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**STRATEGIES FOR SUSTAINING THE PROVISION OF ELECTRONIC
INFORMATION RESOURCES SERVICES IN UNIVERSITY LIBRARIES
OF NORTH CENTRAL NIGERIA**

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Philosophy (Information Studies) in the School of Social Sciences, College of
Humanities, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

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Professor Stephen Mutula

.....

July 2020

DECLARATION

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ABSTRACT

Electronic Information Resources (EIRs) is trending as a system of information provision and services in libraries, an alternative to the traditional information services system. EIRs presently constitute vital sources of knowledge and information in all university libraries. The 21st century has witnessed a global revolution in university library services via the integration of EIRs, and University libraries in Nigeria are catching up to this trend. They have adopted EIRs services in the selection, subscription registration, registration validation, materials organisation, and dissemination of information resources within the libraries that are currently using EIRs. Thus, the initiatives adopted for the provision of EIRs services focusing on their sustainability by university libraries can enhance the delivery of such services if adequately employed, which is the focus of the present study. The strategies applied for sustainable provision of EIR services in University libraries in Nigeria and their implementation in university libraries in North Central Nigeria remain unknown and under-researched. Therefore, the study aimed to: assess the effectiveness of the provision of EIRs in University libraries in North Central Nigeria; investigate the sustainability of funding sources for EIRs; examine strategic planning and policies implemented to impact the sustainable provision of EIRs; examine the extent to which economic, social, and environmental strategies were employed in sustaining EIRs services in the selected libraries; and identify the challenges faced in the provision of EIRs and how libraries ameliorate these. The research questions were deduced from the research objectives.

The HC Bridge Decision Model, the Triple Bottom Line (TBL) theory, and the conceptual framework were drawn from the model and theory variables that guided the study data collection. The pragmatic paradigm was the theoretical lens applied for the investigation of the research questions. The methodological approach used was a multi-method design. The study population comprises professional librarians, ICT services provider, and Library management team from the four selected University libraries of North Central Nigeria. A quantitative questionnaire was applied to collect data from the service providers, the professional librarians, and

the selected ULs' ICT support staff. The qualitative data was collected through an interview from the library management team, document evaluation on the library funding documents, strategic planning and policy documents, and the observation checklist on the available EIRs from the university web site. The study analyses applied the Statistical Package for Social Science (SPSS) to generate frequency tables and percentages and the charts from quantitative data. Qualitative data from the interview, document analysis, and Observation checklist were analysed using thematic content analysis.

The study results revealed the availability of electronic information resources, services in the surveyed libraries and their effectiveness. Nevertheless, from the management response, there is high dissatisfaction with available EIRs services in some libraries. The study further revealed that government interventions through TETFund sustain EIRs services in higher institutions in Nigeria, significantly impacting EIRs' provision in Nigerian ULs. Despite the government efforts, EIRs services funding was inefficient. The strategic planning implementation has a low impact on providing sustainable EIR services in ULs of North Central. Similarly, the policy guide for EIRs' services provision was also lacking. Besides, the surveyed university libraries had applied various economic, social, and environmental strategies for the sustainable provision of EIRs services. Although inherent challenges hinder the EIRs' management in most surveyed libraries.

Finally, the study recommends applying the library sustainability team for EIRs and services effectiveness and having alternative sources for adequate funds. Besides developing and implementing strategic planning and policy for positive impact on EIRs, further recommendations point out that evaluating more innovations in economic, social, and environmental strategies for sustainable provision of EIRs services, and some identified strategic measures need a thorough review.

DEDICATION

I humbly dedicate this thesis to Almighty God, the cornerstone behind all my success in life.

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LIST OF ABBREVIATIONS

AACR2:	Anglo American Cataloguing Rules, second edition
AGORA:	Access to Global Online Research in Agriculture
ALA:	American Library Association
ARDI:	Access to Research for Development and Innovation
AV:	Audio Visual
CALIS:	China Academic Library and Information System
CD-ROM:	Compact Disc –Read-only Memory
CERNET:	China Education and Research Network
CSU:	California State University
DDA:	Demand-Driven Acquisition
DELNET:	Development Library Network
DMC:	Digital Millennium Copyright Act
E-Book:	Electronic Book
EIFL.net:	Electronic Information for Library Net
EIRs:	Electronic Information Resources
E-Journal:	Electronic Journal
ER:	Electronic Resources
ESD:	Education Sustainability Development
FCT:	Federal Capital Territory
FinELib:	Finnish National Electronic Library
FORSA:	Federal University of Technology Owerri
FUTO:	Forum for Resource Sharing in Astronomy and Astrophysics
HC:	Human Capital
FUTMinna:	Federal University of Technology Minna
HELINET:	Health Science Library and Information Network
HINARI:	The Health InterNetwork Access to Research Initiative
ICT:	Information Communication Technology
IFLA:	International Federation of Library Association and Institution
IJCCR:	International Journal of Contemporary Computer Research

IL:	Information Literacy
INASP:	International Network for the Availability of Scientific Publications
INDEST:	India National Digital Library in Science and Technology
IPR:	Intellectual Property Right
JAIR:	Japanese Institutional Repository Online
JISC:	Joint Information Services Committee
JSTOR:	Journal Storage
LIS:	Library and Information Science
LRCN:	Librarians Registration Council of Nigeria
MM:	Multi-Method
MTN:	Multi Telecommunication Network
NC:	North Central
NCN:	North Central Nigeria
NLA:	National Library Association of Nigeria
NRN:	Nigeria Research Network
NUC:	National University Commission
OA:	Open Access
OARE:	Online Access to Research in the Environment
OCLC:	Online Computer Library Centre
OER:	Open Education Resources
OPAC:	Online Public Access Catalogue
PDA:	Patron Driven Acquisition
PPV:	Pay- Per- View
SANLiC:	South African National Library and Information Consortium
SCANUL –ECS:	Standing Conference of African National and University Library in East Central South Africa
SCIELO:	Scientific Electronic Library Online
SDGs:	Sustainability Development Goals
SLCCA:	Serbian Library Consortium for Coordinated Acquisition
SMART:	Specific Measurable Attainable Relevant and Timely

SPSS:	Statistical Package in Social Science
SWOT:	Strengths, Weaknesses, Opportunities and Threats
TBL:	Triple Bottom Line
TETFund:	Tertiary Education Trust Fund
UK:	United Kingdom
UKZN:	University of KwaZulu-Natal
ULs:	University Libraries
UN-EPA:	United Nations Environmental Protection Agency
UNESCO:	United Nations Educational, Scientific and Cultural Organisation
UniAbuja	University of Abuja
UniIlorin:	University of Ilorin
UniJos:	University of Jos
UNWCED:	United Nations World Commission on Environment and Development
USA:	United States of America
USEPA:	United States Environmental Protection Agency
UTAUT:	Unified Theory of Acceptance and Use of Technology
VLCD:	Virtual Library on Capacity Development
VLE:	Virtual Learning Environment
ACRL:	Association of College and Research Libraries
AFLIA:	Africa Federation of Library and Information
WHO:	World Health Organisation
WIPO:	World Intellectual Property Organisation
WTO:	World Trade Organisation

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CHAPTER ONE

INTRODUCTION

1.1 Background

Electronic information resources (EIRs) have existed over the decades, enabling speedy access to information in all University Libraries (ULs). Hoffman, Franks, and Edson (2015) assert that library users increasingly depend on electronic information resources for learning and research. There is the notion that EIRs are cheaper than print libraries, possibly even free and less challenging (Schaffner 2001). However, this is not true, as most EIRs are under subscription (Charles and Denise, 1996). Therefore, EIRs' sustainability strategy for university libraries is necessary, and the need for ways to sustain EIRs services is compelling.

According to Gould and Gomez (2010), access to information is the primary essence of establishing a library. Historically, the University library's objective is to meet its clientele's information needs (Barton 2018, p.11) by providing current, relevant, and adequate information in appropriate formats. Barton (2018, p.1) indicates that successful university libraries identify strategies that lead to planning and implementing effective information services in all forms. Barton (2018, p.1) further adds that this would 'motivate students to develop critical thinking and engage in creative learning within an information and technology-rich environment'. Consequently, the broader context of the university library must reflect its strategic initiatives for sustaining EIRs services. Such strategic initiatives would include, among others, economic strategies (funding search, grant application, vendor or publishers partnership, and license negotiation), social strategies (planning, policy design and implementation, staff development, information literacy, library social programs), and environmental strategies (green library, information commons, upgrade and update of facilities, adequate electricity).

This study aimed to investigate the strategies adopted in sustaining Electronic Information Resources (EIRs) in North Central University Libraries (ULs) in Nigeria. The research was motivated by the fact that the 21st century has witnessed a global revolution in university library services with EIRs' integration. University libraries in developing countries such as Nigeria and other countries in Africa have equally been affected by this global transition from manual to electronic delivery of information services (Obahiagbon and Otabor, 2012; Gakibayo and Okello-Obura, 2013; Wordofa, 2014; Rabi, Ojukwu and Popoola, 2016; Hossaini, 2017; Sejane, 2017).

The transition from traditional print collections to EIRs must be sustained now and into the future. To achieve this, it requires a strategic drive by information service providers in university libraries in Africa and worldwide. However, the adoption of EIRs by University libraries the world over has not been without challenges, including but not limited to licensing costs, inadequate internet facilities, and funding (Okello-Obura and Magara, 2008). Therefore, the sustainability of EIRs provision is a matter that University libraries must prioritise (Agaba et al., 2004; Bogoro, 2015).

Tivy and O'Hare in Adams (2001) and Vallance et al. (2011) define sustainability as the initiatives or support from the management of a resource into the future for maximum continuous production, with consistency in the production of stock and services. In the context of this study, sustainability refers to the strategic initiatives (economic, social, and environmental) applied by ULs for the consistent, continuous provision of EIRs services for services and library users' satisfaction. The sustainability concept cannot be complete without a thorough examination of the status of services, funding sources, strategic planning, and policy framework (Boudreau and Ramstad, 2005; Saunders, 2015).

The adoption of sustainability strategies for the maintenance and provision of high EIRs services by ULs in North Central Nigeria (NCN) is vital for quality teaching, learning, and research. Therefore, the ULs must be innovative and strategic by

implementing policies and long-term planning tailored to meet their users' needs. University libraries must integrate EIRs' services delivery into the milieu of information services. Therefore, this study is significant as it will investigate the strategies adopted by librarians in sustaining EIRs in Nigerian ULs, particularly in the North Central region.

