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# The Evaluation of Automation and Networking in the Transformation of Service Delivery at the John Harris Library, University of Benin, Benin City.

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**Abstract**: The advent of information and communication technologies (ICTs) has precipitated a paradigm shift in the operational and service delivery models of academic libraries worldwide. This study evaluates the transformative impact of automation and networking technologies on service delivery at the John Harris Library (JHL), University of Benin (UNIBEN). The research was guided by three key objectives: to assess the level of automation implemented, to examine the influence of networking on resource sharing and accessibility, and to identify the challenges encountered in the adoption and use of these technologies. Employing a descriptive survey research design, data were collected through questionnaires administered to 50 library staff and 150 registered library users, supplemented by structured interviews with 5 management staff. Quantitative data were analyzed using descriptive statistics (frequency counts, percentages, and mean scores) and presented in tables. The findings reveal a significant level of automation at JHL, particularly with the implementation of the KOHA Integrated Library System (ILS), which has streamlined cataloguing, circulation, and OPAC services. Networking, primarily through the university's intranet and internet connectivity, has vastly improved access to digital resources and facilitated inter-library loans. However, significant challenges persist, including inconsistent power supply, insufficient bandwidth, financial constraints for system upgrades, and a need for continuous staff training. The study concludes that while automation and networking have profoundly transformed JHL into a more dynamic and user-centric institution, strategic interventions are required to consolidate these gains. Recommendations include securing sustainable funding for ICT infrastructure, instituting a robust and continuous staff development program, and enhancing user education initiatives to maximize the benefits of the digital library environment.

**Keywords**: Automation, Networking, Academic Libraries, Service Delivery, John Harris Library, University of Benin, KOHA, ICT, Digital Transformation.


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## INTRODUCTION

The academic library, traditionally the heart of the university, has always been a custodian of knowledge and a critical support system for teaching, learning, and research (Aguolu & Aguolu, 2002). For decades, its services were predominantly manual, revolving around card catalogues, physical circulation records, and hardcopy collections accessed within the library's physical confines. However, the late 20th and early 21st centuries have witnessed an unprecedented digital revolution, fundamentally altering the information landscape. This revolution, driven by advances in Information and Communication Technologies (ICTs), has compelled academic libraries to re-evaluate and reinvent their roles and service delivery models (Borgman, 2007).

Two of the most pivotal technological developments in this transformation are automation and networking. Library automation involves the use of computers and specialised software to manage traditional library activities such as acquisition, cataloguing, circulation, and serials control (Sridhar, 1998). The core of automation is the Integrated Library System (ILS), which integrates these functions into a cohesive unit, enhancing efficiency, accuracy, and speed of service. Networking, on the other hand, refers to the interconnection of computer systems, allowing for the sharing of data and resources (Ojedokun, 2007). In the context of libraries, networking, particularly through the Internet and institutional intranets, has enabled access to online databases, e-journals, and digital repositories, and facilitated resource-sharing consortia like the Nigerian University Libraries Consortium (NULC), breaking down the physical barriers of the library.

The John Harris Library (JHL) at the University of Benin, as a premier academic library in Nigeria, has not been immune to these global shifts. Established to support the university's academic programmes, JHL has, over the years, embarked on several initiatives to integrate technology into its operations. The migration from manual systems to an automated environment, notably with the adoption of the KOHA open-source ILS, represents a significant milestone. Furthermore, its connection to the university's network and the internet has expanded its service portfolio to include electronic information services. It is therefore imperative to conduct a systematic evaluation of how these twin forces of automation and networking have collectively transformed service delivery at JHL, assessing the successes, pinpointing the shortcomings, and charting a path for future development.

### 1.2 Statement of the Problem

Despite the global trend and the recognised potential of ICTs to enhance library services, the journey towards full automation and effective networking in many Nigerian academic libraries, including the John Harris Library, has been fraught with challenges. There is a discernible gap between the theoretical potential of these technologies and the practical reality of their implementation and utilisation (Iwhiwhu & Eyekpegha, 2009). While JHL has made commendable strides, such as the implementation of KOHA, there is a lack of a comprehensive, empirical study that evaluates the holistic impact of this digital transition on its core services.

