proxy servers, and a desire to improve the user experience. Early in the process, Resau engaged in preproject research,[6] including reviewing literature on similar migrations,[7] consulting with other librarians, and presenting those findings in a briefing document to leadership. This research also informed the institution's request for information, which included exploration of other vendors such as LibLynx.[8] OpenAthens was selected based on sustainability, cost, support, and success in similar environments. A cross-functional project team was then formed, which included staff from collection management, IT, library leadership, and vendor representatives. Weekly meetings with internal and external partners ensured ongoing progress and accountability.

Several key lessons emerged from these authentication transitions that can inform similar projects in collection management units. Project scope and stakeholder engagement are critical, particularly in identifying collaborators from the department, IT, the institution, and vendor support. Establishing a dedicated project team with clearly defined roles can also help provide accountability and make a pathway for consistent progress. A structured communication plan, both internal and patron facing, helps manage expectations and reduce confusion. It is important to leverage vendor expertise, and doing so can streamline implementation, particularly in technical areas like configuration. Throughout

the project, thorough documentation of processes, decisions, and contact points proved invaluable for knowledge transfer. Additionally, a well-developed migration communication plan, including ample testing and a sufficient timeline, minimized disruptions. Targeted training tailored to both staff and end users fostered a smooth transition and addressed many questions before the new authentication method went live. Finally, gathering feedback, tracking issues, and developing usage reporting plans were important areas to continuously improve. Gathering feedback also demonstrated the value of the new authentication method to stakeholders.

One final aspect of project management is highlighting the success of the project to the administration. Although this is often done at the end of the project, Robyn M. Gleasner emphasizes the importance of marking milestones and communicating the "small successes" of the project to both the team and the administration.[9] These incremental achievements not only help maintain momentum and motivation among staff but also keep stakeholders informed throughout the process. Regularly showcasing progress can build trust and provide opportunities for timely feedback or course correction.

Communication Tools and Knowledge Transfer

Kristy White and John White note that "[c]hanges in the work of traditional technical services have underlined the need for a continuous reassessment of workflows…due to increased technological capabilities and…expectations from users."[10] To that end, effective communication and documentation practices are essential for successful collection management. In the last ten years, numerous tools have emerged to enhance collaboration and knowledge sharing in digital environments. Tools in the Microsoft Office suite of applications, such as OneNote, SharePoint, and Teams, or open-source tools, such as Slack and Trello, can help ensure transparency, reduce redundancy, promote continuity across staff roles, and improve end-user support.

Teaff's collection services team meets weekly. This face-to-face interaction helps build community and ensures clear communication. They also use Microsoft Teams and email for regular communication. Microsoft OneNote has proven helpful for creating documentation, building on the work of a previous faculty member. The cloud-based file-sharing tool Box.com is another system regularly employed for communication and information storage across the university. These asynchronous forms of communication are helpful because the staff all have at least one work-from-home day a week. They also collaborate across teams, meeting regularly with other library stakeholders, such as subject librarians or the staff in special collections and archives.

In earlier positions, Resau encountered environments where communication relied heavily on static tools. For example, at one institution, Microsoft Excel spreadsheets and Word documents were stored in department-shared folders and served as the primary means of documentation. In another role, Resau joined just prior to a major systems migration from Millennium to ExLibris Alma. Although institutional knowledge was abundant, it was dispersed across print notebooks, Word documents, and various siloed files. To address this, Resau developed a shared OneNote notebook that served as a central documentation hub for the collection management unit. Additionally, a cross-departmental

committee focused on e-resources and discovery was established, bringing together staff from collections, access services, and library faculty. This group initially met monthly during the academic year and later shifted to a bimonthly schedule. At another institution, documentation was similarly managed through Word files housed in unit-specific folders. Upon joining the organization, Resau found minimal existing documentation or knowledge transfer practices. As a result, job aids were developed in real time during daily workflows, ultimately forming a *Collection Management Cookbook*—a consolidated guide to local policies and procedures. In a subsequent role, documentation was again limited, primarily existing in Word files. Resau responded by creating an internal Technical Services LibGuide (LibGuides is part of the Springshare suite of products) that served as the centralized repository for workflows and policies. Trello, a visual project management tool, was adopted to support departmental project tracking, and platforms such as Zoom and Microsoft Teams were used for individual and group communication. Resau has used Trello in both a free version and an institutional subscription. When using the free version of Trello, it is important to track only nonsensitive information on the tracking boards. The institutional version has more privacy settings. In a more recent setting, documentation processes have become more integrated. Staff used institutional Microsoft 365 subscriptions to maintain Word files in SharePoint and use a dedicated OneNote notebook organized by key functional areas within collection management. Documentation may appear directly within OneNote or be linked to corresponding SharePoint files. Microsoft Planner supports project tracking, while communication is facilitated through dedicated Microsoft Teams channels: one for general team updates and others for more dedicated discussions. Weekly team meetings are held to share updates, and a dedicated e-resource management meeting occurs monthly and focuses on resource changes, troubleshooting, and usage data.

Effective communication in collection management relies not only on the choice of tools but also on consistent team adoption.[11] When team members use different platforms (for example, one person relying on a note-taking app while others use Word documents or handwritten notes), institutional knowledge may become fragmented, and procedures and policies may be lost or duplicated. Choosing dedicated shared tools ensures transparency, reduces redundancy, and promotes continuity across staff roles. It is also helpful to conduct periodic communication check-ins, ideally in one- or two-year cycles.[12] These reviews can provide an opportunity to evaluate the tools currently used, assess what the institution supports, and identify whether new or updated platforms could enhance how collection-related information is documented and shared. Finally, actively seeking feedback from staff who use these tools is essential.[13] Their insights can lead to improvements in information organization, distribution, and retention, ensuring that communication strategies evolve in line with team needs and institutional goals.

Leadership Guidance

Leadership requires planning and the creation of a supportive, collaborative work environment. To put these principles into practice, Teaff has implemented various strategies to engage her team, including

fostering learning opportunities and creating professional networks by connecting staff with colleagues at other institutions doing similar work.

In the book *A Starter's Guide for Academic Library Leaders: Advice in Conversation*, Lorelei Tanji recommends having a "clear team charge that outlines the goals, objectives, challenges, deliverables, relationships, responsibilities, reporting, and timelines."[14] Weekly team meetings can help keep the team's goals at the front of mind. Other useful advice from the same book is understanding the concept that managers "lead" staff and "manage" schedules, workflows, and budgets.[15] Good managers should encourage professional engagement (e.g., scholarship, service, skill development, and creation of professional networks) and work toward transparency whenever possible to increase trust.[16] It is also important to balance work and make sure that staff are not "overloaded."[17] Again, weekly meetings or individual check-ins once a month can help to guide this practice. In the chapter "Don't Do More with Less: Sustainable Work as a Management Value," Amanda Koziura outlines ways to create an environment where work-life balance is respected by leveraging what managers can control. Koziura emphasizes the importance of developing a management philosophy that prioritizes sustainability. The chapter emphasizes the importance of regularly reviewing and updating job descriptions to maintain equitable workloads across different departments and job classifications. It also discusses the use of student staff to assist with departmental functions and provides strategies for managing position vacancies.[18]

With this advice in mind, Teaff regularly visits other libraries to speak with staff and managers, asking questions about how they manage specific projects or services. They have facilitated site visits to other local libraries for their team, allowing them to meet staff in analogous positions and learn from each other's expertise and experiences. They also connect their team with other libraries virtually by arranging Zoom or Teams meetings with staff who are willing to consult on tools such as OpenAthens. They encourage their team to collaborate with vendors to enhance training or ask questions about new services. Additionally, they regularly share training and conference opportunities from various listservs or consortia. Because the university also has a law library, there are opportunities for collaboration and networking there. Yearly retreats with law library personnel have become a staple, providing a chance to gather as a community, attend webinars as a group, and learn from each other.

Conclusion

Managing collection services in small libraries requires a combination of effective day-to-day operations, thoughtful integration of emerging technologies, strategic project management, robust communication practices, and leadership guidance. By adopting flexible and agile strategies, small libraries can enhance their collection management services and better meet the needs of their users. The experiences shared by the authors highlight the importance of continuous learning, collaboration, and adaptation to new tools and technologies. By utilizing these insights, small libraries can effectively manage their collections and offer valuable resources to their communities.

CRediT Author Statement

Elizabeth Anne Teaff: Conceptualization, Methodology, Writing – Original Draft, Review & Editing.

Kaci Resau: Conceptualization, Methodology, Writing – Original Draft, Review & Editing.

All authors reviewed and approved the final manuscript.

Notes

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FEATURE

Marking Gender

A Critical Analysis of Gender Representation in Library of Congress Subject Headings

Sungmin Park and Yuji Tosaka

Introduction

Although the problem of bias, prejudice, and marginalization has long been a subject of critical reflection and inquiry in library knowledge organization systems, recent years have seen a dramatic surge in initiatives to address such longstanding issues. Those efforts have been inspired, in many ways, by the public controversy over "illegal aliens" and related terms in Library of Congress Subject Headings (LCSH), as well as the groundswell of racial reckoning across the United States in 2020. However, these recent developments should not overshadow a history of critiques of cataloging practices shaped by the widely used systems and tools maintained by the Library of Congress and other standards organizations.[1] One of the foremost critics is Sanford Berman, who famously criticized LCSH for its normative representations of Euro-centric, white Christian, capitalist worldviews marked by racism, patriarchal authority, and antipathies toward working classes and sexual minorities.[2]

The focus of this article is to analyze how gender is represented (or not represented) across headings for classes of persons within LCSH. In particular, the study examines these terms through the lens of gender marking. Gender marking, referring to how gender is explicitly signaled in linguistic expressions, has attracted scholarly attention in linguistic research since the 1960s and gained particular prominence since the feminist critique of language of the 1970s.[3] While most linguistic studies address gender marking in natural languages, this study's focus is on LCSH, a controlled vocabulary governed by cataloging rules and policies designed to support effective retrieval.

For the purpose of this article, the term "gender" is used narrowly in terms of female/male dichotomies. The female/male categorization is one of the foundational binary constructs shaping social hierarchies and ideologies, and as such also has a section of its own ("Man/Woman/Sex") in Berman's classic treatise on LCSH.[4] Many, including Berman, have long criticized how these gender categories are represented in LCSH, pointing to a litany of LCSH terms that have no comparable headings assigned to men. For example, there is no equivalent heading for the LCSH term *Women accountants* (old heading: *Women as accountants*), meaning that terms like *Male accountants* have not been available to be assigned to works dealing with male accountants. (Likewise, *African American accountants* exists as an LCSH term, but *White accountants* does not.) The implicit effect of such subject cataloging practice is to normalize the male-as-default position and relegate female classes of persons to a special, nondominant category.

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As noted earlier, the problem of sexism in LCSH has been widely known among catalogers and given critical scrutiny from many researchers over the years. However, past literature has lacked a detailed, systematic analysis identifying the exact scale and patterns of gender categorization within LCSH. The authors aim to fill this critical gap in the literature by conducting a comprehensive evaluation focusing on LCSH demographic terms from a gender categorization perspective with an eye toward uncovering underlying patterns that might be deeply embedded within the most widely used multidisciplinary thesaurus in the US library community. This article's findings contribute useful insights that will inspire readers to reexamine subject cataloging practices and consider how they have reflected and reinforced systems of inequity, marginalization, and exclusion in the larger culture.

Literature Review

Although critiques about various aspects of LCSH have a long history in the cataloging literature, such critical attention "greatly intensified" since the late 1960s.[5] An important part of this critical literature involved efforts to question prejudicial headings and arose amidst the rise of various social movements, including civil rights and feminism.[6] As Hope A. Olson and Rose Schlegl noted, the treatment of gender was "by far the largest category" of critical writings on biases in subject cataloging practice.[7] The predominance of gender-based critiques should be hardly surprising because gender relations and discourse are essential to the ways in which human knowledge and social power are constructed.[8]

As noted earlier, one of the best-known examples of such critiques can be found in Berman's classic 1971 treatise *Prejudices and Antipathies*. His work devoted a whole section to criticizing twenty categories of gender-related headings, such as *Women as accountants* [*architects*, *artists*, *astronauts*, *soldiers*, etc.]. He rightly noted the absence of "comparable terms assigned to the other sex, e.g., Men as accountants." In Berman's analysis, such women-only headings were a clear reflection of "male chauvinism" and the "wholly indefensible stereotype that relegates women to 'hearth and home'" and treats women engaged in nondomestic situations as exceptions.[9] By the late 1970s, similar critiques about sexism in LCSH led to the publication of *On Equal Terms: A Thesaurus for Nonsexist Indexing and Cataloging*, in which the compiler Joan K. Marshall highlighted both "biased terminology" and "the absence of terms to adequately cover concepts" as the key impetus for developing an alternative vocabulary to provide enhanced subject access to materials related to women.[10]

Since then, a number of researchers have also approached the question of gender bias in LCSH from broader theoretical perspectives. Olson critiqued "bias in the representation of marginalized groups and topics bounded by gender, race, ethnicity, nationality, class, sexuality and other factors," which in her analysis manifested the inherent linguistic shortcomings of imposing universalistic order for subject access and authority control. The practice had the practical effects of limiting diversity in naming concepts and groups outside the mainstream cultural norms.[11] Likewise, Emily Drabinski highlighted the inherent limitations of subject language as a universalizing system and structure, and called for broader efforts to engage users in critical interrogations on controlled vocabularies as constructed, contested domains rather than fixed sets of authoritative terminologies.[12]

While problems of gender-related subject access thus have been widely recognized and well defined over the years, comprehensive evaluation of gender bias and disparities in LCSH has been mostly lacking in the literature. Some studies have evaluated LCSH terms and bibliographic records in specific subject areas such as women's studies, examining the shortage of appropriate headings established for many basic women-related topics or catalogers' failure to assign relevant headings to bring out such topics effectively.[13] Others have examined gender bias found in LCSH terms and the evolution of headings concerning women.[14] For example, Margaret N. Rogers tracked changes for LCSH terms beginning with "women" (or old heading "woman"), as well as all narrower terms under those headings, between 1975 and 1991.[15] Examining only women-related headings is methodologically limited and does not reveal a full story about their marginalization and exclusion in LCSH, however. Tracy Waterman focused on compiling LCSH entries beginning with "male," "men," "female," and "women," among others, in the 1988, 1993, and 2003 editions.[16] While illuminating in many ways, the study did not present a clear picture of "systemic biases" within LCSH at the time. The data were obscured by the simultaneous inclusion of references and all precoordinated headings under a single main heading; for example, the dataset contained more than 250 entries beginning with "women" followed by subdivisions.

More recently, Amanda Ros in her 2019 article criticized the "'straight white American man' assumption" entrenched in LCSH and produced a high-level snapshot based on "search[ing] for subjects containing 'women' or 'men.'"[17] Those searches found a dramatic imbalance in the LCSH structure: 4,056 and 444 terms containing "women" and "men," respectively. The article did not analyze gender bias within LCSH in any close detail, however, other than highlighting several sample terms that are respectively perceived as male (or rather, white American male) or traditionally as female.[18] Given that there has been a recent proliferation of interest in various reparative cataloging initiatives, the existing literature reviewed above shows that more systematic efforts are timely and critically needed to gain a fuller understanding of the overall state of gender representations in LCSH so that the cataloging and metadata community can work more effectively to effect systemic changes in subject cataloging standards and practices.

Research Questions

Sexism in LCSH has been well documented as one of the fundamental problems shaping subject representation of various social concepts and groupings. Many critics have noted that the prevalence of headings for classes of persons qualified only for women (*Women accountants*, *Women physicians*, etc.) in effect marginalizes those engaged in nondomestic spheres as special categories not conforming with the gender stereotypes. Men, by contrast, tend to be normalized and represented in broader, gender-neutral terms. A review of past research in the previous section shows, however, that the problems of gender categorization in LCSH, while widely recognized, have not been studied in a systematic manner. To fill in the critical gap in the cataloging literature, the authors aimed to conduct a comprehensive analysis of LCSH's gendered headings with regard to demographic group terms. By doing so, the present study intends to throw fresh light on how genders are marked in LCSH and how such practices differ between male and female groups, and across various LCSH demographic group

categories. Specifically, the authors sought to contribute to a fuller understanding of the implicit gender assumptions within LCSH by focusing on the following research questions:

- How many gendered headings are currently found in LCSH representing classes of persons overall?
- How many gendered headings are currently found across various LCSH demographic group categories?
- How many unpaired gendered headings (i.e., terms qualified only for women or men) are currently found across various LCSH demographic categories?
- What patterns and underlying assumptions may be identified, if any, through analysis of such unpaired headings?

Methodology

Scope and Data Extraction

To address the study questions outlined above, the authors used the OpenRefine software to query the LC Linked Data Service (https://id.loc.gov/) to extract and compile a dataset for the current research. OpenRefine (https://openrefine.org/), a powerful open-source tool for working with often messy datasets, is useful for extracting external data from web services like the LC Linked Data Service. For data collection, the authors decided to focus solely on evaluating the main topical headings marked with gender terms such as *Women authors* and *Male authors*. In other words, the primary research focus in this study was on better understanding the overall gendered structure of LCSH without individually counting precoordinated strings that combine those headings with various subdivisions, or non-gendered main headings with gendered subdivisions. Note that although gendered headings encompass such terms as *Wives, Mothers, Lesbians, Husbands, Fathers*, etc., those lexically gendered terms were intentionally excluded from the analysis because the focus of this study is on how LCSH explicitly marks gender for standalone nongendered terms. In the present work, gendered headings were defined as main topical headings containing four gender markers—*women*, *female*, *men*, *male*—in any position, whether the beginning, middle, or end. The authors used those parameters to construct their LCSH dataset for detailed quantitative analysis.

To extract subject headings containing the gendered terms above, the authors used the procedures outlined at the *Programming Historian* website,[19] revising them as needed to fetch URLs and parse web content for the matching LCSH terms retrieved from the LC Linked Data Service. The LC website has brief documentation for URL patterns to be used for searching and querying (https://id.loc.gov/techcenter/searching.html). Conducting queries via its online search form and then filtering results helped to clarify the documentation and provide further clues for refining search queries. Specifically, the following type of URL was constructed for queries to interact with the LC Linked Data Service via OpenRefine:

https://id.loc.gov/search/?q=rdftype:Topic&q=memberOf:http://id.loc.gov/authorities/subjects/collection_LCSHAuthorizedHeadings&count=2500&q=women.

