

INFORMATION COMMUNICATION TECHNOLOGY LITERACY SKILLS OF STAFF AS DETERMINANTS OF EFFECTIVE ROUTINE OPERATIONS IN FEDERAL UNIVERSITY LIBRARIES IN NORTH EAST NIGERIA.

By

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Abstract

Purpose: This study investigated the relationship between the efficacy of library operations and ICT literacy skills levels among federal university library staff in Northern Nigeria.

Design/Methodology/Approach: Four specific objectives were formulated to guide the study. The study adopted a correlational descriptive research design. Four research questions were answered along with four null hypotheses. A total of two hundred and seventy-six (276) library staff of the six federal university libraries in Northern Nigeria were used as the population of the study using a purposive sampling technique. A questionnaire was used for data collection, and regression analysis was used for data analysis.

Findings: The study found that a positive, high relationship [$r = 0.72$] exists between basic ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Consequently, a significant relationship exists between the basic ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$]. There is a positive, high [$r = 0.64$] relationship between intermediate ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Also, a significant relationship exists between the intermediate ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$]; A positive moderate relationship [$r = 0.59$] exists between advanced ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Consequently, a significant relationship exists between the advanced ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$], and there is a positive, very high relationship [$r = 0.71$] between ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Furthermore, a significant relationship exists between the ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$].

Implication: The university management and librarians should ensure libraries have relevant ICT's appropriate for library operations. Also, librarians should be encouraged to possess information and communication skills that will help them function effectively in the library.

Originality/Value: It was recommended that the management of the federal university libraries in Northern Nigeria should not relent efforts in sustaining the tempo of giving more training to their staff. This could enable the library staff to acquire more skills capable of sustaining the existing relationship between the basic ICT literacy skills and effective library operations in the libraries, amongamongst others.

Keywords: Library Operations; Correlates; ICT Literacy Skills Levels; Federal University; Library Staff, Northern Nigeria.

Paper type: Empirical research

Introduction

Libraries play a significant role in promoting knowledge access for research, education, and training. Libraries are generally set to ensure effective and efficient management of information resources, facilities, technology, and money to achieve the goals of the libraries. Universities can only achieve or fulfill this

mission by providing adequate teaching, learning, and conducting research. Without a good and usable library that will always serve as a repository of information, no university can be successful in its academic work. This implies that libraries must be up to date in this current information age. Given the aspirations of higher learning today, the library system must take on

the burdensome task of ensuring that the user community is well connected to the world of information. Libraries not only supplement classroom learning, but they also help in providing research updates by offering a wide variety of resources, including engaging learners with books, complementary research, reference materials, and journals; offering a broad selection of scholarly tools and current literature on every topic for students, educators, and academic scholars; and maintaining a good reference and information system. The American Library Association [ALA] (2019) defined the library as, "a collection of information resources in a variety of formats that is organized by information professionals or other experts who provide convenient physical, digital, bibliographic, or intellectual access and offer targeted services and programmes with the mission of educating, informing, or entertaining a variety of audiences and the goal of stimulating individual learning and advancing society as a whole". Libraries are usually structured to promote access to information for particular patrons through the services of library staff and other staff qualified to meet user needs. By implication, the room or building that houses such a compilation normally, but not always, achieves organizational goals to establish libraries in university settings. These libraries can only be effective in discharging their duties through effective library operations.

Library operations, according to Brown (2020), are the engagement in carrying out the significant tasks in the library, such as selection of information resources, acquisition, cataloguing and classification, storage, retrieval, and dissemination of information with the view to bringing about effective service provision to the user community. It is an efficient method for carrying out tasks and maintaining library operations for users to experience hassle-free, productive, and smooth library use. This helps librarians to achieve their goals of meeting patrons' information needs. It also helps to enrich and encourage their learning experiences in a way that makes them want to use the libraries more after each encounter (Library and Archive Solution [LAAS] 2019). Library operations can be defined as the core activities or routine processes carried out by library staff daily, such as collection development, cataloguing, classification, circulation, administration, storage, information dissemination, referral activities, and so on, to ensure that the library achieves its goals and objectives using effective and efficient library staff.

