

Library Statistics: A Tool for Effective Management of Academic Libraries in Nigeria

By

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Abstract

This paper looks at the role of library statistics in enhancing management of academic libraries. It provides some insights on key responsibilities of library administrators and the relevance of statistics as indispensable tool for effective management of the academic libraries in Nigeria. Attempt was made to explain relevant concepts and types of library statistics. The paper also emphasizes the need for librarians to understand that due to the increasing complexity and sophistication in the management of library operations, it is necessary that collection and use of statistical data is given serious attention. Thus, library administrative and operational records should be considered as important sources of generating statistical data. These records include users' profile, acquisition, cataloguing, circulation/books lending transactions, electronic information resource usage, budget and financial expenditure, etc. Therefore, the use of library statistics is very necessary in preparations of budgets, annual reports, assessing and evaluating services, prioritization in allocation of resources, and presentation of achievements. However, the major constraints that hinders collection and use of library statistics in Nigerian academic libraries were highlighted. These constraints include organizational structure of library organogram, staff unease with qualitative analysis, lack of skill-sets for good data analysis, and poor presentation skills among others. Hence, the paper concludes that, in Nigeria, collection and use of library statistics has not been given attention, especially when compared to the situation in some African countries and the developed world. Consequently, some recommendations were made, which include capacity building for librarians, developing standard for collection and use of library statistics, and integration of technology in generating statistical data to support making sound decision for effective management of academic libraries.

Keywords: Library Statistics, Uses of Library Statistics, Library Management, Nigerian Academic Libraries.

Introduction

Libraries play very crucial role in any institution learning by providing free access to knowledge and information. They provide resources and services for virtual and physical access in order to meet the information needs of its users. As service organization, libraries are allocated resources through budgets, grants, donations and other funding bodies (Bhattacharya, 2018). The benefits to be derived from these investments are expected to be measured through library use and user studies. Hence, it is imperative that return on investment in libraries is determined from accurate statistical data that can show where gaps exist in terms of expenditure on procurement of resources and services, number of traditional and virtual users that access the library, and other areas of great need (Düren and Landoy, 2019). As such generation and use of statistics, had been regarded as one of the most essential tool for effective management of any academic library for its optimum performance. In other words, library statistics is generally recognized as vital tool for effective management of all type of libraries worldwide.

In the context of this paper, academic libraries are those attached to tertiary educational institutions such as universities, colleges of education, and polytechnics. The main purpose of establishing such type of libraries is to support the attainment of goals and objectives of their parent institutions in the areas of teaching, learning, research and community services. The users of academic libraries are lecturers, students, researchers, non-teaching staff, and others from outside the institution. An academic library therefore, can be described as the central organ that support all academic activities in the educational institution. However, there are four key resources that head of an academic library manages as part of administrative functions. These resources are people (both library staff and users), information resources, physical facilities, and finance (Mole, 2023a). For instance, the university librarian as the chief administrator responsible to the Vice-Chancellor for the day to day operations of the library and coordination of services it offers, must rely on statistical data in order to carry out his/her enormous responsibilities. The responsibilities of the university librarian as highlighted by Ekoja (2020) include:

- coordination of library operations and services like collection development, cataloguing and classification, books lending, reference and information services, and so on,
- development and implementation of library strategic plan,
- preparation and implementation of library's annual budget and other grants, and
- preparation and presentation of report on the overall performance of the library.

However, the above responsibilities cannot be carried out effectively and efficiently without generating and utilizing statistical data to support managerial decisions. Lawal, Onikosi-Alliyu, Babalola, Adegbite & Olodo (2024) assert that managerial decisions can be reliable based on the quality of data presented. This means that, for effective management of an academic library, different statistical data is required for a given purpose or decision.

In the scope of library management, statistics is very useful in measuring output of staff and organizational productivity. Generally, the importance of statistics in management include planning of operations, staffing, measuring of standard of jobs or services output, project planning, budgetary allocation, quality assurance, and personnel administration (Lawal, Onikosi-Alliyu, Babalola, Adegbite & Olodo, 2024). In this regard, it is pertinent to say that the importance of statistics cut across all areas of library operations including receiving users' requests and giving feedback. A study by Galadima, Ugah and Ibrahim (2024) on library statistics in tertiary educational institutions in Nasarawa State revealed that, statistical records were generated and utilized for management of the university libraries. However, these researchers emphasized on the need for sustaining the utilization of the statistical records for both short and long term planning in the university libraries. Hence, in the present digital age, it is imperative that library statistics should not be limited to numbers, but to include qualitative data along with traditional statistics.