Special search constraints used to construct these queries were:

- rdftype:Topic: This limited a query to only topical terms, excluding precoordinated strings with subdivisions that are effectively treated as duplicates for this study (e.g., Women architects—United States).
- memberOf:http://id.loc.gov/authorities/subjects/collection_LCSHAuthorizedHeadings: This limited a query to authorized LCSH headings, excluding topical subdivisions that contain the gender keyword used for a particular query.
- count: The LC Linked Data Service did not return all available results to OpenRefine without specifying these numbers. The numbers specified in the search string above were based on test results returned via the online search form and filters.

The authors conducted four separate queries for headings containing "women," "female," "men," and "male" via OpenRefine on November 28, 2023. The returned results included headings that did not contain any of the gender keywords used in the queries. Such headings were returned by the LC web service because references containing each keyword were included in their authority records. For example, *Menopause* was returned as a search result in both "women" and "female" queries because the subject authority record included *Change of life in women* and *Female change of life* as *see from* references. Accordingly, the returned LCSH data needed cleaning to filter out such valid gender-related headings that fall outside the scope of this study.

After the initial data cleanup, the authors performed the following additional steps to limit the extracted LCSH data further to demographic group terms. Headings that contained the search keywords but did not indicate human gender, such as *Male (African people)*, were identified and excluded from the dataset; so were terms referring to female or male organisms that are not human, such as *Males*, *Females*, *Female honeybees*, and *Male livestock*.[20] In addition, headings in which the keywords were used as modifiers of nondemographic subjects were also excluded from the study; examples included *Male friendship*, *Female seminaries*, and *Men's magazines*. Similarly, headings where a keyword was used either as the object or part of the object of the preposition were also excluded. Examples included *Anxiety in women*, *Diving for women*, *Grief in men*, *Children of women drug addicts*, and *Legal assistance to women*. Note, however, that headings containing the preposition "in" were retained in the dataset, and thus included in the present study, when the gendered term representing a demographic group is not the object of the preposition but was rather qualified by the prepositional phrase as the primary focus of the entire nominal phrase. Such headings included *Women prisoners in motion pictures*, *Women college students in literature*, and *African American women in higher education*. Compound words containing one of the keywords, such as *Businessmen*, *Businesswomen*, and *Snowmen*, were also excluded because such lexicographically gendered terms, as noted above, were outside the scope of our research design.

Additionally, the following types of headings were removed from the original dataset:

- Proper nouns containing one of the keywords, such as *International Women's Decade, 1976-1985*, *Young Men's Christian Associations*, or *X-Men (Fictitious characters)*.

- Musical headings containing "Men's voices" or "Women's voices," such as *Choruses, Sacred (Women's voices)*, or *Cantatas, Sacred (Men's voices)*.

Duplicates extracted in separate keyword queries (e.g., *Male to female transexuals* and *Female to male transsexuals*) that were retrieved both in the "male" and the "female" queries, were also removed so that each term was grouped under only one of the women, female, men, and male groups.

As noted earlier, the key question that particularly interested the authors was the extent to which LCSH terms including "women" or "female" (hereafter "feminine" terms or headings) lack equivalent headings, including "men" or "male" (hereafter "masculine" terms or headings), and vice versa. In other words, the lack of such masculine headings might be regarded as good indications that men, covered by gender-neutral headings, are the default or norm in a particular social group, while women are an exception or deviation from that norm that warrants a special gendered heading. Likewise, if masculine headings lack equivalent feminine terms, it would in turn imply that such social groups are essentially marked as female by default.

The final dataset—the lists of gendered LCSH terms limited to demographic groups—was used to identify feminine or masculine headings lacking equivalent gendered counterparts. For that purpose, the gender keywords—women/female and men/male—were dropped to output four separate lists of feminine or masculine headings without the gendered keywords. These lists were cross-checked to identify headings that either have equivalent headings in parallel construction (e.g., *Male college athletes/Women college athletes*, *Male musicians/Women musicians*) or lack such equivalent headings (e.g., *Male high school teachers*, *Female offenders*).

Analytical Framework

To analyze gendered headings in a more granular, comprehensive manner, this study first defined thirteen demographic group categories and coded the cleaned LCSH dataset accordingly. These categories were primarily based on the nine Library of Congress Demographic Group Terms (LCDGT) categories: *age*, *educational level*, *ethnic/cultural*, *language*, *medical/psychological/disability*, *national/regional*, *occupation/field of activity*, *religion*, and *social* categories. In LCDGT, each term is assigned to at least one of these categories to enable broad-level collocation. This study utilized the nine categories (both names and codes) defined in the LCDGT instruction sheet, "L 405-Categories of Terms of LCDGT Manual," as well as the detailed instruction sheet for each category provided in the "Understanding of the LCDGT categories" section of the *LCDGT Manual*.[21]

Additionally, the present study introduced modifications to the LCDGT categories for reasons that will be detailed in the following subsection. Specifically, it merged LCDGT's *ethnic/cultural*, *national/regional*, and *language* categories, forming a new *ethnic/national/language* category to assign a single category to terms with polysemous qualifiers. However, the study adhered to the definitions in the relevant *LCDGT Manual* instruction sheets in coding this merged category.[22]

Furthermore, this study introduced six additional categories because the authors found that many gendered LCSH terms did not quite fit within the LCDGT's nine categories, or that subcategories seemed necessary to enable a more detailed analysis. The scope of the *occupation/field of activity* category was slightly modified

to exclude headings indicating the athletic activities of the group members. Instead, a separate subset, the *athletics* category, was created and defined specifically for this study. Along with the *athletics* category, new categories for *fictitious*, *gender/sexual orientation*, *general*, *offense/custody*, and *time* were also established. The subsection below provides concise explanations on the scope of each demographic category used for the present study. These categories and their scopes are summarized in table 1.

Table 1. Categories and Scopes of Gendered Headings

Category/Code	Scope
Age [age]	Use for the chronological age of the group members. (e.g., *Middle-aged women*; *Older women*).
Education level [edu]	Use for the educational level of the group members (e.g., *Women college students*; *Women doctoral students*; *Women college graduates*).
Ethnic/National/Language [eth/nat/lng]*	Use for (1) the ethnic or cultural identification of the group members (e.g., Cherokee women; Women, Tibetan; Hispanic American men); (2) the demonym related to a supranational region, a country, or a subnational region or jurisdiction that is associated with the group members (e.g., *Women, Ukrainian*; *Women, Cook Islander*); (3) the language associated with the group members (e.g., *Women, Bantu-speaking*; *Women, Swahili-speaking*).
Medical/Psychological/ Disability [mpd]	Use for the medical or psychological condition, or the physical or mental disability, of the group members (e.g., *Mentally ill women*; *Women alcoholics*; *Learning disabled men*).
Occupation/Field of activity [occ]*	Use for the activity or avocation associated with the group members (e.g., *Women air pilots; Women chess players*; *Male models*; *Male nurses*). [c.f., Headings associated with the athletic activities of the group members were grouped under the athletics category (see below)]
Religion [rel]	Use for the religion, denomination, sect, religious order, etc., of the group members (e.g., *Buddhist women*; *Hindu women*; *Muslim women*).
Social [soc]	Use for identifiable social groups that cannot be included in the other categories (e.g., *Women dog owners*; *Divorced women*; *Women millionaires*).
Athletics [ath]*	Use for athletic activities of the group members (e.g., *Male cross-country runners*; *Women wrestlers*; *Women skateboarders*).
Fictitious [fic]*	Use for fictitious groups (e.g., *Women superheroes*; *Women antiheroes*; *Leopard men*).
Gender/Sexual orientation [gen]*	Use for the gender or sexual orientation of group members (e.g., *Transgender women*; *Bisexual women*).
General [gnr]*	Use for gendered terms that are not modified either by noun or adjective. This category includes how those unmodified gendered terms are portrayed, as well as unmodified gendered terms combined with other topics using the conjunction "and" (e.g., *Women*; *Men*; *Women in art*; *Women and religion*; *Architecture and women*).
Offense/Custody [ofn]*	Use for the illegal activities of the group members or the custody of the group members, irrespective of the legality of the group members' actions (e.g., *Women murderers*; *Women war criminals*; *Male prisoners*).
Time [time]*	Use for the time-related or historical context of the group members (e.g., *Women, Prehistoric*).

*Excluding the final six categories, codes and scopes are drawn from *LCDGT Manual L405-Categories of Terms*. The scope of the ethnic/national/language category is a merged category, drawing its scope from the three separate LCDGT categories: ethnic/cultural, national/regional, and language. The scope of the occupation/field of activity category has been slightly modified to exclude headings indicating the athletic activities of the group members.

Scope of Categories

Age category [age]

Reflecting the LCDFT categorization, LCSH terms indicating the age of the group members were grouped under the age category. Terms in this category contain qualifiers such as older, young, juvenile, and middle-aged. Examples include *Middle-aged women* and *Older women*.

Education level category [edu]

Headings indicating the educational level of the group members were grouped under the education category. Examples include *Women college students*, *Women doctoral students*, and *Women college graduates*. However, groups of students in a specific field of study, such as *Women medical students* and *Women seminarians*, were grouped under the social category, in alignment with the LCDGT education level categorization policy.[23]

Ethnic/National/Language category [eth/nat/lng]

In this study, LCDGT's ethnic/cultural category, national/regional category, and language category were merged into one ethnic/national/language category because of their often inherent amorphousness and ambiguity. This category grouped headings qualified by the terms showing the ethnic or cultural identification of the group members (e.g., *Cherokee women*; *Women, Tibetan*; *Hispanic American men*); the demonyms related to a supranational region, a country, or a subnational region or jurisdiction associated with the group members (e.g., *Women, Ukrainian*; *Women, Cook Islander*); and headings qualified by the language associated with the group members (e.g., *Women, Bantu-speaking*; *Women, Swahili-speaking*).

The decision to merge these categories was based on several factors. In LCSH, nationality of classes of persons is not designated by adjectival qualifiers, but by geographic subdivisions. Adjectival qualifiers can be used to designate qualifications other than the nationality, including ethnic group and language.[24] However, "Celtic," "Germanic," and "Slavic" in *Celtic women*, *Germanic women*, and *Slavic women* are ethno-linguistic terms, complicating the assignment of a single category to each heading.

Moreover, there are exceptions in which adjectival qualifiers are used to indicate the nationality of classes of persons. Adjectival qualifiers are allowed for nationality for classes of authors. However, qualifiers for literary authors can indicate nationality, language, or both.[25] For example, "Urdu," "Yiddish," and "Malayalam" adjectival qualifiers in *Women authors, Urdu*; *Women authors, Yiddish*; and *Women authors, Malayalam* indicate languages used by the literary authors. In contrast, "Filipino" in *Women authors, Filipino* and "Commonwealth" in *Women authors, Commonwealth* indicate nationality or supranationality. However, "English" in *Women poets, English* indicates both the language used by the women poets and their nationality.

Furthermore, while adjectival qualifiers for ethnic groups can also be added to classes of authors, distinction between a nationality and an ethnic group is sometimes not clear. For example, Armenia

is a nation-state, and Armenians can indicate both an ethnic group and a nationality. Adding more complexity, Armenian is also a language. Therefore, *Women authors, Armenian* could be grouped under the three different categories, the ethnic/cultural, national/regional, or language category.[26]

Medical/Psychological/Disability category [mpd]

Headings indicating a medical or psychological condition, or physical or mental disability of group members were grouped under the medical/psychological/disability category. Examples include *Autistic women*, *Mentally ill women*, *Women alcoholics*, and *Learning disabled men*.

Occupation/Field of activity category [occ]

Headings indicating the avocation or activity associated with the group members, whether paid or unpaid, were grouped under the occupation/field of activity category.[27] Examples include *Women air pilots, Women chess players*, *Male models*, and *Male nurses*. Unlike the corresponding LCDGT category, however, terms specific to the athletics category were excluded from this category and analyzed separately. Additionally, headings with qualifiers indicating employment status, such as *Working class women*, were categorized into the social category.

Religious category [rel]

Gendered headings qualified by terms of religion, denomination, sect, religious order, etc., were grouped under the religious category. Examples of such headings include *Buddhist women*, *Hindu women*, *Muslim women*, and *Shaker women*. For this study, headings containing the ethno-religious qualifier "Jewish" were categorized into this category, consistent with its treatment as a religious group in the *Subject Headings Manual*.[28] Likewise, *Karaites women*, *Shiite women*, *Sikh women*, *Yezidi women*, *Alevi women*, and *Druze women* were coded into this category.

Social category [soc]

As defined in *LCDGT Manual* L540, headings representing identifiable social groups that could not be placed under other categories were grouped under the social category. Examples include *Women dog owners*, *Divorced women*, and *Women millionaires*. Additionally, groups of students in specific fields of study, such as *Women engineering students* and *Women veterinary students*, were also grouped under this category in alignment with the LCDGT education level categorization policy.[29]

Athletics category [ath]

The authors established the athletics category, separate from the LCDGT categories, to allow for a more in-depth analysis of the dataset. Headings that include qualifiers indicating the athletic activities of group members were grouped under this category. Examples include *Male cross-country runners*, *Women wrestlers*, and *Women skateboarders*.

Fictitious category [fic]

To accommodate fictitious headings that do not fit into the existing LCDGT categories, the authors created the fictitious category for this study. Examples of such headings include *Women superheroes*, *Women antiheroes*, and *Leopard men*.

Gender/Sexual orientation category [gen]

To collocate headings associated with the gender or sexual orientation of the group members, the authors created the gender/sexual orientation category for this study. Examples include *Transgender women*, *Bisexual women*, and *Female-to-male transsexuals*. For the purpose of data analysis, *Female-to-male transsexuals* was classified as a "male" term, while *Male-to-female transsexuals* was classified as a "female" term.

General category [gnr]

In this study, the authors created the general category to group headings that do not include qualifiers designating them to any of the other categories, including unmodified gendered terms combined with other topics using the conjunction "and." Headings without adjectival or noun modifiers, such as *Women*, *Men*, *Women in comics*, *Women and religion*, and *Architecture and women*, were grouped under this category.

Offense/Custody category [ofn]

This study created the offense/custody category to collocate headings that indicate illegal activities of the group members, as well as headings related to the custody of group members, regardless of the legality of their actions. Examples include *Women murderers*, *Women war criminals*, and *Male prisoners*.

Time category [time]

This study introduced the time category to group headings that indicate the historical period to which group members belong. Examples of such headings include *Women, Prehistoric* and *Women healers, Medieval*.

Assignment of Categories

Categories identified in the previous subsection were coded across the entire LCSH dataset based on identity elements appearing in either the modifier or head noun position. Multiword terms were treated as single units. For example, "African American" in *African American women* (modifier position) or "volleyball players" in *Women volleyball players* (head noun position) were coded into the ethnic/national/language and occupation/field of activity category, respectively.

Headings containing multiple identity elements were coded for multiple categories. For instance, *African American women surgeons* was coded into both the ethnic/national/language and occupation/field of

activity category for "African American" and "surgeons," whereas *Creek women* was coded solely into the ethnic/national/language category for "Creek." Similarly, *Older women authors* was coded into both the age and occupation/field of activity category for "older" and "authors," while *Older women* was coded solely into the age category.

When appropriate categorization was unclear, nongendered terms in LCDGT were used as references. For instance, *Women human rights workers* was coded for the occupation/field of activity category because *Human rights workers* is grouped under the same category in LCDGT. Similarly, *Women activists* was coded for the social category as *Activists* is placed under the same category in LCDGT. If nongendered terms do not exist in LCDGT, variant forms from either LCDGT or LCSH were consulted. For example, *Women political activists*, which lacks a nongendered equivalent in LCDGT, was coded for the social category because "Political activists" is listed as a variant form of *Activists*, which is grouped under the social category in LCDGT.

Broader terms (Hypernyms)

Headings qualified by broader terms associated with specific categories were still grouped under that category. For example, *Indigenous women*, which does not indicate a specific ethnic group and is broader in meaning than *Cherokee women*, was categorized under the ethnic/national/language category. Additional examples coded into this category include *Minority women*[30] and *Racially mixed women*. Likewise, broader terms such as *Women with disabilities* and *Women patients* were coded into the medical/psychological/disability category, while terms such as *Women employees*, *Women specialists*, *Women artisans*, *Self-employed women*, *Working women in motion pictures*, and *Women in the professions* were coded into the occupation/field of activity category. In the athletics category, general terms such as *Women athletes* and *Male athletes* were included; similarly, in the gender/sexual orientation category, *Sexual minority women* and *Sexual minority men* were included.

Headings with "in"

There are two distinct types of headings that include the preposition "in." The first type involves a term referring to a member of a demographic group followed by "in" and the name of a specific medium (e.g., motion pictures, television, literature), signaling that group member's representation within the given media context. The second type includes headings where the same "in" construction does not pertain to the portrayal or representation of a demographic group member (e.g., *Women in agriculture*, *Women in the labor movement*, *Women in Buddhism*).

For coding consistency, this study categorized headings with "in" based on the category of the demographic term preceding "in" when the preposition was used to indicate the portrayal of group members. For example, *Women college teachers in literature* was coded for the occupation/field of activity category, and *Abused women in art* was placed under the social category. Likewise, *Women in art*, *Women in comics*, *Men in motion pictures*, and *Men in popular culture* were coded for the general category.

When "in" was not clearly used to indicate portrayal, categorization was based on the overall meaning of the phrase. For example, *Women in the food industry* was grouped under the occupation/field of activity category, not under the general category, as "in the food industry" indicates a specific occupation. Similarly, *Women in agriculture* and *Women in missionary work* were also categorized under the occupation/field of activity category.[31] In the same sense, headings such as *Women in guilds*, *Women in cooperative societies*, *Women in the labor movement*, *Women in the Rastafari movement*, and *Women in public life* were grouped under the social category, while *Women in Islam* was grouped under the religious category, as "in Islam" indicates the religion.

It is important to note that the ambiguity of "in" headings, especially when not indicating representation, has been a subject of criticism. Berman argued that headings such as *Women in Buddhism* and *Women in the Bible* failed to convey a clear conceptual distinction. While a heading like *Women in the Bible* might be understood as denoting a depiction of women in biblical texts, *Women in Buddhism* could equally suggest the theological position of women in Buddhism, the representation of women in Buddhist literature, or their experiences as faith practitioners. Marshall highlighted an unclear distinction between headings such as *Women in Islam* and *Muslim Women*.[32]

Acknowledging said ambiguity, this study categorized headings such as *Women in Buddhism*, criticized as not clearly differentiated from *Buddhist women*, under the religious category, interpreting such headings as indicating the group members' religions. Similarly, *Women in Christianity* and *Women in Latter Day Saint churches* were grouped under the same category. Headings such as *Women in the Bible* were categorized under the general category, with such headings interpreted as indicating the discussion or representation of group members in religious texts. Likewise, headings such as *Women judges (Islamic law)* were categorized under the occupation/field of activity category, based on the categorization of the gendered terms, with those headings interpreted as indicating the discussion or representation of group members in legal codes.