Library staff, popularly called human resources, are the experts who connect the library to the user community through the routine activities they perform. Correspondingly, excellently trained library personnel are one of the best strengths of any library. Many libraries are working hard to identify the skills, expertise,

attitudes, and behaviour needed by library workers to provide their customers with the best services. Employees are thus the most valuable resource for any library. The primary responsibility for translating all other capital into useful goods and services lies with these resources. Therefore, library staff must be developed carefully and with the utmost care (Abban, 2018)). According to the Librarians' Registration Council of Nigeria [LRCN] (2014), library staff are categorized into professionals, paraprofessionals, and supportive staff. Considering the challenges posed by ICT in the proliferation of information, manual library operations have failed to connect users to the world of information and, of course, require additional training for library staff. This prompted LRCN to enact a law that, aside from variations in their various degree of training, they are expected to possess a certain level of ICT competence.

ICT literacy skills are the capacity to use, identify, manage, incorporate, assess, build, and convey information ethically and professionally within the global context, using digital technologies, communications tools, and networks (Oyedokun, Oyewum, Akanbi & Laaro, 2018). Reiterating on the required ICT literacy skills for twenty-first-century librarianship, Kumar, (2017) believes that ICT literacy has become a prerequisite for evaluating

a would-be candidate for employment in librarianship or information-based organizations, given that libraries are adopting ICT to carry out their operations. Anyim (2018) noted that the successful acquisition of ICT literacy skills depends on: the seriousness of institutions' administrators, adequacy of funds, the willingness of the trainers, and the time convenient for participants to leave their job and go for short courses at given intervals over a long period without being restrained in the office. While emphasizing the various levels of ICT literacy, Oyedokun, Oyewum, Akanbi, and Laaro (2018) categorized them into basic, moderate/intermediate, and advanced ICT literacy skills.

Interestingly, incorporating information technology into library operations has transformed most library operations, including collection development, cataloguing and classification, circulation, storage, retrieval, data dissemination, and many other areas that were previously performed but are now pegged (Oyedokun, Oyewumi, Akanbi, & Laaro, 2018). While elaborating on the usefulness of ICT for library operations, Aba, Ezeani, and Cyprian (2015) revealed that ICT has reduced the tedious repetitive nature of circulation routines, including charging and unloading in the traditional circulation system. It has also made it easy to use technology to compile and hold a list

of lenders by continuously producing overdue notices. Routine circulation operations that were previously difficult, such as tracking books loaned out, placing them on recall, and reserving them for users, have been successful as a result of libraries using ICT to carry out operations. The only problem is that the library staff could not use the ICT to transform library operations due to a lack of the required training, and that will bounce back on the user community.

Consequently, a preliminary investigation by the researcher in some of the libraries shows that they have ICT facilities, but the bulk of library operations are still performed manually. Northern Nigeria, being the focus study area, has become important and necessary for determining what could have been responsible for the under-utilization of ICT for effective library operations in federal university libraries. Given the above assertion, an empirical study was conducted to find out what could have been responsible for the under-utilization of ICT to carry out library operations in the federal university libraries in Northern Nigeria and thus, the reason for the study.

Objectives of the Study

The general objective of this study was to find out if there is a relationship between effective library operations and ICT literacy skills among Federal University Library Staff in North-East, Nigeria. The specific objectives are to:

1. determine the relationship between basic ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.
2. determine the relationship between intermediate ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.
3. determine the relationship between advanced ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.
4. determine the relationship between the ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.

Research Questions

1. What is the relationship between basic ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria?
2. What is the relationship between intermediate ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria?
3. What is the relationship between advanced ICT literacy skills possessed by library staff and the efficacy of library operations in

federal university libraries in Northern Nigeria?

4. What is the relationship between the ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria?

Hypothesis

- H01:** There is no significant relationship between basic ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.
- H02:** There is no significant relationship between intermediate ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.
- H03:** There is no significant relationship between advanced ICT literacy skills possessed by library staff and the efficacy

of library operations in federal university libraries in Northern Nigeria.

- H04:** There is no significant relationship between ICT literacy skills possessed by library staff and the efficacy of library operations in federal university libraries in Northern Nigeria.

