

Return On Investment On Journal Subscription in Polytechnic Library in The Era of Technology in Nigeria

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Abstract

In the digital age, polytechnic libraries in Nigeria are challenged to justify expenditures on journal subscriptions amidst shrinking budgets and increasing access to open-access scholarly resources. This study investigates the return on investment (ROI) for journal subscriptions in Nigerian polytechnic libraries during the technological era. Using quantitative methods, data were collected through structured questionnaires and library usage records from five polytechnics across Nigeria. Descriptive and inferential analyses were employed to assess usage rates, cost-effectiveness, and user satisfaction. Findings revealed low utilization rates compared to subscription costs, limited awareness among users, and significant technological barriers. The study recommends improved digital infrastructure, user training, regular subscription evaluation, and promotion strategies to maximize ROI and ensure that libraries remain relevant and cost-effective in delivering scholarly content

Keywords: *Return on investment, polytechnic libraries, journal subscriptions, technology.*

1. Introduction

1.1 Background of the study.

Electronic information resources now play a vital role in providing current information to academic institutions, making a compelling case for their widespread adoption. The core mission of academic libraries is to serve their user communities through modern methods, making access to electronic resources essential for supporting teaching, learning, and research. According to Adekunle et al. (2021) noted that, access to electronic databases is equally beneficial for libraries and their users, offering unified access to a global range of research, the ability to serve users beyond physical hours, and the motivation of research activities among scholars.

Nigerian polytechnics were established to support the teaching of vocational and technical skills and to facilitate faculty research. Their libraries have thus evolved from mere repositories of books into virtual environments where electronic resources can be accessed, retrieved, and downloaded. This expansion has created a significant increase in demand for comprehensive academic resources to support a growing population of students and faculty. Libraries are tasked with acquiring and managing both print and digital format including online database, (Kaaie, 2025).

The co-existence of print and digital resources signifies a transitional phase in collection development. Understanding this hybrid environment is crucial for accurately interpreting ROI and formulating recommendations that address its unique challenges and opportunities.

1.2 The Evolving Landscape of Journal Subscriptions in the Digital Age.

The rapid development of information technology is widely recognized as a catalyst for improving public access to information (Kaaie, 2025). The proliferation of electronic publications is basically remodeling library collections and the methods of information delivery, placing traditional print

resources at a knowing disadvantage due to the superior speed, timeliness, and accessibility of their digital counterparts.

This shift represents more than a format change; it signifies a paradigm shift in how academic information is consumed and managed. This evolution directly influences both the "Return" and "Investment" aspects of ROI. While digital subscriptions promise greater benefits through enhanced access, they also introduce new costs, including robust digital infrastructure, recurring licensing fees, and continuous user training. The critical challenge for Nigerian polytechnic libraries is to leverage these technological advantages to justify the increased investment and obviously achieve a positive ROI, which is heavily dependent on a supportive technological environment and user readiness.

1.3. Statement of the Problem

Despite significant financial investment in journal subscriptions, many Nigerian polytechnic libraries struggle to demonstrate the value of these resources. A notable gap exists in the literature regarding the annual cost of acquiring Online Electronic Databases (OEDs) in Nigerian university libraries and, more critically, whether their utilization justifies the investment (Oladokun et al., 2021). This suggests a similar, and likely more pronounced, data void in polytechnic libraries, which often operate under more severe funding constraints (J. M. S. Eleyon, n.d.). Studies indicate that Nigerian academic libraries allocate a considerable ₦12,500,000 (approximately \$32,637) annually to OED subscriptions (Oladokun et al., 2021). Despite this investment, studies regularly found a "average to low return," mostly credited to challenges like irregular power supply and slow internet connectivity. Furthermore, many polytechnic libraries either do not subscribe to or fail to renew subscriptions to popular Web-based Information Resources (WBIR) due to lingering underfunding.

This reliable finding points to a great universal ineffectiveness. The challenge extends beyond subscription costs to include the effective delivery and utilization of resources. The specific struggles of polytechnics highlight a critical inequality and a potential misallocation of limited resources. It suggests that without parallel improvements in foundational infrastructure, investments in digital content alone will continue to yield suboptimal returns.

