DESIDOC Journal of Library & Information Technology, Vol. 45, No. 3, May 2025, pp.186-193, DOI : 10.14429/djlit.20885

Collection Development Using Data Analytics: A Case Study at IGDTUW, Delhi, India

D.S. Sengar[#,*], Komal Saxena[$] and Ashok Kumar Rathore[~]

[#]*Indira Gandhi Delhi Technical University for Women, Delhi - 110 006, India*
[$]*National Green Tribunal Western Zone Bench, Pune - 411 001, India*
[~]*Independent Researcher, Delhi, India*
[*]*E-mail: sengaripu@gmail.com*

ABSTRACT

The study aims to revamp the collection development policy using data analytics techniques at IGDTUW, Delhi. the study used the circulation records from 2022 to 2024 and found 30,612 records of library holdings. Further, 16,905 circulation records were also downloaded and used in data analysis. The library holdings data included book titles, authors, call numbers, and accession numbers. Furthermore, library-holding records and circulation datasets were loaded into Python. The Pandas library was used to read the Excel files. The study found that 23.05 % of books were heavily used, while 76.95 % remained unused. Interestingly, 30.7 % of faculty-recommended books were borrowed, showing a gap between faculty-recommended titles and student needs. The results helped develop a policy for selecting and removing books, ensuring the library's collection is relevant, user-friendly, and space-efficient. This study provides a simple method other libraries can follow in collection development and better use their resources.

Keywords: Collection development policy; Weeding out policy; Trueswell rule; Usage of faculty recommended books

1. INTRODUCTION

This study focuses on the library at Indira Gandhi Delhi Technical University for Women (IGDTUW) in Delhi, established by the Government of NCT of Delhi in 2013. It is founded as a non-affiliating University to facilitate and promote studies, research, technology, innovation, incubation and extension work in emerging areas of professional education among women, with focus on engineering, technology, applied sciences, architecture and its allied areas to achieve excellence in these and related fields. Weeding out books began when the IGDTUW Library faced a shortage of shelving space. This prompted a need to evaluate and decide which books to remove. The well-established 80/20 principle was found to be useful in guiding this effort. Analytical tools like Excel 365 and Python were used to analyse the library records comprehensively. Library staff observed that many books in the library are not being used. Thus, the library conducted a study to assess the usage of recommended books over a specific period. Circulation data from the past three years was analysed, comparing borrowed titles with the library holdings. The findings were insightful and helped identify books that were not being used but were occupying valuable shelving space. Based on this analysis, certain unused titles were removed, freeing up space for more relevant and in-demand resources. The whole exercise was used for collection development policy, weeding out policy. It is presented in the form of a paper so that other libraries can employ a similar kind of study in their setup, and making the collection meaningful and useful to the users and for better fund utilisation purposes. The process of studying book usage and removing less-used titles helped shape a clear policy for managing the library collection. These policies ensure that library resources remain useful and funds are spent wisely. The study examines the applicability of Trueswell 80/20 rule and establishes criteria for weeding out resources. Consequently, revamp collection development policy at IGDTUW. This paper explains the methods, tools, and analysis used in the study. The study will be beneficial to other libraries to conduct similar reviews, improve their collections, and make better decisions about resource management. The study aims to build collections so that libraries can meet users' needs.

2. LITERATURE REVIEW

A comprehensive literature review was conducted to understand the progress in the area. Several databases such as Google Scholar, Emerald, JSTOR, and various open-access databases, were searched. The review focused

Received : 12 November 2024, Revised : 19 March 2025
Accepted : 25 March 2025, Online published : 09 May 2025

on understanding current work and activity in this area. The review of literature highlights the importance of data-driven approaches in library collection management, focusing on core resources and optimising the balance between acquisition, weeding, and preservation. Trueswell's research laid the foundation for prioritising frequently used materials, with this idea by recommending regional inter-library loan centers for less frequently used items, ensuring efficient resource allocation[1]. Application of the 80/20 rule, where 20 % of materials account for 80 % of circulation, a principle that guides budget and collection decisions[2].