Theoretical Framework

The Technology Acceptance Model (TAM) is an Information System Theory designed by Fred Davis (1989). The theory proposed a relationship between users’ acceptance of a new Information System and the users’ perceptions of the ease of use and usefulness of the Information System. The model suggests that: When users are presented with new technology, several factors influence their decision about how and when they will use it, notably:

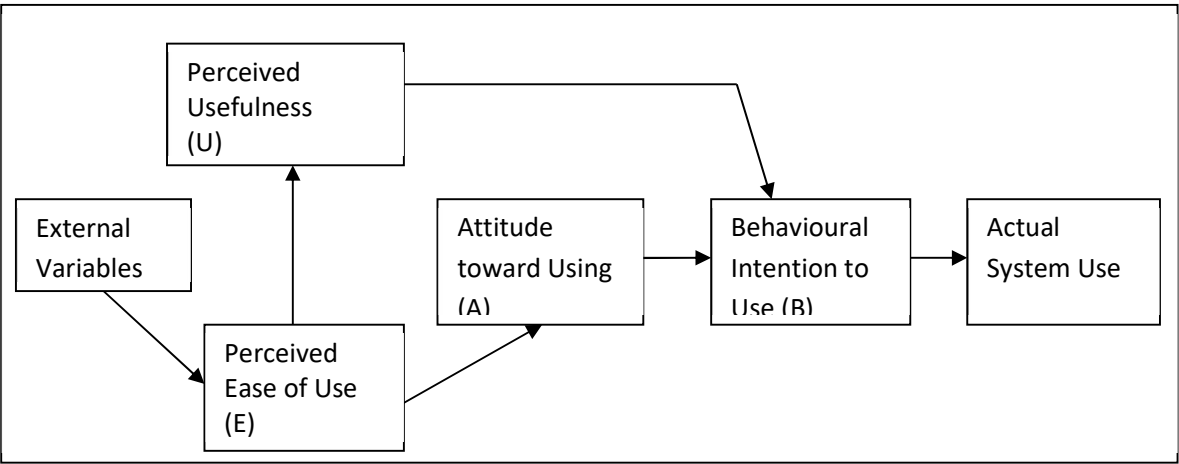


Fig. 1.3: Adapted Technology Acceptance Model (TAM) (Fred Davis, 1989)

The theory has two constructs – "perceived usefulness" and "perceived ease of use," which are the determining factors of system use that predict library staff attitudes toward the system, i.e., their willingness to use the system. Perceived usefulness means "the degree to which library staff believe that using ICT would enhance their job performance", while perceived ease of use means "the degree to which library staff believe that by acquiring ICT literacy, they would be free of stress in discharging their duties. Librarians/ University authorities need to explain the reasons and benefits of introducing the new development to the library staff because it is a total change in carrying out library operations. Teaching the library staff how it works before introducing the real ICT is very important, and once it is accepted, it becomes easier to implement than planning everything in isolation, and the same library staff that was not involved in the planning are now the same people who will be asked to use them.

Review of Related Literature

A study was conducted by Olufunke (2017) on "ICT Skills, Social Media Use and Service Delivery by Librarians in Federal Universities in the South-West, Nigeria". The study aimed to determine whether there exists a relationship between library service and ICT skills among library staff in federal universities in the South-West, of Nigeria. The finding revealed that there were high percentages of librarians possessing basic computer skills and

communication skills, with very low percentages of librarians having ICT skills for problem-solving and content creation. In Kwara state, Oyedokun Oyewum Akanbi and Laaro (2018) selected some universities to evaluate the ICT ability of library employees. The purpose of the study was to determine the ICT literacy level of library staff in selected university libraries in Kwara state. It was found that most of the library staff possessed basic ICT literacy skills, as indicated by 74 (67.6%), as they could only handle basic operations in the library.

A study was carried out by Tech-Terms (2019) on "Status of Technological Competencies of Library Professionals in Colleges of Kerala: An Analytical Study". The basic aim of the present study was to test the Information and Communication Technology (ICT) competencies of college library professionals in Kerala. The study found that librarians possess intermediate ICT literacy skills in carrying out all library operations. However, it was realized that most of the library staff acquired their skills through in-house training. Another study was conducted by Oyedipe and Popoola (2019) on "Influence of Age, Employment Status, ICT Literacy Skills, and ICT Use in Public University Library Performance at Work." The purpose of the survey was to evaluate the effects of ICT literacy skills on the implementation of library staff of demographic variables (age and employment status). The study found positive correlations

between age, employment, ICT competencies, and task performance. The analysis test revealed a significant effect of ICT literacy skills on the task performance of the respondents based on age, employment status, and ICT utilization.