This chapter further presents the context of the study, which includes: university library roles, EIRs, sustainability concept, the area of study, statement of the problem, the purpose of the study, research objectives, research questions, the originality of the study, the significance of the study, ethical issues, scope, delimitations of the research, definition of critical terms, the structure of the thesis, and the summary of the chapter.

1.2 Context of the study

University libraries are academic libraries situated in the universities to help accomplish institutions' educational goals of teaching and learning, research, and community engagement. According to Reitz (2004), a university library system is established, run, and funded by a university to meet the information and research needs and provide curriculum-based knowledge for its students and staff members. Aguolu (cited in Fabunmi 2004) asserts that the university library is the university's essential organ. Similarly, Fabunmi (2004) argues that any university's intellectual vitality and effectiveness depend mostly on the efficiency of its state-of-the-art library resources. Besides, the world's ranking of institutions (Buela-Casal et al. 2007) expects university libraries, among other things, to access adequate funding and deploy electronic information resources and services (EIRS) to meet the information and research needs of its clientele effectively.

Ifidon (2000) averred that the university library's primary obligation is to promptly provide adequate and effective services, using electronic resources such as licensed or Open Access databases essential to its fulfilment mission. Academic libraries can provide information services to their patrons through library collections development

and subscriptions to databases (license and free resources) (Hamwaalwa et al., 2016). Adegoke (2015) opined that the ULs are central to meeting the statutory academic and research mandates of these institutions as they provide requisite information resources in all forms, including EIRs.

According to Anglo American Cataloguing Rules (AACR2 2005), electronic (information) resources (EIRs) are material (data) that are coded for manipulation by computerised devices. Similarly, Kenchakkanavar (2014, p.97) defines EIRs as ‘information resources that require a computer to access or any electronic device to deliver data. They comprise data sourced from full text-bases, electronic journals, image collections, multimedia products that are numerical, graphical, or time-based’. EIRs may be exclusively commercial but may also be freely available through open access institutional repositories. The EIRs resources are the latest and new information resources in an academic library (Adeniran 2013). They are essential because patrons can access them from any location with an internet connection at any time. For this study, EIRs is a broader term representing the library information collection, which is accessed electronically. These include but are not limited to virtual libraries, institutional repositories, Open Access databases, library web pages, OPACs, KOHA, CD-DVD, e-journals, online theses, e-books (Adeniran 2013).

The provision of EIRs and support services is the sole responsibility of academic librarians in all university libraries. Academic librarians are also responsible for selecting and acquiring EIRs and the organisation, marketing, and promotion of the available resources to the relevant users. Studies by Coughlin, Campbell, and Jansen (2016); Gardner, Juricek, and Xu (2008) affirmed that thousands of e-resources are provided to patrons by ULs to ensure research and information needs of patrons are met.

Evidence from Catalonia University Spain indicated that millions of dollars amounting to 70% of their annual library budget were for maintaining library subscriptions

(Coughlin, Campbell and Jansen 2016). Olle and Borrego (2010, p.223) also asserted that ‘there is a tremendous increase in the amount of EIRs available in ULs over the last two decades’ (due to increased budgetary allocations and availability of resources). While budgetary allocations may be increasing significantly in some developed countries such as Spain, the same cannot be said of Africa, especially Nigeria, where there are weak funding regimes for university libraries (Okello-Obura and Magara 2008). Additionally, though ULs globally have adopted the EIRs, they have equally been affected by licensing costs, poor internet connectivity, and low funding (Okello-Obura and Magara, 2008). For students and staff to be consistently provided with EIRs effectively into the future, there is a need for sustainability of such EIRs services (Agaba et al. 2004; Campbell et al. 2015), calling for strategic measures to achieve this objective.

1.2.1 Adoption of EIRs in Nigeria

Adopting EIRs services in University libraries in Nigeria has posed several challenges (Ugwu and Onyegiri 2013). In recent times, academic librarians’ role has evolved and gained traction, as revealed by the emerging new titles of their jobs because of integrating information and communication technologies, including EIRs in the libraries. Such jobs include but are not limited to electronic resources librarian, electronic resources coordinator, EIRs strategist, e-resource access, and management services librarian, among others (Ruth and Collins 2008, p.137). Others include digital collection manager, information policy and management librarian, and ICT librarian (Bridges, Gascho and Griggs 2010; Johnson et al. 2015).

Madhusudhan (2010, p.492) asserts that one essential way of improving the quality of information services is to support creating, accessing, and using information. Besides providing users with shared space, internet, new technological facilities, and online database (Oakleaf 2010, p.80), there is a need for resources. According to Oakley and Spallek (2012:76), these additional library resources could be open to students and

faculties worldwide. Dadzie (2005) adds that resources are invaluable research tools that balance the print-based resources in an abridged library setting.

Different studies have evaluated EIRs' relevance, usage, and availability (Torma and Vakkari 2004; Al-Rahmi et al. 2018), including challenges. These studies affirmed that they are vital for all academic institutions (Gardner, Juricek and Xu 2008; Zhang, Ye and Lui 2011; Ayoo and Lubega 2014; ElNashar, El-Saidny and Sherif 2014). Zhang et al. (2011), in a study conducted in Chinese university libraries on the usefulness and usage of EIRs, found that EIRs were useful for several reasons, including robust searching ability, speed, suitability, and comprehensiveness. They concluded that understanding EIRs' relevance would enable university libraries to manage these resources more effectively and sustain the EIRs for long-term usage (Zhang et al. 2011).

However, the inadequate management of EIRs services stemmed from economic, social, and environmental forces, which further sparked service dissatisfaction to users (Chowdhury 2013, p.183). A lack of funding for EIRs was affirmed by Ugwu and Onyegiri (2013), with budget cuts hitting ULs and worsening the situation by making their acquisition difficult. Nevertheless, ULs in Nigeria are committed to providing EIRs services to their community members, though with limited funding support and strategic initiatives that include technology innovation, open access, digitization, and consortium (McKnight 2010). Oladokun (2002) asserts that the challenges in providing EIRs services have grown since the inception of ULs in Nigeria due to the economic meltdown. The situation is further exacerbated by a lack of strategic planning and policy on EIRs in some libraries (Saunders 2015).

Scholars like Jantz (2012), Parirokh, Daneshga and Fattahi (2008), Khan and Bhatti (2012), Antonelli (2008), Yan, Hu and Hu (2015), and Armstrong, Edward and Ray (2002) have noted that libraries in United States, Australia, United Kingdom, and Asia applied innovative strategies to enhance and sustain EIRs services.

Electronic Information Resources are integral to efficient information services provision in University libraries (Oakley and Spallek 2012, p.76), which can be possible by implementing strategies from economic, social, and environmental perspectives. Also, through extra funding support (Jantz 2012), partnership and institutional collaboration for acquisition (Beagrie 2003; McKnight 2010), greening the library (Antonelli 2008), literacy skill strategy, open access, subscription negotiation (Parirokh, Daneshga and Fattahi 2008), and NUC virtual collection (Gbaje 2007) more can be achieved in implementing EIRs services in ULs. Beagrie (2003) reported that Australia, France, Netherlands, and the United Kingdom had widely implemented national digital initiatives for information services.

Lozano, Ceulemans and Scarff Seatter (2015) assert that certain specific legislations have forced organisations to adopt sustainability strategies as an essential tool to report their organisations' sustainable practices. Similarly, Kumar et al. (2017) affirmed that several developed nations apply a standard system to report sustainability practices to ensure decision-makers have a solid foundation in their strategic planning and decision making. However, because of various considerations such as scope, place, community/private, goods/services, a specific approach to sustainability that works for one organisation may not have the same results for another (Batista and Francisco 2018). Therefore, most organisations, including ULs, would be required to reengineer and be innovative.

In a study, Batista and Francisco (2018) sought out sustainable practices performed by large corporations using the corporate sustainability index 2012-2016 of the Brazilian stock market. The study revealed that strategic planning considered infrastructure, human capacity, environment, product innovation, organisational management efforts, and deadline set as the baseline for initiatives implementation. They also found that environmental practices required specific environmental legislation to enable contracts with suppliers (Batista and Francisco 2018).

Sroufe (2017) sought to understand how some organizations' management operationalized sustainability in providing services to clients in the USA. The study indicated that these organisations use integration as a system-based approach to sustainability, change management, innovation, and corporate strategy (Sroufe 2017). Another study in India by Deshwal (2015) focused on green human resources as a strategic initiative for corporate bodies to promote sustainable business services. The study found that green human resource management covered two central tenets: environmentally friendly human resource initiatives and knowledge capital preservation. These enhance the industry workforce in being more conscious of their tasks with values (Deshwal 2015).

In the library context of Sri Lanka, Balasooriya (2014) sought to examine the strategic initiatives and developments taking place in educational and research institutes. The study revealed that academic ranking systems influenced the librarians and their institutions to partake in Open Access local collections' practices. Significantly, academics were judiciously submitting their local publications to the institution library repositories to enhance numbers of citations and cyber visibility, thus, positively improving their institution database to comply with international standards. Similarly, the Open University of Sri Lanka initiated authority control in their cataloguing practices for effective information services (Gunasekera 2019). The study showed that the digital library collection of Sri Lanka and the significant contributions of their libraries, NGOs, and non-Librarians led to the strategic collaboration between the research institute and the higher institutions. The Sri Lanka experience could be a viable economic strategy for sustainable EIRs services provisions in similar developing countries, including Nigeria.

1.2.2 Sustainability in e-resource provision

The idea of Sustainability means different things to different disciplines and organisations. According to Tivy and O'Hare (1982), as cited in Brown et al. (1987,

p.714), from the biological context, sustainability is the ‘management of a resource for maximum continuing production, consistent with the maintenance of a constantly renewable stock’. Conway (1985, p.12) defines sustainability as ‘the ability of a system to maintain productivity despite a major disturbance’ from an agricultural perspective. While from a sociological perspective, Pearson (1985), as cited in Geurts (2016, p.17), notes that ‘the core of the idea of sustainability is the concept that current decisions should not damage prospects for maintaining or improving living standards in the future’. Vallance, Perkin and Dixon (2011) define sustainability with an emphasis on maintenance for the future and consistency in production and services.

The World Commission on Environment and Development (WCED), also known as ‘Brundtland Commission’, defined sustainability as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (UNWCED 1987, p.43). According to Gladwin, Kennelly, and Krause (1995), this definition has been accepted globally in managing different organisations and disciplines. For Veiderman (1994, p.5),

sustainability is a participatory process that creates and pursues a vision of a community that respects and makes prudent use of all its resources – natural, human, social, cultural, and scientific. Furthermore, sustainability ensures that present generations attain a high degree of economic security and can realise democracy and popular participation in the control of their communities, as well as maintaining the integrity of the ecological systems upon which all life and all production depend.