The above principle to archival management, advocating for deaccessioning and appraisal practices based on actual item usage, aligning with Trueswell conclusions[3]. Some studies expanded the theoretical framework of the 80/20 rule[4,5] while later studies demonstrated its practical application across global library systems[6]. Few studies are useful to understand how comparative studies of material usage, specifically for faculty-recommended resources, can shape collection development[7,8]. The importance of effective sampling techniques like "relative use" to assess the usage of such materials[9], while a case study at Hezekiah Oluwasanmi Library highlighted the importance of monitoring both in-library consultation and circulation data to enhance academic collections[10].

Regular assessments and input from stakeholders help to ensure collections remain relevant and valuable[11,12]. Circulation data plays a pivotal role in shaping collections by identifying high-demand and underutilised materials. This data-driven approach enables libraries to optimize their budget allocations and acquisition decisions, ensuring efficient use of funds[13,14]. In public libraries, information about borrowed books helps to create programs and learning activities that match people's interests, building stronger connections in the community[15].

However, while circulation data provides valuable insights, some researchers caution against over-reliance on quantitative metrics. Some studies point out the importance of using feedback from users to improve how libraries manage their collections and services in a more balanced way[16,17].

In academic settings, it is important to involve faculty and students in making policies. Some studies highlight that including subject experts in decisions helps ensure that collection policies meet the needs of different people[18,19]. Some studies suggest having clear selection guidelines that are updated regularly to match changing educational needs, along with smart budget planning to handle financial limits effectively[20].

Regular review of the collection ensures adaptability to technological advancements and emerging academic trends. The flexibility in collection development policies is necessary to maintain long-term relevance[21,22]. Additionally, the importance of resource-sharing practices to maintain up-to-date collections, especially in rapidly changing academic environments[23].

In conclusion, the literature underscores a multifaceted approach to library collection management, balancing data-driven decisions with user engagement and institutional alignment. This ensures that libraries remain dynamic, responsive, and capable of serving the evolving needs of their communities. Weeding practices have been an essential part of maintaining a library's relevance. Damaged or deteriorating materials should be removed to maintain the quality of collections[24], while some studies outline criteria for weeding based on usage frequency and curricular alignment[25,26] Methods like keyword filtering and browse counts help refine these processes, ensuring libraries retain relevant materials and eliminate unnecessary ones[27].

3. OBJECTIVES OF THE STUDY

The strives to achieve the following:

- To Test Trueswell 80/20 Rule: The study examines the applicability of Trueswell 80/20 rule in the context of the IGDTUW Library, assessing whether 20 % of the library's collection accounts for 80 % of its usage;
- To analyse the usage statistics of Faculty-Recommended Books: The study assesses the actual usage of books recommended by faculty members to determine their alignment with student needs and overall library usage, ensuring more user-focused acquisition strategies;
- To develop a collection development policy for IGDTUW library: Based on the data analysis, the study suggests a collection development policy suited to the IGDTUW Library;
- To establish criteria for weeding out resources: This study creates a policy to remove unused or outdated books, making the library's collection more useful and saving space based on data analysis.

4. METHODOLOGY

Python was downloaded from the Anaconda website and installed on a Windows computer to make it easier to analyse data. The library holdings and circulation records were downloaded from the NewGenLib ILMS system. The circulation records included data from the years 2022, 2023, and 2024. Data from before 2022 was not used because the COVID-19 pandemic had reduced library visits and book borrowing during that time. In total, 30,612 records of library holdings and 16,905 circulation records were downloaded. The library holdings data included book titles, authors, call numbers, and accession numbers. This data also covered different types of books, like donated books, reference books, and book bank collections. To simplify the analysis, only important details like title, accession number, author, and publication details were kept. Similarly, in the circulation data, only these key fields were retained, and information about reference books and donated books was kept separately. For the analysis, both datasets were loaded into Python. The Pandas library was used to read the Excel files. A specific column, Title,

was chosen to find all unique book titles. Duplicate titles were removed using a function called drop_duplicates(). Then, the total number of unique titles was counted using the nunique() function. The results were saved as a CSV file for easy access.

The analysis found that the library holdings dataset contained 5,550 unique book titles, while the circulation records dataset had 1,489 unique titles. This helped understand the variety of books in the library and how they were being used.

