

## Computer Driven Library Management and Service Rendering System: Mobile Library Landscape

Article History	
Received:	25.04.2020
Accepted:	24. 05.2020
Revision:	04. 06.2020
Published:	10.06.2020
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How to Cite the Article:	
Yekini N. A <i>et al.</i> , (2020); Computer Driven Library Management and Service Rendering System: Mobile Library Landscape . <i>IAR J Eng Tech..1(1)</i> 1-8.	

**Abstract:** Library system is one of the core resources for accreditation and recognition of academic institutions worldwide. In recent time the usage of library by the students and the staff of an academic institutions fell short of expectation. In this research, an investigative survey was conducted on the use of academic library in Yaba College of Technology, Nigeria. It was observed that 19.8% of sampled population patronize library regularly, while 65.6% did occasionally, and 14.6% never patronize the library. The major reasons that contributed to the decline in the usage of academic library among students and staff revolved around the manual approach to the management and dissemination of services to the users in this digital world. The research then provides a solution by proposing the design of mobile library landscape which is a computer application system with embedded digital generation catalogue; automated circulation and control where library can be accessed everywhere with a real-time feedback and update on iPhone, iPad, android devices or any internet based computer system.

**Keywords:** Academic library, Digital generation, mobile library, digital catalogue, library usage, Library users.

### 1. INTRODUCTION

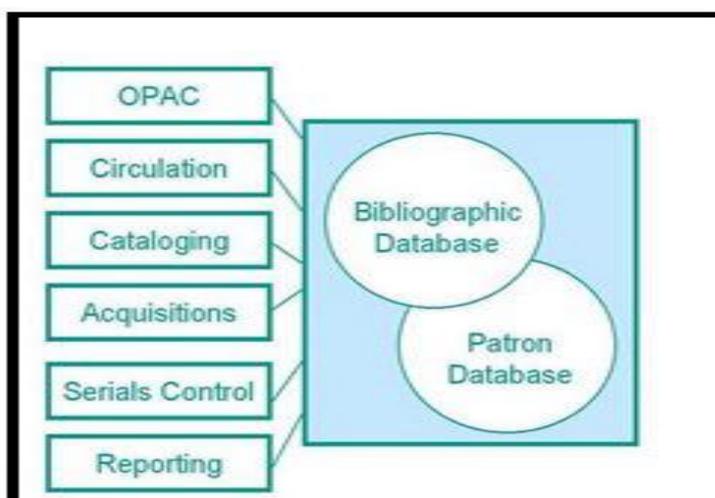
Library resources constitute one of the major resources required for establishment and recognition of academic institutions. A standard library is required for enhancing and promotion of academic integrity and progress of the institution. Library archives printed or non-printed materials to be consulted by both students and lecturers in the institutions of learning.

“A library System encompasses a term that is used to describe the routines in the library. It includes central organization created to manage and coordinate operations and services in or between different centers, buildings or libraries branches and library patrons”. Adamson Veronica, et al. (2008). Library sequences involve Selection, Ordering, Acquisition, Organization, Preservation, and Spreading of Information or services to the people that need library services. The users of library in academic institutions are majorly the students and staff, while library can also render services to the outsider or hosting community. ICT usage in the library cannot be overemphasized especially in this digital world where ICT application has become driven by human endeavor in all

ramifications of life. There is no area of library operation where ICT application is not relevant, in recent time ICT application has been deployed for security of life and properties in the library Yekini and Adebawale (2014).

The use of ICT is not limited to the library, it is transversely across all professions. Pronounced, vibrant, and dynamic libraries are currently rated by the level of adoption of ICT in their services P.B. Ghante., Ashok Y (2014).

Figure 1 represents a model of the library modules (OPAC, circulation, Cataloging, Acquisitions, Serial control, and reporting) as opined by Debasis Das, and Parnab Chatterjee (2015). There is none of the module in the model that does not require the use of ICT for service delivery.



**Figure 1.** Model of the library modules

There is no doubt that many library are not been patronized for it services to the users. In some academic institutions, the capacity of library remain constant while the required users population increases day by day or year by year depends on the recruitment of staff and students enrolment respectively. This alone can militate against the usage of library by the users due to congestion and it subsequent negative implication on the ushers.