Headings with "and"

LCSH includes many gendered terms combined with other subjects using the conjunction "and." Although it can be argued that these terms are not strictly demographic headings, they were included in this study because these headings are used for resources discussing a gender group. All such headings found in this study were in the form of either: [an unmodified gendered term (*Men* or *Women*) and other subject] or [a subject and an unmodified gendered term], except *Libraries and abused women*. Examples of such headings include *Women and animals*, *Internet and women*, *Men and literature*, and *Motion pictures and men*. For this study, this type of term was categorized based on the gendered terms regardless of the other combined subjects. For example, *Women and war* and *Technology and women* were assigned to the general category, while *Libraries and abused women* was categorized under the social category.

Results and Discussion

Gendered LCSH Terms

Number of Feminine and Masculine LCSH Terms

From the LCSH queries described earlier in the "Scope and Data Extraction" section, a total of 3,286 subject headings were retrieved. As noted there, the initial dataset was subsequently narrowed down to demographic group terms, yielding a total of 2,343 headings. Of these, 2,142 headings contained "women" or "female" (2,126 and 16 headings, respectively), and 201 headings contained "men" or "male" (142 and 59 headings, respectively) (see table 2).

Table 2. Number of Headings in Each Keyword Group

Category	Women	Female	Feminine Term Total	Men	Male	Masculine Term Total	Total (Feminine and Masculine)
Initial dataset from id.loc.gov	2,487	121	2,608	538	140	678	3,286
Cleaned dataset for the study	**2,126**	**16**	**2,142 (91.4%)**	**142**	**59**	**201 (8.6%)**	**2,343**

One basic finding that jumps out at any observer is that a significant disparity exists in the number of feminine versus masculine headings. The total number of headings containing either "women" or "female" constituted 91.4 percent of the total gendered demographic headings.[33] In sharp contrast, the total number of headings containing either "men" or "male" constituted only 8.6 percent of the total gendered demographic headings (see table 2). These results closely align with Ros's findings in 2019. While her research was exploratory and differed in scope from this study, a similar ratio was observed among 4,045 LCSH terms that were analyzed in her study: 90.2 percent containing "women" as opposed to 9.8 percent containing "men."

Number of Paired and Unpaired Gendered LCSH Terms

As noted earlier in the "Research Questions" and "Scope and Data Extraction" sections, one of the key questions of this study was the extent to which feminine LCSH terms lack masculine equivalents, and vice versa. The absence of such masculine counterparts could suggest that men are implicitly treated as the default or normative group in a particular social group, represented through gender-neutral headings, while women are positioned as deviations from that norm, thus necessitating gender markings. The scope of this investigation was limited to subject heading pairs in which the only difference was found in the gender markers (i.e., women, female, men, male). For example, in the case of the heading *Women physicians*, the present study examined whether equivalent headings such as *Male physicians* or *Men physicians* exist within LCSH.

Among the total of 2,142 feminine headings, only 5.9 percent (126 headings) had equivalent masculine LCSH terms (i.e., containing "men" or "male"), while the overwhelming majority (94.1 percent, 2,016 headings) did not. In contrast, of the total of 201 masculine headings, 62.7 percent (126 headings) had equivalent feminine LCSH terms (i.e., containing "women" or "female"), whereas 37.3 percent (seventy-five headings) did not (see table 3).

Table 3. Gendered Headings with and without Their Equivalents

Category	With Equivalent Pair	Without Equivalent Pair	Total
Masculine	126 (62.7%)	75 (37.3%)	201
Feminine	126 (5.9%)	2,016 (94.1%)	2,142

Even without going into any in-depth qualitative analysis, the striking disparity in feminine and masculine headings suggests a distinct, systematic pattern within LCSH: a male-centric perspective that overwhelmingly assigns existing general headings to resources even where specific masculine terms would be more appropriate and warranted. Even when a male subject is discussed in a resource being cataloged, that fact is unmarked and elided by using a gender-neutral heading. This omission can be illustrated readily by the following set of examples spanning decades, all LC or PCC (Program for Cooperative Cataloging) records that can be retrieved without much effort:

- *The Roles of Men and Women in Eskimo Culture* by Naomi Musmaker Giffen (1975) has *Eskimo women* as a subject heading in its bibliographic record, but there is no parallel masculine term created for Eskimo men, resulting in the general term, *Eskimos*, as in *Eskimos—Social life and customs*, being used as the sole available heading to represent the topic of "Eskimo men."[34]
- *Different Paths of Iñupiat Men and Women in the Wage Economy: The North Slope Experience* by Judith Kleinfeld, John A. Kruse, and Robert M. Travis (1984) has *Inuit women* in its LC bibliographic record, but *Inuit* might be regarded as representing the "Inuit men" topic, if at all.[35]
- The bibliographic record for *The Occult Sylvia Plath: The Hidden Spiritual Life of the Visionary Poet* by Julia Gordon-Bramer (2024) was assigned *Women poets, American—20th century—Biography*. However, *James Buchanan Elmore (1857–1942): Literary Ethnographer and Folk Poet* by Ronald L. Baker with Catherine A. Baker (2024) has *Poets, American—20th century—Biography* in its bibliographic record. The heading "Male poets, American" was not created nor assigned on this record.[36]

While these examples illustrate missing masculine headings that are explicitly warranted by resources being cataloged, another contributing factor here may be the authors' implicit bias. As Olson pointed out, authors writing about male accountants, for instance, may have focused on men without acknowledging this focus (and catalogers not bringing out the gendered aspect of such resources), whereas those writing about women accountants emphasized the role of gender in their discussion of the topic.[37] Trinh T. Minh-ha's observation that "men, having always assumed the right to speak for the other, obviously didn't think about expressing the male condition in their works" reinforces this idea.[38]

Gendered Headings in Thirteen Categories

This section categorizes each gendered heading and presents a basic quantitative analysis of the LCSH dataset for this study using the thirteen categories and the coding policy outlined in the "Analytical Framework" section. In total, 2,871 categories were coded for 2,343 headings. The analysis revealed that 1,815 headings (77.5 percent) were exclusively coded for a single category, while 528 (22.5 percent) were coded for two categories, with no headings coded for more than two categories. Out of the total 2,871

categories, 2,632 categories (91.7 percent) were coded for 2,142 feminine headings, and 239 categories (8.3 percent) were coded for 201 masculine headings. A detailed breakdown of these findings can be found in table 4.

Table 4. Number of Headings Coded for Single or Multiple Categories

	Feminine	Masculine	Total
Total headings	2,142 (91.4%)	201 (8.6%)	**2,343**
Headings coded for one category	1,652 (91.0%)	163 (9.0%)	**1,815**
Headings coded for two categories	490 (92.8%)	38 (7.2%)	**528**
Total categories coded for headings	2,632 (91.7%)	239 (8.3%)	**2,871**

Distribution of Headings across Categories

Table 5 and figure 1 show the distribution of gendered headings across the thirteen categories. Table 5 focuses on the distribution of feminine and masculine headings coded for each category, while figure 1 presents how gendered headings are distributed overall across the thirteen categories.

Table 5. Gendered Headings across Categories

Category	Women	Female	Feminine Term Total	Men	Male	Masculine Term Total	Total (Feminine and Masculine)
Age [age]	26	2	**28 (60.9%)**	15	3	**18 (39.1%)**	**46**
Education level [edu]	11	2	**13 (76.5%)**	0	4	**4 (23.5%)**	**17**
Ethnic/National/ Language [eth/nat/lng]*	981	0	**981 (95.4%)**	40	7	**47 (4.6%)**	**1,028**
Medical/Psychological/ Disability [mpd]	20	0	**20 (71.4%)**	8	0	**8 (28.6%)**	**28**
Occupation/Field of activity [occ]*	1,065	3	**1,068 (96.1%)**	5	38	**43 (3.9%)**	**1,111**
Religion [rel]	113	0	**113 (86.9%)**	17	0	**17 (13.1%)**	**130**
Social [soc]	198	0	**198 (85.0%)**	29	6	**35 (15.0%)**	**233**
Athletics [ath]*	66	2	**68 (90.7%)**	0	7	**7 (9.3%)**	**75**
Fictitious [fic]*	11	0	**11 (91.7%)**	1	0	**1 (8.3%)**	**12**

Category	Women	Female	Feminine Term Total	Men	Male	Masculine Term Total	Total (Feminine and Masculine)
Gender/Sexual orientation [gen]*	14	1	**15 (26.8%)**	39	2	**41 (73.2%)**	**56**
General [gnr]*	77	0	**77 (84.6%)**	14	0	**14 (15.4%)**	**91**
Offense/Custody [ofn]*	27	10	**37 (90.2%)**	0	4	**4 (9.8%)**	**41**
Time [time]*	3	0	**3 (100.0%)**	0	0	**0 (0.0%)**	**3**
Total	2,612	20	**2,632 (91.7%)**	168	71	**239 (8.3%)**	**2,871**

*Categories have been modified from LCDGT. See table 1 for further details.

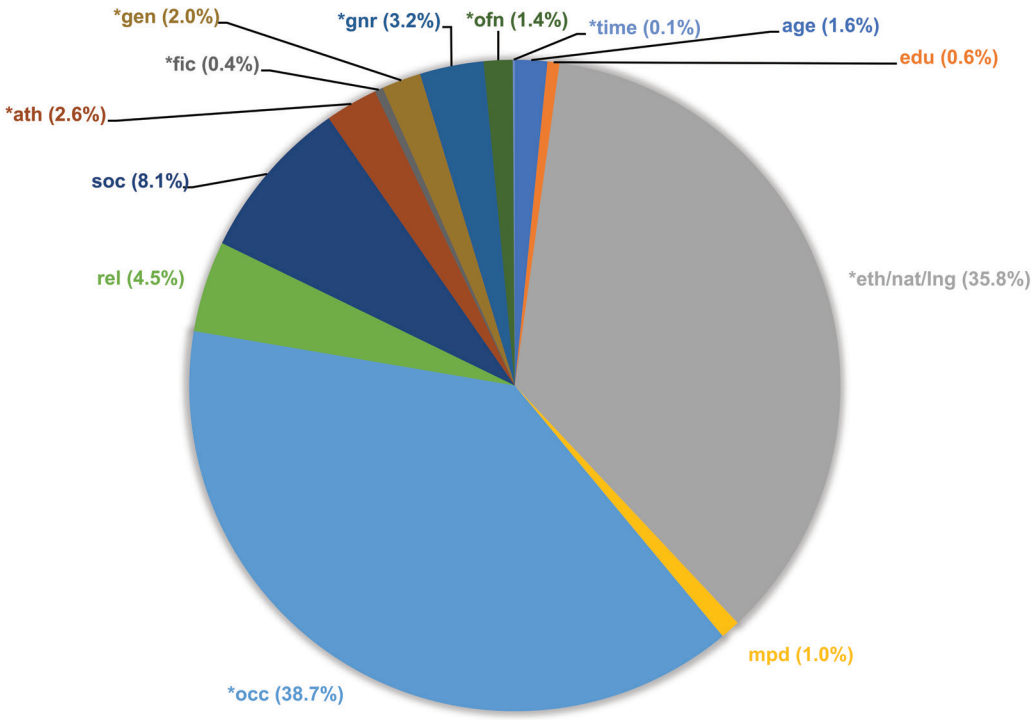

Figure 1. Distribution of gendered headings across categories.
*Categories have been modified from LCDGT. See table 1 for further details.

The occupation/field of activity category was the most frequently coded category, being coded for 1,111 headings (1,068 feminine headings and forty-three masculine headings). Only slightly less frequently coded was the ethnic/national/language category, being coded for 1,028 headings (981 feminine headings and forty-seven masculine headings). The two categories combined constituted nearly three quarters (74.5 percent) of the total coded gender categories (38.7 percent and 35.8 percent, respectively).

The social category was the third most frequently coded category, being coded for 233 headings (198 feminine headings and thirty-five masculine headings), followed by the religious category, which was coded for 130 headings (113 feminine and seventeen masculine headings). The two categories combined constituted 12.6 percent of the total coded categories (8.1 percent and 4.5 percent, respectively).

The remaining 12.9 percent was coded for the other categories: general category (3.2 percent), athletics category (2.6 percent), gender/sexual orientation category (2.0 percent), age category (1.6 percent), offense/custody category (1.4 percent), medical/psychological/disability category (1.0 percent), education level category (0.6 percent), fictitious category (0.4 percent), and time category (0.1 percent) (see figure 1).

Proportions of Gendered Headings and Unpaired Terms Across Categories

As shown in table 5, feminine headings accounted for nearly 90 percent of the total gendered headings in more than half of the categories. The greatest disparity appeared in the occupation/field of activity category, where feminine headings made up 96.1 percent. The ethnic/national/language category followed closely, with feminine headings constituting 95.4 percent. The fictitious, athletics, and offense/custody categories all displayed a similar disproportion, with feminine headings constituting more than 90 percent of the total. The categories that exhibit a disproportionately higher number of feminine headings, such as occupation/field of activity, athletics, and offense/custody, might well be regarded as areas that are marked by stronger gender norms. A similar pattern emerged in the case of feminine headings without masculine equivalents and masculine headings without feminine equivalents. Table 6 presents the headings coded for each category, as well as those lacking corresponding gendered counterparts within each category.

Table 6. Unpaired Gendered Headings across Categories

Category	Feminine	Feminine Without Masculine Equivalent	Masculine	Masculine Without Feminine Equivalent
Age [age]	28	20 (71.4%)	18	10 (55.6%)
Education level [edu]	13	10 (76.9%)	4	1 (25.0%)
Ethnic/National/Language [eth/nat/lng]*	981	948 (96.6%)	47	14 (29.8%)
Medical/Psychological/Disability [mpd]	20	15 (75.0%)	8	3 (37.5%)
Occupation/Field of activity [occ]*	1,068	1,039 (97.3%)	43	15 (34.9%)
Religion [rel]	113	101 (89.4%)	17	5 (29.4%)
Social [soc]	198	177 (89.4%)	35	14 (40.0%)
Athletics [ath]*	68	65 (95.6%)	7	3 (42.9%)

Category	Feminine	Feminine Without Masculine Equivalent	Masculine	Masculine Without Feminine Equivalent
Fictitious [fic]*	11	11 (100.0%)	1	1 (100.0%)
Gender/Sexual orientation [gen]*	15	7 (46.7%)	41	33 (80.5%)
General [gnr]*	77	64 (83.1%)	14	1 (7.1%)
Offense/Custody [ofn]*	37	34 (91.9%)	4	1 (25.0%)
Time [time]*	3	3 (100.0%)	0	N/A
Total	2,632	2,494 (94.8%)	239	101 (42.3%)

Note: A total of 2,871 categories were coded across 2,343 headings.
*Categories have been modified from LCDGT. See table 1 for further details.

Occupation/Field of Activity, Athletics, Offense/Custody, Fictitious

In the occupation/field of activity category, feminine headings lacking parallel masculine terms often represent traditionally male-dominated occupations. Examples include *Women coal miners*, *Women carpenters*, *Women chemists*, *Women chief executive officers*, *Women economists*, *Women engineers*, *Women heads of state*, *Women helicopter pilots*, *Women mathematicians*, *Women mayors*, *Women surgeons*, and *Women presidents*.

The opposite was also true. Although they constitute only a small number, certain masculine headings in the occupation/field of activity category, such as *Male prostitutes*, *Male strippers*, and *Male quiltmakers*, lacked equivalent feminine headings. The corresponding generic terms (e.g., *Prostitutes*, *Strippers*, *Quiltmakers*) apparently have been understood traditionally to denote women in these roles, reflecting prevailing gender norms that historically associated such occupations with women. It should be acknowledged that some terms traditionally associated with men have parallel feminine terms along with masculine terms, such as *Male lawyers*, and vice versa. However, these cases represent only a small fraction, and parallel terms were, in general, created relatively recently.[39]

A similar pattern was evident in the athletics category. Sixty-eight feminine headings coded for this category included headings such as *Women boxers*, *Women snowboarders*, *Women rowers*, *Women triathletes*, *Women wrestlers, Women speed skaters*, and *Women polo players*. These headings, lacking masculine counterparts, designate athletic fields that have historically been considered outside the traditional spheres of women's participation.

In contrast, only seven masculine headings were coded for the athletics category, and among them, only three headings—*Male cross-country runners*, *Male cheerleaders*, *Male junior high school athletes*—lacked female parallel headings. In particular, *Male cheerleaders* in this category can be seen as a parallel to *Male quiltmakers* in the occupation/field of activity category, in that masculine gender marking appeared within domains culturally coded as feminine.

Within the offense/custody category, there were only four masculine headings, whereas there were thirty-seven feminine headings in the same category. This disparity appears to reflect societal norms that associate criminal acts predominantly with men.[40] Feminine headings in this category lacking masculine equivalents include *Women suicide bombers*, *Women terrorists*, *Women child molesters*, *Women serial murderers*, *Women drug dealers*, *Women bank robbers*, and *Female assassins*. Consistent with the pronounced disparity between feminine and masculine headings, the proportion of masculine headings lacking feminine counterparts is very small. Of the four masculine headings, only one, *Young male prisoners*, had no feminine counterpart.

In the fictitious category, eleven feminine headings were identified, while only a single masculine heading, *Leopard men*, was found. Apparently, no feminine headings in this category have parallel masculine headings. This disparity is largely due to headings containing "Women superheroes," such as *Women superheroes in comics*, *Women superheroes in motion pictures*, and *Women superheroes in mass media*. Once again, there is no masculine parallel heading for *Women superheroes*. *Superheroes* was implicitly used to refer to male superheroes, while women superheroes are treated as exceptions.

Ethnic/National/Language

In the ethnic/national/language category, 981 feminine headings were identified, compared with only forty-seven masculine headings, an overwhelming ratio of more than twenty to one. Strikingly, 96.6 percent of the feminine headings lacked corresponding masculine forms. This asymmetry is especially pronounced for American Indigenous peoples: approximately 170 headings, such as *Abenaki women*, *Choctaw women*, *Haida women*, *Nez Percé women*, *Yakama women*, *Achi women*, *Otomi women*, *Tzeltal women*, *Mataco women*, and *Quechua women*, appeared only in feminine form. The sole exceptions were *Navajo women* and *Navajo women weavers*, which had masculine counterparts.

A substantial subset of feminine headings (390) was cross-coded with the occupation/field of activity category. Examples include *Women poets, Arab*; *Women novelists, Moroccan*; *Women dramatists, Korean*; *Women authors, Turkish*; *Indian women air pilots*; *Haitian American women surgeons*; and *African American women judges*. In contrast, only six masculine headings were cross-coded with occupation/field of activity, and all of these had feminine counterparts.