The cleaned data was also used to check the Trueswell rule, which is often used to study library usage patterns. Additionally, the data was analysed to see how much students used the books recommended by faculty members. More details about how the data was analysed can be found in sections 6.1 and 6.2 of the study. These steps helped achieve the study's goals and provided useful insights. Flow chart of the whole process is given in Fig. 1

5. LIMITATIONS

This study focuses on the analysis of IGDTUW library data from the library software. It has not included the manual data generated in the library. Further, circulation data from 2022 to 2024 was analysed. Furthermore, the study includes printed books only, excluding audio-visuals, e-resources, and journals. Reference books are not included, as they do not circulate. Only circulation data from IGDTUW library is considered. Out of many data fields, only selected ones are analysed.

6. DATA ANALYSIS

6.1 To Test Trueswell 80/20 Rule

According to William J. Jackson, the Trueswell 80:20 Rule is a well-known concept used to evaluate library collections. This rule, established by Trueswell in 1969, suggests that approximately 20 % of a library's holdings account for about 80 % of its circulation. This phenomenon has been observed and validated through multiple studies and investigations, where the author used data from various types of libraries to demonstrate the uneven distribution of circulation activity. For this study, two Excel files were used: one containing 5,550 unique titles from the library holdings and another with 1,489 unique titles from the circulation records. Since reference books are not issued for circulation, 628 reference books were excluded from the total holdings. This left 4,922 unique titles available for circulation. Both files were loaded into Python using the Pandas library for analysis. The aim was to identify unused titles and calculate the proportion of used and unused titles. The files were read into Python as separate Data Frames using the pandas. read_csv function. To ensure accurate comparison, the titles in both files were standardised by converting them to lowercase using .str.lower() and removing extra spaces with .str.strip(). This step eliminated any minor differences in capitalisation or spacing that could interfere with the comparison. To find common titles between the two files, Python "inner join method" was used. This method identified the titles that appeared in both the library holdings and circulation records. These common titles were saved in a new Data Frame and exported as a CSV file for further analysis.

The analysis revealed that 1,489 titles (23.05 %) were used, while 3,433 titles (76.95 %) remained unused. Although the exact numbers did not perfectly match the classic 80:20 rule, the findings showed a similar pattern. A small portion of the library's collection accounted for most of the circulation activity, while a large portion of titles remained unused. This analysis supports the relevance of the Trueswell 80:20 rule in understanding library usage patterns and highlights the need for optimising library resources. In a similar study by Yang, Y.-T., & Shieh, J.-C. 2019[6], the author found that