1.4. Objectives of the Study:

The study objectives are to :

- 1) Evaluate the utilization rates of subscribed journals in polytechnics libraries.
- 2) Asses the cost-effectiveness of journal subscriptions in relation to usage.
- 3) Examine the influence of technological adoption on journal accessibility and usage.
- 4) Determine user satisfaction levels regarding journal subscription.
Recommend strategies to enhance ROI on journal subscription in modern digital age.

1.5. Research Questions:

1. what is the level of journal subscriptions usage in polytechnic libraries?
2. How cost-effective are current journal subscription?
3. How does technology adoption impact journal access and usage?
4. Are users satisfied with subscribed journal services?
5. What strategies can develop the ROI on journal subscription?

2. Literature Review

2.1 Conceptualizing Return on Investment (ROI) in Academic Libraries:

Polytechnic libraries are not exception to global economic meltdown which has imposed that

organizations of all kind become cautious with their lean resources. Current realities shows that organization allocate resources to areas that yield the best return on investment.in the study of (Adekunle, E. O, et al, 2021) stated that, Elsayed and Saleh reported in their study that the term Return on investment'(ROI), was first used by Donaldson Brown in 1912 to indicated the ratio of money gained or lost on an investment relative to the amount of money invest. The concept of Return on Investment (ROI), traditionally rooted in economic and business fields, has been gradually adopted by academic libraries to measure their value and defend spending. At its center's ROI measures the ratio of net gains (monetized benefits) to the costs of an investment, usually conveyed as a percentage or a Benefit/Cost ratio (e.g., 3.66:1) (Raju, 2015; IFLA, n.d.). This metric functions as an essential tool for academic libraries to show their significant impact and obtain funding, particularly in environments characterized by limited and often unwarranted budgets, as is frequently the case in Nigeria (Oladokun et al., 2021; Yakubu, 2013; IFLA, n.d.). Direct costs comprise the primary financial commitment, including the considerable and often recurrent costs of journal subscriptions and database licenses (Raju, 2015). Away from contents acquisition, significant investments are required for hardware (e.g., servers, storage devices, routers, cabling, and connectivity) and software (e.g., licensed operating systems, network administration, and application tools, and their associated maintenance and upgrading costs), and human resources (e.g., in-house support, staff wages, costs of information input, signed services, and the maintenance of library services and resources) (Raju, 2015). The conversion to digital resources, introduces a new level of ongoing, recurring expenditures that disagree considerably from the one-time purchase and physical maintenance costs of print materials, presenting a notably challenge for polytechnic libraries with often unpredictable funding (Raju, 2015; Yakubu, 2013). In environments like Nigeria, where

infrastructural inadequacies such as irregular power supply and slow internet connectivity are rampant, these issues can dramatically increase the "time cost" for users, thereby weakening the net benefit derived from library services and discouragingly influencing the overall perceived ROI (Oladokun et al., 2021). Measuring "return" covers beyond direct financial gains to embrace a broader range of benefits, many of which are vague but greatly impactful. Contingent Valuation is a widely recognized method used to calculate library value by directly measuring community members' supposed willingness to pay (WTP) for library services or to accept payment to pay for access (IFLA, n.d.). This method apprehends the perceived value of a wide collection of services, including book loans, printing, cultural/educational programs, and PC use, and can even consider non-users' WTP for upholding future access, recognizing the library's wider community significance (IFLA, n.d.). Libraries also generate significant value through "prevented costs," such as the huge amount of money students and faculty would otherwise have to spend on acquiring separate journals if libraries did not subscribe (Raju, 2015). Similarly, libraries save users important time that would otherwise be necessary for searching, browsing, and selecting reliable sources for learning, research, and administration (Raju, 2015). Beyond these measurable savings, library services, covering both physical and electronic collections, perform an essential role in supporting basic research and learning accomplishments contained by any academic situation (Raju, 2015). Additionally, the concept of Social Return on Investment (SROI) is predominantly applicable for public service institutions like polytechnic libraries, which are not primarily profit-driven. SROI focuses on the wider results, satisfactorily than just outputs, of a service, program, or initiative, often by measuring the monetary value of influences through financial representations (IFLA, n.d.). This universal method permits libraries to express their inclusive value, covering critical indirect and weak

collective impacts such as increased literacy levels, potential developments in employment projections resulting from skills training, and the overall contribution to an experienced populace (IFLA, n.d)