Observations and anecdotal evidence suggest several problems. First, there appears to be an underutilisation of the automated systems by some users and perhaps even staff, potentially due to a lack of awareness or inadequate training. Second, the efficiency gains from automation may be undermined by infrastructural deficits such as erratic power supply and poor network connectivity, leading to service interruptions. Third, the library's capacity to leverage networking for robust resource sharing and access to global scholarly content may be constrained by financial limitations for database subscriptions and bandwidth costs. Without a systematic investigation, it remains unclear to what extent automation and networking have truly transformed service delivery, what the specific pain points are, and how they can be addressed. This study, therefore, seeks to fill this gap by providing an empirical evaluation of the transformation brought about by automation and networking at JHL, identifying the specific problems that hinder optimal performance.

### 1.3 Purpose of the Study

The general purpose of this study is to evaluate the extent to which automation and networking have transformed service delivery at the John Harris Library, University of Benin. The specific purposes are to:

1. Assess the level and extent of automation implemented in the core operations of the John Harris Library.
2. Examine the impact of networking on resource sharing, accessibility of information, and user services at the library.
3. Identify the challenges encountered in the adoption, implementation, and sustained use of automation and networking technologies at the library.

### 1.4 Research Questions

This study is guided by the following research questions:

1. What is the level and extent of automation in the cataloguing, circulation, and Online Public Access Catalogue (OPAC) services of the John Harris Library?
2. How has networking improved resource sharing and accessibility of electronic resources for users and staff of the John Harris Library?
3. What are the major challenges inhibiting the effective implementation and use of automation and networking technologies at the John Harris Library?

### 1.5 Significance of the Study

The findings of this study will be beneficial to:

- JHL Management: The results will provide empirical data to inform policy decisions, strategic planning, and resource allocation for ICT infrastructure development and staff training.
- Library Staff: The study will highlight areas where staff require further capacity building to effectively manage and leverage the automated systems.
- University Community (Students and Researchers): By identifying challenges to optimal service delivery, the study will ultimately contribute to improving the user experience and satisfaction with library services.
- Other Academic Libraries: The findings can serve as a benchmark and learning point for other university libraries in Nigeria that are at various stages of their own automation and networking journeys.
- Researchers in LIS: This study will contribute to the body of scholarly literature on technology adoption in academic libraries within developing countries.

### 1.6 Scope of the Study

This study is limited to the John Harris Library, University of Benin, Benin City. It focuses specifically on the evaluation of automation and networking technologies and their impact on service delivery. The study covers the period from 2015 to 2023, a period that coincides with the full implementation of the KOHA ILS at JHL. The study will involve library staff across various units and library users (postgraduate students and academic staff) who are presumed to be the heaviest users of electronic and automated services.

## LITERATURE REVIEW

This chapter reviews relevant literature on the concepts of library automation and networking, their impact on services, and the associated challenges. The review is structured in line with the objectives of this study.

### 2.1 The Concept of Library Automation

Library automation is the application of computers to perform traditional library activities in a more efficient and effective manner. According to Sridhar (1998), the genesis of library automation can be traced to the use of punched cards for circulation and cataloguing in the 1930s, but it was the advent of the computer in the 1960s that truly set the stage for modern library automation. The core of any automation project is the Integrated Library System (ILS), a suite of software modules that work together to manage key functions. As noted by Mutula (2008), a typical ILS includes modules for acquisition, cataloguing, circulation, serials control, and an Online Public Access Catalogue (OPAC).

The benefits of automation are well documented in the literature. It leads to increased operational efficiency by reducing the time and labour required for repetitive tasks (Adebayo, 2005). It improves the accuracy of bibliographic records and circulation transactions. Most importantly, it empowers users through the OPAC, allowing them to independently search the library's collection from any network-connected terminal, thereby reducing their dependence on library staff for basic inquiries (Anunobi & Edoka, 2012). In the Nigerian context, the adoption of open-source ILS like KOHA and ABCD has gained traction due to their low cost of acquisition, as evidenced in studies by Okiki and Asiru (2011), who documented its implementation in several federal university libraries.