Duxbury and Jeannotte (2010, p.2) noted that the report on ‘Our Common Future’ by the United Nations emphasised physical ecology and environmental concerns, which continue to be the cornerstone of sustainable development. There is also increasing emphasis on sustainable approaches to interconnections with social and economic

dimensions of development, thus, opening space for further reflection and exploration of the term sustainability (Kadekodi 1992; Nurse 2006).

Sustainability in organisational management has been influential, supportive, and beneficial in all development dimensions (Ochoa and Pinto 2014). Therefore, it is crucial that university libraries also embrace sustainability in providing EIRs services (Adams et al. 2016). In this regard, Lozano et al. (2013) posited that for universities to become sustainability leaders and change drivers, they must ensure that the needs of present and future generations are contextualised and adequately secured. Sustainability in this study's context means the strategic initiatives applied to provide consistent information services to library users' satisfaction.

1.2.3 Strategies for sustaining EIRs in university libraries

Johnson, Whittington and Scholes (2011, p.3) define strategies as the “long term direction of an organisation”. It is also an initiative applied by organisations like ULs to provide information services that complement cutting-edge technology. Having strategies in place encourages and enhances the organisation's commitment to effective information services delivery. The consortium is a critical strategic framework for EIRs collection development, selection, and acquisition in the library environment. Taole (2008, p.40) asserts that a consortium's essence is ‘to provide information and documentation services among members by harnessing and sharing national and international resources through efficient utilisation of ICTs’. In South Texas, consortium institutions ensure effective EIRs services delivery in universities (Xu 2016). Liebst and Feinmark (2016) revealed that the consortium of private colleges and universities in the USA, known as The Higher Education Data Sharing Consortium (HEDS), was one of the most successful ones. Al-Baridi (2016), in search of a working consortia model for Saudi Arabia national and regional library, stated that the American Library Consortia are highly developed, operational, and are a

significant member of small–medium and large size libraries. Sejane (2017) also states that in Lesotho, LELICO is a registered university library consortium.

Dai, Chen, and Zhang (2017) highlighted a Chinese national commitment to sustainable EIRs services known as Chinese Academic Libraries (CALIS). CALIS is a nationwide resource sharing project among Chinese academic libraries that provides online document and information services to users through the China Education and Research Network (CERNET). Moreover, Ou and Zhou (2016) affirmed that CALIS's objective is to strategically amass distributed scientific data from major universities in China to provide long-term preservation and support of data sharing and reuse.

Several other library consortia exist to enhance the sustainable provision of EIRs. Such consortia include the Colorado Alliance of Research Libraries (CARL), Washington Research Library Consortium (WRLC), Triangle Research Libraries Network (TRLN), and Orbis Cascade Alliance (OCA). The OCA aims to share economic values, services, and infrastructure cost among member libraries (Turner 2014). Jackson (2004), Wiley and Chrzastowski (2005) point out that The Inter-library loan (short term lending, purchase on-demand, and print on demand) is an advanced strategy for facilitating the provision of EIRs and document delivery services. The other approach for sustaining EIRs in libraries is through income generation as an alternative funding source. Income-generating initiatives such as partnerships with charitable organizations, research grant applications, and consultancies (Chaputula and Kanyundo 2014) are becoming common (Eze and Uzoigwe 2013). Other strategies for sustaining EIRs services in libraries include database license negotiation between the library and the vendor (Mapulanga 2013), pay-per-view and open access (Kahn and Underwood 2013; Chunsheng 2014). Many other forms of strategies used to sustain EIRs services are energy consumption control, provision for alternative electricity supply, air-conditioning for EIRs, constantly upgrading computers, continuous system maintenance (green environmental strategies), and staff development and upskilling.

However, in the African context, there is scarce literature expressing such strategies. Most studies revealed poor strategic planning as one issue to sustainable EIRs services in ULs in Nigeria (Auroux et al. 2014; Asogwa, Ugwu and Ugwuanyi 2015), hence the need to examine university libraries' strategies for EIRs services in Nigeria. Nevertheless, some African authors such as Chiware and Mathe (2015) reported Research Data Management (RDM) services from South Africa as a strategy for information professionals. Open Access Initiatives in Zimbabwe (Chisita and Chparausha 2019) and Digital preservative strategy in the academic library of South Africa (Masenya and Ngurube 2019) are some of the few revealed methods for sustainable EIRs in academic libraries in Africa.

1.3 Statement of the problem

University libraries' primary objective is to provide users with adequate, effective, and accurate information (Xu, Kang, Song, and Clark 2015; Fink 2019). For the university libraries to perform this function, substantial financial support from the national government and parent organisations is needed (Gould and Gomez 2010). Increasingly providing EIRs services to clientele has become a significant preoccupation of university libraries; however, EIRs' high cost is an impeding factor, especially in an environment where budget cuts to libraries have taken centre stage. It is exacerbated by the fact that deployment of EIRs services requires robust ICT infrastructure, human resources, technical support and maintenance, a green library environment, stable electricity and internet connection. These are mainly lacking in most university libraries in Africa, including Nigeria (Akinsola, Herselman, and Jacobs 2005; Nkondo et al. 2014).

The requirements mentioned above are significant to sustainable EIRs services. Therefore, ULs must adopt sustainability measures to maintain and secure research collections for future generations and meet institutional objectives. Some of the sustainability measures that ULs have adopted, especially in developed countries, include but are not limited to: consortia initiatives, alternative fundraising strategies,

licensing negotiation with publishers of online resources, pay-per-view strategies, green library, institutional repositories, open access, and more (Ugwu and Onyegiri 2013; Jain 2014; Makori 2015). University libraries in Africa are lagging in these sustainable strategic initiatives compared to their counterparts. It is affirmed that libraries could attain economic sustainability for variety and high-quality EIRs through the business model approach. The approach can be useful in developing world academic libraries.

Nigerian university libraries face numerous challenges in providing EIRs, as shown in LIS literature (Okafor 2011; Akpokodje and Ukwuoma 2016; Rabi, Ojukwu and Popoola 2016; Iroaganachi and Izuagbe 2018). These include but are not limited to depreciating currency against rising EIRs subscription/acquisition costs in dollar currency, insufficient electricity supply, inadequate ICT skills, low funding and budget cuts, and inadequate facilities (Isah 2010; Akpokodje and Ukwuoma 2016). These challenges negatively affect EIRs services in ULs, as attested by Akpokodje and Ukwuoma (2016). Echezona, Okafor and Ukwuoma (2011) indicate that no specific fund is available to sustain EIRs provision in Nigerian university libraries.

Baumgartner and Ebner (2010) observed that the lack of strategic planning, vital for sustainable EIRs services provision, contributes to university libraries' sustainability issues. However, there is limited understanding of the factors hindering sustainable EIRs in university libraries. Also, there is little appreciation of the impact of strategic planning and policy and how to leverage these to enhance sustainable EIRs services in ULs. All successful organisations and institutions like ULs develop and implement strategic planning and procedures to guide decision making and resource mobilisation (Saunders 2015).

The UK, USA, Australia, Germany, and the Netherlands have long commissioned sustainability studies to develop sustainability models for the library. The development and adoption of HINARY, AGORA and other open access (Aronson 2004), eIFL.net (Electronic Information of Library Net) (Hackett 2007), International Network for the

Availability of Scientific Publication (INASP) (INASP 2017), and more were the strategic approaches applied for economic sustainability in libraries. Though these models have worked reasonably in developed countries, they have faced challenges in developing countries because of infrastructure and funding issues, among others. In the Nigerian context, LIS bibliometrics studies by Ani and Okwueze (2017) and Udo-Anyawu (2018) conducted from 2004 to 2014 revealed limited focus on the strategies for sustaining EIRs services in university libraries. Akpokodje and Ukwuoma (2016) underscore the need for ULs to respond to this gap.

Similarly, Tella and Olabooye (2014) undertook a bibliometric study from 2000 to 2012 in a Nigerian LIS environment and found no strategic initiative on EIRs' sustainability. The findings corroborate Onyancha's (2007) that highlight a lack of sustainability studies in Africa in the LIS field. Consequently, Alhaji (2018) argues that professional librarians need to take practical steps in ensuring the implementation of strategic initiatives that sustain electronic information resources in their libraries. In Nigeria, the growing strategic initiatives for sustainable EIRs services in ULs are scarce among Library and Information Science literature.

Therefore, this study aims to address issues regarding sustainable EIRs strategies in selected North Central Nigeria's University libraries. It also seeks to bridge the existing gap in knowledge, for example, a literature harvest on sustainable EIRs services, exploring funding opportunities for sustainable EIRs, strategic planning and policy issues in selected Libraries. The study further examines their applied economic, social and environmental strategies for sustainable EIRs. It is envisaged that the outcomes of the study could inform the EIRs policy development – formulation and improvement – and spur sustainability studies on university libraries.

1.4 Research objectives

The study addresses the following research objectives:

- i. To assess the effectiveness of the provision of EIRs in University libraries in North Central Nigeria.
- ii. To investigate the sustainability of sources of funding for EIRs.
- iii. To examine the strategic planning and policies implemented to impact the sustainable provision of EIRs.
- iv. To examine the extent to which economic, social, and environmental strategies were employed in sustaining EIRs services in selected libraries.
- v. To identify the challenges faced in the provision of EIRs and how libraries ameliorate these.

1.5 Research questions

The following research questions guided the study:

- i. How effective is the provision of EIRs in University libraries in North Central Nigeria (NCN)?
- ii. How sustainable are sources of funding for EIRs?
- iii. What strategies and policies are implemented to ensure the sustainable provision of EIRs?
- iv. To what extent have libraries applied economic, social, and environmental strategies for the sustainable provision of EIRs services?
- v. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

1.6 Assumptions of the study

The study assumes that EIRs' provision in university libraries in North Central Nigeria is not sustainable because of ineffective strategies and policies.

1.7 Significance of the study

The study investigated the strategies employed by selected university libraries in North Central Nigeria to sustain EIRs services. Research of this nature has not been undertaken to date in the area under study, as attested by the results on the bibliographic analysis of LIS studies in Nigeria from 2000 to 2015 (Tella and Olabooye 2014; Ani and Okwueze 2017; Ani, Ngulube and Onyancha 2017; Udo-Anyanwu 2018). This study investigates strategies implemented for sustainable EIRs services in ULs to bridge the gap in the literature. The research contributes to a better understanding of the management approach to sustainable EIRs services in the LIS field. The study provides the framework upon which proper strategic planning and policy can develop to guide the sustainable provision of EIRs services in selected ULs.