This research is focus on investigating the decline in the usage of library by the students and academic staff of public higher institutions using Yaba College of Technology as a case study. The research will adopt the use of structure questionnaire and record inspection to collect data within the sample population, data to be collected will be analyses and possible ICT solution will be recommended to improve library usage and relevant of the academic library in the institutions of learning.

## 2. LITERATURE REVIEW

### 2.1. Yaba College of Technology Library

“The College Library as it popularly call functions as the academic live wire of the College that is responsible for the acquisition and processing of all the books, journals, e-books, e-journals, databases to meet the information needs of staff and students of the college community. The main Library and various School Libraries have a combined seating capacity for 1,740 readers. The main Library is made up of 6 (Six) Departments namely: The Polytechnic Librarian’s Office; Readers Services; Technical Services; Serials; Information & Communication Technology; Archives; and Research and Documents” Adebowale T., (2018). Yaba College of Technology has a population of 20,000 students and 1,900 staff that cut across the various disciplines and units of the College Omokungbe O. (2018).

### 2.2 Digital Age Challenges of Nigerian Academic Librarian

A librarian is a professional with both practical and theoretical knowledge in management of library system and dissemination of its services to the various categories of users. Academic librarian mean librarians of higher institutions such as colleges of education, polytechnics and universities. “Most Academic librarians in Nigeria have the following challenges to put up with in a bid to be relevant in this digital age. Training background: - On the job trainings for librarians to improve their competency in the area of information and communication technology are inadequate; Work environment: “The environment where most librarians work is not conducive for optimal performance. Lack of facilities such as office furniture, stationeries and information and communication technology facilities are part of the challenges faced by academic librarians in Nigeria; Electricity: - The erratic nature of electric power supply in Nigeria is another problem that confronts academic librarians” Yacob Haliso., Ogunbeni J.I. (2014).

### 2.3 Academic Library and ICT

“Information and communications technology (ICT) have brought unprecedented change and transformation to university library and information services by creating an environment where rapid continuous change had become the norm. The university library finds itself in a time of tremendous challenge but it is also a time of boundless opportunity to use ICT creatively to enhance service delivery to the user” Lakshmikant Mishra., Jyoti Mishra., (2014). An increased number of users, a greater demand for library materials, and an increase in the amount of material being published demands the integration of ICT into library system for effective service delivery Md. Shariful Islam and Md. Nazmul Islam (2007).

ICT help librarian to better informed and stay ahead towards service delivery in academic library, training of professionals librarian on use of ICT will go a long way to promote management of library, and help to promote users patronage Anup Singh (2013).

### 2.4 Role of Academic Library

Academic library is the live wire of academic institutions that perform or require to perform one or more of the following roles: promoting information literacy among students of higher learning institutions Basri Hassan and Yushiana Mansorat (2017); Association of College and Research Libraries (2017) in the work title Academic Library Impact on Student Learning and Success: Findings from Assessment in Action Team Projects opine that Academic Library Contributions to Student Learning and Success in the following ways: it increases student success, learning enhancement through collaborative academic programs and services, Library research consultations boost student learning. Academic Library played a vital role in the accreditation of academic institutions by supervising agency, “libraries are considered as one of the fundamental factor required for accreditation of any academic program in every higher institutions in Nigeria. This is why libraries services a major gateway to accreditation of undergraduate programs in every higher institution” Men, Joseph Manasseh and Isreal, Aliyu Abubakar (2017). Academic library is one of the three core infrastructures and academic live wire of

