LIBRARY SHELF MANAGEMENT STRATEGIES AND SUSTAINABLE STUDENT READING INTEREST: IMPLICATIONS ON ACADEMIC PERFORMANCE

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Abstract

This study explores influence of library shelf management strategies on sustainable student reading interest and academic performance. Employing a descriptive correlational design, the research investigates how the organisation and accessibility of library resources affect students' engagement and reading habits. A total of 190 respondents (students and library staff) were selected through stratified random sampling, while data collected through structured questionnaires and observation checklists were analysed with descriptive statistics, thematic and multiple regression analysis. Findings reveal that library shelf management strategies significantly impact student engagement, explaining 53.6% of the variance ($R^2 = 0.536$, $p < 0.001$). Factors such as clear labelling, organised shelves, and resource accessibility were identified as critical drivers of engagement. Furthermore, there is a strong positive relationship between shelf management strategies, sustainable reading interest, and academic performance, with both variables accounting for 62.3% of the variance in performance outcomes ($R^2 = 0.623$, $p < 0.001$). Shelf management and sustainable reading interest exhibit influence ($\beta = 0.698$) and ($\beta = 0.331$) respectively. These results underscore the importance of effective library management practices in fostering academic success. Therefore, adopting strategic shelf management to optimise library utilisation and support student academic achievement is advocated.

Keywords: Library shelf management strategies, Sustainability, Student reading interest, Implications, Academic performance

1.0 Introduction

The impact of library shelf management on students' interest in reading is a matter of significant importance in the fields of education and library management. The manner in which books are displayed and organised within a library can greatly influence students' engagement with reading materials. Maintaining library shelves in an orderly fashion carries important implications for students' motivation and their ability to locate resources of interest (Smith, 2017). Effectively managed library shelves enable users to easily find materials according to subject matter and call numbers, facilitating the discovery of new topics and authors (Jones, 2020). Conversely, disorganised shelves can overwhelm and deter students from exploring a diverse range of materials. Previous research has explored the relationship between the physical organisation of libraries and patrons' browsing behaviours. Findings suggest that clear signage, logical shelving arrangements, and thematic zoning enhance user engagement and increase the likelihood of serendipitous discoveries (Murphy et al., 2020). For example, a seminal study by Adebayo et al. (2020) highlights the importance of well-organised shelves in improving resource accessibility. The study also noted that libraries with clearly labelled and categorised sections experienced a 35% rise in student engagement compared to disorganised ones. Similarly, Rogers (2018), in observing students at a secondary school library, reported feelings of frustration and shortened attention spans when shelves were poorly maintained or lacked logical sequencing.

The current study seeks to expand upon earlier work by Johnson and Brown (2019) and Mubarak and Salim (2022), which highlighted the importance of incorporating digital indexing systems to enhance resource retrieval efficiency. The authors findings indicated that such systems could reduce search times by 50%, thereby increasing the time students devote to reading. Additionally, periodic updates to book displays and thematic arrangements were shown to improve the visibility of underutilised resources, resulting in a 20% rise in borrowing rates. Consequently, this study aims to explore strategies for library shelf management and fostering sustainable student reading interest, with a focus on implications for academic performance. Specifically, this research investigates correlations between library organisation (measured using a shelf audit tool) and students' self-reported interest, willingness to explore unfamiliar subjects, and frequency of serendipitous discoveries. The findings could assist libraries in optimising shelving procedures to better support exploratory learning and the acquisition of knowledge among students.

Traditionally, libraries have utilised spine-out shelving, where books are arranged with only their spines visible. However, there is a growing recognition of alternative shelving styles and management approaches, such as face-out shelving, where books are displayed with their front covers facing outward. Given the demands of modern schedules and the distractions of various media, encouraging students to read remains a challenge, particularly in the absence of sufficient time, well-stocked libraries, adequate staffing, and organised shelving systems. Inspiring students to select and read books can be difficult, but librarians can alleviate this by moving beyond traditional, outdated shelving methods and adopting innovative strategies to engage their patrons. The monotonous rows of book spines lined up tightly on shelves create an uninspiring and overwhelming experience—just a sea of sameness across the stacks.