For any academic library to achieve overall operational effectiveness and efficiency in managing its key resources, generation and use of statistics is very necessary. The author's personal observations and experience of practices across some libraries have shown that generation and use of statistics were given less attention in Nigerian academic libraries. Hence, the purpose of this paper is to provide some insights on the role of library statistics as a tool for effective management

of academic libraries in Nigeria. Therefore, this paper will play a significant role towards stimulating further discussions and empirical studies on library statistics including qualitative approach type.

Methodology

Literature review approach was adopted in this paper. Contents analysis of the existing sources of information on library statistics were identified from textbooks, relevant journals, reports, and online resources. The review focus on relevant concepts, theory, types of library statistics and its applications in academic library management. The author's views were also brought to bear in the contents analysis of documented sources and subsequently draw conclusion.

Conceptual clarifications

Concept of statistics: Generally, statistics is a scientific method that involved collection, organization, summary, presentation, and interpretations of data in order to make valid conclusions and sound decisions. Without statistical data one is bound to make decisions with uncertainty due to incomplete information or lack of accurate data. According to Oladugba, et al (2022), statistics is a discipline of study, but it also denotes data and numbers defined from the data, such as averages. Hence, statistics lend itself for applications in all fields/areas of human endeavour like biostatistics, medical statistics, agricultural statistics, educational statistics, business statistics, employment statistics, and so on. In this regard, librarians have also recognized statistics as a very relevant and important tool in managing libraries.

The concept of library statistics can be described as numerical data that measure various aspects of library operations and services. in other words, it is as an art of keeping quantitative records of operations in the library. Library statistics also be regarded as an accurate and precise records of data collection by staff of a particular library in the course of discharging daily operations and service offerings to users. However, Rashid (2023), further defined library statistics as numerical data that measure various aspects of library operations and services. Thus, the statistical data collected are used to evaluate the effectiveness of library services and efficiency of operations, identify areas of weakness for improvement, and compare a library's performance to other libraries for the purpose of enhancements and satisfying users. It is important to note that library statistics is not limited to numbers only because narrative statistics, and storytelling with numbers are also needed along with quantitative data in making decisions for effective management functions (Düren & Landoy, 2019).

The concept of management in the context of academic libraries should not be confused with library administration. In other words, library management is a narrower term of library administration. Library administrators need to apply management principles to provide the necessary support for the attainment of the goals of their parent institutions. Library administrators need to apply management principles in order to provide the necessary support for the attainment of the goals of their libraries and parent institutions as well. According to Mole (2023b), library management involves coordination of human and material resources to achieve better results and attain parent institution's goals. Furthermore, library management is one of the basic functions to be carried out by a library administrator by way of applying the principles of planning, organizing,

financing, staffing, directing, and controlling of both human and material resources. In this regard, all management activities in the library such as financing, staffing, information resources development, cataloguing and user services, require statistical data for making realistic decisions that will help ensure effective management of academic libraries.

In the light of the above, library management should not be confused with library administration. However, these phrases could be regarded as synonymous or used interchangeably. Scholars like Mole (2023b) is of the view that library administration encompasses all activities for the library organizational set up including staffing so that the desired objectives and goals can be accomplished. This implied that, administration is more of leadership responsibility involving policy making and implementation.

In view of the above conceptual explanations, it is obvious that library statistics is very useful because it help libraries and librarians to determine the effectiveness of their performances, make decision that are data driven, and justify fund allocated and utilized by libraries. Hence, it is very essential that library managers implement library statistics to meet the growing administrative challenges and to provide quality and effective service delivery to their customers. According to Rashid (2023), library statistics are used to evaluate the effectiveness of library services and operations, identify areas for improvement and compare the library's performance to other libraries. Library statistics can be used by library staff, library managers and other stakeholders, such as funding bodies and policy makers. The justification for library statistics also include: evaluation and reporting library performance, to develop plans for the library, to evaluate resources needed, determine prioritized operations and services, and benchmarking service delivery. This means for proper planning, development as well as efficient and effective decision-making, it is imperative that library managers rely on statistics of the true situations about their library. In a situation whereby libraries are experiencing low budget allocations and declining patronage, then concrete evidences from statistics becomes very valuable tools to salvage the situation. Similarly, statistics is very crucial for libraries to present evidences to justify cost effectiveness in operations, human resources and facilities.