Furthermore, Odu and Omosigho (2017) conducted a study on "Digital literacy and the implications of Nigerian digital library," which is another research that had an interest in ICT literacy training of library staff. The study intends to examine the implications of being digitally illiterate in electronically operated libraries to encourage and promote academic libraries in Nigeria. It was found that a few of the library staff possessed advanced literacy skills. The study recommended the need to encourage constant training and retraining of both library staff and library users; acquisition of adequate ICT facilities for library operation and proper funding to sustain and maintain the acquired facilities be taken seriously. A study was conducted by Ogheneghatowho and Omeluzro (2021) on the "Influence of ICT skills on job performance of librarians in university libraries in the Southwest, Nigeria." One of the specific objectives of the study was to determine the ICT literacy skills level of the professional library staff of the university libraries. The finding shows that only 86(23%) possess advanced ICT literacy skills which has helped in influencing their work environment. The study further

recommended that more ICT literacy skills training should be organized for the other librarians to be relevant in information management.

Also, Ola (2018) carried out a survey of university libraries in South-West, Nigeria on how the application of ICT for research skills affects library development. The study examined, among others, the influence of ICT on library operations and the degree to which ICT is being used for library services. The findings show that there was a high level of utilization of ICT for library operations in the universities studied, with a mean of 3.30 in library networking, library automation, digitization of library resources, and resource sharing among and within libraries; general automation of the library; information packaging, and general library management. It was revealed that the use of ICT has positively impacted library operations and services for sustainable development in the following areas: information security; storage, resource sharing, daily library management, ease of work, continuity of work, and teamwork. A study was conducted by Chiemeka, Ejike, Kingsley, & Blessin, (2015) titled "The level of information and communication technology skills possessed by librarians in university libraries in Anambra State, Nigeria". The general objective of the study was to ascertain the usefulness of ICT at the University of Abuja and

Jo's libraries in service delivery to the community of users. It was revealed that the two university libraries presently use ICT for word processing for management operations, as represented by 113 (83%), provision of online documents as indicated by 77 (57%), and online searches as represented by 61 (45%), respectively. It further revealed that the inability to use ICT for library services and highly technical functions by the library staff of the University of Abuja and Jos was attributed to a very low level of ICT competency.

Methodology

The study adopted a correlational descriptive research design. According to Ali (2006), a survey research design is a descriptive study that seeks or uses sample data of an investigation to document, describe, and explain what exists or is nonexistent on the present status

of a phenomenon being investigated. The population of the study is 247 library staff that consists of the professional and Para-professional staff in federal university libraries in Northern, Nigeria, using a purposive sampling technique. A self-designed questionnaire was the instrument used for data collection, while data analysis was carried out using *Pearson's Correlation Analysis* at 0.05 level of significance.

Result and Presentation

Out of the two hundred and seventy-six questionnaires administered to the respondents in all six federal university libraries in North—East, Nigeria, two hundred and thirty-one, representing 84%, were retrieved, found properly filled, and were used for the analysis.

Research Question 1: What is the relationship between the basic ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria?

Table 1: *Pearson's Correlation Analysis of the Relationship between the Basic ICT Literacy Skills and Effective Library Operations by the Staff*

Variables	Mean	Std	N	R	r ²
Basic ICT Literacy Skills	31.96	4.05	231	0.72	.55
Library Operations Carried out	31.51	5.03	231		

Std = Standard Deviation, N = Population size, r = Correlation Coefficient, R² = Coefficient of determination

Table 1 presents the results of the relationship between the basic ICT literacy skills and effective library operations by the staff in federal university libraries in the North-East,

Nigeria. It reveals that the correlation coefficient [r] is 0.72. This suggests that there is a positive high relationship between the basic ICT literacy skills and the library operations carried out in the

libraries. This result implies that the more the librarians acquire basic ICT literacy skills, the more it will positively reflect on the efficacy of library operations carried out in the libraries. The table also reveals that the coefficient of determination [r^2] associated with the correlation coefficient [r] of 0.72 is .55. This implies that

55% of basic ICT literacy skills possessed by library staff could predict the library operations carried out in a library.

H₀₁: There is no significant relationship between the possessed basic ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria.

Table 2: ANOVA test on the Relationship between the Basic ICT Literacy Skills and Effective Library Operations by the Staff

Variables	Mean	Std	N	R	r^2
Intermediate ICT Literacy Skills	31.96	4.05	231	0.64	.41
Library Operations Carried Out	30.25	5.22	231		

df = Degree of freedom, Sig = Level of Significance p 0.05, F = F-ratio

Table 2 shows that the obtained F-ratio 254.269 is significant at the 0.00 level. The null hypothesis was rejected because 0.00 is less than the 0.05 level of significance set for the study. Therefore, it can be inferred that a significant relationship exists between basic ICT literacy

skills possessed by library staff and the library operations carried out in the libraries.