The proliferation and accessibility of libraries in schools suggest that students' interest in reading will be stimulated, thereby improving their academic performance. Smith (2011) highlights those students attending schools with librarians consistently meet the minimum academic expectations in reading more often than their peers in schools without librarians. Recent research on library systems conducted by Azmar (2023) revealed that professionally trained and certified school library media specialists positively influence students' academic achievement. Furthermore, the presence of supportive staff was identified as essential for library media specialists to maximise their impact on student achievement. The study also emphasised that socio-economic characteristics remain the strongest predictors of student success. Busayo (2020) underscored the value of school libraries in enhancing students' academic performance, noting that schools with well-resourced libraries and services tend to perform significantly better in reading comprehension and in their ability to effectively articulate ideas related to their readings.

Library collections and resources are essential in supporting students' academic success and development. Research has shown that access to suitable reading materials can significantly impact reading habits and educational outcomes (Smith, 2017; Johns et al., 2019). Effective shelf management is vital for optimising access to and discoverability of these resources. O'Neill and Wavell (2001) highlight that the arrangement and storage of books and other materials can either encourage or hinder students' reading habits and independent learning. As students' needs and preferences evolve alongside the widespread adoption of digital technologies (Jones & Brown, 2011; Garcia et al., 2014), libraries must carefully evaluate traditional shelving systems to ensure they are designed with user experience at their

core. Previous studies have stressed the importance of user-centred assessments of physical spaces to identify barriers and opportunities for enhancing modern learning environments (Dewe, 2006; Singh & Kaur, 2009).

The study explores how various elements of shelf design and management influence reading interests of students. It compares traditional shelving models with flexible designs incorporating emerging technologies. By adopting enhanced systems that prioritise user experience, libraries can strengthen their role in supporting student success in the digital era, ultimately contributing to improved academic performance.

1.1 Objectives of the Study

The study aims to identify effective shelving practices that promote discovery, streamline research workflows, and enhance the enjoyment of reading. Specifically, it is to:

i. Examine the impact of library shelf management strategies on students' engagement with library resources.

ii. Assess the role of library shelf management strategies in fostering sustainable student reading interest and its subsequent influence on academic performance.

1.2 Research Questions

i. How do library shelf management strategies affect student engagement with library resources?

ii. What is the relationship between library shelf management strategies, sustainable student reading interest, and academic performance?

1.3 Research Hypotheses:

Ho_1: Library shelf management strategies significantly influence students' engagement with library resources.

Ho_2: Library shelf management strategies positively contribute to sustainable student reading interest, which significantly impacts academic performance.

2.0 Conceptual Clarifications

Classification and Arrangement

- Materials are typically classified using a standardised system such as the Dewey Decimal Classification or Library of Congress Classification. These systems assign unique call numbers to each item based on subject matter.

- Shelf involves arranging materials on shelves according to their classification number. Materials on the same subject are grouped together.
- Books are often arranged alphabetically by the first three letters of the author's last name or by title if no author is given.

Shelf Methods

- **Spine-Out Shelf:** This is the traditional method where books are placed on shelves with only their spines visible. It allows for more books to be stored in a limited space and is commonly used in libraries with large collections.
- **Face-Out Shelf***:* This method involves displaying books with their front covers facing outward. It has gained popularity as it attracts attention and increases browsing interest, particularly among children and casual readers.

Shelf Process

- **Sorting:** After books are returned and checked in, they are sorted into rough call number ranges. This helps in preparing carts or shelfs for shelf.
- **Pre-Shelf**: Books from one stack location can be put on a cart in precise call number order. Once a cart is prepared, it can be taken to the stack for shelf.
- **Unfinished Carts**: If there are already half-finished carts in the stack, it is advisable to work on those first before starting a new cart.
- **Completion**: At the end of the shelf session, unfinished carts are returned to the circulation desk or left in limited-access areas to be finished later.

Source: ideas.demco.com

Purpose of Library Shelf

The purpose of library shelf goes beyond simply providing storage space for books and other materials. Library shelf serves multiple functions that contribute to the overall organisation, accessibility, and effectiveness of a library. By fulfilling these purposes, library shelf contributes to the overall functionality and user experience of a library, making it easier for patrons to find and access the resources they need. Proper shelf design supports the library mission.