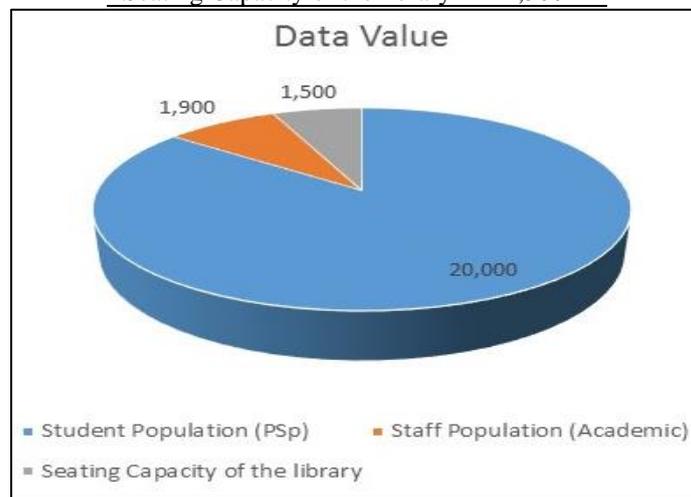
higher institutions of learning, library rendered the following services to the student, staff and higher institution itself: The library renders support to students, staff, researchers and other members of user community; Scholarly publication of faculty members, theses and dissertations of postgraduate students, and publications of the institution are collected and kept in the library; University libraries usually provide access to various international reputable database of electronic database of journals and textbooks. Library is an important intellectual resource centre in the higher institutions community and helps to fulfill the curriculum requirements and promotes studies and research; libraries are major gateways to accreditation of academic courses Michael Oluwole Afolabi (2014).

### 3. METHODOLOGY

Data were collected through record inspection and structure questionnaires. There are three categories of questionnaires used for gathering data from the librarian, Students, and Academic staff respectively. Data collected was tabulated as follows:

**Table 1.** Data through Record inspection

Data Attributes	Data Value
Student Population (Psp)	20,000
Staff Population (Academic)	1,900
Seating Capacity of the library	1,500



**Figure 2.** Pictorial representation user response classical information

**Table 2.** Library User statistics

Average Daily Visitor	Average Daily Issue of Books
18	48

**Table 3.** Library Collection

<b>Books</b>	<b>84754</b>
periodical	605
Electronics	5
Manuscript	nil
Map and charts	10

**Table 4.** Library Automation

<b>Library automation</b>	<b>Yes</b>	<b>No</b>
Is the library automated	1	0
Fully	0	1
Partial automation	1	0
<b>Barriers to automation</b>	<b>Yes</b>	<b>No</b>
ICT trained staff	0	1
power	1	0
space	0	1
Cooperation of authority	0	1
Finance	0	1

**Table 5.** Service Provide by the library

<b>Service Provide by Library</b>	<b>Yes</b>	<b>No</b>
Circulation Service	1	0
Cataloguing	1	0
Reference Service	1	0
CAS	1	0
SDI	1	0
Reprographic	1	0
Internet	1	0
Library Network Services	1	0

**Table 6.** Length of Engagement

<b>Length of Staying on Campus</b>	<b>1 – 2 years</b>	<b>3 – 4 years</b>	<b>5years +</b>
Students	17	498	0
Teachers	33	12	197

**Table 7.** Library Frequent of Usage (515 respondents)

<b>Regular</b>	102
occasionally	338
Never	75

**Table 8.**User satisfaction

<b>Satisfied with Library Facilities</b>	<b>High</b>	<b>Average</b>	<b>Not satisfied</b>
Location	79	167	194
Arrangement of books	189	107	144
Furniture and equipment's	313	99	28
Lighting and ventilation	189	101	150
Cleanliness	413	23	4
Helpfulness of Library staff	389	37	14
<b>Satisfied With The Collection Of Resources Of The Library</b>	<b>High</b>	<b>Average</b>	<b>Not satisfied</b>
Books	287	132	21
Reference Books	403	29	8
Periodicals	289	129	22
Newspapers	439	0	1
<b>Satisfied with the Library services</b>	<b>High</b>	<b>Average</b>	<b>Not satisfied</b>
Circulation services	199	193	48
Cataloguing services	281	89	70
Reference services	389	39	12
Reprographic services	99	103	238
Internet services	21	49	370
Library network programme	0	23	417
Binding	0	0	440
<b>Satisfied with Overall Functions of the Library</b>	<b>High</b>	<b>Average</b>	<b>Not satisfied</b>
	136	55	249