Moreover, the study will also develop a strategic sustainability framework for EIRs in university libraries to guide the ULs in designing better strategies for sustaining EIRs' services provision by creating awareness about alternative funding models in ULs. The study may also offer ULs opportunities to review and consider alternative funding models for their libraries to sustain the EIRs services. The theories and methodology in this study can be used in similar and related research.

1.8 Scope of the study

This study covers Federal University Libraries in the North Central region of Nigeria. The states in the North Central geopolitical zone include Benue state, Nasarawa state,

Kogi state, Niger state, Kwara state, Plateau state, and Abuja, known as the Federal Capital Territory of Nigeria.

The North Central geopolitical zone in Nigeria was formerly known as ‘the Middle Belt’. Since 1950, the region played an important role in Nigeria’s politics, economy, agriculture, and Islamic religion expansion (Tyoden 1993; Logams 2004). Two of Nigeria’s major hydroelectric power stations (Kainji Dam and Shiroro Dam) are in this region, specifically in Niger state. The North Central region has diverse tribes and ethnic groups. The most dominant are Hausa, Yoruba, Tiv, Igala, Idoma, Nupe, Kwari, and Gbagyi. Each maintains its respective cultural identity and sovereignty (Ostien 2009, cited in Ostien 2012, p.5).

The Middle Belt was broken up into smaller states under the military regime in 1967, resulting in seven states that include: Kogi, Kwara, Niger, Nassarawa, Benue, Jos, and the Abuja Federal Capital, which is at the centre of the northern region, the heart of the federal capital territory, Abuja (Ostien 2012, pp.5-6). Each of the states in North Central has federal universities funded by the government. These public universities include the Federal University of Technology, Minna, Niger state; University of Ilorin, Ilorin; University of Jos, Plateau state; and the University of Abuja located in the Federal Capital city Gwagwalada, Abuja. These include Federal University Lokoja, Kogi, Federal University Lafia, Nassarawa, and the Federal University of Agriculture Markurdi, Benue. However, only four Universities were selected for this study. Out of the seven mentioned federal universities: The University of Abuja, Federal University of Technology Minna, University of Ilorin and the University of Jos were the old universities that have sustained EIRs services for over a decade.

Furthermore, they measured within the top 25 in universities’ national ranking that qualifies their selection for this study. The Federal University of Lokoja, Federal University of Nassarawa and Benue state University were not selected for this study because they fall below the top 25 ranking range and are new universities in the

region. At the time of the study, the entire population in the four universities surveyed was 126, consisting of 102 librarians, ICT support staff, and 26 management teams.

1.8.1 Overview of federal universities in North Central Nigeria

Nigeria's education system goes back to the Elliot Commission of 1943, culminating in Nigeria's universities' establishment (Otonko 2012). The country has established 43 federal universities across the country, 52 state universities, and 79 private universities, resulting in one hundred and seventy-four (174) universities (Mogaji 2019). The federal universities exclude colleges of education and polytechnics.

Among the 40 federal universities funded by the Nigerian government, four (4) university libraries were selected purposively for this study. The selected libraries include the University of Abuja, the University of Jos, the University of Ilorin, and the Federal University of Technology, Minna. The above university libraries were established several decades ago and have adopted EIRs in delivering information services to their communities.

The University of Ilorin (UniIlorin) was established in 1975 by the Federal military government and has fourteen (14) faculties: Agriculture, Arts, Communication and Information Science, Health Sciences, Education, Engineering & Technology, Environmental Science, Law, Management Science, Pharmaceutical Science, Life Science, Physical Science, Social Science, and Veterinary Medicine (UniIlorin 2017). The University of Ilorin is one of the oldest institutions in North Central Nigeria, with an increasing population of above 30,000 students and 3,040 staff (Akintade 2011). It was ranked 2726th in the world university ranking and 7th out of 255 tertiary institutions in Nigeria (Webometrics, 2019).

Federal University of Technology Minna (FUTMinna) was established in 1983, focusing on technology education and self-reliance in science, engineering, and technology. The university is the only federal institution for science and technology

within the North Central region that produces a science and technology skilled workforce for Nigeria. The institution has 13000 students and 698 staff. It has ten (10) faculties/schools, namely: Faculty of Agriculture and Agricultural Technology; School of Engineering and Engineering Technology; School of Environmental Technology; School of Information and Communication Technology; School Entrepreneurship and Management Technology; School of infrastructure, Process Engineering and Technology; School of Life Sciences; School of Physical Sciences; School of Science and Technology Education; and School of Postgraduate studies (FUTMinna 2017). FUTMinna has a central library and faculty libraries that are automated and comply with the present technology trends (University of Jos 2017). The University was ranked 3257th in the world university ranking and 11th in the local institutional ranking (Webometrics 2019).

The University of Jos was established in November 1971 but commenced its first session in January 1972 at the University of Ibadan extended campus (University of Jos 2017). In October 1975, it was renamed the University of Jos. The University comprises twelve (12) faculties: Faculty of Agriculture; Arts; Health Science; Education; Engineering; Environmental Sciences; Law; Management Sciences; Natural Sciences; Pharmaceutical Sciences; Social Sciences; and Veterinary Medicine) (UniJos 2017). The University of Jos has the most extensive library information common space in northern Nigeria and was the first to adopt electronic information resources in the north-central region (Association of Commonwealth Universities 2017). The institution has collaborated with African Virtual Open Initiatives and Resources (AVOIR) and The Carnegie Corporation (USA) in enhancing the provision of information services and e-learning (Agyeman 2007; Igwe 2013). This collaboration has enabled the institution to provide electronic information resources services in the general library and all the faculty and departmental libraries (Ekerete and Ekanem 2015). The university was ranked 3750th in the world universities ranking and 19th in the local institutional ranking (Webometrics 2019).

Finally, the University of Abuja, popularly known as UniAbuja, was established in 1988 and started operation in 1990. UniAbuja is located in the Federal Capital Territory Gwagwalada with the distance learning school in the Municipality Garki. UniAbuja comprises ten (10) faculties: faculty of Agriculture; Arts; Health Sciences; Education; Management Sciences; Engineering; Law; Social Science; Science and Veterinary Medicine, including a postgraduate school (Uniabuja 2017). According to universities' ranking web, the University of Abuja was 4225th and 24th in the local institutional ranking (Webometrics 2019).

Nigeria's federal government fully funds the universities presented above through the National University Commission (NUC) and the Tertiary Education Trust Fund (TETFund). These two are the Federal Ministry of Education's regulatory bodies and are mandated to regulate the higher education system across Nigeria's six geopolitical zones. The justification for the choice of the four universities is based on the following factors: firstly, one of the university libraries (University of Jos) had implemented some semblance of sustainable EIRs services such as external funding support efforts for the library to sustain EIRs, which is not supported empirically in LIS literature; Secondly, the proximity of the selected institutions to one another and the researcher's familiarity with the north-central region were also contributing factors; finally, the four selected universities were within the 25th top-ranked institutions in Nigeria.

Figures 1.1 and 1.2 illustrate the states within North Central Nigeria and the six geopolitical zones.



Figure 1.1: Map of Nigeria geopolitical zones (Source: Skyscraper City 2011)

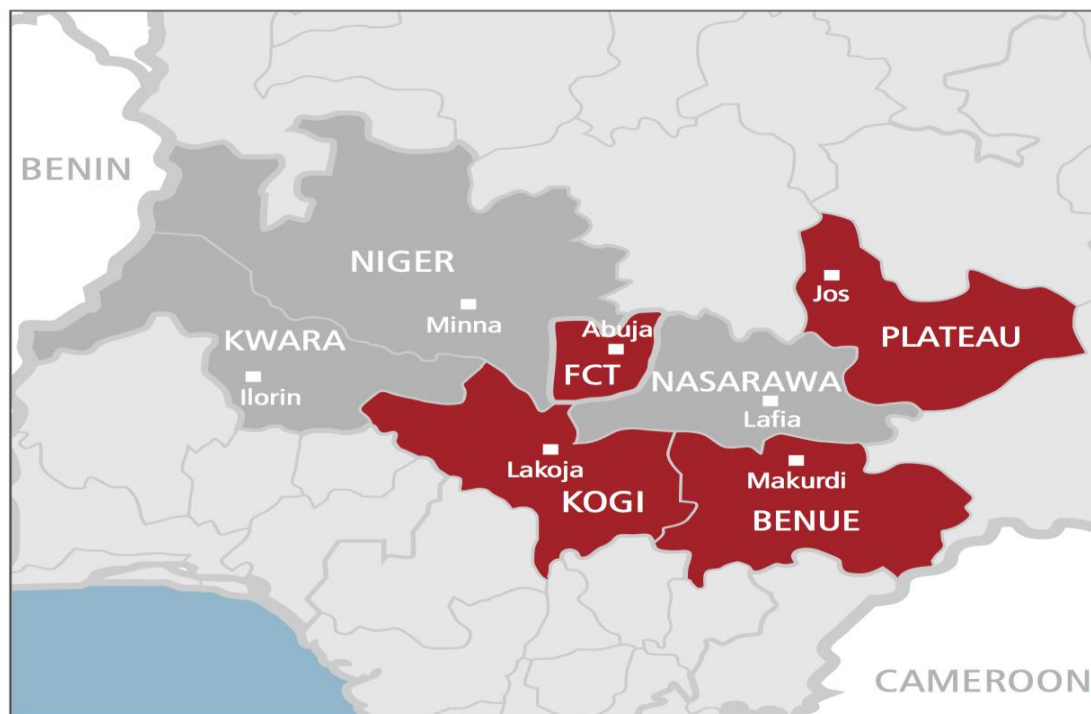


Figure 1.2: Map of North Central Nigeria (Source: Soriola 2018)

1.9 Delimitations of the study

According to Enslin (2014, p.275), limitations are constraints or limits in any research study that are out of researchers' control; for example, financial resources, access to information, and time, capable of redefining the study's scope. Delimitation, on the other hand, is the specific and positive choices a researcher makes when deciding on the scope of a particular research study, such as setting parameters guiding the study, which enhances research, and considering concepts, theories, literature, methods, and others (Enslin 2014, p.276).