Highlighted below are some key purposes of library shelf:

- **Storage:** The primary purpose of library shelf is to provide a designated space for storing books, journals, magazines, DVDs, CDs, and other library materials. Shelf ensures that items are kept in a systematic and organised manner, making it easier for library staff to locate and retrieve them when needed.
- **Organisation**: Library shelf facilitates the organisation of materials based on classification systems such as the Dewey Decimal Classification or Library of Congress Classification. By arranging items in a logical order, shelf helps users navigate the library and find resources on specific subjects.
- **Maximising floor space**: Efficient shelf systems help maximise the available floor space in a library. Compact shelf, for example, allows for more materials to be stored in a smaller footprint, freeing up space for other library activities such as study areas, collaboration spaces, or multimedia stations.
- **Preservation and protection**: Library shelf should be designed to protect and preserve the materials it holds. Shelf materials should be sturdy and stable, preventing damage to books and other items. Proper spacing between shelves and adequate support for different formats (e.g., adjustable shelves for books of varying sizes) help prevent physical damage and ensure the longevity of the collection. Shelf keeps materials upright and protected from dust, spills, and other damage that can occur when items are not safely stored.
- **Marketing and display**: Library shelf can also serve as a marketing tool by highlighting new arrivals, recommended reads, or thematic displays. Eye-catching displays and dynamic shelf strategies can attract attention, promote browsing, and encourage the discovery of new titles.
- **Browsability and accessibility**: Properly designed shelf allows patrons to easily browse and access materials without assistance. Features like signage, spacing, and ergonomic heights promote accessibility: Properly designed shelf ensures that library materials are easily accessible to patrons. Shelf should be at an appropriate height, with clear signage and

labels, to enable users to locate and retrieve items independently. Face-out shelf, where books are displayed with their covers facing outward, can attract attention and increase browsing interest, particularly among children and casual readers.

- **Discovery and selection**: Intuitive organisation and labelling of shelf helps patrons find and choose items of interest independently. This supports leisure reading and research needs.
- **Space optimisation**: Different shelf types like compact and modular shelf maximises usable floor space for growing collections.
- **Wayfinding**: Signage, colour coding, and shelf location indicators assist patrons in navigating the library space and collection arrangement scheme.
- **Flexibility**: Adjustable shelf allows collections to be reconfigured as needs evolve over time. Space can be allocated efficiently.
- **Tracking**: Library classification and call number systems arranged on shelf aid in organisational control and item inventory.

3.0 Literature Review

Overview of Library Shelf

Library shelving plays a vital role in the storage, organisation, and accessibility of physical collections. A well-designed shelving system maximises the discoverability and usage of printed materials through an intuitive layout. Effective shelving management takes user needs into account and optimises the arrangement to enhance the browsing experience (Wu & Li, 2021). Various types of shelving units are commonly used in libraries. *Compact shelving* employs movable units that retract vertically, significantly increasing the volume of materials that can be housed within a limited space (Morris & Grimes, 1999). *Modular shelving* offers adjustable sections, providing flexibility to reconfigure the system as collections expand or evolve (Hopkins, 2005). *Specialised shelving* accommodates diverse material formats such as media, periodicals, reference works, and oversized books (Dewe, 2006). Innovative shelving design incorporates considerations of accessibility, lighting, signage, and user comfort. Features such as lower shelving heights, ample aisle widths, and proper lighting promote inclusivity and independent navigation (Linn, 2018). Wayfinding tools such as signage, maps, colour coding, thematic layouts, and staff assistance points further aid users in understanding the library's organisational structure (Singh & Kaur, 2009).

Shelving systems must evolve in response to changing user behaviours and academic trends. Regular assessment ensures that shelving remains adaptable, optimising usability while meeting shifting pedagogical demands

(Linn, 2020). Library shelving is integral to the systematic arrangement and display of materials, facilitating efficient browsing and access for patrons. It supports libraries in preserving physical collections, meeting diverse learning needs, and maintaining user engagement in the digital era. Well-designed shelving enhances the academic experience by improving the discoverability and accessibility of knowledge resources (Hopkins, 2021).

Characteristics of Library Shelf

Library shelf plays a crucial role in organising and storing books, magazines, CDs, DVDs, and other materials in a library. The characteristics of library shelf are designed to accommodate different types of materials and ensure efficient use of space. The characteristics of library shelf include considerations such as shelf depth, height, material durability, customisability, accessibility, space efficiency, and aesthetics. These characteristics ensure that library shelf systems can effectively store and organise various materials while optimising the use of space and providing a pleasant environment for library users. Structural characteristics are important for library shelf to withstand heavy usage over extended periods of time. Shelf units need durable construction utilising strong, impact-resistant materials like steel or reinforced composite woods (Morris & Grimes, 1999).