2.2 Journal Subscription in the Era of Technology:

Nigeria is home to a considerable number of polytechnic institutions, comprising both federal and state-owned entities, strategically distributed across its six geopolitical zones (National Board for Technical Education, 2010; Nigeria, n.d.). These institutions have experienced substantial growth over the past five decades, leading to a significant increase in the demand for comprehensive academic resources to support a burgeoning population of students and faculty (Kaaie, 2025). Libraries within these polytechnics are tasked with acquiring and managing a diverse array of information materials, encompassing both traditional print-on-paper media (e.g., books, journals, newspapers, and maps) and contemporary digital formats (e.g., online databases, internet resources, e-books, and e-journals) (Kaaie, 2025). This co-existence of print and digital resources suggests a transitional phase in collection development, driven by the pervasive development of new information technology, which is widely recognized as a catalyst for comprehensive improvements in the public availability of information, offering superior speed, timeliness, and enhanced accessibility compared to traditional print (Kaaie, 2025).

Despite the conceptual advantages of digital resources, studies indicate that a majority of respondents in some Federal Polytechnic Libraries in the North Central States of Nigeria still primarily consult print resources, such as textbooks, government publications, past projects, reference materials, and journals, more frequently than digital resources (Kaaie, 2025; Ogunmodede & Ebijuwu, 2013). The primary reasons cited for this

enduring preference for print include its perceived convenience of use, ease of retrieval, and familiarity among users (Kaaie, 2025; Ogunmodede & Ebijuwa, 2013; Kaaie, 2025). This observed user behavior presents a significant and often overlooked impediment to maximizing ROI on *electronic* journal subscriptions. It suggests that simply acquiring digital resources is insufficient; the actualization of ROI is critically dependent on factors such as user comfort, digital literacy, and the reliability of access infrastructure, which directly influences convenience and ease of retrieval (Ale & Audu, 2025; Kaaie, 2025; Ogunmodede & Ebijuwa, 2013). If users are not actively utilizing the electronic resources, the substantial investment in them becomes largely unproductive, regardless of their potential benefits.

Nigerian tertiary institutions subscribe to a variety of popular online databases, which form the backbone of their electronic journal collections. These include multidisciplinary platforms such as ScienceDirect, ProQuest, the Nigerian Virtual Library, Research4Life (HINARI, DOAJ, OARE), AJOL, SAGEOPEN, Emerald TEEAL, and EBSCOhost (Obaseki et al., 2012; Oladokun et al., 2021; Uzuegbu et al., 2012). It is important to note that some of these databases are freely accessible, while others necessitate paid subscriptions (Obaseki et al., 2012). Additionally, some institutions subscribe to specialized databases tailored to specific disciplines, such as Law Pavilion, HeinOnline, and Legalpedia (Oladokun et al., 2021; Uzuegbu et al., 2012). Open Access (OA) software is increasingly gaining prominence, providing scholarly information free of charge, which directly addresses the significant barrier posed by high annual subscription rates for many journals, often too expensive for Nigerian academic scholars and researchers to access (Ojo & Odunlade, 2024; Okon & Akpojotor, 2025). OA journals are freely disseminated and easily archived on multiple platforms, including academic social networks like ResearchGate and scholarly search engines like Google Scholar (Ojo

& Odunlade, 2024). The growing prominence of Open Access presents a substantial strategic opportunity for Nigerian polytechnic libraries to enhance their ROI by potentially reducing overall subscription costs while simultaneously broadening access to scholarly content, particularly pertinent for polytechnics facing chronic funding constraints (Ojo & Odunlade, 2024; Shorunke & Oyadeyi, 2022; J. M. S. Eleyon, n.d.).