The study examined sustainability strategies for sustaining EIRs services in selected university libraries in North Central Nigeria. The choice of the study population was limited to library services providers (library management team, academic librarians, and ICT support staff) who are concerned about designing strategies for sustainability

in their libraries. The study did not extend to cover all the universities in Nigeria because this would be impractical. The study was therefore limited to four universities within the North Central Nigeria region, namely: the University of Abuja (UniAbuja) in the federal capital of Nigeria, the University of Jos (UniJos) in Plateau state, the University of Ilorin (UniIlorin) in Kwara state, and the Federal University of Technology Minna (FUTMinna) in Niger state. The other three Universities (Federal University Lokoja, Benue State University and the Federal University of Nassarawa) in the Northern region are new and may not have reliable documents to aid data collection. Additionally, they all fall below the top 25 of the highly ranked universities under consideration.

Furthermore, the study's limitation lies in the scarcity of empirical literature about strategies for sustaining EIRs in ULs in Nigeria and, indeed, the whole of Africa. Most research on sustainability in general and digital resources, in particular, are from the developed nations and more so from the science disciplines.

1.10 Overview of methodology

This study applies the pragmatic paradigm that guides reviews through an underlying philosophical framework for mixed or multiple method research (Tashakkori and Teddlie 2003). Tashakkori and Teddlie (2003) posit that the ontology of pragmatism proffers that every researcher has their unique personal interpretation of the world. It appears more emphasis is on mixed or multi-methods in methodological pragmatism (Maxcy 2003). Multiple-methods are more compatible with the pragmatic paradigm. Iwata and Hoskins (2020) applied a multi-case study design to examine the management of intellectual capital held by Tanzania's higher learning institutions: strategies and challenges. Baral (2020) used a survey design to explore the perceived effectiveness of information sources in meeting the information needs of rice growers in Nepal under social research's pragmatic paradigm. The study indicated a significant

positive correlation between information variables, education and accessibility to information sources.

The present study used a pragmatic paradigm multi-method design (Morse 2003) because it allowed the researcher to accurately collect, analyse and draw conclusions from the collected data. Multi-method design refers to using more than one data collection technique and applying multiple methods to analyse the data through non-numerical (qualitative) procedures to answer the research question (Mohajan 2018). Multi-Method design is suitable because it combines quantitative and qualitative approaches (Hallebone and Priest 2009; Saunders et al. 2009, p.119).

The study population across all four selected university libraries was 126, which comprised the management team (24), librarians (90) and ICT support staff (12) (see table 4.2). The study sampled all librarians of the four selected university libraries.

The data collected applied multiple instruments such as a questionnaire, interview, document analysis and a checklist. The questionnaire contains closed-ended questions used to collect quantitative data from four selected university librarians. The Interview was used to collect qualitative data from the library management team to address the management enquiry. Document analysis was applied to examine the financial details, strategic planning, and EIRs policies in each respective library under study. Finally, the checklist was used to gather qualitative data on available EIRs and services in the selected libraries.

The multi-method design data analysis was used. This method involves the analysis of the quantitative data that applied descriptive/inferential statistics for concerned variables. The quantitative data was encoded and analysed using the statistical package for social science (SPSS) version 18. This package is commonly used for the descriptive and inferential analysis of data. The qualitative data collected from the interview, document analysis and observation checklist was analysed using thematic content analysis. According to Bernad (2010), thematic content analysis involves

identifying and describing both implicit and explicit ideas in the collected data, that is, themes.

1.11 Definition of key terms

Electronic information resources

The term is commonly referred to as e-resources, which can be defined as any work encoded and made available for access through the use of a computer (Library of Congress 2016, p.2).

Electronic information resource services

Damyanthi (2006) defines EIRs services as librarians' practices that involve organisation, access, distribution, and use of stored knowledge to enhance education objectives, leisure, and other socialisation processes. In more precise terms, EIRs represent the practices and techniques used by librarians and library staff to provide information services such as selection, acquisition, licensing, access, maintenance, usage, evaluation, retention, and de-selection of libraries' electronic information resources (Johnson et al. 2012).

Strategic initiative

The strategic initiative is the innovative approach applied by librarians in sustaining their services. These approaches directly drawn from the library's strategic planning are carefully designed to motivate library user interest in library resources and services (Sreekumar 2012).

Sustainability

The International Institute for Sustainable Development (IISD 1992) defines sustainability as business strategies and practices that meet the enterprise's and its stakeholders' needs today while protecting, sustaining and enhancing the human and natural resources for the future. In contrast, the United States Environmental Protection Agency 2013 in Hecht and Fiksel (2015) defines sustainability as the design and maintenance culture under which humans and nature exist in productive harmony, where the fulfilment of the social, economic and other requirements of present and future generations depend on formative impact. In the present study, sustainability means the economic, social and environmental strategies applied for consistency in providing EIRs services.

University Library (UL)

The term university library is a narrow term for an academic library. A university library is a type of academic library found within universities only. In contrast, the academic library is a broad term for all libraries found in public tertiary institutions such as the university, college of education, polytechnics, research institutes, and other professional institutions (Bakri and Willett 2017).

1.12 Structure of chapters

This thesis is organised into seven chapters, as follows:

Chapter One: Introduction- presents the study's introduction; the context of the study, including the adoption of electronic information resources in Nigeria; sustainability, strategies for sustaining EIRs services in ULs; statement of the problem; research objectives; and research questions. The chapter further covers assumptions of the study, significance of the study, the scope of the study, delimitations, an overview

of the methodology, definitions of key terms, structure of chapters, and the summary of the chapter.

Chapter Two: Theoretical framework - The chapter provides a critical review of the theoretical frameworks grounded on the HC Bridge Decision Model, Triple Bottom Line (TBL) theory, as well as the Unified Theory of Acceptance and Use of Technology (UTAUT) used to guide this study.

Chapter Three: Review of literature - This chapter covers a comprehensive global review of relevant reports, articles and empirical literature in both print and electronic format using the research questions as a guide to identify the gaps and how this study can address these.

Chapter Four: Research methodology - This chapter presents the research methodology covering the pragmatism paradigm, multi-method design, qualitative and quantitative approaches, the study population, sampling procedures, instrument validity and reliability, data collection, data analysis and ethical issues of research.

Chapter Five: Data presentation and analysis - the chapter presents the findings and analysis of quantitative and qualitative data sourced from questionnaires, focused group interview, documents analysis and observation checklist. The research findings, based on the specific questions and conceptual framework of the study and the data analysis, are reported using charts and frequency tables.

Chapter Six: Discussion of findings - discusses the results using extant literature and the theory. The contribution of the study is also presented.

Chapter Seven: Summary, conclusion, and recommendations - covers a summary of the findings, the conclusion of the study and suggestions for further research.

1.13 Summary

This study explores the strategies applied in sustaining EIRs services in ULs of North Central Nigeria. The study is motivated by a limited understanding of alternative economic sources for EIRs, the scarcity of literature on the strategies for sustaining EIRs services. This chapter provided an introduction to the study, which contextualised the university libraries' role based on extant literature. The study also investigated the sustainability strategies adopted by the sampled universities in Nigeria to provide EIRs services in Nigeria. The study was guided by five (5) research questions and limited to four (4) university libraries in North Central Nigeria. The study focuses on addressing the following objectives: to assess effectiveness in providing EIRs in University libraries in North Central Nigeria; investigate the sustainability of sources of funding for EIRs; examine strategic planning and policies implemented to impact the sustainable provision of EIRs; examine the extent to which economic, social and environmental strategies were employed in sustaining EIRs services in selected libraries and identify the challenges faced in providing EIRs and how libraries ameliorate these. The study is deemed significant as it will develop a strategic sustainability framework for EIRs in university libraries. The next chapter presents and discusses the theoretical framework relevant to the sustainability of EIRs.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 Introduction

This chapter's main objective is to provide the underpinning theoretical framework that guides the study on sustainability strategies for electronic information resources in North Central Nigeria's university libraries. The section discusses various theoretical models relevant to the sustainability of electronic information resources in university libraries. The following theories and models are reviewed: HC Bridge Model (Boudreau and Ramstad, 2005), Triple Bottom Line (TBL) theory (Elkington, 1994), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, and Davis, 2003). Denzin (1978) states that triangulating more than one theory helps address complex cross-disciplinary subjects such as sustainability and library services. Ngulube, Mathipa, and Gumbo (2015) also assert that theoretical triangulation enhances the validity of research explanations.

According to Bezuidenhout (2014), a theory is a systematic analysis of the concepts, constructs, and relationships of specific procedures or phenomena in each discipline. Leedy and Ormrod (2013), Littlejohn and Foss (2008) define a theory as an organised set of expectations, concepts, and values that explain phenomena or specific parts of human knowledge. The theoretical framework is a graphic collection of thoughts that piece together the sensation that we choose to scrutinise in research (Bezuidenhout 2014). Green et al. (2015), Grant and Osanloo (2014) noted that theoretical models or frameworks are the structure of theories, philosophies, and ideas that can enhance the management of research processes. Brink, Walt, and Rensburg (2012) assert that a theoretical framework is based on the existing theory's propositional assertion.

The purpose of a theoretical framework in research is to provide a lens through which a problem can be investigated or interrogated (Bezuidenhout 2014). Moreover, a

theoretical framework enables the analysis of the underpinning relationships among concepts by describing the complex phenomenon (Karimi, Zgibor, Piatt, and Socharoentum 2016; Heale and Noble 2019). Polit and Beck (2004) state that theory helps stimulate research and extend knowledge by creating conceptual benchmarks and intellectual directions to scholarly debates. Stacks and Salwen (2009, p.4) state that ‘theory refines our ideas, like a map for exploring uncharted/unexplored territories’.

As indicated by Bezuidenhout (2014), a theoretical framework is used in research to:

- i. Delineate the scope of a study.
- ii. Provide guidelines, principles, and perspectives to examine a topic.
- iii. Identify crucial and relevant variables in an investigation.
- iv. Guide how data can be collected, analysed, and interpreted.
- v. Provide the solution and identify the new essential issue to include in the study.
- vi. Underpin critical research questions studied to improve the phenomenon. (Bezuidenhout 2014, p.55)

The rest of this chapter presents and discusses The Unified Theory of Acceptance and Use of Technology (UTAUT), HC Bridge Decision Model, Triple Bottom Line Theory and Summary of the chapter.