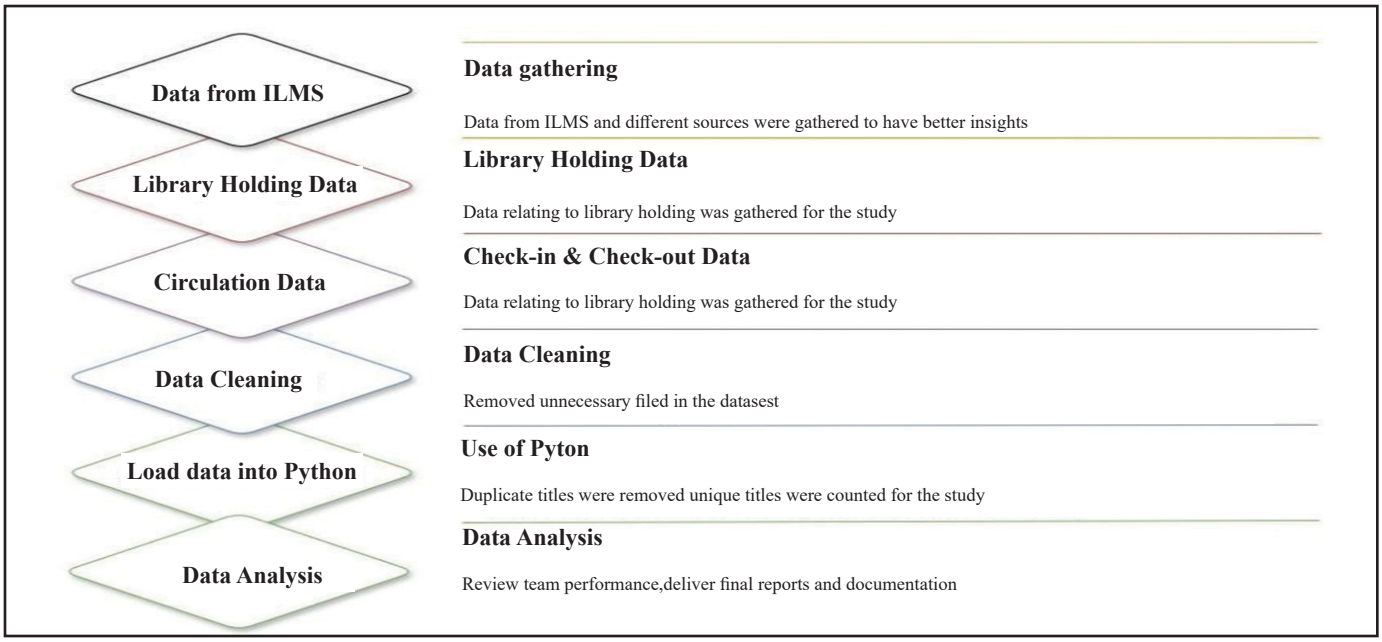

Figure 1. Methodology followed in the study.

24.7 % of patrons accounted for 75.3 % of borrowed books, further demonstrating the 80/20 rule in library circulation data. This supports the idea that a disproportionate amount of circulation activity is driven by a small percentage of the collection or patron base, reinforcing the ongoing relevance of Trueswell findings.

6.2 Analysing Usage Statistics of Faculty-Recommended Books

The second objective focused on determining how much faculty-recommended books are utilised in the university library. The study was conducted to assess whether the books recommended by faculty members were actively being used by students and patrons, thus evaluating their practical value. Steps in the Analysis:

For this study, we used two datasets: Library holdings record with 5,550 unique titles and Circulation records with 1,489 unique titles. The library holdings data includes a complete list of all the books in the library. However, after excluding 628 reference titles (not available for circulation) and 558 donated titles (not recommended by faculty), the number of unique titles reduced to 4,364. These 4,364 unique titles represent faculty-recommended books, which formed the basis of this analysis. The next step involved examining the circulation records to identify how many unique titles had been borrowed by students or other library users. The circulation data initially showed that 1,489 unique titles were borrowed. However, after excluding 149 donated titles (denoted by "D" in the records, as they were not faculty-recommended), the count of unique circulated titles dropped to 1,340. Both datasets-one with 4,364 unique titles of faculty-recommended books available for circulation and the other with 1,340 unique circulated titles-were loaded into Python using Pandas for further analysis. The steps for cleaning and standardising the data were similar to those detailed in the earlier analysis. The main objective was to determine how many of the faculty-recommended books had been borrowed by students at least once.

The analysis revealed that 1,340 out of 4,364 faculty-recommended books were in circulation. This means these books had been borrowed by students or other users at least once. To calculate the usage percentage, the formula used was:

Usage Percentage = (1,340 / 4,364) × 100 = 30.7%

This result shows that 30.7 % of the faculty-recommended books were actively used by students, while 69.3 % of these books were not frequently borrowed. This highlights a significant proportion of faculty-recommended books that remain underutilised in the library. From this analysis, we can draw several important conclusions about the usage of faculty-recommended books in the university library. Notably, 30.7 % of the faculty-recommended books are actively being circulated and used by students and patrons. The data shows that 69.3 % of faculty-recommended books are rarely borrowed. This suggests these books may not match student needs. Reasons could include curriculum changes, outdated content, or shifts in preferences. This finding is important for guiding future library purchases and faculty recommendations. It allows the library to review the collection, focus on student-relevant books, and consider updating or promoting unused materials. Revisiting the recommendation process or highlighting lesser-used resources may also help align the collection with current student demands. If we compare the usage of faculty-recommended books at IGDTUW with similar studies by other authors, the results are more or less same. The studies are given below: -

Arbeeny, P. & Chittenden, L.[27] found that 22 % of faculty-recommended books were borrowed at least once, compared to 48 % of student-selected books. Over a three-year period, faculty-recommended titles had a lower usage rate. The study highlighted a notable gap in circulation between faculty-recommended and student-selected books, raising concerns about the alignment of faculty recommendations with student needs. Lisa M. & Rose-Wiles[28] a four-year analysis of circulation and in-house use of print books, revealing that only 35 % of faculty-recommended titles were checked out at least once over five years. The study concluded that while faculty recommendations play a critical role in library collection development, a significant portion of the recommended books remained underutilised. From the above studies, around 22 % to 35 % of faculty-recommended titles were borrowed by users, indicating that 30.7 % of the faculty-recommended books in the IGDTUW library are actively used by students and patrons, which is a positive outcome.