Research Question 2: What is the relationship between the intermediate ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria?

Table 3: Pearson's Correlation Analysis of the Relationship between the Intermediate ICT Literacy Skills and Effective Library Operations by the Staff

Model	Sum of Squares	df	Mean Square	F	Sig	Decision
Regression	1984.957	1	1984.957	254.269	0.00	Significant
Residual	1787.692	229	7.807			
Total	3772.649	230				

Std = Standard Deviation, N = Population size, r = Correlation Coefficient, r^2 = Coefficient of determination

Table 3 presents the results of the relationship between the intermediate ICT literacy skills and effective library operations by

the staff in federal university libraries in the North-East, Nigeria. It reveals that the correlation coefficient [r] is 0.64. This indicates

that there is a positive high relationship between intermediate ICT literacy skills possessed by library staff and the library operations carried out in the libraries. This finding implies that the more the library staff acquire intermediate ICT literacy skills, the greater the possibility of an increase in the efficiency of library operations. The table also reveals that the coefficient of determination [r^2] associated with the correlation coefficient [r]

of 0.64 is .41. This result implies that 41% of intermediate ICT literacy skills possessed by library staff can predict the library operations carried out in a library by the staff.

H₀₂: There is no significant relationship between the possessed intermediate ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria.

Table 4: ANOVA on the Relationship between the Intermediate ICT Literacy Skills and Effective Library Operations by the Staff

Model	Sum of Squares	Df	Mean Square	F	Sig	Decision
Regression	1552.855	1	1552.855	160.197	0.00	Significant
Residual	2219.794	229	9.693			
Total	3772.649	230				

df = of freedom, Sig = Level of Significance p 0.05, F = F-ratio

Table 4 shows that the obtained F-ratio 160.197 is significant at the 0.00 level. The null hypothesis was rejected because 0.00 is less than the 0.05 probability level set for the study. Therefore, it can be inferred that there is a significant relationship between intermediate

ICT literacy skills possessed by library staff and library operations carried out in a library.

Research Question 3: What is the relationship between the advanced ICT literacy skills and effective library operations by staff in federal university libraries in Northern Nigeria?

Table 5: Pearson's Correlation Analysis of the Relationship between the Advanced ICT Literacy Skills and Effective Library Operations by the Staff

Variables	Mean	Std	N	R	r^2
Advanced ICT Literacy Skills	31.96	4.05	231		
Library Operations Carried Out	27.25	6.39	231	0.59	0.35

Std = Standard Deviation, n = Population size, r = Correlation Coefficient, r^2 = Coefficient of determination

Table 5 presents the results of the relationship between the advanced ICT literacy

skills and effective library operations by staff in federal university libraries in the North-East,

Nigeria. It reveals that the correlation coefficient [r] is 0.59. This reveals that there is a positive moderate relationship between advanced ICT literacy skills possessed by library staff and the library operations carried out in libraries. This result implies that acquiring advanced ICT literacy skills can contribute to the increased efficacy of the library's operations. The table also reveals that the coefficient of determination [r²] associated with the correlation coefficient [r] of

0.59 is .35. This result implies that 35% of advanced ICT literacy skills possessed by library staff could determine the library operations carried out in a library.

H₀₃: There is no significant relationship between the possessed advanced ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria.

Table 6: ANOVA on the Relationship between the Advanced ICT Literacy Skills and Effective Library Operations by the Staff

Model	Sum of Squares	Df	Mean Square	F	Sig	Decision
Regression	1319.862	1	1319.862	123.227	0.00	Significant
Residual	2452.787	229	10.711			
Total	3772.649	230				

df = degree of freedom, Sig = Level of Significance p 0.05, F = F-ratio

Table 6 shows that the obtained F-ratio 123.227 is significant at the 0.00 level. The null hypothesis was rejected because 0.00 is less than the 0.05 level of significance set for the study. Therefore, it can be declared that a significant relationship exists between advanced ICT literacy skills possessed by library staff and the

efficacy of library operations in university libraries.

Research Question 4: What is the relationship between the ICT literacy skills and effective library operations by staff in federal university libraries in Northern Nigeria?