Notably, a significant number of feminine headings containing "African American women" (110 headings) were identified in this category, while only twelve masculine headings containing "African American men" appeared. Of these, seventy-four feminine headings were cross-coded for occupation/field of activity, but only two (*African American women singers* and *African American women teachers*) had masculine counterparts. The feminine-only examples highlight professional or leadership positions and traditionally male-dominated occupations, such as *African American women chemists*, *African American women chief executive officers*, *African American women executives*, *African American women fire fighters*, *African American women in higher education*, *African American women lawyers*, *African American women legislators*, *African American women physical scientists*, *African American women physicians*, *African American women school principals*, and *African*

American women school superintendents. Among the fourteen masculine headings lacking feminine counterparts, six included the phrase "gay men" (e.g., *Cree gay men*). Four of these would have feminine equivalents if headings containing "lesbians" had been included in the dataset.

Medical/Psychological/Disability, Age

In contrast with the categories examined thus far, some categories showed less pronounced disparities between feminine and masculine headings. In the age category, feminine headings accounted for 60.9 percent. Similarly, within the medical/psychological/disability category, feminine headings constituted 71.4 percent. These results may be explained by the comparatively weaker influence of gender norms in these categories, as opposed to the occupations or athletic fields, where male dominance has historically been more pronounced. Pronounced male dominance was obviously not the case for certain age groups or medical conditions. Moreover, gender itself is an important consideration in many medical and sociological contexts. These dynamics are evidenced by paired headings such as *Older women/Older men*, *Middle-aged women/Middle-aged men*, *Young women/Young men*, *Deaf women/Deaf men*, *Women with mental disabilities/Men with mental disabilities*.

However, there was still a disproportionately high number of feminine headings without masculine counterparts coded for the medical/psychological/disability category (fifteen out of twenty headings). Notably, headings such as *Women patients*, *Blind women*, *Autistic women*, and *Mentally ill women* lack parallel masculine forms, even though they describe broad medical conditions that affect all genders. It is also significant that headings like *Women athletes with disabilities*, *Women alcoholics*, and *Women drug addicts* highlight demographic groups or conditions that have, in many contexts, historically been associated with men.

In the age category, fourteen of the twenty feminine headings lacking masculine counterparts included the terms "older" or "middle-aged" (e.g., *Older women authors*, *Older women athletes*). By contrast, eight of the ten masculine headings lacking feminine counterparts contained the term "young" (e.g., *Hispanic American young men*, *Puerto Rican young men*, *Young male authors*, *Young bisexual men*). These patterns reveal a marked asymmetry: women's aging is explicitly marked in subject headings, whereas men's aging remains largely unmarked. Conversely, youth is disproportionately marked for masculine headings, far more than for feminine ones. This dynamic may not only underscore cultural and scholarly attention to women's aging and men's youth as distinct categories of study, but also reflect a patriarchal duality in a larger modern culture: women's aging is often remarked in terms of decline in youthful appearance, while men's youth is marked as noteworthy as a distinct phase toward achieving substance, growth, and success.[41]

General

In the general category, with the exception of *Women*, all of the feminine headings (seventy-six out of seventy-seven) either were linked to other topics through the conjunctive "and" (e.g., *Women and democracy*, *Advertising and women*, *Women and journalism*, *Women and land use planning*, *Women and communism*, *Women and the military*, *Women and sea*, *Women and war*, *Computers and*

women, *Museums and women*, and *Architecture and women*) or indicated portrayal (e.g., *Women in mass media*, *Women in comics*, *Women in video games*, and *Women in opera*).[42] These "and" heading patterns have drawn criticism for describing women in a passive role for works in which women play an active role.[43] Indeed, forty-two such "and" feminine headings were identified in the general category, forty of which lacked the masculine equivalents. By contrast, only two masculine "and" headings (*Men and literature*, *Motion pictures and men*) were found, and both had feminine counterparts. Overall, nearly all masculine headings (thirteen out of fourteen) had equivalent feminine counterparts, whereas the vast majority of feminine headings (sixty-four out of seventy-seven) lacked masculine equivalents. If *Women—Religious aspects—Christianity*, the feminine counterpart of *Men (Christian theology)*, were included in the dataset, all masculine headings in the general category would have corresponding feminine forms.

Education level

In the education level category, feminine headings accounted for 76.5 percent of the total (thirteen out of seventeen). However, this proportion would increase to 85.2 percent (twenty-three out of twenty-seven) if ten headings indicating students in specific fields, coded into the social category according to the LCDGT definition, had been coded for the education level category.[44] These headings distinctly indicate the education levels of the group members: *Women agricultural students*, *Women law students*, *Women medical students*, *Women science students*, *Women veterinary students*, *Women dental students*, *Women engineering students*, *Women sociology students*, *Women art students*, and *Women seminarians*. Notably, none of these headings has a corresponding masculine equivalent, and the majority pertain to fields that have been historically male-dominated.

By contrast, only four masculine subject headings were identified in this category: *Male college athletes*, *Male college students*, *African American male college students*, and *Male junior high school athletes*. Of these, only one heading, *Male junior high school athletes*, lacked a corresponding feminine form. By comparison, the majority of feminine headings did not have masculine counterparts. The examples included *Women college students in literature*, *Women doctoral students*, *Women graduate students*, *Women college graduates*, *Filipino American women college students*, *Hispanic American women college students*, *Indian women college students*, and *Minority women college graduates*. It is noteworthy that the feminine-only headings include those denoting advanced academic degrees beyond the undergraduate level (e.g., *Women doctoral students*, *Women graduate students*), as well as those referring to graduates rather than current students (e.g., *Women college graduates*, *Minority women college graduates*). This pattern suggests that women's educational experiences are disproportionately marked, while men's are left unmarked, reinforcing the implicit assumption of male students as the default.

Religion

In the religion category, feminine headings accounted for 86.9 percent of the total. One contributing factor to the disparity was the inclusion of twenty-nine "in" feminine headings (e.g., *Women in*

Buddhism, *Women in Judaism*, *Women in Christianity*) in this category. As discussed in the "Assignment of Categories" section, this form has been criticized for its ambiguity. No such structure was found in masculine headings grouped under the religion category.

Most of the masculine headings in this category had corresponding feminine counterparts (twelve out of seventeen headings). Notably, the five masculine headings lacking feminine equivalents were also coded for the gender/sexual orientation category, including the qualifier "gay": *Jewish gay men*, *Catholic gay men*, *Muslim gay men*, *Christian gay men*, and *Presbyterian gay men*. Thus, if headings containing "lesbians" were included in the dataset, only one masculine heading, *Presbyterian gay men*, would remain lacking a corresponding feminine counterpart.

In particular, the masculine headings with corresponding feminine headings in this category pertain to widely accepted religions or religious sects, such as *Christian men*, *Muslim men*, *Catholic men*, *Jewish men*, *Protestant men*, and *Presbyterian men*. By contrast, the feminine headings lacking corresponding masculine equivalents encompass a more diverse range of religious affiliations (e.g., *Taoist women*, *Moravian women*, *Zoroastrian women*, *Bahai women, Anabaptist women*, *Jaina women*, *Swedenborgian women*).

Social, Time

The characteristics of the headings grouped under the social category exhibit greater variety compared with those in other categories.[45] Nevertheless, feminine headings constitute 85.0 percent of the total in this category. Indeed, 89.4 percent (177 out of 198) of feminine headings in the social category lacked masculine counterparts. Those feminine-only headings included many headings related to reform or activism (e.g., *Women political activists*, *Women social reformers*, *Women abolitionists*, *Women revolutionaries*, *Women pioneers*, *Women pacifists*, and *Women philanthropists*) and headings not traditionally associated with women (e.g., *Women cigarette smokers*, *Women daredevils*, *Women heads of households*, *Women intellectuals*, *Women soccer fans*, *Women sports spectators*, *Successful women*, *Tattooed women*, *Women presidential candidates*, *Women political candidates*).

In contrast, only 40.0 percent of the masculine headings (fourteen out of thirty-five) lacked feminine counterparts. Several of these terms are associated with categories traditionally linked to women, such as *Male feminists*, *Male sexual abuse victims*, *Male rape victims*, and *Male fans*. In addition, a substantial proportion of the remaining terms refer to conditions or identities historically applicable only to men, such as *Uncircumcised men*, *Strong men*, and *Remittance men*. These latter examples do not necessarily reflect normative bias but rather denote gender-specific phenomena. Furthermore, as was the case in other categories, although gender bias predominantly affects women, instances of this bias, albeit on a smaller scale, were observable in both directions in some cases. For example, while there is no parallel masculine term for *Tall women*, there is also no parallel feminine equivalent for *Short men*.

In the time category, no masculine headings were coded for this category, and only three feminine headings were identified: *Women, Prehistoric*; *Women, Prehistoric, in art*; *Women healers, Medieval*.

Gender/Sexual orientation

Headings in the gender/sexual orientation category exhibit a reverse pattern, with a higher number of masculine headings compared with feminine headings: forty-one (73.2 percent) and fifteen (26.8 percent), respectively. It is primarily because the paired heading for *Gay men* is *Lesbians* in LCSH, and headings containing "lesbians" were not included in this study.[46]

In fact, almost all masculine headings lacking feminine counterparts (thirty-three headings) contained "gay men" or "bisexual." The sole exception was *Female-to-male transsexuals in art*. Only twelve out of those thirty-three masculine headings would be truly without feminine counterparts if headings containing "lesbians" were included. Reclassifying the twenty-one headings with feminine counterparts containing "lesbian" as having feminine equivalents would reduce the proportion of masculine headings without feminine counterparts in this category from 80.5 percent (thirty-three headings) to 29.3 percent (twelve headings), a level comparable with the proportions observed in other categories such as education (25.0 percent), ethnic/national/language (29.8 percent), occupation/field of activity (34.9 percent), and religion (29.4 percent).

Discussion and analysis

As has been observed, the disproportionately large number of headings coded for the occupation/field of activity and the ethnic/national/language categories can be attributed largely to the prevalence of feminine headings within these categories. In contrast, the number of masculine headings in these categories does not differ significantly from those in the other categories (see figure 2).

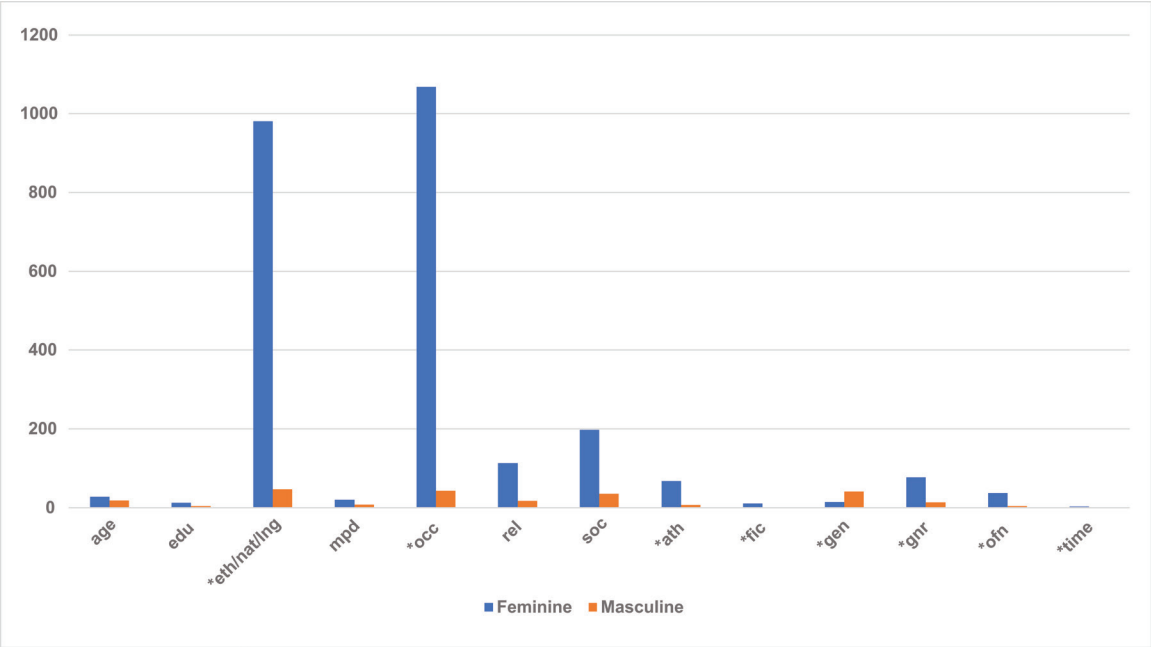

Figure 2. Number of feminine and masculine headings coded for each category.
Note: Total number of categories coded for 2,343 headings was 2,871.
*Categories have been modified from LCDGT. See table 1 for further details.

While this study focuses on presenting a comprehensive, quantitative analysis of gendered headings, anyone interested in further exploring reasons for considerable gender disparity in LCSH can readily identify several broader contexts offering explanations. As Rogers noted, the high number of feminine headings in the occupation/field of activity category can in part be explained by the explosive increase in occupational headings for women between 1975 (*Library of Congress Subject Headings*, 8th edition) and 1980 (9th edition), followed by the continued growth until 1991 (14th edition).[47] Likewise, the large number of feminine headings coded for the ethnic/national/language category can partly be traced to hundreds of headings referring to women of particular ethnicities added between 1993 and 2004. As Waterman noted, terms such as *Women, Achuar*; *Women, Acoma*; *Women, Afghan American* were added to LCSH during that period.[48]

Regarding the exceptionally high number of feminine headings in the two categories, important context that should not be overlooked is the rise of women's studies and related disciplines. This led to an increase in the creation of women-related headings driven by literary warrant, influenced by third-wave feminism beginning in the early 1990s.[49] Central to this movement was the concept of intersectionality, which examined the layers of oppression women face as a result of gender, race, and class.[50] In addition to a proliferation of newly emerging literature that needs headings, Rogers also noted that the surge of occupational headings for women reflected a growing awareness and broader recognition of women's roles extending beyond traditional domestic spheres as discrete, identifiable topics, paralleling the expansion of women's studies as a scholarly discipline.[51]

It is also undeniable that, along with this growth in feminine headings, however, remaining forms of biases have continued to contribute to disparities in the numbers of feminine and masculine headings in these two categories. One of these biases is the subsuming of terminology, as Rogers and Marshall noted, where terms, used for people in general, are also used for men in specific contexts.[52] As explained earlier with examples in the "Gendered LCSH Terms" section, the male-centric norms have perpetuated disparities by assigning existing general headings to resources when specific masculine terms would be more appropriate and should have been warranted. In fact, the large number of feminine headings within the occupation/field of activity category reflects a long-standing practice of explicitly designating women in professional roles, without creating equivalent masculine headings. Women's participation in these fields is singled out through gendered headings such as *Women physicians*, *Women astronauts*, and *Women engineers*, while the unmarked terms *Physicians*, *Astronauts*, and *Engineers* implicitly continue to be used to represent men. It should be noted that many of these headings originated as part of the gradual replacement of earlier forms like *Women as physicians*, *Women as engineers*, and *Women as astronauts*. These "Women as…" constructions were criticized as a reflection of male chauvinism, as they reinforced the assumption that the normative physician, engineer, or astronaut was male and that women in these professions were exceptions to that norm. Currently, LCSH does not include any occupational headings containing "women" or "female" with "as."

Furthermore, LCSH has a general policy that instructs catalogers to assign a broader heading that represents two or three subtopics when it "includes no other topics within its scope." Because gender

is deeply entrenched within simplistic female and male binaries within LCSH, it might be possible that the instruction also played a role in inhibiting the creation of masculine headings even when possibly warranted by works that discuss the activities and positions of both men and women specific to a particular subject.[53]

Use of Gender Markers in LCSH

Gender marking is a way of "explicitly signaling that a linguistic expression refers to a male or female being." The semantic feature of gender in English can be marked through various linguistic means, including attributive adjectives (e.g., male nurse), compounding (e.g., chairman), and derivation (e.g., actor/actress).[54] The present study examines LCSH terms in which gender is explicitly marked by attributive adjectives (female, male) or by gender-denoting nouns (women, men) appearing either in head position (e.g., *African American women*) or in modifier position (e.g., *Women daredevils*) within a noun phrase.

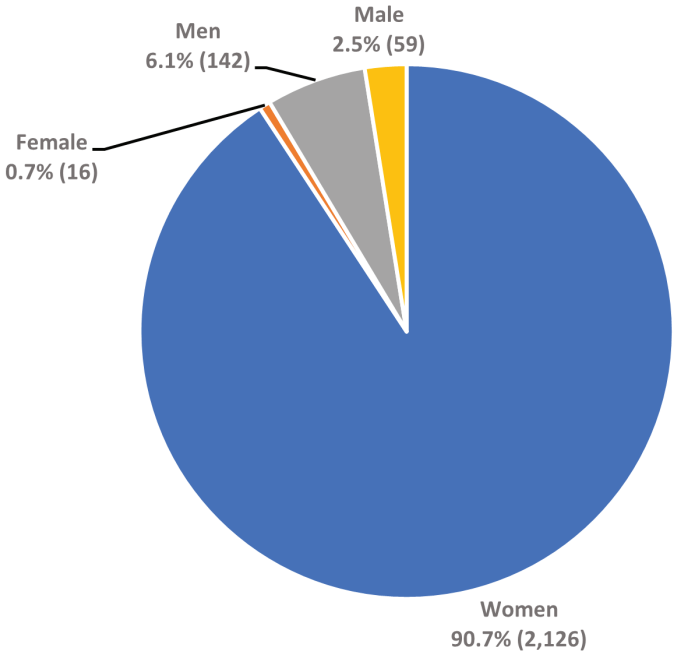

Figure 3. Proportion of LCSH terms by gender markers.
Note: Percentages were calculated against 2,343 headings, the entire dataset.

The results in table 2 in the "Gendered LCSH Terms" section revealed a pattern in the use of gender markers within LCSH. Notably, the dataset indicated a substantial prevalence of the nominal forms, "women" and "men"—90.7 percent (2,126 headings) and 6.1 percent (142 headings), respectively—compared with their adjectival counterparts, "female" and "male," 0.7 percent (sixteen headings) and 2.5 percent (fifty-nine headings), respectively. The predominant use of the nominal gender forms obviously reflects the fact that in LCSH, *Women* and *Men* are reserved for works on human females and males, while *Females* and *Males* are reserved for works on female and male organisms in general.[55] However, it is noteworthy that the dataset demonstrates that the adjectival forms, "male" and "female," are still employed to mark gender in some demographic headings, albeit much less frequently (3.2 percent or seventy-five headings) compared with the nominal forms, "men" and "women" (96.8 percent or 2,268 headings).