In fact, managing academic libraries is increasingly becoming a complex and difficult task due to rapid development in ICTs, changes in information seeking behaviour of users, hybrid nature of information resource collection, diversity of user groups, among other factors. Hence, the relevance and importance of management theories in libraries cannot be overemphasized. In other words, management theories are very useful in providing an insight for understanding and managing academic libraries. In this regard, system theory has been considered as relevant in guiding library managers to generate statistical data about the whole library operations for making sound decisions. Moreover, the system theory views an organization as a collection of sub-systems which are interrelated and contributing towards achieving overall goals (Afolayan, 2021). This implied that, system theory can guide a library manager to make decisions for discharging managerial functions effectively.

According to Olum as cited by Afolayan (2021), a system theory has four different components as follows: (i) inputs in the form of resources, raw materials, money, technologies, and people, (ii) Processes that involves planning, organizing, motivating, and controlling, (iii) Outputs in the form of products or services, and (iv) outcomes which enhances quality of operations and service

delivery for improved productivity of workers or customers services. Therefore, a library manager should be guided by principles of system theory to ensure that statistical data is generated from all sub-systems of operations and services for the purpose making sound decision for the overall success of the library management.

The principles of systems theory have been found to be applicable to many disciplines including library and information science. According to Colaric (1998), Ludwig von Bertalanffy advanced the idea of systems theory in the first half of the 20th century, at a presentation of a philosophy seminar paper in 1937 at the University of Chicago. The presentation of that seminar attracted many scholars into research on the tenet of the system theory. In the library context, systems theory was found to have helped towards ensuring that library operate as a unified system that can respond to changes in users' service demands, to adapt to the needs of the digital environment, and to be stable for future development. However, to achieve all these a library must generate statistical data from a unified system in order to make a sound decision for effective performance.

Types of Library Statistics

Based on the tenets of the principles of system theory highlighted above, library statistics should be generated as a unified system. In other words, the collection of the statistical data should be done as routine work that encompasses all aspects of the library operations. According to Bhattacharya (2018), there are two major type of library statistics: use of library to determine how the resources are being utilized, and user studies to understand users' perceptions and their feedbacks on the library resources and services. Bhattacharya further pointed out that, the major sources of generating library statistics include: acquisition section, circulation section, serials section, reference section, and other primary and secondary sources such as diaries, gate (entry) register, library housekeeping operations software, daily, weekly, monthly or quarterly reports as well as other written documents of the library. This implied that, the statistical data is largely generated from library administrative and operational records. These records refers to documents or computer files which contains information about routine operations and management of the library. Examples of these records are:

- library users' profile or records,
- circulation/books lending record,
- acquisition records for different materials,
- cataloguing records,
- electronic information resource usage
- budget and finance records,
- personnel records.
- meetings and events records, etc.

The above records are very crucial for effective and efficient library management, especially in decision making process and reporting of performance.

In fact, every standard library keeps a variety of statistics of its routine operations such as acquisition, cataloguing, bindery, circulation, and references services. Other occurrences that can necessitate collecting statistics include missing or mutilated materials, registration of different categories of users, serials consultations, and frequency as well as pattern of users' visits to the

library at different times each working day. Each department, section or unit in the library is expected to provide the statistics of its activities as required by the library management and or the parent institution. Below are outline of major areas that different types of library statistics is expected to be generated for decision making:

Collection Statistics: this is the type of statistics that measure various aspects of the library's collection including its size, age and format of materials. These statistics can be used to identify collection gaps, plan for future acquisition, and evaluate the diversity and inclusiveness of the collection. The overall aim of this statistics is to ensure that library resources are tailored to meet the needs of all categories of users.

Technical Services Statistics: this statistics is concerned with data on acquisition, materials received at a particular time, and so on. Another important aspect is the collection of data on cataloguing and classification. Productivity of cataloguing staff can be measured in terms of number of materials catalogued in a day, a week or per month.