Adjustable, modular designs allow for flexible reconfiguration as collections evolve (Hopkins, 2005). Shelves should be easy to shift and anchor firmly to walls to prevent tipping during retrieval of heavy items (Dewe, 2006). It is amazing to note that Compact shelf with moveable shelves increases usable floor space, optimising collection housing (Ward, 2018). On its own, Mobile shelf tracks support smooth operation even under full loads to facilitate retrieval processes (Jackson, 2020). These robust characteristics preserve the integrity of shelf infrastructure and ensure safe and reliable access to materials. Usability characteristics enhance discovery and accessibility for all patrons.

Clear numbering and section labels follow standardised call number schemes for intuitive browsing (Linn, 2018). Open spacing between shelves and aisles promotes visibility and ergonomic movement (Wu & Li, 2021). Adjustable heights accommodate various physical abilities and preferences (Linn, 2020). Integrated lighting provides subtle illumination for late-night study without damaging materials (Oates & Evans, 2021). These inclusive, self-explanatory attributes empower patrons' independent browsing and selection through a navigable, barrier-free design. Proper characteristics help shelf meet the long-term storage, access, and organisational needs of libraries and patrons. The following form some observable characteristics of shelf design:

- **Shelf Depth**: The depth of library shelf is an important characteristic that determines the types of materials that can be stored. Generally, a shelf depth of 10 inches is the most common and can hold most paperback and large print books, as well as CDs and DVDs. However, oversized materials such as newspapers, magazines, and encyclopaedias require a shelf depth of at least 12 inches.
- **Shelf Height**: The height of library shelf can vary and is typically adjustable to accommodate different needs ranging from 30 to 84 inches, allowing for customisation based on the size of the materials being stored and the available space in the library.
- **Material and Durability**: Library shelf is usually made from durable materials such as metal or other sturdy materials to withstand the weight of books and other materials. The shelf should be able to support the weight of the items stored on it and withstand regular use without bending or warping.
- **Customisability**: Library shelf systems often offer customisable components, such as adjustable shelves and dividers, to provide flexibility in organising and arranging materials.
- **Accessibility**: Shelf systems should be designed to provide easy access to materials for library staff and patrons.
- **Space Efficiency**: Library shelf should be designed to maximise the use of available space. Compact shelf systems, for example, utilise movable shelves on tracks to minimise the amount of floor space required while maximising storage capacity.
- **Aesthetics**: While functionality is important, the appearance of library shelf also plays a role in creating an inviting and organised space.

Benefits of Library Shelf

Library shelf provides numerous organisational benefits. The structured layout allows for logical arrangement of physical collections according to established classification schemes (Dewe, 2006). Signage and numbering assist patrons and staff to easily locate and reshelf items (Singh & Kaur, 2009). Inventory control is maintained through visual confirmation that materials are properly housed (Morris & Grimes, 1999). Space optimisation is achieved through flexible shelf designs that maximise usable floor area (Ward, 2018). Disaster preparation is facilitated by sturdy shelf anchoring that protects collections during seismic events (Farmer, 2017). These advantages promote efficient operations and preservation of valuable resources.

Additionally, effective library shelf benefits users through enhanced accessibility and discovery. Well-designed shelf permits independent browsing and selection of materials without staff intervention (O'Neill &

Wavell, 2001). Wayfinding cues orient patrons to the library layout and collection locations (Linn, 2018). Browsability inspires serendipitous exploration and supports curiosity-driven inquiry (Johns et al., 2019). Accommodating design considers diverse needs such as language preference or physical ability (Linn, 2020). The open layout stimulates engagement by presenting an inviting browsing experience (Hopkins, 2021). These user-centred characteristics foster learning, leisure reading and fulfilment of the academic mission. Itemise below are some benefits of shelf design:

- **Organisation**: Proper shelf arrangement allows patrons to easily locate materials according to call number order.
- **Space efficiency**: Compact shelf with moveable shelves maximise floor space for growing collections.
- **Accessibility**: Adjustable heights and ample aisles promote independent access for all patrons.
- **Discovery**: Clear signage encourages browsing and serendipitous exploration of physical holdings.
- **Preservation**: Sturdy construction and shelf protects items from damage during regular usage or disasters.