2.2 The Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a recent technology adoption and use theory in Information Systems developed by Venkatesh, Morris, Davis, and Davis (2003). The UTAUT model attempts to explain human factors that influence usage behaviours regarding the adoption and use of information technology. The theory proposes four essential constructs: effort expectancy, performance expectancy, social factors, and facilitating conditions. These four are the

independent variables. The UTAUT is founded on eight (8) theory and models, namely: Theory of the Diffusion of Innovation (DOI) (Rogers 1995), the Motivational Model (MM) by Davis, Bagozzi and Warshaw (1992), the Model of PC Utilisation (MPCU) by Thompson et al. (1991), and Social Cognitive Theory (SCT) by Bandura (1986). Other theories merged to form the UTAUT include the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975), the Theory of Planned Behaviour (TPB) by Ajzen in 1991, and the Technology Acceptance Model (TAM) by Davis, Bagozzi, and Warshaw (1989). UTAUT is, therefore, robust and economical.

UTAUT also presents the dependent variables of age, behavioural intention, usage, gender, the voluntariness of use, and experience (Venkatesh et al. 2003; Mohamadali and Garibaldi 2010, p.393). The model is useful for understanding users (Wu and Wu 2018), predicting the use of technology (Chen, Butler, Guo, and George 2019), understanding information systems users' intention (Lie, Maimaitijiang, GU, and Zhong 2019), and understanding technology adoption (Charalabidis, Zuiderwijk, and Alexopoulos et al. 2018).

The development of UTAUT brought an alternative view on user and innovation acceptance (Venkatech et al. 2003). It aimed at explaining a user's intention to use the EIRs and continuous usage behaviour. UTAUT has been applied successfully in many studies that investigated the e-resources adoption, librarian acceptance of innovation, EIR services, and behavioural intention to utilise EIRs (Venkatesh, Thong, and Xu 2013; Awwad and Almjali 2015; Zainab, Kiran, Karim, and Sukmawati 2018).

Sejane (2017) asserts that UTAUT has been applied variously to address access and use of e-resources because it has a comprehensive gamut of constructs covering a broad scope of technology acceptance and use, as shown in figure 2.1.

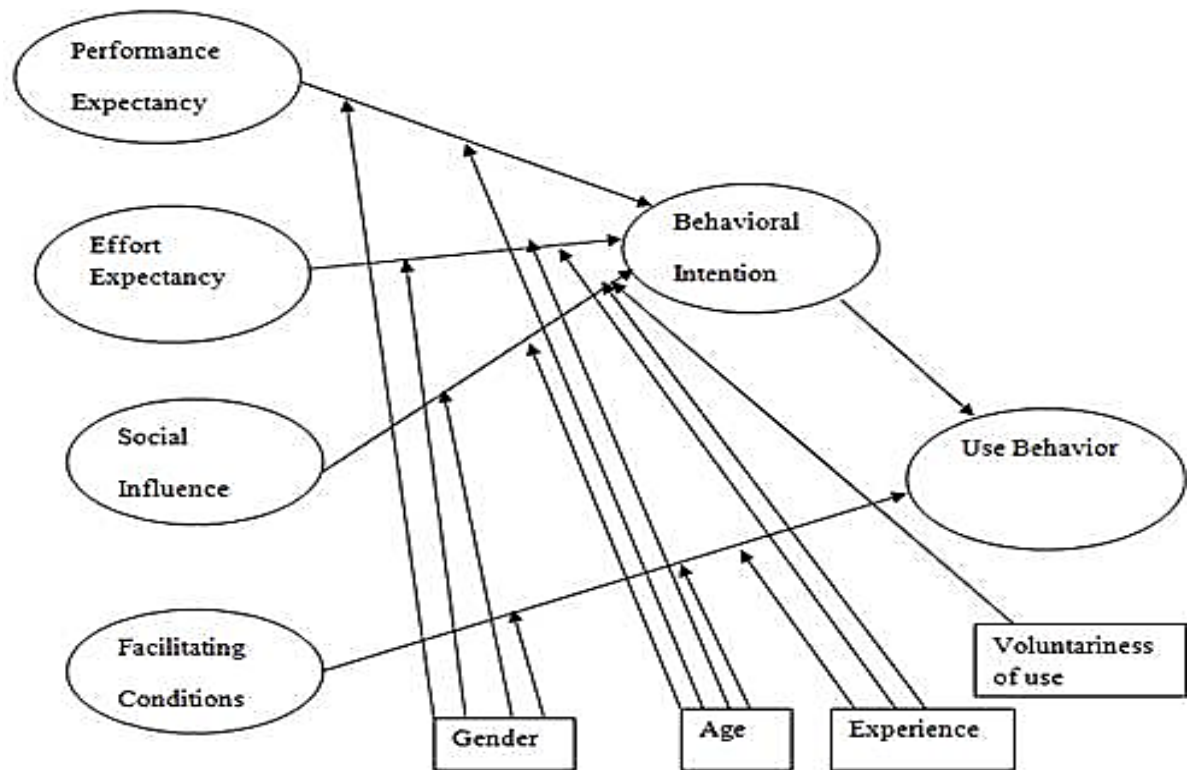


Figure 2.1: Unified Technology Acceptance and Use of Technology Model (UTAUT) (Source: Venkatesh et al. 2003)

The Facilitating Condition (FC) refers to the degree to which the individual believes that technical infrastructure and the organisation will support the services. The Facilitating Condition is the direct determinant factor for user behaviour, while experience and age moderate behavioural intention. The organisational facilities and services are the determining factor in using resources (Swain and Panda 2009; Madhusudhan 2010; Habiba and Chowdhury 2012).

Effort Expectancy (EE) is the measure of the degree of ease associated with system use (Venkatesh et al. 2003). According to Chao (2019), Effort Expectancy is a direct determinant of behavioural intention and is assumed to influence behavioural intention by moderating factors of gender, age, and experience. Indirectly, it further affects user behaviour.

Performance Expectancy (PE) ‘measures the degree to which an individual believes that using the system will help him or her to attain gains in job performance’ (Venkatesh et al. 2003). Performance expectancy is assumed to moderate the effect of behavioural intention by gender and age.

Social Influence (SI) construct measures the degree to which the individual perceives others to believe they should use the new system (Venkatesh et al. 2003). It is hypothesised to moderate the influence on the behavioural intention by gender and age, experience, and the system’s volunteers.

UTAUT has been applied by various educational institutions, including the library and researchers, to respond to critical issues such as users’ attitudes towards technology acceptance. Researchers have integrated UTAUT with other theoretical models to study technology acceptance and use and related issues (Venkatesh, Thong, and Xu 2013). Zainab, Kiran, Karim, and Sukmawati (2018) adapted the UTAUT model to examine the librarian’s acceptance of radio-frequency identification-based library management systems (RFID-LMS) with the use of the multiple regression method. However, acceptance and use of technology are not limited to UTAUT construct determinants, as the sustainable and effective provision of resources can also influence technology acceptance and usage. UTAUT was not adopted to underpin this study. It is mostly used in studies that focus on technology acceptance that includes electronic information resources acceptance. In contrast, current research focuses on strategies for sustaining electronic information resources provision in university libraries.

2.3 HC Bridge Decision Model

Using three independent analysis levels, Boudreau and Ramstad (2005) developed the HC Bridge decision framework to represent decisions on efficiency, effectiveness, and impact. The Bridge framework uses a bridge metaphor that serves as a link between business investment in human resources and a firm’s ability to achieve sustainable business practices (Piwowarczyk, Ottl, Lauer, and Kuretzky 2005). The HC Bridge

Framework focuses on human capital. March and Gerald (1995) and Huber (1990) posit that effectiveness, efficiency, and impact are critical to managing services and the acceptance of services' value. The Bridge framework is applied generally to understand library management's strategic approaches in sustaining electronic information resources and services (Boudreau and Ramstad 2004). The major three anchor points: Impact, effectiveness, and efficiency, are illustrated in figure 2.2 below.

HC BRIDGE™ FRAMEWORK

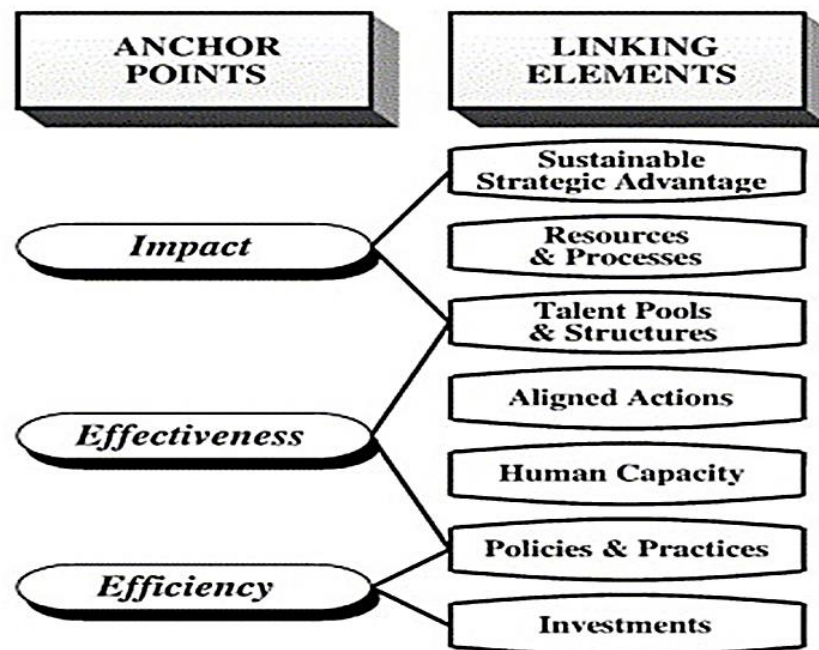


Figure 2.2: The HC bridge decision framework (Source: Boudreau and Ramstad 2005)

The *impact* construct refers to how the organisation applies its talent pools and structure to achieve strategic goals. According to Boudreau and Ramstad (2005), strategic success in any organisation requires well-articulated strategies.

Effectiveness refers to the outcome of human resources policies and practices. Such is dependent on the combination of capability, opportunity, and motivation.

Effectiveness is also associated with the sustainability of success, determined by how human capacity or practices influence organisational productivity by aligning the action beyond traditional job and performance requirements. The notion of effectiveness also refers to exercising one's talent in a financially constrained working environment to achieve the desired success by individuals who have been trained and given incentives for this purpose (Boudreau and Ramstad 2005). Finally, the construct captures how programs and practices affect talent and organisation pools (Boudreau and Ramstad 2005).

According to Boudreau and Ramstad (2005), the Efficiency construct in the HC Bridge framework focuses on the resources used to deliver services (policies and investment). It also emphasises approaches applied to provide HR (human resources) practices and reveals how social and material investments improve agenda implementation in an organisation. According to Boudreau and Ramstad, typical efficiency indicators include the cost of funds (finance) and resource mobilisation policy and its application (policy and practices). When applied to EIRs' sustainability, efficiency focuses on the question, 'how efficient is the funding source (investment) to sustain EIR services?' Therefore, in this study, efficiency explores the funding sources to provide EIR services sustainably.