Readers Services and Usage Statistics: statistics on reader services and usage of library resources is very crucial in decision making. The circulation section is where books loans are offered, and library staff interact with their customers physically or virtually in some cases. This section should ideally maintains data such as physical books on shelves, periodicals, eBooks, study spaces, number of computers accessible and or loanable, users' visits to library, interlibrary loans, items added or weeded from existing collection, etc. The total number and pattern of reference inquiries are also very essential in library statistics. Therefore, usage statistics is very useful in identifying popular materials and services, assessment of effectiveness of library service delivery and identifying areas of improvement. It can also be used to justify funding requests and demonstrate the library valuable contributions to its stakeholders. Moreover, the data generated from this section can be used to track library usage and evaluate user services offerings. Readers Services Division in any university library is a focal point towards effective decision making and efficiency of operations. For instance, Osayuwa-Odigie and Ewere (2016) emphasized that, under Textbooks Collection Unit, recording statistics of readers' services use is necessary for planning purposes and review of the services offered to library customers.

Budget and expenditure data: this type of statistics is indispensable for the successful preparation and presentation of library budget. Records on income and expenditure for procurement of resources and services, staff training, travels and meetings are important tools for effective management decision.

E-library Statistics: this statistics measures library's provision of information and communication technology facilities, including the usage of computers, electronic resources and website visits. The e-library should monitor user queries and analyzes the questions for informed decision to meet the information needs. These statistics can be used to assess the e-library infrastructure and identify areas for improvement. This type of statistics can also be used to justify requests for funds, and show the library's commitment to adapt to changing technological needs of its customers.

National library statistics: this is very crucial in providing quantitative and qualitative data required for assessment of library services, and to ensure accuracy of planning and forecasting in administrative services. For instance, Düren and Landoy (2019) stated that countries like Russia and South Africa had developed national standard for library statistics and made the data generated

accessible for the purpose of comparison of operations and service delivery among libraries. However, these researchers emphasized that uniform indicators and units of calculation should be clearly defined for the purpose of uniformity and unambiguous interpretations of the data.

Uses of Statistics in Overall Library Management

Collection and use of library statistics is as old as the library work itself. Over the years, librarians have collected data on staffing, collections, registered users, information materials loaned or consulted in a particular period, and so on. This implied that statistics serves as veritable tool for discharging management functions in libraries. Therefore, the role of library statistics as a tool for effective management of libraries cannot be overemphasized. This indispensable role was clearly demonstrated by International Federation of Library Association (IFLA), having created the *IFLA Library Map of the World* as a “representative source of basic library statistics and a robust tool providing country-level data and a worldwide comparison of different library performance metrics by region”. As an advocacy tool, the document shares accurate and reliable statistical data collected from national library associations, national libraries, and other library support organizations and institutions all over the world (available @ <https://www.librarymap.ifla.org>.) This initiative started in 2017, whereby the statistics generated will be used as a tool for global advocacy on libraries’ roles in achieving Sustainable Development Goals (SDGs). Since its commencement, many African countries are still lagging behind in terms of contributing comprehensively about the statistics of their libraries. However, it is not only IFLA that is concerned with collection of library statistical data. For instance, New South Wales Public library (2024) uses its website (<https://pls.sl.nsw.gov.au>) to generate and compile annual statistics to be used for administrative functions like annual report for seeking grants and other needs of Australian Bureau of Statistics.

Library statistics can be used by library to measure the productivity of staff for the purpose of appraisal in promotion or other decisions. In other words, library statistics help library administrators to evaluate staff performance in an objective manner.

Similarly, library administrators can use library statistics to promote library services and convince stakeholders, such as funding bodies and policy makers. Thus, the statistical data will provide extent of library growth and development, services delivered to users, return on investments, and level of implementation of strategic plan. All these will help to enhance operational performance and decision making process. Bhattacharya (2018), argued that a policy decision can only be taken by library administrators based on statistical data. Hence, it is imperative to used statistics in all aspects of library operations including collection development, borrowing transactions, frequency of users’ visits, acquisitions, reference inquiries and so on. Statistics is a means of tabulating and presenting figures, which can be used in decision making to determine the growth or decline of a particular service area.