6.3 To Develop a Collection Development Policy

The collection development policy ensures that the IGDTUW library meets user needs and supports academic success. It helps keep the library's collection relevant, balanced, and high-quality for students, faculty, and staff. This policy aligns with the university's goals.

6.3.1 Selection Criteria

- Relevance to Curriculum: Preference for materials that support academic programs and research. Authority and Accuracy: Priority given to reputable sources and updated, accurate information, especially in rapidly evolving fields such as technology and engineering.
- Physical Condition**:** Materials in poor physical condition, unless rare or irreplaceable, should be replaced or removed.
- Demand and Circulation Data**:** Selection will be informed by circulation data, ensuring that frequently checked-out items are prioritised and retained.
- Diversity and Inclusivity: Inclusion of diverse viewpoints to support an inclusive academic environment.

6.3.2 Acquisition Priorities

- Core Collection**:** Priority for essential academic materials directly supporting IGDTUW's courses and research areas.

- New Editions and Updates: Updated versions or latest editions of frequently used materials will be prioritised.
- Faculty and Student Requests**:** Requests from faculty and students are encouraged and prioritised when relevant to curriculum support.

6.3.3 Evaluation and Continuous Review

Annual reviews will be conducted using circulation data to align with emerging curriculum needs and library usage trends.

6.3.4 Procurement of Digital Resources and Accessibility

Procurement of digital resources will be emphasised to complement print resources, especially in high-demand areas where digital access can enhance resource availability.

6.4 Weeding Out Criteria

Weeding, or deselection, is the process of removing outdated, damaged, or no longer relevant materials from a library collection. It's essential for maintaining a library that is both up-to-date and in alignment with the current needs of its users. Weeding out or deselecting items in a library collection is an essential practice for maintaining a relevant, efficient, and useful library. Libraries generally follow certain criteria for weeding based on factors like relevance, physical condition, circulation frequency, and curricular alignment. The weeding process is essential for maintaining a university library's relevance, including the collection at IGDTUW. This process involves periodically removing outdated, damaged, or irrelevant materials, ensuring the library remains useful for current students and faculty. Here are some commonly applied criteria in academic libraries that could be adapted for IGDTUW Library also:

6.4.1 Content Accuracy and Relevance

Materials are often removed if they contain outdated or factually inaccurate information, especially in fields with rapid advancements, such as technology and sciences. Obsolete editions are usually replaced with newer, more accurate ones to maintain credibility and support the latest curriculum.

6.4.2 Physical Condition

Items that are significantly worn or damaged beyond repair can be recommended for removal.

6.4.3 Circulation and Use

An item's relevance is also assessed by its circulation frequency. If a book has not circulated within a set period (e.g., five years), it may be a candidate for weeding. Low-circulation items are sometimes moved to storage or replaced by digital alternatives.

6.4.4 Duplication and Space Constraints

Duplicate copies that are no longer in high demand may be removed to manage space effectively.

7. DISCUSSIONS

In a government university library, data analysis was used to improve the library's collection. This helped in creating a Collection Development Policy and a Weed Out Policy. These policies aimed to make the library more efficient and useful. However, the library faced several challenges while implementing the findings from data analysis. The main challenge was identifying books that: Were rarely used by students and faculty? Were available in excessive numbers? Were outdated and no longer relevant? To solve this, the library categorised these books department-wise. After that, they sent them for faculty review before finalising their removal. However, many faculty members opposed removing these books. They believed that even less-used books might still be useful for academic or research purposes.