Boudreau and Ramstad's (2005a) HC Bridge Decision model has brought to light the management role in sustainable services for all organisations. Increasingly, many organisations, including libraries, are searching for models that can be applied sustainably to bring better financial results, keep organisations competitive in a market, and provide ways for effective delivery of services (Chintapalati 2013; Goldsmith 2013; Muratovic 2013). In this regard, Boudreau and Ramstad (2005b) assert that the human resources function should embrace sustainability not just for organisational effectiveness and long-term economic benefit but also for ethical reasons. On the other hand, Barney (1995) argues that a comprehensive understanding of the external forces' critical evaluation and the organisational internal strength and

weaknesses are the pathways to sustainable organisations. Moreover, domestic corporate or internal resources that are physical, financial, human, and organisational are vital in delivering services to end-users (Barney 1995). Of the internal resources, the human resource provides the potential to design and sustain competitive advantage leading to long-term sustainability (Carbery, Garavan and Sheehan 2014). Therefore, the HC Bridge Decision Model is applied in this study to measure EIRs services' sustainability in university libraries (i.e. effectiveness). The HC Bridge Decision model/framework is also used here to measure the efficiency of the funding sources for EIRs in a financially sustainable way.

The model is further used to understand the impact of strategic planning and policy implementation in the university libraries. This study adopts the three HC Bridge Decision Model variables to develop the EIRs' sustainability framework for ULs, including effectiveness of available resources, efficient funding for EIRs, strategic planning and policy implementation impact on EIRs, economic, social, and environmental strategies. The use of the above model would pioneer or complement the limited models in the field of LIS. Chowdhury (2013, p.605) developed the digital information services sustainability model of the three tenets: economic, social, and environmental sustainability. To Chowdhury (2013:605-606), the central objective of digital information services' economic sustainability is to facilitate affordable and improved access to information resources. Social sustainability guarantees access to unlimited information resources, and environmental sustainability decreases environmental challenges on information access. The LIS discipline's sustainability drive is gaining significant traction because libraries are challenged to defend their relevance in justifying financial support from their parent organisations in an environment of continuing budgetary cuts (Hamilton 2004, p.392).

2.4 Triple Bottom Line Theory

There are three tenets to the Triple Bottom Line Theory (TBL), namely: economic, social, and environmental, used to investigate the strategies applied in sustaining EIRs services in ULs of Nigeria. These are necessary given that information services fail in the three areas in the university libraries in Nigeria.

The economic aspect of TBL refers to economic sustainability within the environment, unlike the traditional system that encompasses only the financial benefits. Moreover, the triple bottom line directly links to the acquisition, purchase negotiation strategies, collaboration, and procurement. The Johannesburg Stock Exchange (2005, p.1) states that economic sustainability aims to determine if the organisations or business entities are for long-term sustainability rather than only attending to the present. In contrast, the Social Bottom Line (SBL) aims to profit from the human capital perspective (Basar 2018, p.184). In other words, it shows the sets of societal values. This valuation depends on organisational justice, human resources activities, and commitments (Basar 2018). Furthermore, SBL is linked to social movements that enhance patronage and satisfactory information dissemination, such as skill acquisition, user training, social media services, marketing, and other social strategies for sustaining EIRs services. Additionally, the social element (the people) of TBL investigates the human social impact, employee welfare, regulations, community services, and supplies; the economic factor is concerned with the profit, while the environmental element (the planet) evaluates the ecological impact, facilities, and shared space.

Finally, the Environmental Bottom Line encompasses all environmental dimensions such as waste, energy use linked to architectural, technological hardware, and all facilitating EIRs instruments such as air-conditioner, internet, computers, green information common space, electricity, and others. Centre for Sustainable Organisations (2011) noted that environmental sustainability ensures low negative impacts on the environment.

Elkington (1994) coined the word Triple Bottom Line in a quest to advance sustainability management in a business organisation. According to Savitz (2006), The Triple Bottom Line captures the essence of sustainability by measuring the impact of an organisation's activities on the world. It includes both profitability and shareholder values and its social, human, and environmental capital. Moodley (2015, p.41) defined the "bottom line" as "the profit or net income that is obtained after expenditures deducted from revenue and is normally the last line of the income statement and therefore referred to as the 'bottom line'. The TBL was designed in the 1990s to measure organisational performance integrating three perspectives (economic, social and environmental) rather than the traditional financial approach (Slaper and Hall 2011).

Elkington (1994) developed the Triple Bottom Line theory for organisational sustainability advancement. Triple Bottom Line is an accounting framework with three variables (economic, social, and environmental), also known as 3BL. TBL is a management tool to enhance cooperative work (Spreckley 2015). Elkington (2018) affirmed that the original idea of TBL was to encourage businesses to manage the broader economic, environmental, and social impacts of their operations. The social, economic, and environmental measurement is an 'objective accounting procedure that enables social enterprises to establish social and environmental values, plans, and criteria against which they can measure performance alongside their financial measurement' (Spreckley 2015, p.27). Friedman (2015) argued that social responsibility unfavourably affects an organisation's financial return; thus, the valuation of organisational output should be predicated exclusively on the triple bottom line of economic, social, and environmental impacts.

The TBL, according to Slaper and Hall (2011, p.1), is a vital reporting tool to support sustainability goals. Therefore, this study is hinged on the need for ULs in Nigeria to implement strategies to enhance EIRs' provision sustainably. In this regard, Henriques and Richardson's (2013, p.27) notion of sustainability as a broad discipline that

encompasses corporate boundaries of responsibility and its mechanisms beholds ULs to give pledges to provide ‘sustainable services’ to its patrons as it is their professional responsibility. The provision of information services (such as EIRs) in university libraries need not be overemphasised. Arowoshegbe et al. (2016) asserted sustainability is the dominant approach to examining organisational imbalances in the natural system, which can adversely affect the economic system and human quality of life if not addressed. Arowoshegbe et al. (2016, p.88) therefore underscore the adoption of TBL in the pursuit of social, economic, and environmental sustainability, asserting that the struggle to retain all resources possible for future generations, utilising enough to survive today, must be part of the evolutionary process into sustainability.

The illustration in Figure 2.3 demonstrates the intersection of the three segments of the TBL model.

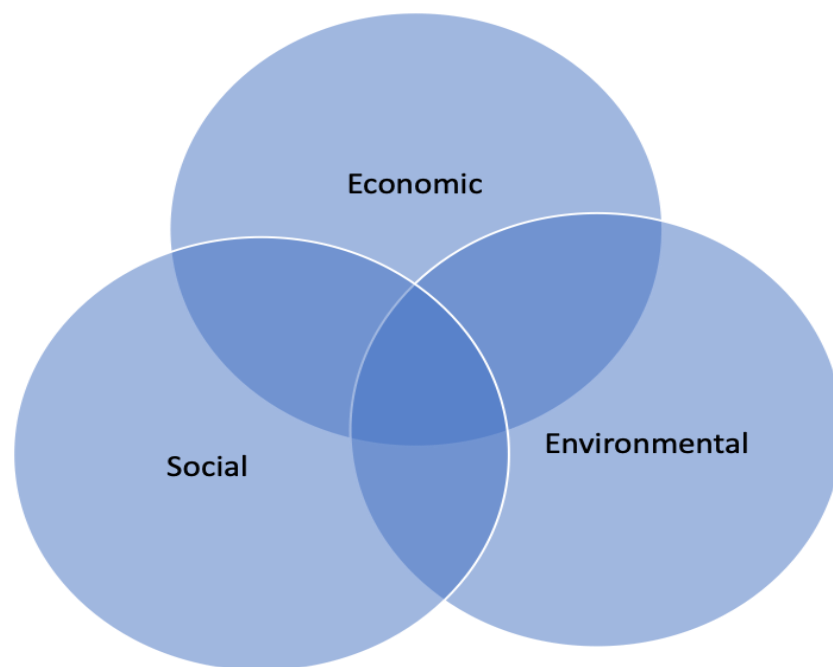


Figure 2.3: TBL elements of sustainability (Source: Barbier 1987)

The interdependence of the three forms of sustainable tenets cannot be overemphasised. Elkington (1994, p.91) pointed out that ‘sustainability development involves the simultaneous pursuit of economic prosperity, environmental quality, and social equity’. Elkington (1999) discouraged a single financial bottom line and instead argued that organisations aiming for sustainability should advance TBL. Group of 100 (2003) support the idea that financial performance reporting must incorporate social and environmental bottom lines. Such financial reporting would help identify common risks from the economic, social, and environmental perspectives and address them through managing strategic approaches.

According to Raza (2018), TBL measurement requires an organisation to broaden conservative economic performance measurement and reporting to incorporate measurement outcome reporting of social and environmental performance. Slaper and Hall (2011) also aver that most businesses globally are compelled to implement TBL scorecards for long-term profitability. They added that collaboration and partnership make good business sense, especially with a non-profit organisation for economic prosperity goals, social wellbeing, and environmental protection (Nancy et al. 2008).

Norman and MacDonald (2003) noted that organisations aiming to improve sustainability would monitor and measure their social performance impact for a long-term profit with the TBL measurement approach. Moodley (2015) added that TBL reporting enhances the improvement and maintenance of ethical organisational values through legislative compliance and commitment to the community.

Most advanced nations are promoting and integrating the TBL into their administrative services. These countries include Australia, Britain, France, Japan, Canada, New Zealand, South Africa, Switzerland, the United States of America, and Germany (Centre for Promoting Idea) (Turner 2014, p.35).

The current study, therefore, attaches great importance to the TBL model. The economic bottom line dimension of sustainability emphasises the financial impact on

the system (i.e., the university library); this is because the funding sources' efficiency is central to the sustainability of EIRs services in the ULs. In this current study, the Social Bottom Line emphasises the organisation's or business entity's social practices (i.e. ULs). The performances of organisations from the social dimension can be attributed to social investment (Luo et al. 2015, p.133). That means that social returns reported from the libraries directly or indirectly have an economic impact as well. Luo et al. (2015), who support the argument, observed a significant link between the financial implications of investment in organisations and corporate social performance. Therefore, as organisation units, the library can be positively or negatively impacted by the economic bottom line.