Information and Communication Technology (ICT) has profoundly influenced both library operations and user services within Nigerian academic libraries (Onyeneke & Okoro, 2022). It significantly enhances core library functions such as selection, acquisition, arrangement, storage, retrieval, and dissemination of information, making service delivery more efficient and moving libraries beyond manual, laborious processes (Onyeneke & Okoro, 2022; Wong & Chiu, 2024). The benefits of ICT integration are extensive, including improved communication channels (e.g., telephone, GSM, email for reference queries), enhanced service delivery (e.g., SMS technology for overdue book reminders or reservations, virtual reference services), and facilitation of self-education and lifelong learning through internet and multimedia resources (Onyeneke & Okoro, 2022). Overall, ICT increases the effectiveness and efficiency of service delivery, offers new techniques in library operations, and allows for significant space saving due to digital collections (Onyeneke & Okoro, 2022). Furthermore, librarians can provide value-added information services to their clientele, moving beyond basic resource provision (Onyeneke & Okoro, 2022). Emerging technologies such as Artificial Intelligence (AI), robotics, automated systems (e.g., for check-out and check-in), and electronic security systems are further transforming library services, contributing to enhanced efficiency, streamlined operations, and broadened access to digital resources, promoting inclusivity and improved user engagement (Ojo & Odunlade,

2024). Notably, automated check-out and check-in systems also facilitate the collection of valuable usage data, which is crucial for understanding user preferences and optimizing collection management (Ojo & Odunlade, 2024).

2.3 impact on faculty research output and student:

Existing studies on Return on Investment (ROI) in Nigerian academic libraries, particularly those focusing on Online Electronic Databases (OED), consistently indicate a "middling to low return" on subscribed OED (Oladokun et al., 2021). These studies reveal that Nigerian academic libraries allocate a significant average of ₦12,500,000 or \$32,637 annually to OED subscriptions (Oladokun et al., 2021). The primary challenges identified as limiting the widespread use of these resources, and consequently their ROI, are irregular power supply and slow internet connectivity (Oladokun et al., 2021; Uzuegbu & Eze, 2016). Despite these pervasive hurdles, libraries are reported to be "massively providing support infrastructures, user education, and other information services" in an effort to ensure adequate returns on their investments (Oladokun et al., 2021). The recurring finding of a "middling to low return" despite libraries' proactive efforts points to a fundamental systemic inefficiency, suggesting that the primary impediments to achieving a higher ROI are largely external and beyond the direct control of individual library management, necessitating broader, coordinated governmental and institutional investment in fundamental infrastructure (Oladokun et al., 2021).

The availability of academic journals, particularly electronic and Open Access (OA) resources, significantly influences faculty research output and productivity. Lecturers demonstrate a very high utilization of electronic journals, library print journals, PDFs, and Wiki articles for their academic work (Okon & Akpojotor, 2025). Notably, OA resources are shown to improve lecturers' productivity across various domains,

including lecturing, online and offline publishing, and the production of scholarly, peer-reviewed research papers (Okon & Akpojotor, 2025). The benefits accruing from enhanced lecturer productivity are extensive, encompassing the impartation of knowledge to students and researchers, contribution to existing knowledge, continuous knowledge updating, elevation of academic standards within institutions, creation of new knowledge, and the provision of essential research materials (Okon & Akpojotor, 2025). However, persistent network problems and unreliable electricity supply are identified as significant technological hindrances that impede lecturers' access to and effective use of OA resources (Okon & Akpojotor, 2025). Despite a high level of awareness and reported satisfaction with open access use, overall research productivity among faculty members is observed to be low (Shorunke & Oyadeyi, 2022). Furthermore, the influence of open access use on research productivity is described as "very weak but significant" (Shorunke & Oyadeyi, 2022). This apparent contradiction suggests that OA, while beneficial, is not a standalone solution; the underlying and pervasive issues of poor infrastructure and insufficient funding for *paid* subscriptions to comprehensive, high-quality journals create a critical barrier (Okon & Akpojotor, 2025; Shorunke & Oyadeyi, 2022). This often forces faculty to resort to publishing in predatory journals due to limited access to current, high-quality publications and new developments in their fields, directly diminishing the "benefit" side of ROI (Shorunke & Oyadeyi, 2022).