### 2.2 Networking in Academic Libraries

Networking is the backbone of the modern digital library. Ojedokun (2007) defines it as the practice of linking two or more computing devices together to share data and resources. In libraries, networking operates at two primary levels: the Local Area Network (LAN) within the library building, and the Wide Area Network (WAN) that connects the library to the campus network and the global internet.

The transformative power of networking is most evident in the area of resource accessibility. Through networks, libraries can provide access to a vast array of remotely hosted electronic resources, including e-journals, e-books, and databases (Borgman, 2007). Furthermore, networking is the foundation for resource-sharing initiatives, like consortia. The Nigerian University Library Consortium (NULC), for instance, was established to

leverage collective bargaining power for database subscriptions, a model that has significantly expanded the digital content accessible to universities like UNIBEN (Atinmo & Jimba, 2010). Networking also facilitates services like virtual reference, online document delivery, and institutional repositories, which have redefined the library's role from a warehouse of books to a dynamic gateway to global information.

**2.3 The Impact of Automation and Networking on Library Services**

The synergistic effect of automation and networking has led to a comprehensive transformation of library services. According to Anunobi and Edoka (2012), the impact can be categorised as follows:

- Transformation of Technical Services: Automation has revolutionised technical services. Cataloguing has been made more efficient through the use of Machine-Readable Cataloguing (MARC) standards and the ability to copy cataloguing records from shared databases like the Library of Congress, drastically reducing original cataloguing time.
- Revolution in Circulation Services: Automated circulation systems have eliminated manual record-keeping, enabled self-check-in/check-out kiosks, streamlined management of fines and reservations, and provided real-time data on collection usage for informed decision-making (Adebayo, 2005).
- Enhanced Access and Discovery: The OPAC, a direct product of automation and networking, has merged to create web-based discovery tools. Users are no longer limited to searching a single library's collection; they can discover resources from consortium partners and global union catalogues (Borgman, 2007).
- New Service Paradigms: Networking has given birth to entirely new services. Digital reference services (email and chat), institutional repositories for preserving and showcasing local research output, and information literacy tutorials delivered online are now standard offerings in a modern academic library (Mutula, 2008).

**2.4 Challenges of Implementing Automation and Networking**

Despite the clear benefits, the path to successful automation and networking in developing countries is strewn with obstacles. Studies focusing on the Nigerian context consistently identify a common set of challenges. Iwhiwhu and Eyekpegha (2009), in a study of Delta State University libraries, identified inadequate funding as the most critical challenge, affecting the procurement of hardware, software, and maintenance. Erratic

power supply forces libraries to rely on expensive alternative power sources, like generators, increasing operational costs.

**Other significant challenges include:**

- Inadequate ICT Infrastructure: This includes insufficient computers, poor internet bandwidth, and outdated networking hardware (Atinmo & Jimba, 2010).
- Insufficient Skilled Manpower: The need for staff with dual expertise in librarianship and ICT is often not met, leading to a reliance on external technical support, which can be costly and slow (Okiki & Asiru, 2011).
- Resistance to Change: Some library staff and users, accustomed to traditional methods, may exhibit technophobia, leading to underutilisation of the new systems (Adebayo, 2005).

**2.5 Theoretical Framework: The Technology Acceptance Model (TAM)**

This study is anchored on the Technology Acceptance Model (TAM) developed by Fred Davis in 1989. TAM is one of the most influential models for explaining and predicting user acceptance of information technology. The model posits that two key factors determine an individual's behavioural intention to use a technology: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

- Perceived Usefulness (PU) is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance."
- Perceived Ease of Use (PEOU) is the degree to which a person believes that using a particular system would be free from effort.