This problem was not limited to this university. Rokusek[31] also found similar opposition in his research paper. He noted that many universities face difficulties in removing old books because faculty members resist the idea. Later, the library shared data-driven findings with the faculty. The data showed that these books were rarely accessed. After seeing the evidence, the faculty members agreed to the removal process. The main purpose of removing old books was to create space for new and relevant books. This helped in meeting the current academic needs of students and faculty. Results of the weed-out process: In 2022, the library removed 3,862 books. This was 12.61 % of the total collection (30,612 books). The total book circulation in 2022 was 15,507. After removing old books, it increased to 16,168 (4.26 % growth) in 2023. A study by Becker[32] found similar results. His research showed that library circulation increased by 70 % during the three years of the weeding out project. His study highlights the need for continual maintenance of academic library collections. The IGDTUW Library first created its Collection Development Policy in 2004. According to this policy, only faculty members could recommend new books for purchase. However, data analysis showed that only 30 % of the books recommended by faculty were used by students and researchers. To solve this issue, the library revised the policy. Now, students and other library users can also recommend books. This change made the book selection process more inclusive and ensured that the library acquired books that were truly in demand. A similar study by Kamau[33] found that many university libraries had policy gaps. His research pointed out that faculty recommendations should be balanced with student needs. This helps in creating a more effective and user-friendly library collection.

8. FINDINGS

Although the study's findings diverge slightly from the classic 80:20 ratios, the data demonstrates a similar pattern where a small fraction of the collection

is responsible for the majority of usage, validating the core principle of the Trueswell Rule. The analysis showed that approximately 23.05 % of the available titles (1,489 titles) were circulated and 76.95 % of the titles (3,433 titles) remained unused. This finding aligns with the Trueswell 80:20 Rule, indicating that a small proportion of the collection drives the majority of circulation activity, even if the specific percentages differ from the classic ratio.

The analysis aimed to assess the practical value and usage of faculty-recommended books, determining how actively these resources are utilised by students and patrons. The calculated usage percentage of faculty-recommended books is 30.7 % (1,340 out of 4,364), indicating that a significant portion of these books is actively used. A concerning finding is that 69.3 % of the faculty-recommended books have not been frequently borrowed, highlighting a potential gap between faculty recommendations and student usage.

The findings highlight a comprehensive and strategic approach to developing a collection development policy for IGDTUW Library. By incorporating data-driven methodologies, user involvement, and clear selection and weeding criteria, the library can ensure that its collection remains relevant, diverse, and aligned with the academic objectives of the institution. The criteria for weeding discussed apply to the IGDTUW Library, allowing it to maintain an efficient and relevant collection tailored to its user community's needs.

The findings emphasise the necessity of a structured weeding process in the IGDTUW Library to manage its collection effectively. By employing criteria such as content relevance, physical condition, circulation frequency, duplication, and established collection development policies, the library can enhance its ability to serve current users.

9. CONCLUSION

Based on the data and analysis in the study, the following conclusions can be drawn:

The study confirms the applicability of Trueswell 80/20 Rule in the context of the IGDTUW Library, where a small percentage of the library's collection (23.05 %) accounts for the majority of circulation (80 %). This finding emphasises the need to focus on high-demand resources for better resource management. Only 30.7 % of the books recommended by faculty were borrowed, meaning most of them (69.3 %) were not used much. This shows that the books suggested by faculty might not match what students need. Reviewing the recommendation process could help in selecting more useful books. A big part of the library's collection is not being used, showing the need to remove old, irrelevant, or damaged books. This will free up space and help the library focus on the books people use most, making the collection better. The study highlights the need for a collection policy at IGDTUW Library based on data. This policy should focus on what users need, using borrowing data and faculty suggestions, to make sure the library buys the right books that support the university's goals. Artificial Intelligence (AI) is transforming library collection management by automating book selection and weeding out processes. Google Scholar plays a key role by providing citation analysis, research trends, and author impact metrics to guide decisions. Google Scholar helps identify highly cited and influential books for acquisition.

The study suggests that borrowing data ought to be consulted to improve collection policies, removing unused books. Furthermore, the study suggests that faculty and students should be engaged in book selection. Further, it is suggested that duplication should be checked before placing an order of books so that unique titles may be added to the library collection. Thus, it will help keep the collection updated and useful for everyone.