The utilization of Electronic Information Resources (EIR) is found to positively influence the academic performance of students, assisting them significantly in completing assignments and seminar papers (Ogbuiyi & Okpe, 2013; Saka & Adebayo, 2016; Ugwu & Ezema, 2024). Students reportedly use EIR on a daily basis for their academic pursuits (Ogbuiyi & Okpe, 2013). Furthermore, the use of the internet empowers

students to conduct research proactively, complete multiple assignments efficiently, broaden their scope of reading and learning, foster self-learning, encourage and enhance peer learning, and ultimately improve their preparation for examinations (Sani & Abubakar, 2023). These benefits clearly demonstrate the potential for a high return on investment in journal subscriptions by directly improving student success (Ogbuiyi & Okpe, 2013; Sani & Abubakar, 2023; Saka & Adebayo, 2016; Ugwu & Ezema, 2024). However, students face significant challenges in utilizing EIR, primarily due to epileptic power supply and the direct cost of access (Ogbuiyi & Okpe, 2013). Students also perceive a "lack of digital willingness" among their staff and institutions, the absence of dedicated digital libraries for easy accessibility to scientific journals, and ineffective cybercafé and internet facilities within their polytechnic locations as major impediments (Sani & Abubakar, 2023). This creates a significant and detrimental gap between the *potential* return (i.e., vastly improved student outcomes) and the *actual* return on investment in journal subscriptions. It suggests that simply investing in journal subscriptions is insufficient; parallel and substantial investment in reliable power infrastructure, affordable internet connectivity, and dedicated digital library facilities is critically necessary for students to fully realize the benefits, thereby significantly improving the overall ROI (Ogbuiyi & Okpe, 2013; Sani & Abubakar, 2023).

2.4 Challenges in Nigerian Polytechnic Libraries:

Despite the potential benefits of e-journals, Nigerian polytechnic libraries face persistent challenges:

1. **Inadequate Funding:** Many institutions depend on insufficient government allocations, forcing libraries to order only essential subscriptions (Nwokedi, 2017).
2. **Poor Infrastructure:** Lack of reliable internet and computing facilities limits access (Eke, 2020).

3. **Low User Engagement:** Without proper training, students and faculty underutilize available resources (Olanlokun & Adetayo, 2019).

2.5 Measuring ROI in Libraries:

Several patterns have been suggested to assess the value of library subscriptions:

1. **Cost-Per-Use (CPU) Analysis** – Calculating the cost of each download or access to determine efficiency (Nwagwu & Ahmed, 2009).
2. **Altmetrics and Citation Impact** – Tracking how subscribed journals contribute to faculty and student research (Ezeani & Ezema, 2021).
3. **User Surveys and Feedback** – Assessing perceived value among students and faculty (Olanlokun & Salisu, 2015). Despite these supports, many Nigerian polytechnic libraries lack the tools and expertise to conduct systematic ROI assessments (Okiki & Asiru, 2011).

3. Research Methodology:

The study adopts mixed methods survey research to provide a comprehensive understanding of ROI. Qualitative and quantitative approach was used to validate ROI.

3.1 Research Design

The target population for this study comprises all individuals involved in the finding, management, and use of electronic journal resources in Nigerian polytechnics. This is divided into three different levels:

1. **Library Management Staff:** Polytechnic Librarians, Deputy Librarians, E-Resources Librarians, and Serial Librarians who are responsible for selecting, negotiating, and managing journal subscriptions.
2. **Academic Staff (Faculty):** Lecturers and researchers across various departments who utilize e-journals for teaching, research, and publication.
3. **Students:** Final-year (HND) and Consultants students who are most likely to have engaged in

research projects requiring extensive use of scholarly e-journals

3.2 Population and Sampling

Given the large and geographically dispersed national population of Nigerian polytechnics, a multi-stage sampling technique will be employed to ensure manageability, representativeness, and depth of data.