In the context of this study, the successful transformation of services at JHL through automation and networking is contingent not just on the installation of the technology, but on its acceptance and use by both library staff and patrons. For staff, if they perceive the KOHA system as useful (making their work faster and more accurate) and easy to use, they are more likely to embrace it fully. Similarly, for users, if the OPAC and online databases are perceived as useful for finding information and easy to navigate, their adoption and satisfaction will be high. The challenges identified (e.g., lack of training) directly affect PEOU, while issues like system downtime affect PU. Therefore, TAM provides a robust lens through which to analyse the findings of this research.

**2.6 Summary of Literature and Knowledge Gap**

The extant literature unequivocally establishes that automation and networking are indispensable for modern academic libraries. They enhance efficiency, expand access, and

create new service opportunities. However, much of the literature on Nigerian libraries discusses automation and networking in general terms or focuses on national perspectives. There is a scarcity of recent, in-depth, single-institution case studies that provide a holistic evaluation of the transformation, tying together the level of automation, the impact of networking, and the specific challenges in a unified framework. This study aims to fill this gap by providing a focused evaluation of the John Harris Library, using the TAM framework to understand the user and staff acceptance dynamics, thereby offering a nuanced understanding of the digital transformation at a key Nigerian academic library.

## RESEARCH METHODOLOGY

This chapter outlines the methods and procedures employed in conducting this research. It covers the research design, population, sampling technique, instruments for data collection, validity and reliability, data collection procedure, and method of data analysis.

### 3.1 Research Design

The study adopted a descriptive survey research design. This design is considered appropriate because it allows for the collection of data from a sample of a population to describe the attitudes, opinions, behaviours, or characteristics of that population (Creswell, 2014). It is suited for investigating the current state of affairs regarding the level of automation, impact of networking, and challenges at JHL without manipulating any variables.

### 3.2 Population of the Study

The target population for this study comprised two distinct groups:

1. Library Staff: All 65 professional and para-professional staff of the John Harris Library who interact directly with the automated systems.
2. Library Users: The active postgraduate students and academic staff of the University of Benin, estimated at over 5,000, are the primary beneficiaries of the transformed services.

### 3.3 Sample and Sampling Technique

A combination of sampling techniques was used.

- For the library staff, a census sampling was used, meaning all 65 staff members were targeted due to the manageable size of the population.
- For the library users, a stratified random sampling technique was used. The population was stratified into postgraduate students and academic staff. A simple random

sampling was then used to select 130 postgraduate students and 20 academic staff, giving a total user sample of 150.

However, the final returned questionnaires formed the basis for analysis. To gain deeper insights, purposive sampling was used to select five members of the library management team for interviews, including the University Librarian and heads of key sections, such as the Systems Unit and Technical Services.

**3.4 Instrument for Data Collection**

Two main instruments were used for data collection:

1. Questionnaire: A structured questionnaire was designed with four sections. Section A collected demographic data. Sections B, C, and D contained closed-ended questions structured on a 4-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree) to address research questions 1, 2, and 3, respectively.

2. Interview Schedule: A semi-structured interview guide was used to collect qualitative data from the management staff to supplement and triangulate the quantitative data from the questionnaires.

**3.5 Validity and Reliability of the Instrument**

The instruments were subjected to face and content validation by two experts in the Department of Library and Information Science, UNIBEN, and one from the Department of Measurement and Evaluation. Their suggestions were used to refine the instruments. A pilot study was conducted with 10 staff and 15 users from a similar library outside the study area. The data from the pilot were analysed using Cronbach's Alpha, which yielded a coefficient of 0.81, indicating a high level of internal consistency and reliability.

**3.6 Method of Data Collection**

Administrative permission was obtained from the University Librarian. The questionnaires were distributed personally by the researcher with the help of two research assistants. For the staff, questionnaires were distributed in their various units. For users, they were administered at the library entrance and reading halls. A total of 50 staff questionnaires and 135 user questionnaires were properly filled and returned, representing response rates of 77% and 90%, respectively. The interviews with management staff were conducted in their offices, audio-recorded with permission, and later transcribed.