REFERENCES

1. Nash, J.L. & Richard. Trueswell's Contribution to collection evaluation and management: A review. *EBLIP*, 2016, **11**(3), 118-24. doi: 10.18438/B8PG8T
2. Britten, W.A. A use statistic for collection management: The 80/20 rule revisited. *Library Acquisitions: Practice & Theory*, 1990, **14**(2), 183-9. doi: 10.1016/0364-6408(90)90061-X
3. Jackson, W.J. The 80/20 archives: A study of use and its implications. *Archival Issues*, 1997, **22**(2), 133-45. https://www.jstor.org/stable/41101977 (Accessed on 18 March 2025)
4. Burrell, Q.L. The 80/20 rule: Library lore or statistical law?. *J. of Documentation,* 1985, **41**(1), 24-39. doi: 10.1108/eb026772
5. Chen, Y.S, Pete Chong P, Tong Y. Theoretical foundation of the 80/20 rule. *Scientometrics,* 1993, 26, **28**(2), 183-204. doi: 10.1007/bf02016899
6. Yang, YT & Shieh, JC. Is there the pareto principle in public library circulation? A case study of one public library in Taiwan. *Malaysian J. of Libr. and Inf. Sci.,* 2019, **24**(2), 97-113. doi: 10.22452/mjlis.vol24no2.6
7. Sutton, A.M & Jacoby, J. A comparative study of book and journal use in four social science disciplines. *Behavioral & Social Sciences Librarian*, 2008, **27**(1), 1-33. doi: 10.1080/01639260802152709
8. Hindle, A & Buckland, M.K. In-library book usage in relation to circulation. *Collect. Manage.*, 1979, **2**(4), 265-77. doi: 10.1300/J105V02N04_01
9. Jain, AK. Sampling and data collection methods for a book-use study. *Library Quarterly*, 1969, **39**(3), 245-52. doi: 10.1086/619765
10. Ajayi, N.A & Adetayo, J.O. Utilisation of library books to enhance academic excellence in Nigeria tertiary institution: A case study of hezekiah oluwasanmi library, OAU, Ile-ife. *J. Soc. Sci*, 2005, **10**(2), 119-22. doi: 10.1080/09718923.2005.11892467