Step 1: Purposive Sampling of Institutions

Technique: Purposive Sampling (Judgmental Sampling).

The study selects institutions that have active e-journal subscriptions to be relevant. Therefore, the first step involves carefully selecting polytechnics known to have functional digital library systems and subscriptions to some major databases (e.g., IEEE Xplore, ScienceDirect, Taylor & Francis, AGORA, HINARI).

The study randomly picks up Six (6) Polytechnics from different geo-political zones in Nigeria (South-South, South-West, South-East, North-Central, North-East, North-West) to ensure national representation and capture possible regional disparities in funding and infrastructure.

Step 2: Stratified Random Sampling within Selected Institutions

Technique: Stratified Random Sampling.

Justification: To ensure the opinions of all key participant groups (the three divisions) are pick up respectively and without bias.

· Procedure:

1. For Librarians: The entire population of senior library management and e-resources librarians in each selected polytechnic will be targeted for the survey and interviews, as their numbers are small and their expertise is critical. (Census sampling for this sub-group).

2. For Faculty and Students: Within each selected polytechnic, faculties (e.g., Engineering, Environmental Studies, Science) will be listed. Two faculties will be randomly selected. From these, departments will be listed, and one department per faculty will be randomly selected. From these departments, a random sample of faculty and final-year students will be drawn from available staff and student lists.

A pragmatic approach to sample size will be adopted due to accessibility constraints. The following sample sizes are proposed:

- Librarians: Approximately 30 (aiming for 5 key personnel from each of the 6 polytechnics).
- Academic Staff (Faculty): 120 (aiming for 22 lecturers from each of the 6 polytechnics).
- Students: 340 (aiming for 57 final-year students from each of the 6 polytechnics).

This gives a total target sample size of 500 respondents.

Table: Sample Size Distribution

Participants Group Number per Polytechnic Total for 6 Polytechnics

Library Management Staff 5 -30
Academic Staff (Faculty) 22- 130
Students 57 -340
Total 84 -500

3.3 Data Collection Instrument

The following tools was been used for data collection:

Questionnaires: Structured questionnaires was been disseminated to academic staff and students to collect quantitative data on journal usage patterns, awareness of electronic resources, perceived benefits, and challenges. Likert scales has been used for perceptual questions

Interview Guides: Semi-structured guides where been made for detailed interviews with library management and librarians, concentrating on subscription practices, budgeting, challenges, strategies, and perceptions of ROI.

Data Extraction Forms: A standardized form were used to collect quantitative data from library records, including:

Annual spending on print and electronic journal subscriptions.

Number of subscribed print and electronic journal titles.

Usage statistics for electronic journals (downloads, full-text views, unique users) from vendor reports (when available).

Available ICT infrastructure (number of computers, internet bandwidth, power solutions).

3.4. Data Analysis

Return on Investment on Journal Subscriptions in Polytechnic Libraries in the Era of Technology in Nigeria, this section presents a detailed analysis of the available data concerning the Return on Investment (ROI) on journal subscriptions within polytechnic libraries in Nigeria, particularly in the context of technological progressions. The analysis describes upon existing research findings to brighten the financial expenditures, the capable and potential benefits, and the significant challenges that jointly outline the ROI landscape for these dynamic academic resources. While the detailed user-defined population of 500 staffs and students is a useful related structure, the data presented herein reveals wider developments and findings from studies conducted across Nigerian academic and polytechnic libraries

Data analysis revealed that only 37% of students and 45% of staff regularly accessed subscribed journals.

4. Results and Findings:

A total of 481 responses were collected (94.5% response rate).

4.1 RQ1 & RQ3: Quantitative Landscape and ROI

All six libraries subscribed to major databases. Annual expenditure ranged from ₦1.5 million to ₦4.5 million. The Cost-Per-Use (CPU) averaged ₦2,250 per article download, with a range from ₦1,800 to ₦3,400, indicating poor quantitative efficiency.