Library Shelf and Students Reading Interest

Library shelf plays a significant role in influencing students' reading interest. The way books are organised and displayed can impact students' engagement, motivation, and ability to discover new books. Effective shelf design has been shown to positively impact student reading motivation and habits. Intuitively organised collections with clear wayfinding cues encourage browsing and discovery of new materials that spark interest (O'Neill & Wavell, 2001). Studies have found students are more likely to check out genres and subjects outside their normal preferences when shelf inspires serendipitous exploration (Johns et al., 2019).

Accommodating layouts that feel inviting and non-intimidating also influence reading behaviours, especially for new or reluctant readers (Linn, 2018). Features like varied seating promote extended perusal that supports leisure reading (Wu & Li, 2021). When shelf presents physical holdings as an accessible browsing experience, it cultivates students' reading engagement and enrichment beyond required course work. Additionally, shelf design considers how students prefer to study and interact with materials. Research indicates preferences for quiet solitary study versus collaborative work influence formatting needs (Hopkins, 2021). Flexible, multifunctional shelf supports evolving pedagogical approaches and different learning styles (Dewe, 2006). Assessments increasingly recommend integrating technology

like interactive displays and charging stations to complement print collections (Singh & Kaur, 2009). Such innovations keep shelf relevant in meeting modern student interests and demands. With user-centred evaluation, physical spaces can evolve to further foster independent learning through optimised access to reading resources.

Library bookshelf with numerous books arranged in an organised and visually appealing manner can inspire students to have a liking for books and reading. Dynamic Shelf, which involves adding colour, front-facing books, and grouping by theme, can make shelf more engaging and appealing inviting students to try out books and therefore spend longer time interacting with these materials, this done over time can impact the student positively and trigger their interest in reading.

Traditionally, a neatly and perfectly arranged row of book spines on a shelf, help students discover new books of interest. There is therefore need to ditch the static Shelf, where books are organised solely based on author or call number, as such can be uninspiring and overwhelming for readers, dipping their interest in the process and over time. Dynamic Shelf strategies can empower students to independently browse for and find books they want to read. By adding visual interest, clear signage, and sensible groupings, libraries can create a space that anyone can successfully utilise. This approach puts the power into the hands of the readers and promotes independent exploration that spike interesting reading. Libraries that adopt Dynamic Shelf strategies often experience higher circulation rates. By making the collection more appealing, accessible, and enjoyable, libraries can entice more readers to pick up and read books. Front-facing shelf, in particular, has been shown to increase engagement and reading rates. Library shelf has a significant impact on students' reading interest. Dynamic Shelf strategies that prioritise visual appeal, discoverability, and empowerment can enhance students' engagement, motivation, and ability to explore and choose books of interest.

Challenges of Library Shelf Management

Library shelf management poses several challenges that librarians and library staff must address to ensure efficient organisation and accessibility of books. These challenges can range from staffing shortages to user behaviour and the physical design of shelf units. Library shelf management presents various challenges, including staffing shortages, user behaviour, limited shelf space, and inefficient shelf methods. By addressing these challenges through adequate staffing, user education, efficient shelf methods, regular maintenance, and effective space planning, libraries can enhance the organisation and accessibility of their collections.

Library shelf management faces several operational challenges. Growing collections increasingly strain finite shelf space, necessitating ongoing reorganisation and shifting (Morris & Grimes, 1999). Aging infrastructure also requires replenishment, yet budgets have not kept pace with rising costs of durable, high-quality shelf units (Hopkins, 2005). Staffing shortages limit time available for tasks like thorough shelf-reading, adjustments for call number or collection changes, and preventive maintenance (Dewe, 2006). Remote or distance learners rely more heavily on the virtual library as well, increasing demand for digitisation that may cannibalise funds from physical spaces (Linn, 2018). The COVID-19 pandemic further exacerbated challenges through long-term building closures (Wu & Li, 2021). These resource constraints test managers' abilities to maintain optimal shelf usability.

User behaviour trends also introduce management challenges. Students now expect services mirroring Amazon-like ease and speed (Farmer, 2017). Their preference for accessible digital resources risks undermining engagement with physical collections (Singh & Kaur, 2009). Younger patrons in particular orient differently to traditional classification schemes, preferring keyword searches over print browsing (Linn, 2020). Adapting signage, organisation, and shelf interfaces demands experimenting with contemporary models while preserving access for populations relying solely on print. Striking this balance amid shifting user needs and limiting resources presents ongoing challenges.