Another noteworthy pattern emerges when comparing the use of "women" vs. "female" forms and "men" vs. "male" forms. Among the feminine headings, the gender marker "women" was used far more frequently than "female," appearing in almost all cases (99.3 percent, 2,126 out of 2,142). In contrast, the use of the terms "men" and "male" was much less skewed: 70.6 percent (142 out of 201) and 29.4 percent (fifty-nine out of 201) (figure 3). The primary reason for this contrast is that "women" is used both as a personal head noun and as a modifier, as evident in examples such as *Navajo women*

and *Women teachers*, whereas "men" is used exclusively as a head noun and "male" is consistently used as a modifier, as in *Navajo men* and *Male teachers*.

Historically, the decision to use "male" exclusively as a gender marking modifier for masculine headings can be traced back to the comprehensive replacement of noun modifier "men," with the attributive adjective "male" at the beginning of 1998.[56] The change resulted, for example, in *Men nurses* and *Men authors* being replaced by *Male nurses* and *Male authors*, respectively. Consequently, the two different types of gender markers, "women" and "male," are now being used as modifiers in LCSH.

This discrepancy is clearly indicated in the *see also* notes for *Women* and *Men*. The subject authority record for *Women* includes the *see also* reference: "headings beginning with the word Women," whereas the *see also* reference for *Men* directs catalogers to search also under "headings beginning with the word Male, e.g., *Male nurses*."[57] As shown in this study, because "female" is also used to serve as a gender marker, this *see also* reference note, particularly for *Women*, may mislead users by failing to direct them to search under headings containing "female." In contrast, there is no similar issue for *Men* because no masculine demographic headings begin with "men," and the word "Male" is consistently used at the beginning of a heading as a gender marking adjectival qualifier. The inconsistent use of feminine gender markers in LCSH, together with the misleading *see also* references under *Women*, hinders effective retrieval. Addressing these issues would reduce confusion, improve search precision, and improve resource discoverability for both catalogers and users.

As noted earlier, a category-by-category analysis of gender markers revealed "women" was predominantly favored over "female," as evidenced by 1,065 headings containing "women" compared with only three containing "female" in the occupation/field of activity category. The offense/custody category had a higher incidence of "female," however, accounting for ten of the twenty "female" headings in total. While twenty-seven headings containing "women" still outnumbered those ten headings containing "female" in this category, the disparity was far less pronounced than in the occupation/field of activity category. One possible explanation is the continued use of *Female offenders*, a term introduced in 1974 to replace *Delinquent women*, and its derivatives (i.e., *Female offenders in literature*, *Female sex offenders*). Despite being an improvement, these terms have faced criticism for not aligning with other headings for criminals. Marshall criticized *Female offenders* and *Reformatories for women*, used instead of "Women criminals" and "Prisons for women," respectively.[58] Because half of the "female" headings fall under the offense/custody category, it is possible for users relying on the *see also* reference for *Women* to miss a substantial number of feminine headings in this category.

Conclusion

This study surveyed how the gender binaries were represented and marked as shown in the total number of LCSH terms containing "women"/"female" or "men"/"male." The results show that LCSH has a significantly disproportionate number of feminine demographic terms (91.4 percent, 2,142 terms). A significant disparity was also observed in gendered headings lacking corresponding terms for the opposite gender. Almost all feminine headings (94.1 percent, 2,016 out of 2,142) lacked equivalent

masculine headings, while only 37.3 percent (seventy-five out of 201) of masculine headings lacked equivalent feminine LCSH terms. This stark difference paralleled the lopsided difference in the total number of feminine and masculine headings.

This study also examined gendered headings coded into thirteen demographic categories to analyze their distribution across the categories. Analysis of the terms grouped by the demographic categories showed that the proportion of gendered headings varied significantly in some cases, with greater disparities evident in categories such as occupation/field of activity, athletics, and offense/custody. The results suggest that the disparity between feminine and masculine headings is particularly severe in categories that have historically been associated with men.

This study validates Olson's observation that LCSH expresses gender explicitly when it is outside of the norm.[59] It also shows that Berman's classic criticism on parochial LCSH terms regarding people and cultures remains valid:

> In the realm of headings that deal with people and cultures—in short, with humanity—the LC list can only satisfy parochial, jingoistic Europeans and North Americans, white-hued, at least nominally Christian (and preferably Protestant) in faith, comfortably situated in the middle- and higher-income brackets, largely domiciled in suburbia, fundamentally loyal to the Established Order, and heavily imbued with the transcendent, incomparable glory of Western civilization.[60]

The shortage or absence of discrete headings for men that parallel those established for women reveals the gender bias embedded within LCSH and, more broadly, within broader cultural norms—biases that appear to have shaped term creation regardless of intention. The disproportionate distribution of feminine headings across various categories suggests a selective process in establishing headings for men and women. This issue extends beyond LCSH itself. If authors had taken patriarchal systems for granted and not written about "male executives" but just "executives," for example, the principle of literary warrant might have resulted in gender-neutral headings being assigned in bibliographic records, thereby masking traditional gender stereotypes in nondomestic spheres. By applying patriarchal perspectives as universal and normative, LCSH reinforces and perpetuates systemic gender bias in library metadata.[61] This issue is compounded by the subject cataloging policy of assigning a broader heading to represent two or three subtopics within its scope, which might have a further effect of impeding the creation of masculine headings when authors discuss both men and women as subgroups in some specific subjects.

The significant disparity between the number of feminine and masculine headings, together with the disproportionately large share of feminine headings lacking masculine equivalents (and the reverse for masculine headings), points to a pattern of subsuming terminology, as noted by Marshall and Rogers, in which generic terms function as masculine by default. This practice not only suggests sexism within LCSH but also creates challenges for users searching for library resources on general topics versus those specific to men. Both types of resources are grouped under the general topic, with no mechanism to distinguish or collocate them separately.[62]

Feminine headings, in conjunction with cataloging practices, potentially marginalize resources that lack corresponding generic headings. Resources that have only feminine headings assigned in their bibliographic records may be excluded from searches conducted using generic headings, whereas resources related to men, due to subsuming terminology, are likely to be included in search results. This issue also applies to masculine headings; however, because the number of masculine headings is much smaller than that of feminine headings, the same risk is significantly smaller for resources related to men. Only assigning headings like *Women scientists* or *Women accountants*, for example, in effect segregates those groups as separate, special classes when they are no less scientists or accountants in the male-dominated fields. One practical approach to solving this problem may be through catalogers consistently supplementing these headings with broader gender-neutral headings.[63] In LCSH, when a biography is assigned headings specifying sex or ethnic group of persons, catalogers are instructed to also assign a corresponding generic heading. For example, a biography with *Women architects* as its subject heading should also include *Architects* as a subject heading.[64] The *Subject Headings Manual* is silent on applying this practice consistently to other types of resources, however.

Another method is to implement a faceted approach to assigning subject headings. Rather than creating or assigning a single, precoordinated subject heading such as *Black women scientists*, catalogers could assign multiple discrete headings, such as *Black people*, *Women*, and *Scientists*. This faceted approach ensures that resources containing *Women* as their subject heading will still appear when users search broadly under a general subject heading such as *Scientists*.[65] However, it also risks reducing precision: users seeking works specifically about "Black women scientists" may retrieve materials on any of these individual facets unless the system or users apply effective Boolean combinations. Additionally, faceting does not preserve the semantic specificity conveyed by a precoordinated heading. For example, if a resource discusses *Navajo women weavers* and *Asian American men*, assigning separate facets (i.e., Navajo, Asian American, Women, Men, Weavers), does not accurately represent the resource's context. As a result, the resource may appear in a search for Navajo men, even though that combination does not occur in the work itself. Such false positives highlight the trade-off between flexibility and precision inherent in a faceted approach to subject access.

This study's findings also suggest the potential marginalization of resources containing demographic headings beginning with "Female," because the *see also* note for *Women* references only headings beginning with "Women." In the offense/custody category, ten of the thirty-seven headings began with "female," making resources in this group more likely to be missed than those in other categories. Furthermore, the results show that "men" and "male" consistently appear in the head noun (e.g., *Navajo men*) and modifier (e.g., *Male feminists*) positions, respectively, whereas "women" appears in both the head noun and modifier positions, with "female" appearing in the modifier position. The discrepancies in the usage of gender markers in the construction of subject headings, as well as the *see also* note for *Women*, could confuse users and potentially marginalize resources with headings beginning with any one of these terms.

Although this study provides valuable insights into the gendered structure of LCSH, it is certainly not without some important limitations. The categorization of certain terms in this study, particularly those with ambiguous or overlapping meanings, is not definitive. Some headings occupy borderline positions between categories, and the category boundaries themselves are often fluid, leaving certain classification decisions open to interpretation. The categorizations employed in this study represent, therefore, one possible approach, and alternative, equally valid approaches may certainly be possible. In addition, feminine and masculine terms such as *Wives*, *Husbands*, *Queens*, *Kings*, *Fathers*, and *Mothers* were excluded from the scope of this study because these headings are not suitable for analyzing the specific patterns by which LCSH constructs gendered headings using four explicit gender markers. For the same reason, compound words (e.g., *Businesswomen*) were also excluded. Nonetheless, examining patterns in these excluded terms could also provide valuable insights and contribute to a more comprehensive understanding of gender representation in LCSH. Furthermore, while this analysis is primarily quantitative, future qualitative research will be needed to provide a deeper understanding of these issues. In addition, investigation on paired headings structured as [x for/in/to/with/of women] and [x for/in/to/with/of men], which were excluded from the scope of this study, may reveal further evidence of gender bias in LCSH. For example, *Fencing for women*, *Leadership in women*, and *Shooting for women* lacked masculine counterparts, whereas *Cosmetics for men* and *Ballet dancing for men* lacked feminine counterparts.

Language not only reflects cultural norms but also shapes how people perceive and conceptualize the world.[66] Subject headings, likewise, are not neutral descriptors but carry cultural assumptions that influence how users encounter and conceptualize knowledge. Male-as-norm bias and other normative assumptions are thereby reinforced through subject vocabularies. Because LCSH is widely adopted internationally, its ideological influence extends beyond the local to the global.

While the current information environment continues to evolve with advancements in linked data, discovery systems, and artificial intelligence, among other advancements, most users clearly lack advanced search skills to harness the full potential of controlled vocabularies. Recent literature seems to underscore the continuing relevance of LCSH and other controlled vocabularies. Users tend to struggle with formulating or iterating appropriate keyword searches; search performance improves for those who learn to use controlled vocabularies because they are designed to eliminate inherent ambiguity and variations in natural language; and quality structured metadata, including controlled vocabularies, provides an essential foundation for developing sophisticated retrieval systems that can better support their information needs with high accuracy and precision.[67]

Research on natural languages has shown that in both gendered and nongendered systems, generic human terms frequently default to male referents.[68] LCSH, however, is not a natural language: gender is marked according to prescribed rules designed to support effective information retrieval. Although gender bias in natural languages is embedded in grammar, lexicon, and everyday use—making reform slow and diffuse—it is possible to address bias in controlled vocabularies more systemically.[69] As designed systems are governed by prescriptive rules and centralized authority, they allow for deliberate

intervention. Ensuring equitable gender marking in LCSH thus serves a dual purpose: enhancing retrieval effectiveness and counteracting the reinforcement of male-as-norm assumptions.

Acknowledgment

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Notes

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3. Ursula Doleschal, "Gender Marking," in *Word-Formation: An International Handbook of the Languages of Europe*, vol. 2, eds. Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen, and Franz Rainer (De Gruyter Mouton, 2015), 1159.
4. Berman, *Prejudices and Antipathies*.
5. Monika Kirtland and Pauline Cochrane, "Critical Views of LCSH—Library of Congress Subject Headings: A Bibliographic and Bibliometric Essay," *Cataloging & Classification Quarterly* 1, no. 2–3 (1982): 71–94.
6. Kirtland and Cochrane, "Critical Views of LCSH"; Karen S. Fischer, "Critical Views of LCSH, 1990–2001: The Third Bibliographic Essay," *Cataloging & Classification Quarterly* 41, no. 1 (2005): 63–109; Steven Blake Shubert, "Critical Views of LCSH—Ten Years Later: A Bibliographic Essay," *Cataloging & Classification Quarterly* 15, no. 2 (1992): 37–97.
7. Hope A. Olson and Rose Schlegl, "Bias in Subject Access Standards: A Content Analysis of the Critical Literature," in *Proceedings of the Annual Conference of CAIS/Actes du congrès annuel de l'ACSI* (1999): 236–47.
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9. Berman, *Prejudices and Antipathies*.
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12. Emily Drabinski, "Queering the Catalog: Queer Theory and the Politics of Correction," *The Library Quarterly 83*, no. 2 (2013): 94–111.
13. Kristin H. Gerhard, Mila C. Su, and Charlotte C. Rubens, "An Empirical Examination of Subject Headings for Women's Studies Core Materials," *College & Research Libraries* 59, no. 2 (1998): 129–37.

14. Margaret N. Rogers, "Are We on Equal Terms Yet? Subject Headings Concerning Women in LCSH, 1975–1991," *Library Resources and Technical Services* 37, no. 2 (1993): 181–96; Tracy Waterman, *Sex and Gender in the Library of Congress Subject Headings, 1988–2003* (master's paper, University of North Carolina at Chapel Hill, 2004); Steven A. Knowlton, "Three Decades Since *Prejudices and Antipathies*: A Study of Changes in the Library of Congress Subject Headings," *Cataloging & Classification Quarterly* 40, no. 2 (2005): 123–45.
15. Rogers, "Are We on Equal Terms Yet?"
16. Waterman, *Sex and Gender in the Library of Congress Subject Headings*.
17. Amanda Ros, "The Bias Hiding in Your Library," *The Conversation*, March 20, 2019, https://theconversation.com/the-bias-hiding-in-your-library-111951.
18. Based on searches replicated in Online Computer Library Center (OCLC) Connexion, note also that the numbers likely included LC Children's Subject Headings, as well as a large number of the same main headings combined with different subdivisions, and 4XX field references.
19. Evan Peter Williamson, "Fetching and Parsing Data from the Web with OpenRefine," *Programming Historian* 6 (2017), https://doi.org/10.46430/phen0065.
20. In LCSH, works on male or female organisms in general are entered under *Males* or *Females*. Works on the human male are entered under *Men*, while works on the human female are entered under *Women*.
21. LCDGT Manuals under "Understanding the LCDGT categories" section are L500: Age Category, L505: Education Level Category, L510: Ethni/Cultural Category, L515: Language Category, L520: Medical, Psychological, and Disability Category, L525: National/Regional Category, L530: Occupation/Field of Activity Category, L535: Religion Category, and L540: Social Category.
22. L510: Ethnic/Cultural Category, L515: Language Category, L525: National/Regional Category, and L405: Categories of Terms of LCDGT Manual.
23. Library of Congress, "L505: Education Level Category," *LCDGT Manual* (2025), https://www.loc.gov/aba/publications/FreeLCDGT/L505.pdf.
24. Library of Congress, "H 350: Nationality Designation of Classes of Person," *Subject Headings Manual* (2013): 1–2, https://www.loc.gov/aba/publications/FreeSHM/H0350.pdf.
25. Library of Congress, "H 350: Nationality Designation of Classes of Person." Adjectival qualifiers can also be used to indicate the nationality of students. However, within the scope of this study, no headings were found that reference students and include adjectival qualifiers for their nationality.
26. By LCSH policy, qualifiers for literary authors can indicate the nationality, the ethnic group, and the language of the group members. Per *Subject Headings Manual* H 350, both headings of the type [class of authors], [nationality] and [class of authors], [ethnic group] exist.
27. Library of Congress. "L530: Occupation/Field of Activity Category," *LCDGT Manual* (2025), https://www.loc.gov/aba/publications/FreeLCDGT/L530.pdf.
28. "Jewish" means "belonging or relating to the religion of Judaism or to Jews" (Collins Dictionary at https://www.collinsdictionary.com/dictionary/english/jewish). In the *Subject Headings Manual*, "Jewish" is discussed as a religious group, while "Jews" is discussed as an ethnic group. See Library of Congress, "H 1103: Classes of Persons," *Subject Headings Manual* (2013), 1.

29. Library of Congress, "L500: Age Category," *LCDGT Manual* (2025), https://www.loc.gov/aba/publications/FreeLCDGT/L500.pdf. See the education level category in the "Scope of Categories" section for additional examples.
30. In LCSH, *Minority women* is often assigned to resources about *People of color*. For sexual minority, *Sexual minority women* is used.
31. "Women in [field]" structure in LCSH has been criticized as an inaccurate and offensive form, similar to the "Women as [occupation]" structure (see Berman, *Prejudices and Antipathies*, 204; and Marshall, *On Equal Terms*, 8).
32. Berman, *Prejudices and Antipathies*, 203–4; Marshall, *On Equal Terms*, 8.
33. Throughout the text, percentages have been rounded to the nearest tenth for consistency.
34. Bibliographic record for *The Rôles of Men and Women in Eskimo Culture*, OCLC database, accessed via OCLC Connexion, OCLC 1601807, accessed September 23, 2025. Note that had *Eskimo men* been available as an established heading, it might have paradoxically resulted in no gendered headings assigned on the bibliographic record, because LCSH policy states: "Do not assign headings that represent the subtopics normally considered to be included in an assigned heading's coverage" (*Subject Headings Manual*, H 180, "Assigning and Constructing Subject Headings"). Clear guidance might be warranted on assigning gendered demographic headings, however, because gender is neither binary nor should be seen as being unambiguously reducible to men and women.
35. Bibliographic record for *Different Paths of Inupiat Men and Women in the Wage Economy: The North Slope Experience*, OCLC database, accessed via OCLC Connexion, OCLC 11649649, accessed September 23, 2025.
36. Bibliographic record for *The Occult Sylvia Plath: The Hidden Spiritual Life of the Visionary Poet*, OCLC database, accessed via OCLC Connexion, OCLC 1390774729, accessed September 23, 2025; Bibliographic record for *James Buchanan Elmore (1857–1942): Literary Ethnographer and Folk Poet*, OCLC database, accessed via OCLC Connexion, OCLC 1432308705, accessed September 23, 2025.
37. Hope A. Olson, "The Power to Name: Representation in Library Catalogs," *Signs: Journal of Women in Culture and Society* 26, no. 3 (2001), 646.
38. Trinh T. Minh-ha, *When the Moon Waxes Red: Representation, Gender, and Cultural Politics* (New York: Routledge, 1991), 123.
39. For example, while *Women nurses* does have its equivalent term, *Male nurses*, the masculine heading was added to LCSH in or before 1986. In contrast, *Women nurses* was added only in 2016. Similarly, *Male lawyers* was added to LCSH in 2010, whereas *Women as lawyers* (replaced by *Women lawyers* in 1993) had already been included in LCSH in 1986 or earlier. The exact date when *Male nurses* was added to the OCLC authority file needs further investigation. Since LCSH data was converted into the MARC authority format in 1986, the heading may have existed in LCSH prior to 1986 and been incorporated into OCLC's authority file only at the time of conversion. See Lynn M. El-Hoshy, "Relationships in Library of Congress Subject Headings," in *Relationships in the Organization of Knowledge*, eds. Carol A. Bean and Rebecca Green (Springer Netherlands, 2001), 136.
40. Berman, *Prejudices and Antipathies*, 181.
41. See Allan D. Cooper, *Patriarchy and the Politics of Beauty* (Lexington Books, 2019).