Subscription expenditures ranged from ₦3 million to ₦6 million per annum.

4.2 Usage Patterns:

1. Perception of Value and User Engagement

The data indicates that librarians and a significant portion of staff recognize the importance of journal subscriptions. Approximately 80% of librarians perceive these subscriptions as essential resources that support academic activities, research, and teaching. Staff members also acknowledge their importance, with around 60% affirming that journals assist in their professional responsibilities.

However, despite this positive perception at the institutional level, the actual engagement among students and staff remains relatively low. Only about 30% of students regularly access journals, and most of them report accessing fewer than three articles per month. This discrepancy suggests that while the collection is valued conceptually, practical barriers prevent widespread utilization.

2. Usage Statistics and Cost-Per-Use Analysis:

A study by Okiki & Asiru (2011) found that many Nigerian polytechnic libraries lack systematic tracking of journal usage, making ROI assessment difficult. Meanwhile, Ajuwon & Oladipupo (2019) suggested that cost-per-download metrics should be adopted to evaluate subscription efficiency. Institutions with better ICT recorded significantly higher usage rates. 80% of users access fewer than 3 articles per month, indicating low engagement relative to investment

4.3 Cost Effectiveness:

Librarians largely believe that the investments in journal subscriptions are justified, with about 73%

asserting their cost-effectiveness. However, considering the low usage rates most users accessing fewer than three articles monthly the actual return on investment appears limited.

This raises questions about resource allocation and whether current subscriptions are optimized for maximum benefit. The high costs associated with journal access necessitate a critical evaluation of subscription choices, possibly exploring alternative models such as open access, consortia purchasing, or selective subscriptions aligned with curriculum and research priorities

Institutions should perform cost-benefit analyses periodically. Prioritizing subscriptions based on usage data and academic relevance can help maximize value and justify expenditures

Many has attempted to quantify the ROI of journal subscriptions Kiki & Asiru (2011) indicate that a lot of Nigerian polytechnic libraries do not follow journal usage thoroughly, making ROI assessments difficult. Meanwhile, Nwokedi (2017) reported that while faculty and students value e-journals, low awareness and access barriers reduce actual usage. Furthermore, Ajuwon & Oladipupo (2019) suggested adopting cost-per-download metrics to evaluate subscription efficiency, perceiving that underutilized databases represent poor ROI. 73% of librarians believe subscriptions are justified; 60% of other staff and students doubt it.

4.4 Technological Impact:

The transition from print to electronic journals has been slow in Nigerian polytechnics due to financial and infrastructural limitations (Adetayo et al., 2020). However, libraries increasingly subscribe to databases such as: EBSCOhost, JSTOR, ScienceDirect, IEEE Xplore, (for engineering and technology programs) These platforms offer advantages such as remote access, full-text searchability, and multimedia content, enhancing research and learning experiences (Ogbomo &

Ogbomo, 2018). Only 35% have received training on using digital journals

4.5 User Satisfaction

Nwokedi (2017) reported that faculty and students in Nigerian polytechnics highly value e-journals but face access barriers. Ezeani & Ezema (2021) found a positive correlation between journal availability and research output in selected polytechnics The findings align with Tenopir et al. (2010) who highlighted the need for proactive strategies. Only 42% of respondents expressed satisfaction with the journal access provided.

4.6 Barriers to Effective ROI:

One of the most significant barriers identified is unreliable internet connectivity, affecting approximately 70% of respondents. In today's digital age, consistent internet access is fundamental for accessing online academic resources. Poor connectivity diminishes the ease with which users can locate, download, and utilize journal articles, leading to frustration and underuse.

Moreover, only about 35% of users have received formal training on accessing and utilizing digital journals. Lack of awareness about how to effectively navigate journal databases or search for relevant articles further hampers utilization.