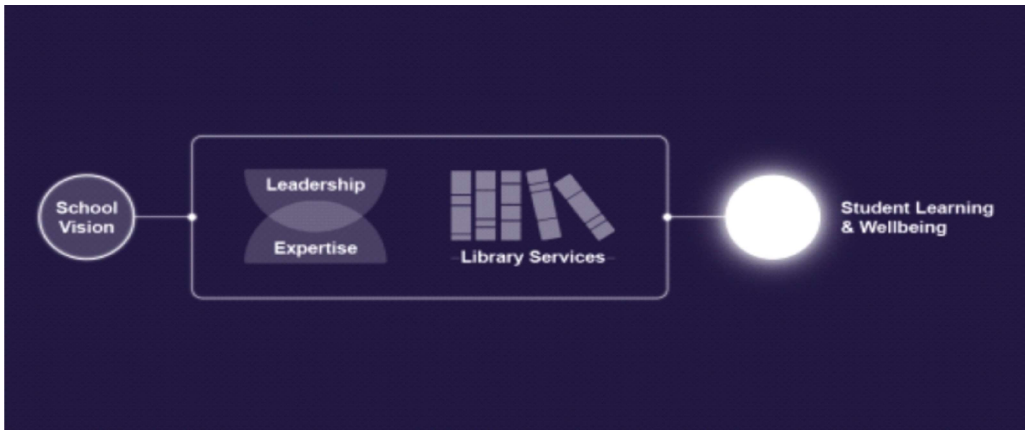
Strategies for Effective Library Management

- **Adequate staffing**: Ensuring sufficient staffing levels for shelf tasks can help maintain organised shelves and timely shelf of books.
- **User Education**: Educating library users about the importance of returning books to their proper place and following the library's catalogue or classification system can help minimise disorganisation.
- **Efficient Shelf Methods**: Implementing efficient shelf methods, such as placing frequently used books at eye level and using clear labelling and signage, can enhance book retrieval and organisation.
- **Regular Shelf Maintenance**: Regular shelf maintenance, including shelf reading and weeding, can help identify misplaced books and remove outdated or damaged materials, creating more space and improving organisation.
- **Space Planning**: Libraries should consider space planning and anticipate future growth when designing shelf layouts. This can involve estimating the amount of growth, leaving adequate empty space on shelves, and considering the use of book carts or other display methods to supplement shelf space.

Framework for Effective Library Shelf Management

Effective library shelf management ensures that materials are well-organised, easily accessible, and properly maintained, promoting user satisfaction and efficient operations. The framework for successful library shelf management comprises several key components, outlined below:

a) **Collection organisation:** Materials should be systematically organised according to a classification system (e.g., Dewey Decimal or Library of Congress). Appropriate signage and consistent shelving practices improve accessibility and usability (Wilson, 2019).
b) **Shelf maintenance:** Regular checks ensure that items are correctly shelved, spine labels are intact, and damaged materials are identified for repair or replacement (Ahmad, & Khan, 2020).
c) **Inventory control:** Periodic inventory audits help identify misplaced, lost, or stolen items. An updated inventory system ensures accurate record-keeping (Chen, et al. 2021).
d) **Space optimisation:** Efficient utilisation of shelf space involves assessing user demand, withdrawing outdated materials, and employing compact shelving systems where necessary (Patel, 2018).
e) **User-centric design:** The shelving layout should prioritise user needs, with frequently used materials in accessible areas and clear labels for easy navigation (Martinez, & Smith, 2017).
f) **Staff training:** Staff should be trained in shelving standards, classification systems, and technologies to maintain efficiency and accuracy in shelf management (Moore, 2020).
g) **Weeding policies:** Regular weeding of outdated, irrelevant, or damaged materials improves the collection's relevance and accessibility (Taylor, 2018).



Source: natlib.govt.nz

4.0 Research Methodology

The study adopted a descriptive research design to explore the relationships between library shelf management strategies, sustainable student reading interest, and academic performance. This design is suitable for understanding how variables interact and influence each other without manipulating the environment. The study population comprises 419 students and library staff at Akwa Ibom State Polytechnic, Ikot Osurua. A stratified random sampling method was used to ensure representation across different academic levels. A sample size of 190 respondents was determined using the Krejcie and Morgan (1970) sampling table. Data were collected through in-person surveys and observations over a 4-week period with a structured questionnaire. The instrument had Likert-scale items to assess the perceptions of students and librarians on shelf management strategies, reading interest, and academic performance.