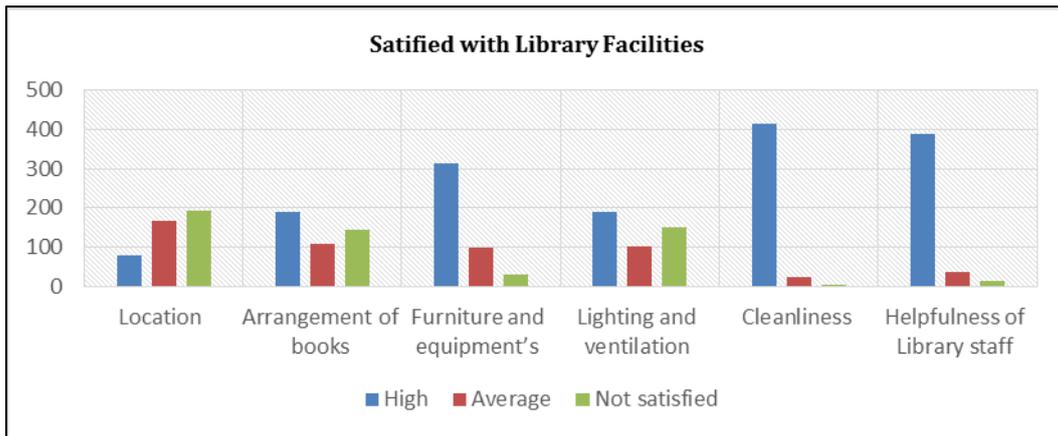


Figure 3. Pictorial representation user response on satisfaction with library facilities

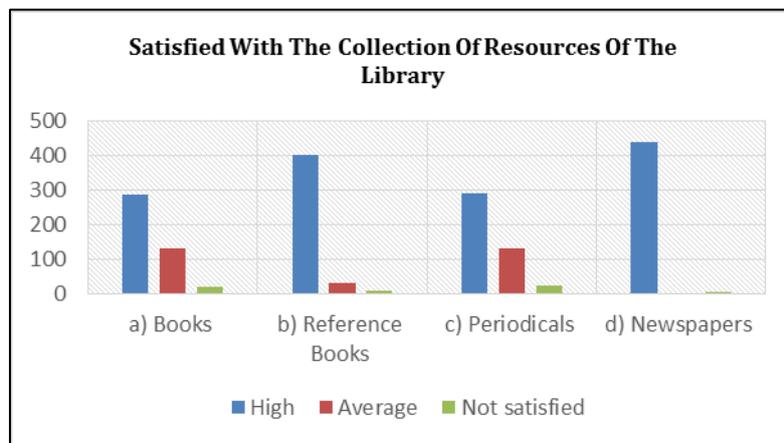


Figure 4. Pictorial representation user response on satisfaction with library collection

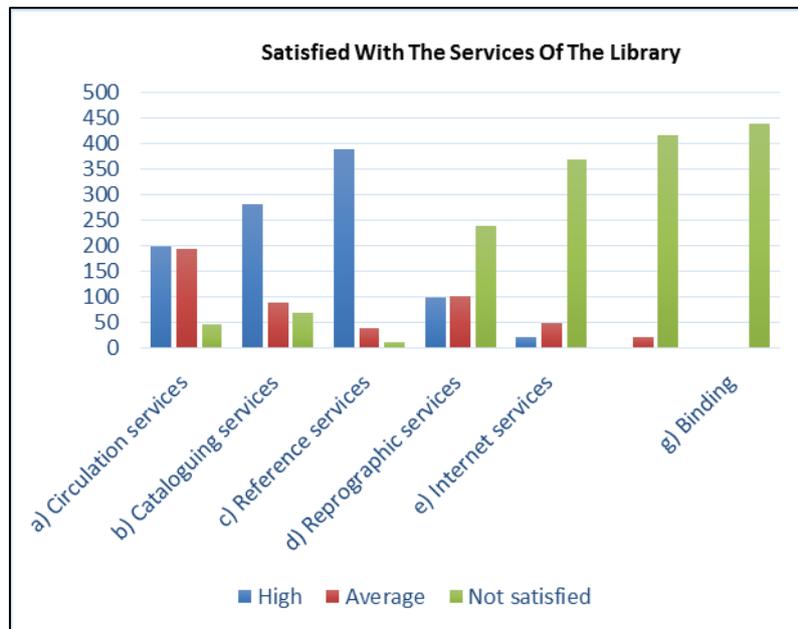
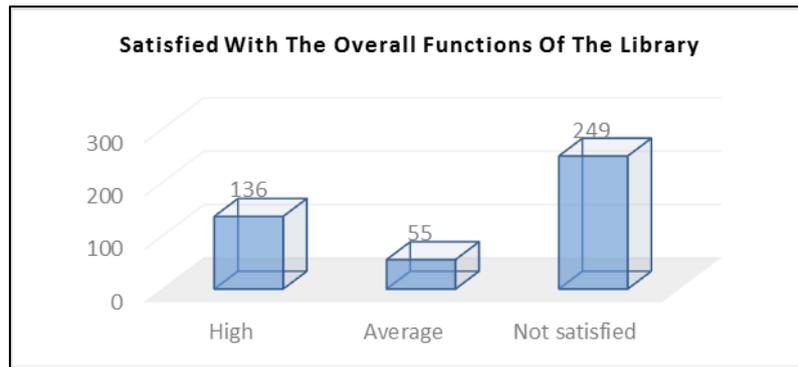