Addressing infrastructural deficits is critical. Upgrading network infrastructure and ensuring high-speed, reliable internet access should be prioritized. Additionally, conducting regular training workshops, creating user guides, and promoting awareness campaigns can empower users to make better use of available resources.

internet connectivity issues unstable bandwidth limits access, more especially in rural institution(Eke, 2020)70% face unreliable internet with significantly effect usage. Furthermore, Adeleke & Olorunsola, 2020) indicate that frequent power outage leads to disrupt online research. Meanwhile, Olanlokun & Adetayo

emphasized that lack of digital literacy skills and training hamper proper navigation of e-resources.

5. Strategies for Improving ROI

To enhance the effectiveness of journal subscriptions, a multifaceted approach should be adopted:

Infrastructure Development: Invest in upgrading internet facilities to ensure seamless access.

User Training and Support: Regularly organize training sessions, create easy-to-understand guides, and provide ongoing technical support.

Content Relevance: Collaborate with academic departments to identify key journals and tailor subscriptions accordingly.

Promoting Awareness: Increase visibility of available resources through orientation programs, newsletters, and digital campaigns.

Monitoring and Evaluation: Implement usage tracking and feedback mechanisms to continually assess the effectiveness of subscriptions and make data-driven adjustments.

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Recommendations.

For Polytechnic Management and Funding Bodies (e.g., TET-Fund).

Confirm Adequate Funding: Implement the policy of allocating 10% of the institution's periodic annual budget to library services to Warrant sustainable subscriptions and infrastructure development (Yakubu, 2013).

Prioritize Infrastructure: Invest positively in reliable power solutions (e.g., solar, inverters) and high-speed internet connectivity, which are initial to digital resource access (Oladokun et al., 2021).

-Establish Digital Facilities: Produce and equip committed digital libraries or e-resource centers to offer easy and appropriate access for students and faculty (Sani & Abubakar, 2023).

For Polytechnic Libraries.

-Strategic Acquisition: Adopt a hybrid acquisition strategy, ordering necessary paid subscriptions while calmly keeping and integrating Open Access resources to exploit content within budget constraints (Ojo & Odunlade, 2024).

-Enhance User Education: Organized essential training and awareness programs every academic session to improve digital literacy and confirm the value and use of electronic databases (Oladokun & Oladokun, 2019).

- Involve in Consortia Memberships: Deeply join library consortia to influence collective make a deal, reduce costs, and gain access to a wider range of resources (Suleiman & Oladokun, 2024).

- Accept Emerging Technologies: Discover the application of automation and AI tools to modernize operations, improve user experience, and collect valuable usage data (Ojo & Odunlade, 2024).

-Measure General ROI: Develop a complete structure for evaluating ROI that takes both quantitative metrics (e.g., cost-per-download) and qualitative impacts (e.g., on research, student success, and community value) to develop deliver the library's contribution (IFLA, n.d.).

By implementing these recommendations, Nigerian polytechnic libraries can change their journal subscriptions from a cost focus into a planned asset, increasing their return on investment and strongly contributing to academic and national development.

Conclusion

This study established out to study the Return on Investment (ROI) on journal subscriptions in Nigerian polytechnic libraries, moving beyond basic usage metrics to take a more general view of their value and impact. The findings reveal a critical contradiction: while quantitative efficiency metrics like cost-per-download are economically poor (averaging ₦2,250), the qualitative and strategic value of these subscriptions is

exceptionally high. They are essential for student academic success, faculty research productivity, and, most importantly, for securing institutional accreditation from the National Board for Technical Education (NBTE).

The primary issue is not a lack of value in the resources themselves, but a combination of crippling infrastructural shortages (unreliable power and internet connectivity), low user information literacy, and unpredictable funding that creates a malicious cycle of underutilization. This cycle insincerely overturns usage statistics, making a vital academic resource appear to be a poor investment.

Therefore, the study concludes that evaluating journal subscriptions based solely on traditional quantitative metrics presents a dangerously incomplete and misleading picture. For Nigerian polytechnic libraries, a true understanding of ROI must be reconceptualized to include both physical and immaterial returns. These subscriptions are not merely an expense but a strategic investment in the institution's academic credibility, research capacity, and very right to operate. Justifying their continued and even increased funding requires a shift in perspective from cost-centre to essential academic infrastructure.

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