Table 71: Pearson's Correlation Analysis of the Relationship between the ICT Literacy Skills and Effective Library Operations by Staff

Variables	Mean	Std	N	R	r ²
ICT Literacy Skills	41.96	4.04	693		
Effective Library Operations	39.67	5.85	685	0.71	0.57

Std = Standard Deviation, N = Population size, r = Correlation Coefficient, R² = Coefficient of determination

Table 7 presents the results of the relationship between the ICT literacy skills and effective library operations by staff in federal university libraries in the North-East, Nigeria. It reveals that the correlation coefficient [r] is 0.71. This suggests that there is a positive, high relationship between ICT literacy skills possessed by library staff and the library operations carried out in the libraries. This result implies that when the library staff acquires more ICT literacy skills, the library operations could

improve for effective service delivery. It also indicates that the coefficient of determination [r^2] associated with the correlation coefficient [r] of 0.71 is .57. This result suggests that 57% of ICT literacy skills possessed by library staff can be associated with the library operations carried out in a library for effective service delivery.

H04: There is no significant relationship between the ICT literacy skills and effective library operations by the staff in federal university libraries in Northern Nigeria.

Table 8: ANOVA on the Relationship between the ICT Literacy Skills and Effective Library Operations by Staff

Model	Sum of Squares	Df	Mean Square	F	Sig	Decision
Regression	4255.224	1	4255.224	416.321	0.00	Significant
Residual	7062.724	691	10.221			
Total	11317.948	692				

df = of freedom, Sig = Level of Significance p 0.05, F = F-ratio

Table 8 shows that the obtained F-ratio 416.321 is significant at the 0.00 level. The null hypothesis was rejected because 0.00 is less than the 0.05 level of significance set for the study. Therefore, it can be inferred that a significant relationship exists between ICT literacy skills possessed by library staff and the library operations carried out in a library for effective service delivery.

Summary of Major Findings

Based on the data analysis, the following is a summary of the major findings of the study:

1. A positive high relationship [$r = 0.72$] exists between basic ICT literacy skills

possessed by library staff and effective library operations carried out in the libraries. Consequently, a significant relationship exists between the basic ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$].

2. There is a positive high [$r = 0.64$] relationship between intermediate ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Also, a significant relationship exists between the intermediate ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$].

3. A positive moderate relationship [$r = 0.59$] exists between advanced ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Consequently, a significant relationship exists between the advanced ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$].

4. There is a very high positive relationship [$r = 0.71$] between ICT literacy skills possessed by library staff and effective library operations carried out in the libraries. Furthermore, a significant relationship exists between the ICT literacy skills possessed by staff and the library operations carried out in the libraries [$0.00 < 0.05$].

Conclusion and Recommendations

The findings indicate a positive relationship between the ICT literacy skills of basic, intermediate, and advanced library staff and library operations. That was the reason for more effort in acquiring ICT literacy skills to maintain and expand the relationship between the variables. If the library does not improve its skill acquisition, it may not be able to discharge its duties effectively. And this implies that there will be no meaningful services to achieve without ICT literacy skills. Furthermore, adequate measures need to be taken in order to improve

internet connections, alternative power sources, and upgrade existing ICT facilities, among other things, if federal university libraries must maintain ICT to carry out library operations. The implication of not providing a conducive environment for the effective application of ICT for effective library operations. That indicates that the users will be on the receiving end, and of course, by denying them access to information that can be generated and distributed through the Millennium Development Technology.

In view of the careful analysis that leads to the above revelations, the following recommendations are worth consideration:

1. The management of the federal university libraries in Northern Nigeria should not relent in efforts to sustain the tempo of giving more training to their staff. This could enable the library staff to acquire more skills capable of sustaining the existing relationship between the basic ICT literacy skills and effective library operations.
2. It calls for the university library management in northeast Nigeria to organize higher training for its staff. This will enable them to maintain a high correlation between intermediate ICT literacy skills and library operations, which will enable them to desire

more challenging operations than previous ones.

3. The management of the federal university libraries in Northern Nigeria should take it up as a challenge that the advanced ICT literacy skills are not enough. They should see a way of advancing their skills to equip them for any operation requiring ICT and have total control over the temptation of manual library operations.

4. There is a need to organize general ICT training in federal universities' libraries in Northern Nigeria to eliminate ICT illiteracy in the libraries. This will enable anyone working as a professional or paraprofessional to use ICT to carry out functions to ensure ICT compliance, since effective library operations require teamwork.

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