Figure 5. Pictorial representation user response on satisfaction with library services



**Figure 6.** Pictorial representation user response on satisfaction with overall library function

#### 4. RESULT ANALYSIS DISCUSSION AND FINDINGS

From table 1, overall population of the students and staff is 21,900 while the seating capacity is 1,500 only. The implication of this is that only 6.8% of the preferred users of the library can use the library system at the same time. Also some staff and students were not registered with the library system that justify the reason why majority of the sampled population are not patronizing the library and also no satisfy with overall function of the library as revealed in table 8. Majority of sampled population are satisfied with Library Facilities, collection of resources, and some of the library services. Users sampled not satisfied at all with Internet services and Library network services.

Some classical information received from head of unit and Polytechnic are table logic 0 and 1 as in table 4 and 5. The result indicated that all services majorly applicable to academic library are currently been rendered by the institution Library. Also only barrier to the full automation of the library is power. Surprisingly 19.8% of sampled population patronize library regularly, while 65.6% did occasionally, and 14.6% never patronize the library.

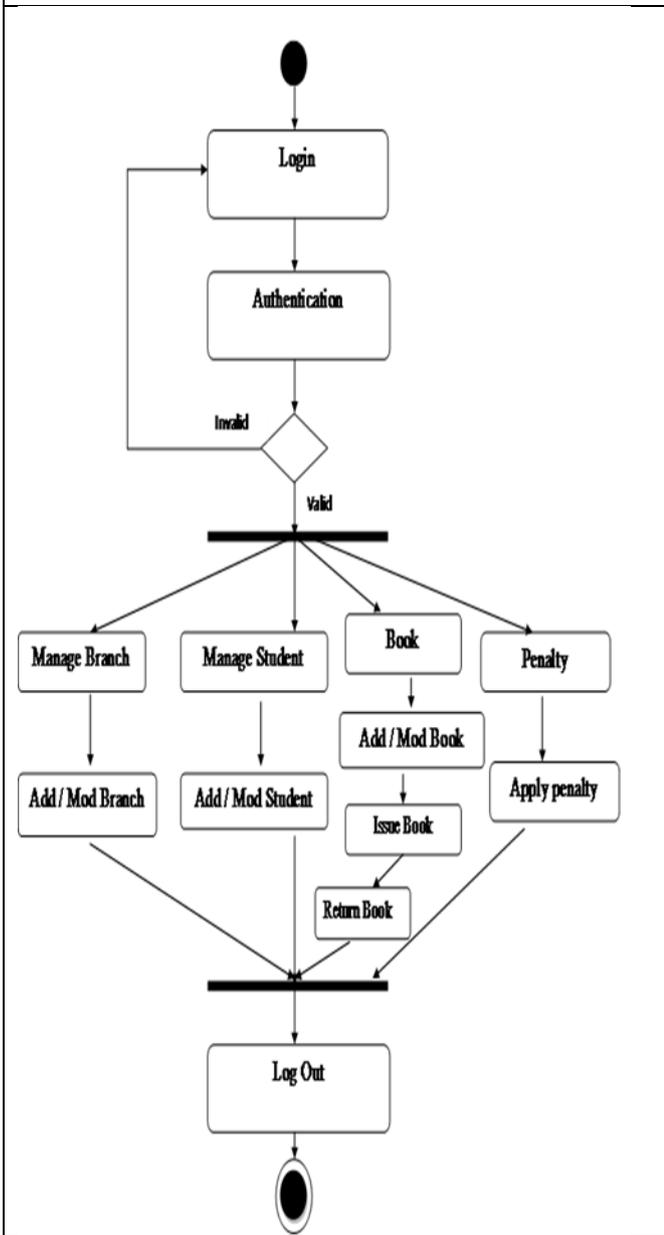
The implication of this results is that the physical library cannot provide the required need and services to be rendered to an academic communities in this modern day of ICT proliferation. With careful look at the services rendered by the sampled library, all services can be integrated into Mobile Library Landscape to be driven by ICT.