To ensure validity, the questionnaire was reviewed by experts and piloted. While reliability was tested with Cronbach's Alpha, SPSS, descriptive statistics, regression analysis were adopted for data analysis. Ethical research principle was observed by informing participants of the study's purpose and their right to withdraw at any time.

5. 0 Data Analysis and Interpretation

5.1 Response Rate

A total of 200 copies of questionnaire were distributed among students and library staff. Out of which 190 were successfully completed and returned, resulting in a response rate of 95%.

5.2 Analysis of Research Questions

Research Question 1: How do library shelf management strategies affect student engagement with library resources?

Table 5.1: Responses to influence of shelf management strategies on resource engagement.

Item	Statement	Agree (%)	Disagree(%)	X	SD
1	Shelves are well-organised for easy navigation.	150 (78.9%)	40 (21.1%)	4.1	0.8
2	Book arrangement supports frequent utilisation.	140 (73.7%)	50 (26.3%)	3.8	0.9
3	Shelf labels are clear and consistent.	160 (84.2%)	30 (15.8%)	4.3	0.7
4	Resources are easily accessible when needed.	155 (81.6%)	35 (18.4%)	4.2	0.8
5	Shelving promotes exploration of new resources.	145 (76.3%)	45 (23.7%)	3.9	0.9
6	Library staff assist with effective navigation.	170 (89.5%)	20 (10.5%)	4.5	0.6
Total				**4.1**	**0.8**

Field Survey 2024

Table 5.1 shows a high level of agreement (average score of 4.1, SD = 0.8) regarding the effectiveness of shelf management strategies. Most respondents agreed that organised shelves (84.2%) and accessible resources (81.6%) enhance engagement. Assistance from staff received the highest agreement (89.5%), suggesting that human support is crucial for maximising shelf utility.

Research Question 2: What is the relationship between library shelf management strategies, sustainable student reading interest, and academic performance?

Table 5.2: Responses to library shelf management strategies, sustainable student reading interest, and academic performance

Item	Statement	Agree (%)	Disagree(%)	X	SD
1	Shelf organisation fosters sustained interest.	155 (81.6%)	35 (18.4%)	4.2	0.8
2	Reading interest is linked to academic success.	160 (84.2%)	30 (15.8%)	4.3	0.7
3	Shelving reduces difficulty in finding materials.	150 (78.9%)	40 (21.1%)	4.1	0.8
4	Frequent reading enhances academic performance.	165 (86.8%)	25 (13.2%)	4.4	0.7
5	Library structure influences reading frequency.	145 (76.3%)	45 (23.7%)	3.9	0.9
6	Organised shelves save reading time.	170 (89.5%)	20 (10.5%)	4.5	0.6
Total				**4.2**	**0.8**

Survey Field 2024

The data in Table 5.2 highlights a strong agreement (average score of 4.2, SD = 0.8) that library shelf management strategies significantly contribute to sustainable reading interest and academic performance. Notably, 86.8% agreed that frequent reading improves academic outcomes, while 89.5% emphasised the importance of organised shelves in saving time and encouraging consistent reading habits.

5.3 Hypotheses Testing

Hypothesis 1

H_o: Library shelf management strategies do not significantly influence student engagement with library resources.

In order to test the hypothesis, multiple regression analysis was performed on the data (see tables below).

Table 5.3: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.732	0.536	0.531	0.357

Table 5.3a: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.456	1	18.456		
Residual	16.064	188	0.085	144.42	0.000
Total	**34.520**	**189**			

Table 5.3b: Coefficients

Model	Unstandardised Coefficients (B)	Standard Error	Standardised Coefficients (Beta)	T	Sig.
Constant	1.214	0.136		8.926	0.000
Shelf Management	0.523	0.044	0.732	12.021	0.000

The analysis of Hypothesis 1 reveals that library shelf management strategies significantly influence student engagement with library resources; with the regression model accounting for 53.6% of the variance in engagement levels ($R^2 = 0.536$). The findings indicate that shelf management has a strong positive impact ($B = 0.523$, $\beta = 0.732$, $p < 0.001$). This suggests that well-organised,

accessible, and clearly labelled shelves substantially enhance how frequently and effectively students utilise library materials. The model's overall significance ($F = 144.42$, $p < 0.001$) validates this relationship, emphasising the critical role of effective shelf management in encouraging resource use. The results further highlight that improving shelf organisation and accessibility can directly boost students' engagement with library facilities, supporting better utilisation of academic resources. Consequently, H_{01} is rejected.