42. Portrayal of women as expressed in "in" headings in the general category (thirty-four headings) also outnumbered headings indicating portrayal of men in the general category (eleven headings).
43. Rogers, "Are We on Equal Terms Yet?," 194.
44. Library of Congress, "L505: Education Level Category."
45. Terms that cannot be included in the other categories are grouped under the social category. See Library of Congress, "L505: Education Level Category," 1.
46. In LCSH, the variant form for *Lesbian* is *Gay women*.
47. Rogers, "Are We on Equal Terms Yet?," 184.
48. Waterman, *Sex and Gender in the Library of Congress Subject Headings*, 69. These headings were added in 1995, 1993, and 2002, respectively.
49. Leslie Heywood and Jennifer Drake, eds., *Third Wave Agenda: Being Feminist, Doing Feminism* (University of Minnesota Press, 1997), http://www.jstor.org/stable/10.5749/j.ctttv3bd.
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51. Rogers, "Are We on Equal Terms Yet?," 184.
52. Rogers, "Are We on Equal Terms Yet?," 190; Marshall, *On Equal Terms*, 9.
53. Marshall, *On Equal Terms*, vii; Berman, *Prejudices and Antipathies*, 174; Library of Congress, *Subject Headings Manual*, "H 360: Free-Floating Subdivisions," https://www.loc.gov/aba/publications/FreeSHM/H0360.pdf; Library of Congress, "H 180: Assigning and Constructing Subject Headings," *Subject Headings Manual*, 1–9, https://www.loc.gov/aba/publications/FreeSHM/H0180.pdf.
54. Doleschal, "Gender Marking," 1159.
55. See the general notes for *Women* (https://id.loc.gov/authorities/subjects/sh85147274.html) and *Men* (https://id.loc.gov/authorities/subjects/sh85083510.html).
56. Library of Congress, "Library of Congress Subject Headings Weekly List 01 (December 30, 1997)," https://www.loc.gov/catdir/cpso/wls98/awls9801.html.
57. LC Subject Heading, *Men*, accessed July 19, 2025, https://classweb.org/.
58. Marshall, *On Equal Terms*, 8.
59. Olson, "The Power to Name: Representation in Library Catalogs," 647.
60. Berman, *Prejudices and Antipathies*, ix.
61. Olson, "The Power to Name: Representation in Library Catalogs," 647; Library of Congress, "H 180: Assigning and Constructing Subject Headings."
62. Rogers, "Are We on Equal Terms Yet?," 190; Marshall, *On Equal Terms*, 9.
63. Rogers, 191.
64. Library of Congress, "H 1330: Biography," *Subject Headings Manual*, 1–9, https://www.loc.gov/aba/publications/FreeSHM/H1330.pdf.

65. H. E. Wintermute, Heather M. Campbell, Christopher S. Dieckman, Nausicaa L. Rose, and Hema Thulsidhos, "Persons and Groups," chap. 3 in *The DEI Metadata Handbook: A Guide to Diverse, Equitable, and Inclusive Description* (Iowa State University Digital Press, 2024), https://doi.org/10.31274/isudp.2024.153.

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67. David C. Murray, and Yuji Tosaka, "The Utility of Teaching LCSH: An Exploratory Study," *The Reference Librarian* 66, no. 3–4 (2025): 137–59, https://doi.org/10.1080/02763877.2025.2545770; Ravi Varma Kumar Bevara, Brady D. Lund, Nishith Reddy Mannuru, Sai Pranathi Karedla, Yara Mohammed, Sai Tulasi Kolapudi, and Aashrith Mannuru, "Prospects of Retrieval Augmented Generation (RAG) for Academic Library Search and Retrieval," *Information Technology and Librarie*s 44, no. 2 (2025), https://doi.org/10.5860/ital.v44i2.17361.

68. Doleschal, "Gender Marking," 1162. English is not entirely non-gendered: while it lacks a system of grammatical gender for most nouns, it does distinguish gender in the third-person singular pronouns (he, she, it). Most English nouns are gender neutral, and gender marking is lexically done. By contrast, many languages such as Spanish, French, and German employ grammatical gender systems, whereas languages like Turkish are considered non-gendered.

69. Whorf, *Language, Thought, and Reality*, 156.

NOTES ON OPERATIONS

Investigating High-Cost Ebooks Purchasing Workflows to Support Course Reserves

Kerri Goergen-Doll and Taylor Ralph

As academic libraries have increasingly shifted to purchasing ebooks that are licensed rather than owned, and are more expensive than print books, challenges to the acquisition and budgeting of textbooks for course reserves have increased. These challenges associated with online textbooks impact how libraries approach initiatives to enhance student affordability. This three-year study analyzes the usage data of high-cost (i.e., those costing more than $500) ebooks purchased as course texts by the library. The analysis demonstrated that the number of titles and the overall cost were relatively low. In contrast, the use of these ebooks was high (exceeding 200 uses per month), especially compared with other ebooks the library had acquired to support curricular and research needs. This data enabled the library to revise the acquisition process, removing the cost-based approval step, which improved the acquisitions workflow and students' access to titles.

Introduction

In academic libraries, one unresolved question is whether acquiring textbooks and supporting course reserves should be a library service. Until the global coronavirus pandemic, Oregon State University Libraries (OSUL) had a policy prohibiting the purchase of textbooks to support courses. This policy was enforced inconsistently. Since 2014, OSUL has encouraged the use of open educational resources (OERs), but adoption has not kept pace with the growth of class offerings. Approximately 41 percent of class sections at OSU offer low- or no-cost course materials.[1] Faculty generally continue to prioritize texts that align with their course content, despite being aware of affordability issues, and still grapple with questions of quality between OERs and commercial options.[2] The Oregon state legislature passed two bills related to textbook affordability in 2015 and 2019. Despite the research, the institutional focus on affordability, and state legislation, the adoption of OERs has lagged behind the actual need.

Student needs for online learning materials have grown because of the many ways learners can pursue their education at OSUL. Overall, enrollment has increased by 16.3 percent over the last five years. The primary growth has been in distance learning enrollment, and this trend is expected to continue. Supporting an online student learning experience means leaning heavily into electronic collections.

The library initiated a purchase on demand (POD) service through the Interlibrary Loan unit in 2009; based on the usage of content purchased through that program, the POD service has remained in place.

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Faculty and students identify titles for the library to purchase and indicate whether the title supports a class or research. Titles purchased through the POD workflow typically see higher usage than titles purchased just in case.[3] Because of that data and a limited collections budget, OSUL continues to lean into POD acquisitions for books (both print and digital).

Because the physical libraries shut down in March 2020 during the pandemic, the policy restricting the library's purchase of textbooks for course reserves was temporarily paused. To support student success during a worldwide pandemic when student finances were strained more than usual, OSUL initiated controlled digital lending (CDL) and secured institutional access to unlimited-user ebooks required for courses. In 2022, the collection development policy regarding textbook purchasing was updated to allow the purchase of course materials when possible. The focus on course material support aligned with the values of learner affordability in the OSUL's Collections Values Framework.[4]

Many procedural changes were needed as OSUL began shifting work to meet the new demands of textbook acquisition and CDL. Because it was unclear whether the same high level of usage (i.e., exceeding 200 uses per month) of library-provided access to course materials would continue post-pandemic, any ebooks priced at $500 or more required additional approval from the director of collection development. This extra check required time for an employee to gather details about the class (class size, location, required or supplemental reading) and the required text (ebook license type, platform access, edition availability), and time for the director to view that information and respond with a decision.

After about six months of this approval procedure, the director inquired whether data could be collected to determine whether the additional steps to purchase high-cost ebooks were necessary. The delays in access caused by the multiple steps appeared to be a barrier for students and an added cost in employee time, particularly for the limited number of texts that met the price threshold. In addition, very few of the requests for high-cost ebooks were denied. Typically, the requests were denied because of limited availability of an electronic book with a multiuser license.

To determine whether the existing approval procedure and limits were necessary, we asked the following questions:

- Is the course reserve usage of ebooks different depending on the license cost?
- Would there be significant impacts on the collections budget by removing or changing the price threshold?
- Was there an overrepresentation of subject headings in the high-cost data set? If so, would continuing to mediate those titles delay access to students in specific fields of study?
- Is the data provided by vendors/publishers robust enough to answer the questions?

The results of this study support data-driven decision-making related to the mediation process for high-cost ebooks requested for course reserves. Additionally, this work provides a model for collecting and evaluating use and cost data to determine the return on investment of providing course reserves as an academic library service.

Literature Review

Even with state and federal support aimed at minimizing the overall cost of postsecondary education, including related fees such as textbooks, the cost of tuition and fees continues to increase.[5] While tuition increased by 4.7 percent between February 2020 and January 2023, textbook prices increased by 7.2 percent.[6] That three-year increase is on top of the 86.7 percent increase in textbook prices between 2006 and 2016.[7]

With the increase in textbook prices, it is no surprise that student behavior has shifted toward avoiding the purchase of course-related texts. The Association of American Publishers reported a 57 percent decline in student textbook purchasing over the last decade.[8] Libraries and bookstores support access to textbooks that avoid the primary issue of publisher pricing of textbooks. The National Association of College Stores promotes equitable access programs to comply with the Affordable College Textbook Act, which was enacted as part of a larger higher education act in 2016. Both Equitable Access and Inclusive Access programs are opt-out programs. If a student does not opt out, they are billed. In Equitable Access plans, a flat fee for textbooks is added to students' tuition bill, regardless of the number of registered classes they are taking.[9] These programs offer prices below retail for textbooks but still burden the student with the need to purchase the textbook. For institutions that are not adopting those models, textbook prices remain unsustainable.[10]

Textbook affordability programming at the Association of Research Libraries (ARL) member institutions was seen as either focusing on providing access and incentives for OERs or focusing on boosting the use of library-acquired materials that are free to use for classes.[11] Although the review of the 104 ARL members' work in textbook affordability is not generalizable, it does demonstrate the tension of using limited, and oftentimes shrinking, library budget dollars to support either OERs or library acquisitions to address the national issue.

Multiple institutions have initiated pilots to study different aspects of electronic course support for students and the library. The pilot projects to purchase e-textbooks at East Carolina University and the University of North Carolina at Greensboro demonstrated cost savings, with more than $38 returned for every $1 spent. Additionally, they found that student achievement was not negatively impacted, based on a small sample of class averages before and during the pilot. There was also high usage of the material.[12] Student achievement was also found not to be negatively impacted in the research study on e-textbooks at Kennesaw State University.[13]

An Indiana University study on student preferences of print or electronic course material found that some students will still print out parts of electronic course content, but even in those cases there is still cost savings for the students based on the cost of course packs. The authors also discovered that their student preferences leaned toward electronic access to course materials.[14] This finding could be partly a result of the increase in online and hybrid classes. Students at Illinois State University shared that e-texts allowed them to do keyword searches, take and share notes, and more easily connect to related content in the library. Beyond the positive logistical elements of accessing an e-text for a class,

the students also noted that the access saved them time from trying to locate the least expensive place to purchase the course material, and the online version worked from any location, thus reducing their stress levels and helping them focus on the class content and learning.[15] A Rutgers University initiative to provide Open and Affordable Textbooks demonstrated additional benefits beyond costs to students. Their students indicated that utilizing note-taking and collaboration features positively increased the overall experience.[16]

In the research conducted by Illinois State University on the value of providing ebooks in their library course reserves program, they found that not only were there cost savings to the students but also increased usage of assigned ebooks over nonassigned ebooks, and use of those assigned texts was seen over multiple terms.[17] The existing literature demonstrates that students use e-textbooks and find several benefits to reading texts in this format. However, there has been little published work using data to understand whether financial limitations on acquiring e-textbooks are necessary. Building on the work of Illinois State University, this research focuses on ebooks required for courses that cost more than $500 to license.

Methods

To inform a decision about changing the approval process for high-cost ebook purchases, library employees at OSUL collected data about high-cost course reserves requests over three fiscal years, from July 2021 through June 2024. All course reserves requests are submitted via a Course Reserves Request form on the library website and are routed to relevant library staff in the Resource Acquisition and Sharing (RAS) department. At the time, high-cost requests over $500 were then forwarded for approval to the Director of RAS, the department responsible for purchasing library materials. During this time period, the collection assessment librarian was also included in the email to the RAS director to keep track of the request information. Library employees tracked information on a shared spreadsheet that included bibliographic data for each requested title, such as the author, publisher, ISBN, subject area, supplier, cost, and license type, as well as data about the course for which the title was requested, such as the instructor, course number, and maximum number of students able to participate in the course. This level of bibliographic data tracking was limited to high-cost course reserves because these titles required the approval process, whereas lower-cost course reserves did not. The data and analysis used to inform the policy decision are included below. It is important to note that OSUL purchases unlimited-user, DRM-free ebook titles, unless that license type is not available. The next best choice is the selection of a license that provides the greatest amount of access for the lowest cost. Once we had a list of titles, the collection assessment librarian gathered usage data for each title broken down by month.

OSUL subscribes to the Alma library management system (LMS) and uses Alma Analytics to create usage reports for COUNTER usage data harvested via the Standardized Usage Statistics Harvesting Initiative (SUSHI). COUNTER is an organization that works with publishers to supply a standard set

of usage reports and metrics for electronic resources. SUSHI is the Application Programming Interface (API) mechanism that harvests the usage data so that library employees can aggregate and access it. A custom list of titles from the high-cost course reserves request forms was entered into Alma Analytics, and the system displayed an analysis with usage information for each title. The project is referenced from TR_B1 reports, a specific title report in COUNTER that displays full-text activity for all content that is not Gold Open Access. This workflow included tracking usage on a monthly basis, beginning with the month following the purchase of the ebook. In addition to exporting and analyzing usage data, the collection assessment librarian created reports that displayed the license type, platform, and Library of Congress (LC) subject classification for each title in Excel after extracting that data from additional analyses in Alma Analytics.

Although tracking the high-cost request titles for our analyses through forwarded emails captured most of the purchases for high-cost ebooks, we discovered that the data represented in the shared spreadsheet did not match all of the title results displayed in the Alma Analytics reports, as some of the titles were missing from the shared spreadsheet. Since 2021, acquisitions employees have coded every purchase using the reporting code function that can be configured in Alma. In 2023, library employees in the RAS department redefined those reporting codes so we could keep track of all titles purchased for course reserves, even if they were purchased using a specialized library gift fund instead of our designated course reserves fund code. After redefining the reporting codes, the collection assessment librarian entered the codes as criteria in an Alma analysis to obtain a full list of course reserve titles. Twenty-one high-cost ebook titles purchased between July 2021 and the end of June 2024 had not initially been included in the shared spreadsheet. These titles were added to the list, bringing the total number of high-cost course reserve purchases over this period to sixty-six titles.

There are limitations to data retrieval in Alma Analytics. For example, the current acquisitions process for course reserves does not include adding metadata related to course or instructor requester information in Alma. Although this information is available through the request form and forwarded emails, some of this information is lost between the request and the purchase. As a result, this project does not include data at the college or department level. It does, however, include LC subject classification data for each title, which provides a more general idea of which disciplines generate high-cost course reserve requests.

In July 2024, after gathering three years of bibliographic, course, and usage data for high-cost course reserve title purchases, the collection assessment librarian began to dissect and analyze the data. This analysis highlighted three focus areas of data that could best inform a new high-cost course reserves policy: usage data, license-type and platform data, and subject data. The usage data analysis did not only include our high-cost course reserve ebook titles but also all other course reserve ebook title usage, as well as the usage of the titles in our two major ebook subscription collections during that time. The analysis also compared the license-type and platform data and the subject data of our high-cost titles with other course reserve titles to examine any discrepancies or trends between the two lists, possibly to determine why some titles cost much more than others.

Results

Return on Investment Analyses

Over the course of three fiscal years, OSUL has invested $50,933.83 on high-cost ebook purchases and $72,876.20 on all our course reserve ebook purchases, bringing our total three-year expenditure for course reserve ebook titles to $123,810.03. At an average of more than $40,000 per year, this investment is not insignificant, but it accounts for only about 1 percent of our total yearly collections budget. During three fiscal years, OSUL purchased sixty-six high-cost course reserve ebook titles and 545 course reserve titles that were below the $500 threshold, for a total of 611 course reserve purchases.

To contextualize the return on investment of our high-cost course reserve titles, the collection assessment librarian first compared TR_B1 COUNTER usage of our high-cost titles with the usage of all other course reserve request titles and the usage of our other two major ebook packages subscribed through EBSCO and ProQuest. After calculating and adding together the median monthly usage across titles and dividing that usage by the number of titles for each collection, it became apparent that our high-cost course reserve titles are very heavily used, with average title usage consistently around 200 uses per month. Only thirteen of sixty-six (19 percent) high-cost titles were used fewer than one hundred times over the past three fiscal years. The library's other course reserve titles also perform very well, but only about two-thirds as well as the more expensive titles. The ebook package usage was much lower, and data showed that many of the titles in the packages have never been used. Figure 1 shows the median monthly usage per title for each of our ebook collections: our high-cost course reserves, all other course reserve titles, our EBSCO ebook package, and our ProQuest ebook package.

The cost per use for each collection category was calculated by dividing the annual expenditure for each category by the number of TR_B1 unique item requests recorded during each respective fiscal year. Figure 2 presents the resulting cost-per-use values. Purchases designated as high-cost course reserves, other course reserves, and the ProQuest Ebook Central package each demonstrate low costs per use, all falling below $0.20. The EBSCO package is excluded from the figure because of its significantly higher cost per use, averaging $3.00, and its inclusion skewed the graph scale in a way that obscured differentiation between the ProQuest and course reserves data.[18] In the most recent fiscal year (FY24), high-cost course reserve titles exhibited a lower cost per use compared with other course reserve titles.