We hereby proposed design of Mobile Library Landscape through which all library users and managers can access anywhere anytime through the computer system or android phones.

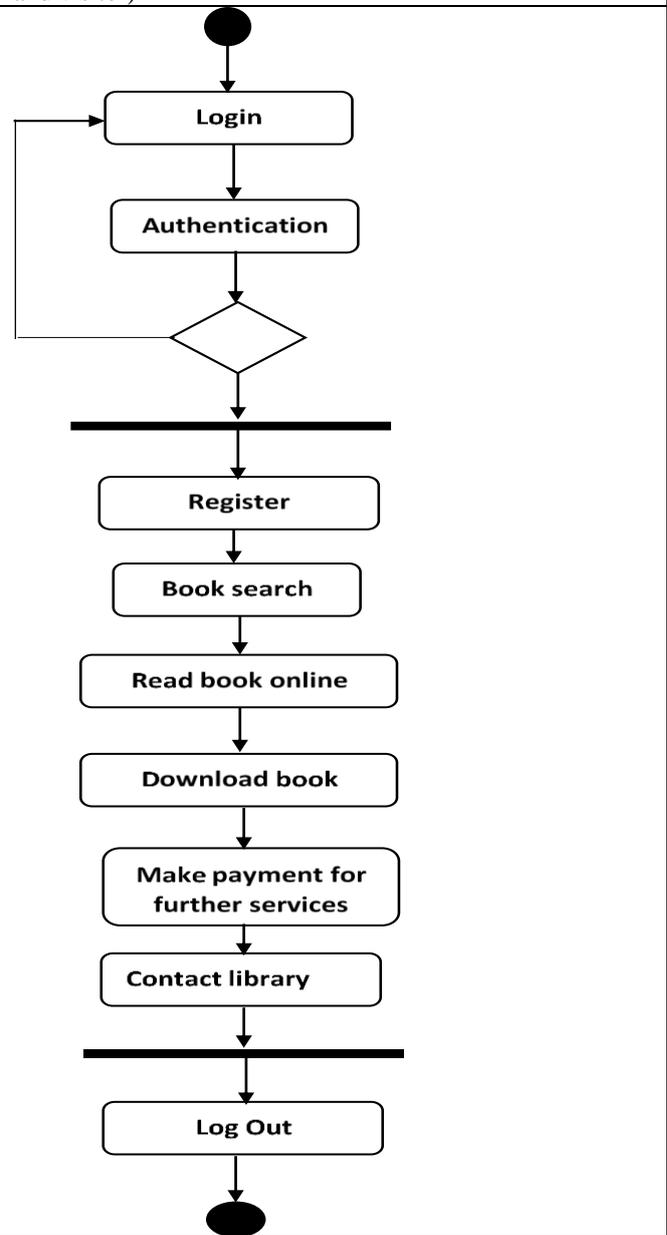
#### 5. PROPOSED DESIGN IMPLEMENTATION

The proposed design is to be implemented using an appropriate programming Language(s), the appropriate programming languages depends on user familiarity with the program. The authors shall be bias with the combination of JavaScript, PHP MySQL for the purpose of this work. The proposed flowchart for the research work is as follows.

**Figure 7.** General Flowchart for Managing MLL system



**Figure 8.** Flow chart for Library Users (Students, Staff, and visitor)



## 6. CONCLUSION

With the recent development of Network technology and proliferation of IT across the globe. The proposed application will be of great benefit to the institutions if develop and implement. The data gather and result obtained from it analysis clearly shows that the College is in their need of this development and it will go a long way to make library accessible to the users at a very minimal cost. The institutions can then subscribe to more online books and also encourage their staff to develop reading materials to be uploaded on the system so that students can access it online for their

academic pursuit. The proposed system is secured, cost effective, and dynamic.

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