**3.7 Method of Data Analysis**

The quantitative data from the questionnaires were analysed using descriptive statistics. Frequency counts, percentages, and mean scores were used to summarise the

responses. The mean score was used for decision-making: a mean score of 2.50 and above was considered as agreement/positive response, while a mean score below 2.50 was considered as disagreement/negative response. The data were presented in tables. The qualitative data from the interviews were analysed thematically based on the research objectives.

## DATA PRESENTATION, ANALYSIS AND DISCUSSION

This chapter presents the analysis of the data collected, organised according to the research questions. It also discusses the key findings in relation to the literature.

### 4.1 Data Presentation and Analysis

4.1.1 Research Question One: What is the level and extent of automation in the cataloguing, circulation, and Online Public Access Catalogue (OPAC) services of the John Harris Library?

*Table 1: Staff Perceptions on the Level of Automation (N=50)*

| S/N | Item Statement | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | The cataloguing module of KOHA is fully functional. | 15 (30%) | 25 (50%) | 8 (16%) | 2 (4%) | 3.06 | Agree |
| 2 | Copying cataloguing from online sources is a common practice. | 20 (40%) | 22 (44%) | 5 (10%) | 3 (6%) | 3.18 | Agree |

| S/N | Item Statement | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|
| 3 | The circulation module effectively manages loans and returns. | 12 (24%) | 28 (56%) | 7 (14%) | 3 (6%) | 2.98 | Agree |
| 4 | The OPAC is accessible from all terminals within the library. | 10 (20%) | 20 (40%) | 15 (30%) | 5 (10%) | 2.70 | Agree |
| 5 | Barcode technology is used for all circulation transactions. | 18 (36%) | 20 (40%) | 10 (20%) | 2 (4%) | 3.08 | Agree |
| | **Grand Mean** | | | | | **2.98** | **Agree** |

**Table 2: User Awareness and Use of Automated Services (N=135)**

| S/N | Item Statement | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | I am aware of the OPAC for searching the library collection. | 50 (37%) | 60 (44.4%) | 20 (14.8%) | 5 (3.7%) | 3.15 | Agree |
| 2 | I find the OPAC easy to use. | 30 (22.2%) | 45 (33.3%) | 45 (33.3%) | 15 (11.1%) | 2.67 | Agree |
| 3 | I use the OPAC frequently instead of the card catalogue. | 55 (40.7%) | 50 (37%) | 25 (18.5%) | 5 (3.7%) | 3.15 | Agree |
| 4 | The self-service options (if any) are efficient. | 10 (7.4%) | 25 (18.5%) | 70 (51.9%) | 30 (22.2%) | 2.11 | Disagree |
| | **Grand Mean** | | | | | **2.77** | **Agree** |

Analysis of RQ1: Data in Table 1 indicate that staff generally agree that automation is well established in core operations (Grand Mean = 2.98). Items 1, 2, 3, and 5 have high

mean scores, confirming the functionality of the KOHA system. However, item 4 (OPAC accessibility) has a lower mean (2.70) and a significant 40% disagreement, suggesting issues with terminal availability or network connectivity. Table 2 shows that users are aware of and use the OPAC (Grand Mean = 2.77). However, the mean for ease of use (2.67) is just above the threshold, and the strong disagreement (74.1%) with the efficiency of self-service options (Item 4) indicates a significant gap in this aspect of automated service delivery.

**4.1.2 Research Question Two: How has networking improved resource sharing and accessibility of electronic resources for users and staff of the John Harris Library?**

**Table 3: Impact of Networking on Resources and Services (N=135 Users & 50 Staff)**

| S/N | Item Statement | Respondents | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | Networking provides reliable access to online databases (e.g., NULC). | Users | 40 (29.6%) | 55 (40.7%) | 30 (22.2%) | 10 (7.4%) | 2.93 | Agree |
| | | Staff | 15 (30%) | 25 (50%) | 8 (16%) | 2 (4%) | 3.06 | Agree |