This data demonstrates that the high-cost course reserve titles are used at a high rate, and on average are used more than the titles in our other ebook collections. Despite the high cost of these titles—the most expensive costing almost $2,000 for an unlimited-user license—they exhibit a low cost per use overall.

License Type, Publisher, and Platform Analyses

Data for the license type and platform of the high-cost course reserve titles and those of all other course reserve titles were analyzed to determine whether license type and platform are significant

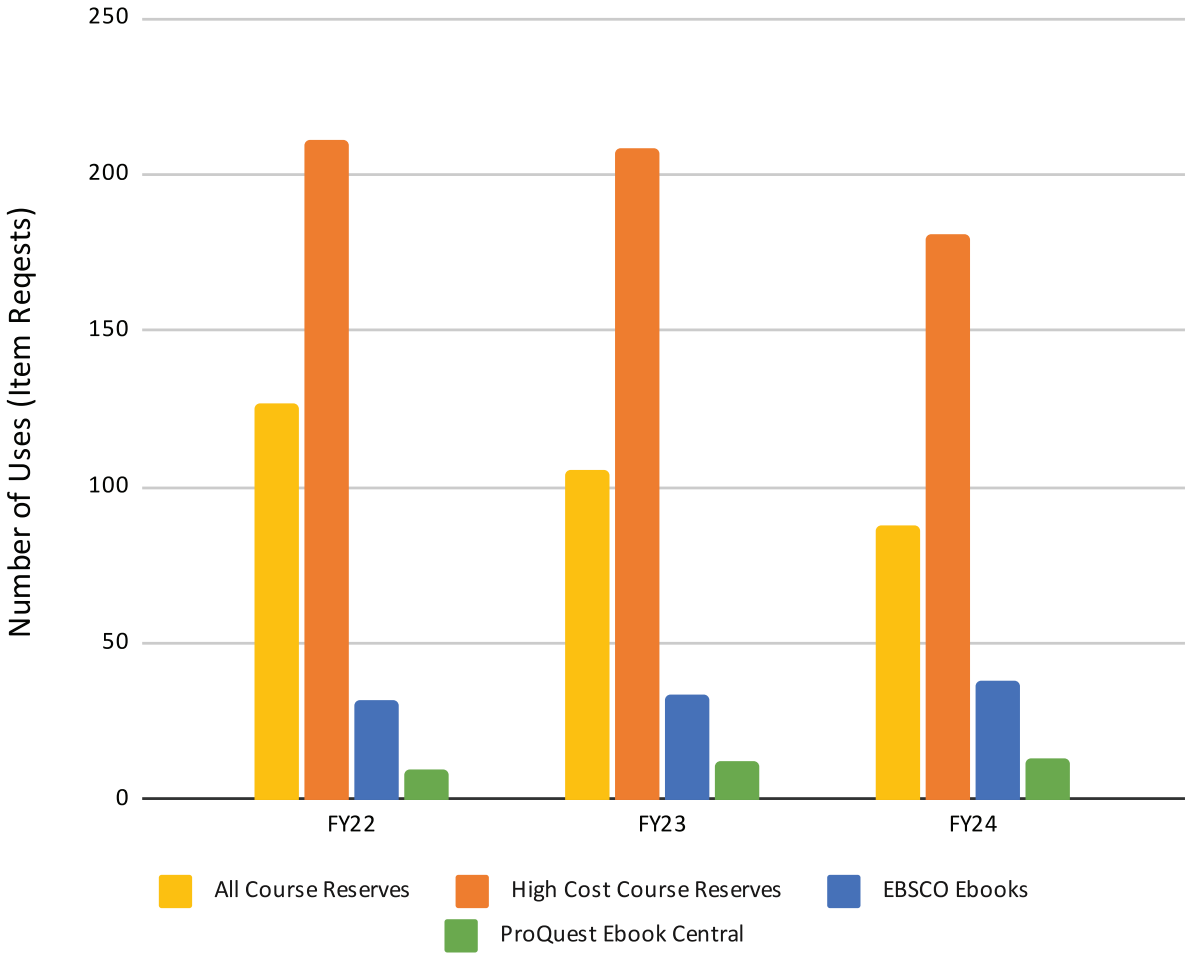

Figure 1. Median monthly uses per title.

factors in ebook pricing. The goal was to determine whether OSUL's policy to mediate high-cost titles might unintentionally delay the purchase of titles with unlimited access models. As a practice, OSUL purchases the license type that allows the greatest number of users, with unlimited-user DRM-free licenses as a preference irrespective of cost. The same concern about our current policy applied to publisher platforms: would there be a delay in the purchase of titles available on only certain platforms because of cost? Following the analysis, however, we determined that those anticipated scenarios do not match the reality for OSUL's course reserve purchases. Figures 3 and 4 display the distribution of license types for high-cost titles and all other titles purchased for course reserves. Interestingly, most of the high-cost course reserve titles were purchased with a three-user license, while the most common license type for all other course reserve titles is the unlimited-user license. This may be because of the fact that traditional textbook publishers do not provide unlimited-user licenses for their content. None of the high-cost course reserve texts have been purchased with a concurrent user license, although a few concurrent user licenses have been purchased for other course reserve titles. The data disproves an

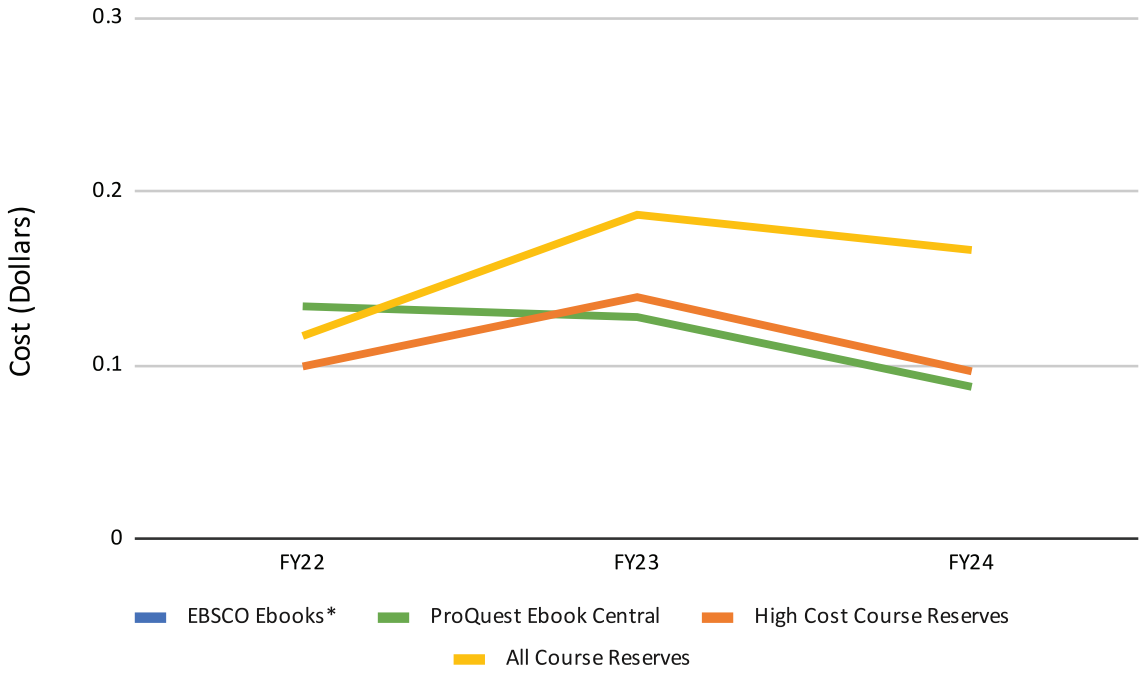

Figure 2. Cost per use by collection. *EBSCO ebooks are not represented in Figure 2 because of the scale of visualization; EBSCO ebooks averaged $3.12 cost per use in FY22, FY23, and FY24.

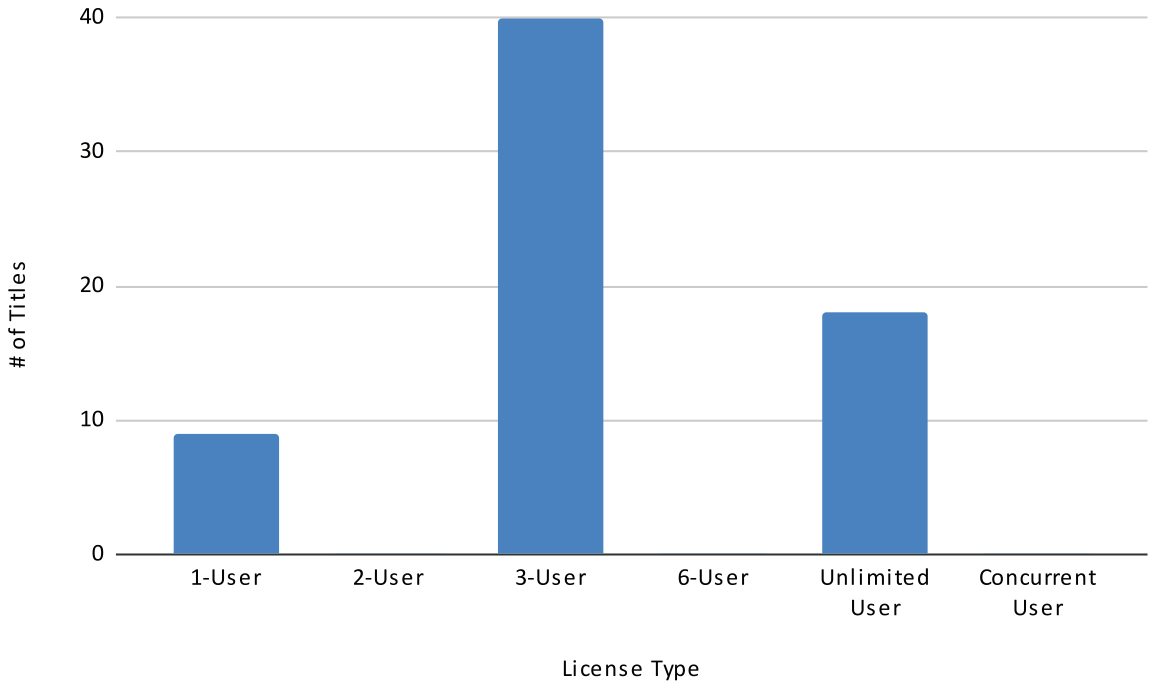

Figure 3. Number of titles purchased by license type: high-cost titles.

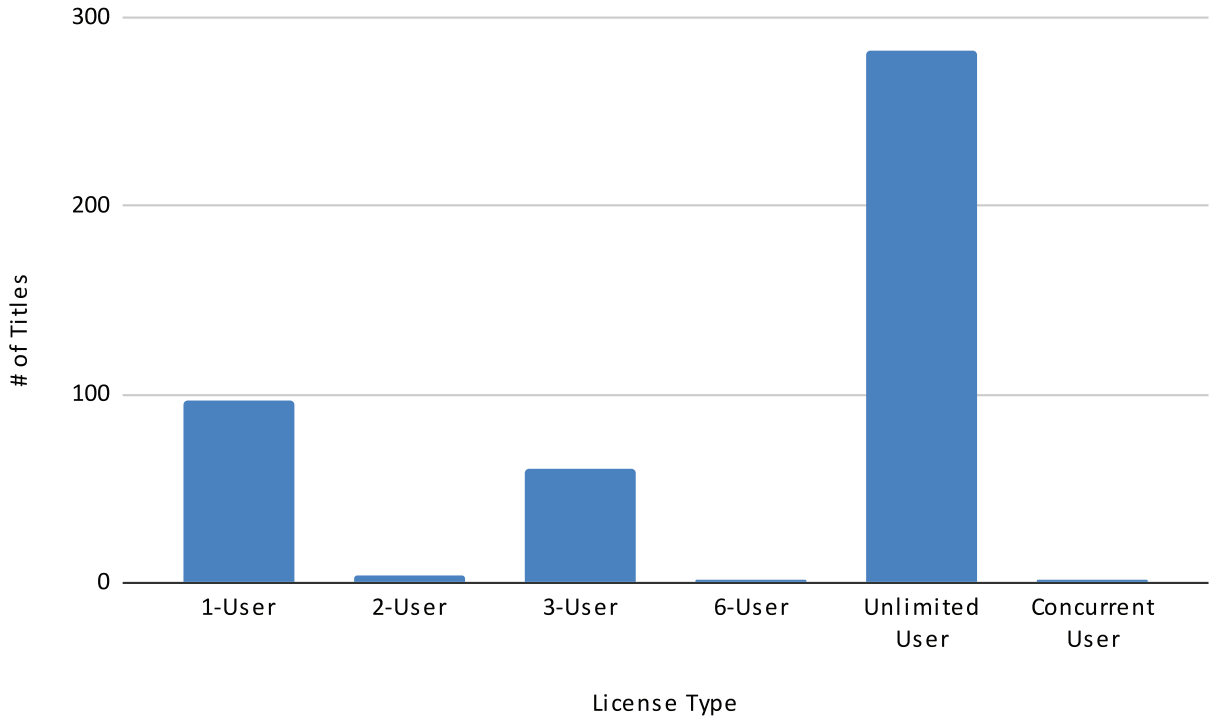

Figure 4. Number of titles purchased by license type: all course reserves.

assumption that unlimited license titles are always more expensive to purchase because there is not a large proportion of them represented in our high-cost analysis. The data also highlights the lack of that license option for more expensive titles, at least for OSUL purchases.

Our limited sample size of sixty-six titles includes twenty-three different publishers. McGraw Hill represents the largest number of titles at twenty (30 percent), and Routledge represents the second highest number of titles with ten (15 percent). Thirteen publishers appeared only once in the sample. Interestingly, all of the McGraw Hill ebooks and all of the Routledge ebooks (except for one, which has a single-user license) were purchased with three-user licenses. In analyzing ebook costs per publisher, the median cost is $760.50 per title. Median pricing for McGraw Hill titles is lower than the overall median price at $650.43, and Routledge titles have a much higher median cost at $913.20. Our lowest cost titles from the high-cost group all have the same price and publisher: $540 for each unlimited-user license title from Cambridge University Press.

Figures 5 and 6 show the distribution of publisher platforms that host high-cost course reserve titles and all other course reserve titles that our library purchases. The breakdowns are similar, with ProQuest as the most represented ebook platform. ScienceDirect from Elsevier and Cambridge platforms constitute a higher percentage of titles for our high-cost titles, and unlike other course reserve purchases, JSTOR, Project MUSE, and Wiley are not represented in the high-cost analysis. Analysis of this data implies that the publisher platform does not significantly impact the cost for ebook titles. It

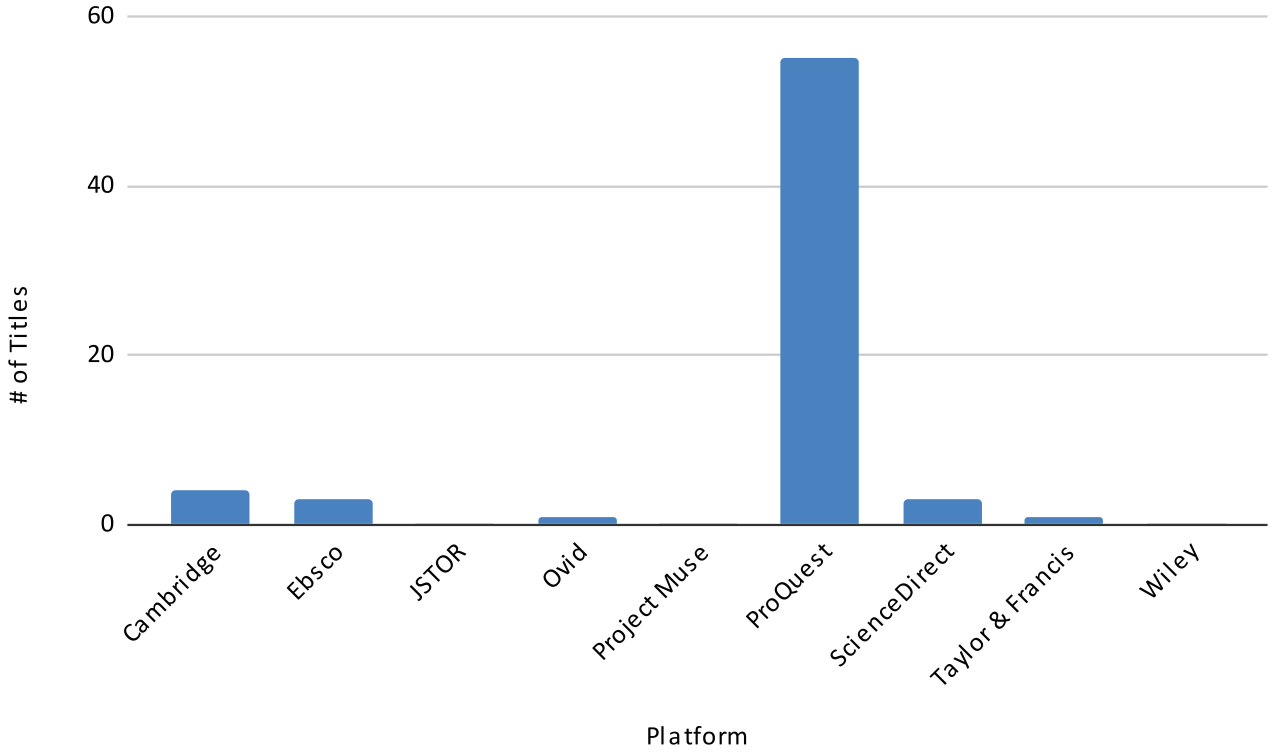

Figure 5. Number of titles purchased by platform: high-cost titles.