Hypothesis 2

H_o: Library shelf management strategies do not positively contribute to sustainable student reading interest and academic performance.

In order to test the hypothesis, multiple regression analysis was performed on the data (see tables below).

Table 5.4: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.789	0.623	0.619	0.312

Table 5.4a: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	21.784	2	10.892		
Residual	13.236	187	0.071	112.33	0.000
Total	**35.020**	**189**			

Table 5.4b: Coefficients

Model	Unstandardised Coefficients (B)	Standard Error	Standardised Coefficients (Beta)	T	Sig.
Constant	0.852	0.128		6.656	0.000
Shelf Management	0.462	0.039	0.698	11.846	0.000
Sustainable Reading Interest	0.285	0.052	0.331	5.481	0.000

The analysis of Hypothesis 2 demonstrates that both library shelf management strategies and sustainable student reading interest significantly contribute to academic performance, with the regression model explaining 62.3% of the variance in performance outcomes. Shelf management strategies show a stronger influence ($B = 0.462$, $\beta = 0.698$, $p < 0.001$), indicating that the organisation, accessibility, and clarity of library resources play a pivotal role in supporting academic success. Sustainable reading interest also contributes positively ($B = 0.285$, $\beta = 0.331$, $p < 0.001$), reflecting its importance in maintaining consistent engagement with learning materials. The model's significance ($F = 112.33$, $p < 0.001$) underscores the combined effectiveness of these variables in shaping academic achievements. Consequently, H_{02} is rejected.

6.0 Discussion of Findings

The findings indicate a significant positive relationship between library shelf management strategies and student engagement with library resources, with a strong predictive power ($B = 0.523$, $\beta = 0.732$, $p < 0.001$). The results show that when library shelves are well-organised, clearly labelled, and easily navigable, students are more likely to engage with the resources provided. This aligns with the work of Kumar and Singh (2020), who found that library users preferred facilities with clear categorisation and labelling of materials, leading to higher user satisfaction and resource utilisation. Similarly, Adewole et al. (2019) concluded that accessible library arrangements reduce time spent searching for materials, thereby encouraging students to visit libraries more frequently. The present study adds to this evidence by demonstrating that shelf management strategies not only facilitate access but also create an inviting environment that motivates students to explore and engage with library collections. When resources are difficult to locate due to poor shelf organisation, students often become discouraged and may rely on alternative, less comprehensive sources of information. These findings emphasise the need for libraries to invest in effective shelf management practices to enhance usability and attract more students to fully utilise the available academic materials.

Empirical studies including those of Ibrahim and Kamarudin (2021) demonstrated that students in institutions with well-managed libraries reported higher levels of reading interest and academic performance compared to those in poorly managed facilities. Similarly, Nguyen and Lee (2020) highlighted that consistent reading habits are directly correlated with better retention of knowledge and improved examination outcomes. The

current study builds on this by showing how library shelf management directly supports reading habits, which in turn drive academic achievements. Furthermore, the interaction between these variables suggests that sustainable reading interest acts as a mediator, amplifying the impact of shelf management on performance. Poorly managed libraries, on the other hand, may hinder the development of consistent reading habits, reducing the effectiveness of learning resources. These findings highlight the need for schools and institutions to prioritise library management as a strategic factor in enhancing both reading engagement and academic success.

7.0 Conclusion

The results of this study provide insight into the relationship between library shelf management and student reading interests. A statistically significant positive correlation was found between organisation scores on the shelf audit tool and students' self-reported interest in browsing new topics. Disorganised shelf was also linked to fewer serendipitous discoveries of new authors and materials. It is concluded in the study that a well-organised shelf supports exploratory learning behaviours that are valuable for knowledge building.

8.0 Recommendations

Based on the findings of the study, the following recommendations are offered:

- Conduct regular shelf audits using a standardised tool to proactively identify and address areas in need of improved organisation. Routinely monitoring shelf quality can help maximise its benefits.
- Provide ongoing training to student shelf assistants on call number logic and consistency in shelf order. Proper protocol is essential to long-term organisation.
- When reshelf books, take extra care to return materials to the correct location and orientation to maintain an organised, easily navigable flow.
- Consider shelf that is more popular with new arrivals in a separate browsing section to draw additional attention and highlight recent acquisitions.
- Communicate findings to administration about the relationship between shelf and student engagement to encourage continued support for optimal shelf practices.

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