11. Johnson, Q. Moving from analysis to assessment: Strategic assessment of library collections. *J. Lib. Administration*, 2016, **56**(4), 488-98. doi: 10.1080/01930826.2016.1157425
12. Hawker L. & Blacklock C. Core collections: Essential titles for health libraries. *Health Inf. & Libr. J.*, 2024, **41**(3), 213-5. doi: 10.1111/hir.12547
13. Hossain M. & Rahman RM. Application of data mining techniques on library circulation data for library material acquisition and budget allocation. *In* Handbook of research on organisational transformations through big data analytics. *IGI global,* 2015, 334-354). doi: 10.4018/978-1-4666-7272-7.CH020
14. Khademizadeh S.; Nematollahi Z. & Danesh F. Analysis of book circulation data and a book recommendation system in academic libraries using data mining techniques. *Libr. & Inf. Sci. Res.*, 2022, **44**(4), 1-9. doi : 10.1016/j.lisr.2022.101191
15. Igarashi T.; Koizumi M. & Widdersheim M. Capturing citizens' information needs through analysis of public library circulation data, *Libr*., 2020 May 26, **70**(2), 127-41. doi: 10.1515/LIBRI-2018-0137
16. Minami T. Potentials of circulation data analysis for library marketing: A case study in a university library. *In* International conference on bio-science and bio-technology. Berlin, Heidelberg: Springer Berlin Heidelberg , 2011, 90-99. doi: 10.1007/978-3-642-27157-1_10
17. Zhang, D. Association mining of application in the library circulation data. *Comput. Knowl. and Technol.,* Available at*: https://www.abtbus.com/pdf/HJDM20120300000_37412849.pdf* (accessed on 12 March 2025)
18. Cabonero, D.A. & Mayrena, L.B. The development of a collection development policy. *Libr. Philoso. Pract.,* 2012, 804, available at: https://digitalcommons.unl.edu/libphilprac/804/. (accessed on 12 March 2025).
19. Shiv, K.S. Collection development and policies of central library IIT BHU and Indore: A comparative study, *Asian J. of Multidisciplinary Studies,* **4**(5), 95-101. Available at http://www.ajms.co.in (accessed on 12 March 2025)
20. Fatima N. Collection development practice in Indian institute of technology libraries of Eastern India: A study. *Collection and Curation*, 2019, **38**(2), 25-31. doi: 10.1108/CC-08-2018-0015
21. Rusmin, J.M. Analisis pengembangan koleksi perpustakaan institut teknologi Indonesia. Tik Ilmeu: *Jurnal Ilmu Perpustakaan Dan Informasi,* 2022, **6**(1), 93-106. doi: 10.29240/tik.v6i1.4258
22. Douglas CS. Revising a collection development policy in a rapidly changing environment. *J. Electronic Resources in Medical Libraries*, 2011, **8**(1), 15-21. doi*:* 10.1080/15424065.2011.551487
23. Vandana, Collection development in libraries: Especially academic library. *IP Indian J. Libr. Sci. Inf. Technol.,* 2020, 5(2), 83-85. doi: 10.18231/j.ijlsit.2020.018
24. Dilevko J. & Gottlieb L. Weed to achieve: A fundamental part of the public library mission?. *Library Collections, Acquisitions, and Technical Services*, 2003, **27**(1), 73-96. doi: 10.1016/S1464-9055(02)00308-1
25. Kirby SB. Fundamentals of collection development and management. *J. Medical Libr. Assoc.*, 2004, **92**(4), 503-505. doi: 10.1080/01462679.2011.529241
26. Soma, A.K & Sjoberg, L.M. More than just low-hanging fruit: A collaborative approach to weeding in academic libraries. *Collect. Manage.*, 2010, **36**(1), 17-28. doi: 10.1080/01462679.2011.529241
27. Arbeeny, P. & Chittenden, L. 2014. An ugly weed: Innovative deselection to address a shelf space crisis. *J. Lib. Innovation*, 2014, **5**(1), 78- 80. https://citeseerx.ist.psu.edu/ (accessed on 18 March 2025)
28. Lisa M. Rose-Wiles, Gerard Shea, Kaitlin Kehnemuyi, Read in or check out: A four-year analysis of circulation and in-house use of print books, *J. Academic Librarianship*, 2020, **46**(4) . doi: 10.1016/j.acalib.2020.102157
29. Rose-Wiles, L.M. Are print books dead? An investigation of book circulation at a mid-sized academic library. *Technical Services Quarterly*, **30**(2), 129-152. doi: 10.1080/07317131.2013.75949
30. American library association. ALA library fact sheet 15: Weeding library collections: A selected annotated bibliography for library collection evaluation. 2024, *ALA*. Retrieved from www.ala.org (accessed on 10 March 2025)
31. Rokusek, S; Bernier, S. & Brown, J.M. Resource review to right size the library collection. Reference services review, 2024, **52**(4), 496-510. doi: 10.1108/RSR-03-2024-0015
32. Becker KL. Revitalising a community college library: Aggressive weeding's impact of circulation statistics, *Reference Services Rev.*, 2024, **52**(4), 474-85. doi: 10.1108/RSR-03-2024-0012
33. Kamau, G.W & Elegwa, A.L. Factors influencing collection development process at the university of nairobi library, *Libr. Manage.*, 2022, **43**(3/4), 207-17. doi: 10.1108/LM-09-2020-0127

CONTRIBUTORS

Dr. D.S. Sengar, He has over 25 years of experience working with various organisations, including INSDOC (now CSIR-NIScPR), AIIS Gurgaon, and IIT Kanpur. Currently, he has been serving at IGDTUW, Delhi, for the past 20 years. He holds the MSc in Physics, Associateship in Information Science from INSDOC, and PhD from Jiwaji University, Gwalior.

Contribution in the current study, The entire study was planned, and the data were downloaded and analysed in alignment with the study's objectives.

Ms. Komal Saxena She has over 10 years of experience in library management. She previously worked in the IGDTUW Library and is currently serving as a Librarian at the National Green Tribunal, Pune. Contribution in the current study, Previous studies on the topic and related references were collected and assist in the data analysis.

Mr. Ashok Kumar Rathore, Completed his MLISc project work related to the topic of this paper in the IGDTUW Library under the guidance of Dr. Sengar.
Contribution in the current study, Assisted in data collection and its analysis.