| S/N | Item Statement | Respondents | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|---|
| 2 | I can access the library's e-resources from outside the library (remotely). | Users | 35 (25.9%) | 50 (37%) | 35 (25.9%) | 15 (11.1%) | 2.78 | Agree |
| | | Staff | 12 (24%) | 20 (40%) | 15 (30%) | 3 (6%) | 2.82 | Agree |
| 3 | Networking has made inter-library loan services faster. | Users | 20 (14.8%) | 45 (33.3%) | 50 (37%) | 20 (14.8%) | 2.48 | Disagree |
| | | Staff | 10 (20%) | 15 (30%) | 20 (40%) | 5 (10%) | 2.60 | Agree |

| S/N | Item Statement | Respondents | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|---|
| 4 | The library's institutional repository is easily accessible via the network. | Users | 25 (18.5%) | 40 (29.6%) | 45 (33.3%) | 25 (18.5%) | 2.48 | Disagree |
| | | Staff | 8 (16%) | 22 (44%) | 16 (32%) | 4 (8%) | 2.68 | Agree |
| | **Grand Mean (Users)** | | | | | | **2.67** | **Agree** |
| | **Grand Mean (Staff)** | | | | | | **2.79** | **Agree** |

Analysis of RQ2: The results in Table 3 show that both users and staff acknowledge the positive impact of networking on accessibility, particularly for online databases and remote access (Grand Means of 2.67 and 2.79, respectively). However, there are clear areas of concern. Both groups show relative dissatisfaction with the speed of inter-library loans (User Mean = 2.48). Users also disagree about the easy accessibility of the institutional

repository (Mean = 2.48). This suggests that while the basic network infrastructure is in place, its application for advanced services like seamless resource sharing and digital repository access needs improvement.

**4.1.3 Research Question Three: What are the major challenges inhibiting the effective implementation and use of automation and networking technologies at the John Harris Library?**

**Table 4: Challenges to Automation and Networking (N=50 Staff)**

| S/N | Challenge Item | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | Unstable electric power supply | 40 (80%) | 10 (20%) | 0 (0%) | 0 (0%) | 3.80 | Agree |
| 2 | Inadequate internet bandwidth/ slow speed | 35 (70%) | 12 (24%) | 3 (6%) | 0 (0%) | 3.64 | Agree |
| 3 | Inadequate funding for system maintenance and upgrades | 30 (60%) | 15 (30%) | 5 (10%) | 0 (0%) | 3.50 | Agree |
| 4 | Lack of continuous training for staff on new technologies | 25 (50%) | 20 (40%) | 5 (10%) | 0 (0%) | 3.40 | Agree |
| 5 | Resistance to change by some staff members | 15 (30%) | 20 (40%) | 10 (20%) | 5 (10%) | 2.90 | Agree |

| S/N | Challenge Item | Strongly Agree | Agree | Disagree | Strongly Disagree | Mean ($\bar{X}$) | Remark |
|---|---|---|---|---|---|---|---|
| 6 | Inadequate number of computers/workstations | 20 (40%) | 18 (36%) | 10 (20%) | 2 (4%) | 3.12 | Agree |
| | **Grand Mean** | | | | | **3.39** | **Agree** |

Analysis of RQ3: Table 4 presents a stark picture of the challenges faced by JHL. All items received very high mean scores, with a Grand Mean of 3.39, indicating strong consensus among staff on these impediments. Unstable power supply (Mean = 3.80) and inadequate internet bandwidth (Mean = 3.64) are the most severe challenges, directly impacting system uptime and the user experience. Funding constraints (Mean = 3.50) and lack of continuous training (Mean = 3.40) are also identified as critical barriers to sustaining and advancing the technological transformation.

**Discussion of Findings**

The findings of this study are discussed in line with the research objectives and supported by relevant literature.

First, on the level of automation, the study confirms that JHL has successfully automated its core housekeeping operations using the KOHA ILS. This finding aligns with the work of Okiki and Asiru (2011), who documented the growing adoption of open-source ILS in Nigerian university libraries as a cost-effective strategy for automation. The high functionality reported in cataloguing and circulation is a testament to this success. However, the lukewarm user response regarding the ease of use of the OPAC and the strong dissatisfaction with self-service options can be explained through the lens of the Technology Acceptance Model (Davis, 1989). The relatively low Perceived Ease of Use (PEOU) for some users suggests a need for more robust user education programmes to improve interaction with the system.