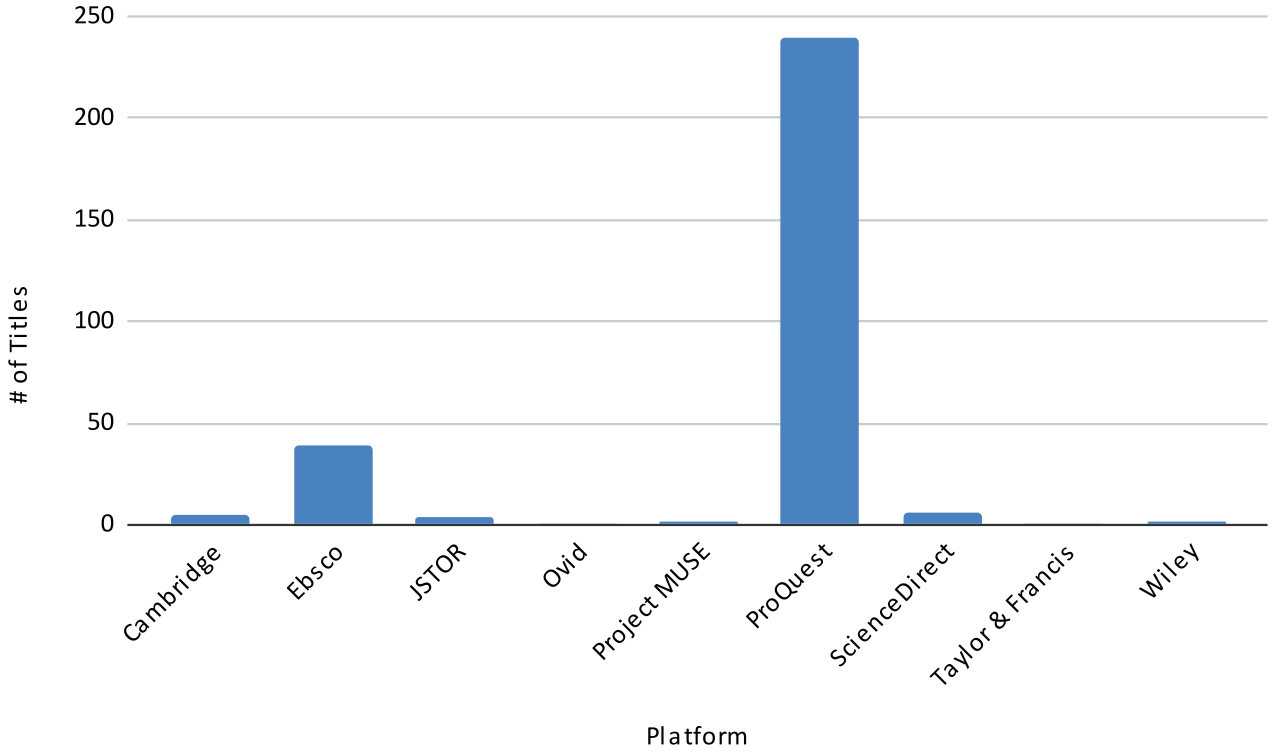

Figure 6. Number of titles purchased by platform: all course reserves.

is also worth noting that OSUL has historically preferred to purchase ebooks from ProQuest, followed by EBSCO platforms. This preference was in part due to the user interface, which is familiar to most students and researchers, and the quantity of these licenses. Illinois State University research noted their own EBSCO and ProQuest platform preference because of access and ability to pull usage, which is also a consideration for OSUL.[19]

Subject Area Analysis

The LC subject analysis highlighted the differences in subject distribution between high-cost course reserve titles and all other course reserve purchases, as shown in tables 1 and 2. The subject analysis is limited by the capabilities of OSUL's LMS and the availability of data imported from ebook packages. Therefore the subject analysis references the LC classification outline, and not specific subjects, in the included tables. As OSUL purchased 545 lower-cost course reserve titles in comparison with sixty-six high-cost titles, it was not surprising that the lower-cost titles represented a wider range of subject areas. For those lower-cost titles, Philosophy, Psychology, and Religion; Language and Literature; Social Science; and Science subject titles constitute the majority of purchases. This distribution for higher-cost titles skews more heavily toward the Science and Social Science subjects, which comprise more than 57 percent of purchased titles (compared with 31 percent of titles for the lower-cost purchases). A manual review of high-cost titles found that the majority of titles in the social sciences designation are finance and economic titles, and the science designations are mainly from the biology and chemistry disciplines.

GOBI's 2024 New Title Report shows that the most expensive texts cost about $150 per title and fall under the Technology; Philosophy, Psychology, and Religion; and Law subjects.[20] Language and Literature and Geography, Anthropology, and Recreation subject titles are generally less expensive. The conflicting data may demonstrate that the individual texts chosen for course readings have a greater impact on cost than would be expected by individual subjects.

Table 1. Number of Titles Purchased by Subject: High-Cost Titles

LC Subject	Number of Titles	% of Titles
Social Sciences	22	33.3%
Science	16	24.2%
Philosophy, Psychology, Religion	7	10.6%
Medicine	4	6.1%
World History	4	6.1%
Education	3	4.5%
Geography, Anthropology, Recreation	3	4.5%
Language and Literature	3	4.5%
Technology	3	4.5%
Law	1	1.5%

Table 2. Number of Titles Purchased by Subject: All Course Reserves

LC Subject	Number of Titles	% of Titles
Social Sciences	103	18.90%
Language and Literature	91	16.70%
Science	66	12.11%
Philosophy, Psychology, Religion	62	10.64%
Medicine	40	7.34%
Geography, Anthropology, Recreation	37	6.79%
History of the Americas	35	6.42%
Education	34	6.24%
Technology	23	4.22%
World History	15	2.75%
Law	14	2.57%
Agriculture	10	1.83%
Political Science	8	1.47%
Auxiliary Sciences of History	2	0.37%
Fine Arts	2	0.37%
General Works	1	0.18%
Military Science	1	0.18%
Music	1	0.18%

Discussion

This three-year study aimed to evaluate data over multiple academic years to determine both the value, in terms of use by students, and the financial burden of acquiring ebooks for course reserves. The focus was to determine whether any differences could be observed between high-cost ebooks that would necessitate continued mediation of purchases. In considering the work of multiple units and the timing demands to have material ready for classes, any avenues for streamlining the process were welcome. The example workflow from Illinois State University is a good representation of people, steps, and timing involved in this work.[21] The differences in this three-year study demonstrate a higher monthly usage rate than lower-cost ebooks, resulting in an overall lower cost per use. The data supports the elimination of mediating high-cost ebook purchasing for course reserves.

The number of titles in the high-cost range was a small fraction of the overall purchases for course reserves. Understanding the average requesting patterns over three years provided confidence that high-cost ebooks could be processed without additional mediated steps and additional expenditure surprises. Tangentially, this work helps affirm the existing collection budget for course reserves.

The data gathered from ebook publisher and vendor platforms, combined with our LMS Alma, were robust enough to answer our research questions. Initial planning was required to ensure the data from Alma was consistent. One lesson learned from a multiyear project is to ensure that any system or procedure changes do not interfere with data collection. This can be challenging without regular communication with stakeholders.

The majority of the high-cost titles were three-user limited licenses instead of unlimited. It is interesting to note that the usage was not negatively impacted by a more restrictive license for high-cost ebooks. Because these limited license titles are so highly used, we might expect to see high instances of turnaways. However, we found significant turnaways for only one three-user license title and one single-user license title out of all of our high-cost group when conducting this analysis. This is something we may want to track in the future to determine whether a second copy purchase policy is needed. The data also highlighted the heavy use and reliance on ProQuest ebook single-title purchasing. It is unclear how that reliance on ProQuest might shift in the future for OSUL because of the recent vendor announcement to move away from the option to purchase single titles.[22]

Future Considerations

Libraries provide course reserves to alleviate students' financial burdens. Government regulations and alternative OERs are not significantly impacting the rising costs of textbooks or the growing debt faced by those pursuing degrees from higher education institutions. Efforts to include expensive ebooks in the OSUL course reserves is one creative way to address the current issues with textbook affordability. This ability lasts only as long as the library can budget for these types of collection expenditures. It is unclear what percentage of overall classes are supported by OSUL course reserves. Even after three years, it is unlikely that we have met the saturation point for textbook needs. Libraries must continue to advocate for changes to the textbook market while also finding innovative ways to support their user communities.

Additionally, libraries remain reliant on the content publishers release in both print and electronic formats. In some instances, a print book is not released as an ebook, making it challenging to support electronic course reserves. Textbook publishers may see higher market values by participating in Inclusive Access programs sponsored by university bookstores, thereby displacing the library market and reducing libraries' ability to provide course reserves at any level.

In considering the need to remove barriers for employees in obtaining course reserve materials at the beginning of each term, and in recognizing the evolving nature of class structures toward online and hybrid formats, OSUL has committed to predominantly purchasing online materials. This commitment assumes that students have access to adequate computers and the internet to engage with online course content. The availability of current laptops and hotspot checkouts at OSUL underscores the ongoing need for students to maintain access to the tools necessary for success in higher education today. Elliott notes that access to the internet and a device is only one of three strata of the digital divide, and that

computer literacy and achieving outcomes through the use of technology are also essential strata to consider.[23] Further research is needed to investigate the effectiveness of online content, particularly ebooks hosted on various platforms with differing productivity claims, in achieving academic outcomes.

Conclusion

This study demonstrates how OSUL improved staff efficiency and reduced the operational time to process acquired course reserve content, in service of the larger goal of lowering some financial barriers for students. These changes resulted from the use of data-informed decision-making. The data provides a concrete answer to shifting processes and policies within the scope of our needs but does not address the overall affordability of textbooks.

CRediT Author Roles

Kerri Goergen-Doll: Conceptualization, Funding Acquisition, Methodology, Writing – Original Draft, Writing – Review & Editing.

Taylor Ralph: Formal Analysis, Investigation, Visualization, Writing – Original Draft, Writing – Review & Editing.

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Book Review

The Organization of Information, Fifth Edition. By Daniel N. Joudrey, with the assistance of Emily Baldoni. New York: Bloomsbury Libraries Unlimited, 2025. 688p. $79.95 softcover (ISBN 978-1-440878-61-9); $130.00 hardcover (ISBN 978-1-440878-59-6); $71.95 ebook (ISBN 978-1-440878-60-2).

Now in its fifth edition, *The Organization of Information* has long been a mainstay of library and information science (LIS) education. This latest edition provides numerous much-needed updates and additions as the information landscape has changed drastically since the release of the fourth edition in 2018. Changes made in this edition are outlined in the preface and include an updated chapter structure, additional figures and vocabulary definitions, new discussion questions at the end of each chapter, and many content additions. Daniel Joudrey, who co-authored the third and fourth editions, was assisted by Emily Baldoni in the fifth edition.

Organization provides a comprehensive overview of the information landscape and the ways cultural heritage institutions describe and search their collections. Readers will come away with a strong understanding of the history of library and information sciences as a whole as well as specific knowledge of modern systems, conceptual models, and standards. In general, the volume is organized to move from broad treatment of a topic through to more specific information. A balance is struck between providing contextual and historical information while also describing current practices in many areas. Extensive citations for further reading are also provided following each chapter.

Early chapters provide a foundation of historical and contextual information about general approaches to information organization and a concise history of recorded information and its systematic organization in the West going back to antiquity. Chapter 1 provides a philosophical foundation for why and how humans organize information and connects these broad concepts to cultural heritage practices and literature. Joudrey and Baldoni provide useful and concise overviews of information organization principles and procedures in libraries, archives, museums, and digital spaces. Each of these sections is dealt with in greater detail in other parts of the book, but this introductory chapter provides a solid overview that LIS students in particular will find invaluable in orienting themselves to the discipline. Chapter 2 constitutes an overview of the history of information organization, especially in libraries, and provides further context for several principles that persist in libraries today, such as uniformity in description and literary warrant.

Chapters 3 and 4 delve into retrieval tools and searching technologies. Resources such as bibliographies and catalogs are given more fulsome definitions; finding aids and museum directories are each given their own sections as well. Chapter 4's overview of the challenges and shortcomings of information retrieval systems is especially well written. This is a topic where it would be easy to get bogged down in technical details, but the authors do an excellent job of providing just enough detail to give readers an understanding of system architecture in the library context and its impact on search tool usability. If there is any criticism to be made in this section, it is only that chapter 3 could have gone into

further detail about the ways that generative artificial intelligence (AI) has influenced expectations around search and retrieval tools. This topic is addressed briefly here as well as in later chapters, and it is admittedly still difficult to draw firm conclusions about the extent and means of AI's influence. However, some readers may find it strange to not see it mentioned more prominently in the context of internet searching.

Taken together, chapters 5 through 9 provide a detailed picture of the various ways in which collections are described. These chapters provide overviews of the major standards and content models used in the cultural heritage sector. Again, libraries receive the most attention in this section, but archive and museum standards are highlighted as well. This is another area where it would be difficult to balance creating a concise overview and providing enough detail to give readers a useful understanding of the evolving landscape of descriptive and other metadata standards, but the authors manage this challenge well. The chapter organization along with plentiful tables and examples help to make these chapters readable and useful as a reference tool. Some of the frameworks covered are notoriously difficult to understand even for seasoned professionals, but *Organization* handles them very well. To name two examples, the International Federation of Library Associations and Institutions' (IFLA) Library Reference Model (LRM) in chapter 7 and Resource Description and Access (RDA) in chapter 9 are covered in detail and given a great deal of useful historical context. A description of the evolution from the Functional Requirements for Bibliographic Records (FRBR) and its associated models to LRM is among the best overviews on the topic. Similarly, the description of RDA and its long history and relationship to FRBR and LRM is handled well. As libraries shift to adopting Official RDA, this section and its references to the RDA Toolkit could be a helpful resource for librarians to orient themselves to new practices. Beyond specific standards, chapter 6 ("Introduction to Metadata") is an especially useful primer on types of metadata and their application. Its concise summary of the unique challenges in digital information organization is well written and a much less daunting read than other metadata overviews in the literature, though a good selection of more comprehensive introductions is also included in the "Suggested Readings" section of the chapter.

The final chapters of *Organization* cover authority control, subject access, controlled vocabularies, and categorization. This section goes into detail about approaches to these topics in libraries, archives, and museums and provides exhaustive examples and references to standards and vocabularies. A great deal of guidance on authority control standards and approaches to subject analysis is included; these sections may be particularly useful to early career catalogers. Other relevant topics are handled in this section as well if relatively briefly—such as cataloging ethics, authority control on the web through tools such as the Virtual International Authority File (VIAF) and International Standard Name Identifiers (ISNI), and the role of subject analysis in the face of AI. Overall, these chapters, while dense in some areas, provide a useful picture of the state of authority work and classification.

While this volume is primarily geared toward LIS students, it is also meant to serve as a reference for information professionals. The fifth edition's expanded chapter and section numbering system makes

the volume very easy to navigate and contributes to its utility as a reference volume that will be relevant beyond the classroom. The robust glossary is also a useful resource for a broad audience.

It goes without saying that information organization is rapidly evolving, especially as the impact of AI on libraries and other information professions has yet to be fully understood. Even in this context, *The Organization of Information* is an ambitious and relevant resource for elucidating the work of the cultural heritage sector. LIS students and others who wish to learn about the history and modern challenges of information organization will receive an excellent introduction to the discipline and a rich bibliography for further reading.—*Lisa Lorenzo (lorenzo7@msu.edu), Michigan State University Libraries, East Lansing, Michigan*

Book Review

Neal-Schuman Library Technology Companion: A Basic Guide for Library Staff, Seventh Edition. By Robin Hastings. Chicago: ALA Neal-Schuman, 2025. 224p. $64.99 softcover (ISBN 979-8-89255-290-5).

The most recent edition of the *Library Technology Companion* published by ALA has been fully revised by a new author, Robin Hastings. This guide has been in publication for over twenty years and Hastings brings an attention to detail and eye toward the future as a library professional with a background in information technology.

This seventh edition follows the same structure of its predecessors and provides a general overview of library technologies, notes the mission critical technologies needed in libraries, describes how to build and maintain the environment for library technologies, and discusses how to stay informed about technology to adapt to future developments. The end of each chapter provides a comprehensive list of sources for more information on a topic, should readers wish to branch out further.

The companion is similar to other publications from the ALA Neal-Schuman imprint that provide broad surveys of library technologies, such as the *New Top Technologies Every Librarian Needs to Know*.[1] This book provides a broad, but never exhaustive overview of technologies used in libraries. The overview encompasses legacy and modern technologies—from shelving and card catalogs to library systems and electronic resources—as well as current technologies such as makerspaces, social media, and brief discussions throughout the book on artificial intelligence (AI) in library tools.

These updates on technology in the seventh edition make some of the information timelier. Most notably, this edition briefly touches upon the ways that AI is beginning to appear in general search engines such as Google, as well as library tools. It also notes the shifting landscape of library technology during and after the COVID-19 pandemic, and accounts for the impact this had on library e-resources and other services that were able to be used by patrons online. These current issues are discussed in a section on the 2023 Public Library Association (PLA) annual technology survey and the overall increase in digital resources. Among some of the data shared that showcases the increasing technology needs in public libraries are these statistics: “47 percent of public libraries now offer some form of mobile internet access…nearly 95 percent of public libraries offered some sort of e-resource to their patrons, with 85 percent providing streaming access to materials through partnerships with vendors…95 percent of public libraries offer some sort of digital literacy training these days!” (11).

Among the strengths of the book, one is a clear delineation of the numerous technologies encountered in libraries. Working in electronic resources and systems myself, I appreciated the way that the author was able to articulate in plain language the complex and interconnected landscape of different library services, such as free online tools, subscription databases, discovery layers, and the library systems that organize and present these services to our patrons. I also found the Library Insights interspersed throughout the book to be helpful. These short narratives provide anecdotes from a variety of library employees and their direct experiences working with the various technologies that are presented in each

section. Such snippets of real experience combined with some of the chapters that provide guidelines on the process of testing and adopting new technologies could be a useful starting point for libraries with small staff looking for a framework to adopt a new service.

One area that I did take issue with is some of the technology that is noted in chapter 14 ("The Death of Technologies: Preservation Issues and Saying Goodbye"). I feel this is one area where the generally broad strokes of the book fall short when describing "The dead, the dying," and the "next likely to hit the chopping block" (148) technologies. That said, it is noted by the author that "my declaration of death or illness does not mean that your library should be completely free of these technologies. But these are formats to think about removing or replacing if you have not yet done so" (148). Amongst other media, they go on to list compact discs under dead formats, DVDs amongst the dying, and ebooks that cannot be downloaded as next likely to hit the chopping block. I agree that CDs and DVDs are dated formats, but have worked in libraries with collections of each that still retain high usage, particularly audiobooks on CD and DVDs of recent movies being popular among patrons that do not personally subscribe to multiple streaming platforms. As for ebooks, the intricacies of digital rights management (DRM) for each publisher can be frustrating. Particularly in academic contexts, there is no guarantee that a license means that a patron will always be able to download the full book on their mobile device without some caveats. Aside from those few sticking points, I found that this latest *Library Technology Companion* serves as an excellent quick guide and point of reference for library staff working with technology and is also ideal for introductory classes that would include library technologies as part of a broad survey in Library and Information Science programs.—*Pete Steadman (*psteadma@iwu.edu*), The Ames Library, Illinois Wesleyan University, Bloomington, Illinois*

Note

1. Kenneth J. Varnum, ed. *New Top Technologies Every Librarian Needs to Know*. Chicago: ALA Neal-Schuman, 2019.