In fact, even in the traditional library operations, statistics need to be collected as part of daily routine jobs. The statistical data are usually collected at short intervals to determine books consulted, reference inquiries, number of library visits, volume of books loans and returns made, etc. Okai, Ojo and Salifu (2023) reported that, the statistics generated in a libraries mainly focus on the services offered while the data obtained are used for planning, personnel recruitment and performance evaluation, collection evaluation and monitoring the trends of service delivery. However, in the digital era, the manual approach for generating library statistics has gone out of fashion, particularly in the developed countries while in the developing countries it is still in use.

From the foregoing therefore, effective management of libraries require basic statistical data. In other words, the management system in libraries involves managing people and work environment. The head or manager of an academic library should see management as an activity that requires planning, organizing, directing and controlling both human and material resources for the successful attainment of goals set by educational institution. However, in order to achieve the desired outputs or service delivery, coordination of management activities alone cannot suffice. Thus, information need to be generated from the library statistics so that the human and material resources can be allocated and channel towards optimal performance. The end results of library management is users' satisfaction with library services. For a library to achieve users' satisfaction, use of statistical data for forecasting and planning are indispensable. The academic librarian as an administrator requires some statistics as measurement tools to assess the level of weakness and strength of services offered to patrons. Aloysius and Torosco (2022) examined library usage statistics from 2018 to 2020 for purpose of evaluating information service delivery in Nyong Essien Library, of the University of Uyo, Nigeria. The result showed poor patronage of the library, especially considering the number of registered users within the stipulated years. The study further revealed that, the use of books, serials, and e-resources were poor. However, the result indicated an impressive use of reference sources. The study concluded that, the Nyong Essien library is yet to fully achieve its objectives because the statistics show that the resources are not effectively utilized. Hence, the study recommended among others that management should improve service delivery and organize orientation programmes in order to promote the use of the library.

Library Academy (2023) pointed some of reasons for use of library statistics for effective management of university libraries. These reasons include: proper operations of the library, preparations of budgets and annual reports, assessing the functionality of different departments, sections or units, creation of new department and evaluating its services, determining increase or decrease in the allocation of resources, and presentation of achievements. With these reasons it is obvious that, future development and long-term planning of the library are better done using statistics.

It is a fact that, for any library manager to succeed, engaging in collection and use of library statistics is inevitable. This will provide opportunities for effective management of the libraries. A study by Chware and Mbambo-Tata (2009), indicated that academic and public libraries in some African countries have achieve some success in collecting and publishing statistics for use as tool in decision making. These publications include:

- i. Annual, quarterly, and monthly reports
- ii. Brochures
- iii. Faculty board meetings
- iv. Departmental meetings
- v. Institutional/library newsletters
- vi. University senate reports
- vii. Service evaluation reports
- viii. Users' feedback, etc

Furthermore, the statistics published in the above documents had facilitated decision making that resulted into expansion of library buildings, increase in books votes, and separation of the books votes for postgraduate from that undergraduate students.

Constraints for Collection and Use of Statistics in Nigerian Academic Libraries

The collection and use of library statistics in Nigerian academic libraries has remain a major challenge over the years. Some of the constraints for the collection and use of statistics in these libraries can be highlighted as follows:

1. Supervisory agencies for higher educational institutions in Nigeria such as National University Commission (NUC), National Commission for Colleges of Education (NCCE), and National Board for Technical Education (NBTE) have been making various efforts for the collection and compilation of statistical digest to be used for various purposes. For instance, the Association of University Librarians of Nigerian Universities has compiled a compendium of briefs on libraries of both public and private universities in Nigeria (AULNU, 2022). However, the statistical data in the compendium was very scanty and non-comprehensive.
2. The use of statistics in Nigerian academic libraries can only be given much attention during accreditation exercise of the programmes offered by respective institutions. Findings from studies have shown that organizational structure, library staff unease with qualitative analysis, lack of skill-sets for good data analysis, and poor presentation skills, are among the major constraints to more extensive use of data in libraries (Eiriemokhale, Isiwelke-Ishola & Ishola 2018).
3. In fact, there is lack of readiness of the librarians in developing countries including Nigeria, to use statistics for reporting the library performance. This means librarians' attitude has become another constraint for generation and use of statistics as management tool. Thus, observations of the situation in many academic libraries in Nigeria have shown that less attention is given to collection of statistics because usually only the junior staff are assign to carry out this responsibility. In this case, the data may be over recorded with lot of errors and lack of accuracy. In this regard, Okai, Ojo and Salifu (2023) noted that the problem of library statistics in Nigeria include lack of comprehensive coverage of all aspects of administrative and user services as well as non challant attitude of junior staff who are usually assigned to handle it.
4. Standardization of format for collection of library statistics has also been another constraint in academic libraries of developing countries. Historically, De Jager and Nassimbeni (2005), reported that South Africa made efforts to standardized collection of statistics in public libraries with funding support from a Working Group on Public Library Statistics under the Carnegie Corporation of New York. As reported by Düren and Landoy (2019) countries such as Russia and Germany have developed national standard for library statistics. Furthermore, African countries like South Africa has also developed the national standard for library statistics. However, in Nigeria, library statistics at national level is still at its infancy stage. Ideally, the data generated at national level should be made accessible for the purpose of comparison of operations and service delivery among libraries. But generally, in African university libraries, there is standard on the type of statistical data to be collected, analyzed, presented and applied in decision making.
5. Furthermore, the statistical data is largely collected manually, which creates further gap with more technologically driven libraries of advanced countries. This implied that, there is lack of technological know-how among librarians in terms of collection and use of library statistics in Nigerian academic libraries.

Conclusion

In conclusion, library statistics play crucial roles towards effective management of academic libraries in Nigeria. By collecting statistical data on various library operations, resources and services, library administrators and managers at different sections and units can make informed decisions. Therefore, in this paper, attempt was made to explain concepts of statistics and its types including collection statistics, technical services statistics, readers' services and usage statistics, budget and expenditure statistics, eLibrary statistics, and national library statistics. The paper also highlighted the relevance of principles of system theory by emphasizing that a library should generate statistical data using a unified system approach in order to make a sound decision for effective performance. Furthermore, the paper pointed out the uses of statistics in the overall management of libraries in terms of prioritized resources allocation, enhancing service delivery, justifying expenditures, demonstrate the value of the library to its stakeholders, and reveal its contributions to the achievement of goals and objectives of parent institution. The major constraints that can hinder collection and use of library statistics in Nigerian libraries were also discussed briefly. The constraints include lack of readiness by librarians and to use statistics in reporting library performance, non-comprehensive collection of statistical data in Nigerian libraries, the statistics is still largely generated manually due to lack of skills and technical know-how for data analysis and reporting. Hence, some suggestions were made as a way forward to guide in decision making and strategic planning for the improvement of library operations, enhance service delivery and justify expenditures.

Recommendations for Way Forward

There is no doubt that, academic libraries in Nigeria operates under difficult financial conditions, which results into decrease in resources allocations and users' patronage. However, collection and use of reliable statistical data can help address some issues affecting the library management. In this regard, the constraints that hinder collection and use of library statistics need to be addressed by all stakeholders. Thus, the following recommendations were made as way forward:

- Library professional bodies such as Librarian Registration Council of Nigeria, Nigerian Library Association (LRCN), Association of University Librarians of Nigerian Universities (AULNU), Committee of Colleges of Education Librarians (COCLIN) and its counterpart for the Polytechnic librarians, should work closely to build capacity of librarians and encourage collection and use of statistics for effective management of libraries and other decision making process.
- In line with above recommendation, standard should be developed for uniformity and consistency in applications and implementation of library statistics in Nigerian libraries. This means that, a template should be developed to ensure uniformity of the data collection for better usage by library stakeholders.
- Government at federal and state levels should also prioritized use of statistics when allocating resources to libraries, most especially in budgeting or special grants.
- The National Library of Nigeria should seek for grants from international stakeholders such as IFLA, UNESCO and other donor agencies, to assist libraries in Nigeria for the collection, compilation and dissemination of library statistical data.
- Information technology should be integrated in the statistics collection methods to be adopted by Nigerian libraries.

- Training and retraining of librarians on collection and use of statistics should be given priority by head of academic libraries. This will help in promoting the use of statistics as a tool for effective library management.

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