Second, regarding the impact of networking, the study reveals that networking has significantly improved access to electronic resources, validating the assertions of Borgman

(2007) that networking turns libraries into gateways. The ability for remote access is a crucial transformation. However, the negative perception of inter-library loan speed and repository accessibility points to a gap between infrastructure provision and service optimisation. This finding resonates with Atinmo and Jimba (2010), who noted that while consortia like NULC exist, procedural bottlenecks and bandwidth issues often slow down the actual delivery of shared resources. The institutional repository, a key networked service, is not yet perceived as easily accessible, indicating a potential issue with awareness, user interface, or integration.

Third, on the challenges, the study identifies a familiar constellation of problems that corroborate the findings of earlier scholars like Iwhiwhu and Eyekpegha (2009). The crippling effect of unstable power and poor internet connectivity cannot be overstated; they directly undermine the Perceived Usefulness (PU) of the systems, as downtime renders even the most sophisticated technology useless. The issue of inadequate funding and training, as highlighted by Mutula (2008), creates a vicious cycle where systems are acquired but cannot be maintained or fully leveraged due to a lack of financial and human capital. The identification of resistance to change, though less severe, echoes Adebayo's (2005) observation on technophobia, underscoring the human dimension of technological transformation.

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the study, draws conclusions based on the findings, and offers recommendations for policy and practice.

### 5.1 Summary of Findings

The study set out to evaluate the transformation brought by automation and networking at the John Harris Library, UNIBEN. The key findings are summarised as follows:

1. There is a high level of automation in the core technical services of JHL, particularly in cataloguing and circulation using the KOHA ILS. The OPAC is functional and widely used, though its ease of use for some users and the absence of effective self-service options remain areas for improvement.

2. Networking has been a major catalyst for improving information accessibility, enabling reliable access to online databases and remote access to e-resources. However, its potential for enhancing services like inter-library loans and the institutional repository has not been fully realised due to procedural and technical constraints.

3. The library faces severe challenges in sustaining its automated and networked environment. The most critical are an unstable power supply, inadequate internet bandwidth, insufficient funding for maintenance and upgrades, and a lack of continuous training for staff.

**5.2 Conclusion**

Based on the findings of this study, it is concluded that automation and networking have indeed brought about a significant and positive transformation in service delivery at the John Harris Library. The library has successfully transitioned from a predominantly manual system to a technology-driven one, resulting in greater operational efficiency and expanded access to information. The implementation of the KOHA ILS represents a major achievement.

However, this transformation is incomplete and fragile. It is hampered by persistent infrastructural deficits and resource constraints that are characteristic of the Nigerian environment. The full benefits of the technological investments cannot be reaped until these underlying challenges are decisively addressed. The library's journey towards becoming a truly digital and user-centric institution is ongoing, requiring sustained commitment and strategic intervention from both library management and the university administration.

**5.3 Recommendations**

Based on the findings and conclusions, the following recommendations are made:

1. To the University Management and JHL Administration:

o Invest in Alternative Power and Network Infrastructure: The university should prioritise the provision of a stable power source, such as a dedicated solar power system or a more reliable generator plant, for the library. Investment in higher bandwidth internet connectivity is non-negotiable for a modern academic library.

o Increase Funding Allocation: The university should increase the library's annual capital and recurrent budgetary allocation specifically earmarked for ICT. This should cover hardware replacement, software licensing (where applicable), system maintenance, and subscription to more diverse electronic resources.

o Develop an ICT Sustainability Plan: JHL management should develop a 5-year strategic plan for its ICT infrastructure, detailing lifecycle management for computers, network hardware, and the ILS to guide budgeting and prevent obsolescence.

2. To the John Harris Library Management:

o Institutionalise Continuous Staff Development: A mandatory, continuous training programme for all staff on the KOHA system, emerging technologies, and digital literacy skills should be established. This will boost staff confidence and competence, addressing the challenge of resistance and underutilisation of the automated systems.

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