Cooper (2017, p.1) asserts that 'in a business environment characterised by its perpetual state of flux, the ability to recognise and react to global forces becomes paramount'. ULs must continuously scan the environment to pick out the opportunities and also threats. Finally, the environmental bottom line focuses on reporting the measurement of space, technological facilities, and more. For ULs to deliver efficient and effective EIRs services, attention must be on technology, green space, computer facilities, alternative electricity supply, and others. If the necessary EIRs service facilities are compromised, EIR services' social and economic impact could be undermined.

The use of TBL to underpin the current study is not without precedent. Many studies in different fields have used the TBL model to underpin the research of various phenomena. Tatari and Kucukvar (2013) examined USA bureau tables to determine the impact of environmental, social, and economic sustainability in the USA's construction sector. The study revealed that multi-family structures and residential permanent single had the highest environmental, social, and economic impact than other construction sectors (Tatari and Kucukvar 2013).

In a study, Basar (2018) examined corporates' interdependency in environments they operate using TBL. The study showed that various factors contributed to the success of the organisations. These factors included stature, the public, purchase, and investor confidence. Moreover, economic efficiency was identified as a critical factor in targeting sustainability. Based on Basar's study, an approach was developed to enhance profit evaluation, which facilitated the indirect sustainability of services because of the assessment (Basar 2018).

Ekwueme, Egbunike, and Onyali (2013) examined the essential components of a successful sustainability strategy using TBL by sampling the corporate managers, employees, consumers, and investors in Nigeria. They found sustainability reporting to be one of the best approaches to report organisational practices and performance. The study further found that there is a positive relationship between sustainability reporting and organisational performance.

Moodley (2015) examined the chemical manufacturing organisation in South Africa using TBL. The study revealed that ecological expenditure contributes to high production cost, erodes the organisation's profits, and threatens to decrease the bottom line if not sustained. The study further revealed that amalgamating the chemical manufacturing sector of South Africa into a single management accounting system enhanced the sustainability services of the chemical sector. In the quest to identify Rwanda's organisational reporting system compared to international standards using TBL, Ntukabumwe (2009) revealed that even though companies generated reports annually, they do not comply with the global reporting system. This finding was attributed to the lack of knowledge or skills for report preparation and presentation and the accounting board's weak constitution, lack of sound regulation for the profession, and inadequate skilled human capital.

Isaac (2017), in a case study at the University of Nairobi, Kenya, applied TBL theory to examine the sustainable provision of digital information services. The study

gathered data from the library, ICT, Digital repository, E-resources staff, and postgraduate students. The analysed data revealed that respondents were aware of the digital information resources and services established from the case study and that their staff members were not aware of environmental sustainability issues (Isaac 2017). The study recommends the formulation of strategies to enhance the social responsibility of digital information resources and services.

2.5 Sustainable EIRs services provision conceptual framework

Although the theory and models discussed in this chapter strongly support the investigation of EIRs services' sustainability strategies, the variables were purposively selected to develop a more suitable framework for the sustainability of EIRs services in ULs. Figure 2.4 illustrates the conceptual framework or research model for this study.

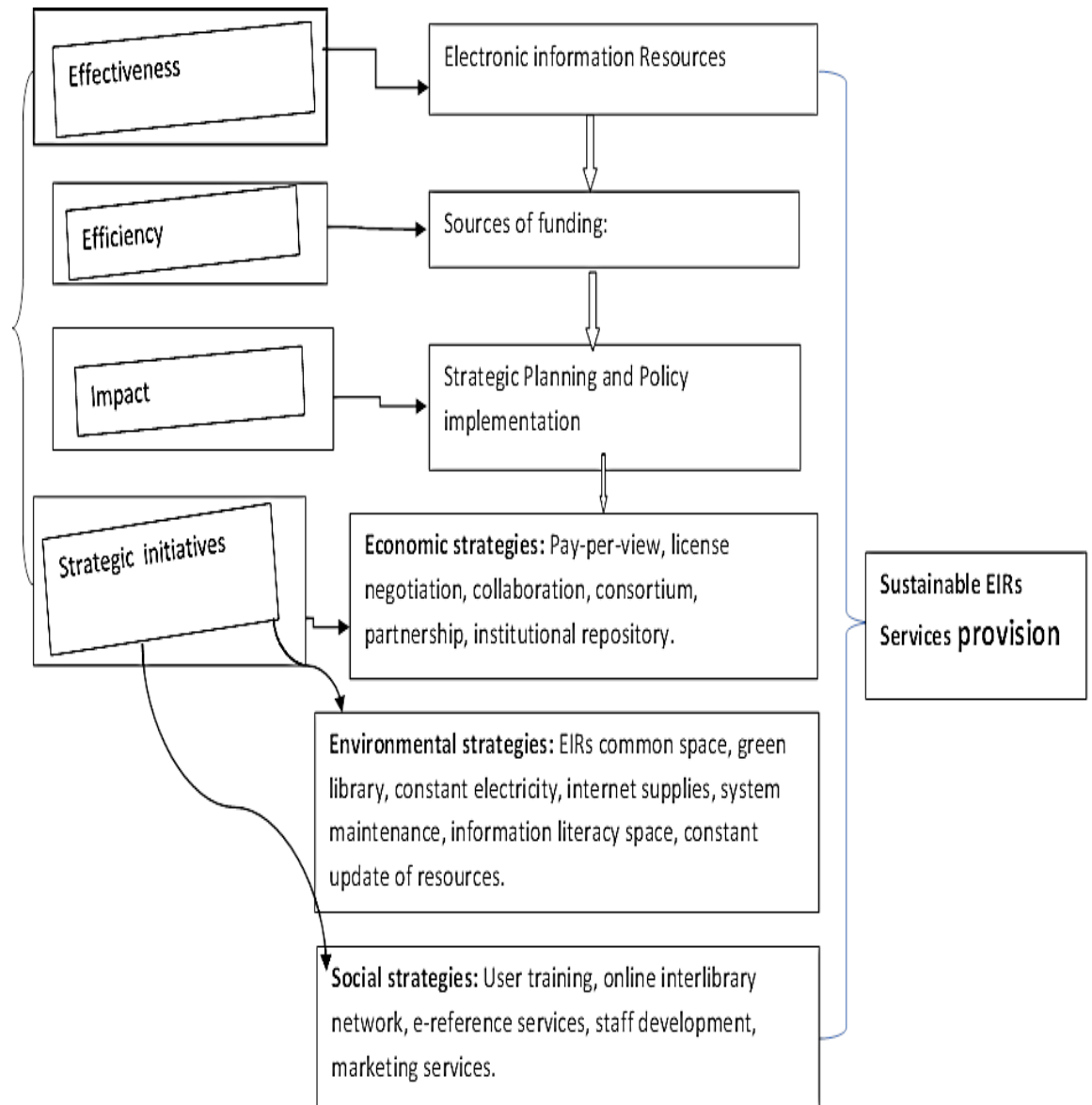


Figure 2.4: Strategic sustainability framework (Source: study)

The variables in the conceptual framework illustrated above are used as the variables to explore the influencing factors of sustainability of EIRs services in ULs.

A conceptual framework is a structure that the researcher believes can best explain the phenomenon's natural progression under study (Camp 2001). It links with the concepts of empirical studies based on previous theories used in promoting and

systemising the researcher's knowledge (Peshkin 1993). The framework facilitates an understanding of a network of ideas in the strategic sustainability of library services. This framework adopted the constructs of other theories, such as the HC Bridge used in this study.

Effectiveness is the degree to which the available electronic information resources effectively provide information services to community users. Being effective is about getting the right resources to sustain library information services (Saxton, Naumer and Fisher 2007); this highlights that internet connectivity availability does not indicate the effectiveness of electronic information resources. Therefore, in discussing sustainable services, the study needs to examine the university library EIRs' status to ascertain their availability and effectiveness.

Efficiency is the degree to which the libraries perform to sustain the provision of EIRs. Considering the high cost of e-journals and databases used by university libraries, according to Shija (2009), it is crucial to understand the strength of the funds available for sustainable EIRs provision. Although advocacies for open access are increasing spontaneously, it is clear that libraries cannot do without subscriptions to paid EIRs; hence, the need for sufficient funds for the provision of EIRs. The funds should sustain the provision of EIRs, thus, need to be consistent and efficient.

The impact is the degree to which the strategic policies for sustaining EIRs implementation in university libraries positively influence EIRs services' sustainable provision. Policy and strategic planning implementation directly affect the viability and sustainable services in any given organisation (Bryson, 2018), such as university libraries. The university libraries need to maximise their policy and planning implementation to enhance library information services' performance and achieve their goals and objectives. However, it will be challenging to sustain EIRs services without well-structured planning and policy implementation.

Strategic initiatives: this is the degree to which the library management apply various strategies in sustaining EIRs services in the libraries. A strategic initiative is an investment in information resources used to accomplish the library objectives, such as providing EIRs services involving the library economic, social, and environmental initiatives (Isaac, 2017). The economic strategies include alternative funding sources such as grants application, pay-per-view, license negotiation, collaboration, consortium, partnership, and institutional repository. The social strategies which improve the dissemination of information services via EIRs include information literacy training for librarians and the clients, online inter-library network, e-reference services, staff development, and marketing services. Lastly, environmental initiatives of EIRs common space include a green library, constant electricity, internet supplies, system maintenance, info literacy space, and continuous update of resources.

The current study combined the HC and TBL theories for convenience based on their advantages or benefits derived from the constructs of the adopted theories:

- i. Convergence claim: The measurement of social performance is a necessary step towards its improvement for firms, which makes them more profitable in the long-run;
- ii. Strong social-obligation Claim: Firms must maximise or improve their social bottom line. Their net positive social impact and accurate measurement is necessary to judge how well they have fulfilled this obligation;
- iii. Transparency claim: The firms have obligations to stakeholders to disclose information about their performance (Ekwueme, Egbunike, and Onyali 2013).

The Triple Bottom Line enables university librarians to effectively manage EIRs by developing and reporting the economic, social, and environmental strategies that facilitate their EIRs services.

The HC Bridge theory was also considered suitable for this study based on crucial aspects such as its effectiveness, efficiency and impact. The benefits are:

- i. Attracting and retaining critical skills and talent for achieving targets;
- ii. Training and development interventions to facilitate skills and knowledge acquisition in talent pools;
- iii. Managing talent pipelines to enable succession planning;
- iv. Establishing and managing performance management systems. (Magau and Roodt 2010)

2.6 Summary

This chapter reviewed HC Bridge Model by Boudreau and Ramstad (2005), Triple Bottom Line (TBL) theory by Elkington (1994) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh Morris, Davis and Davis (2003). The HC Bridge Model and Triple Bottom Line were relevant and applicable in the current study, which focuses on sustainable EIRs services. Constructs from the selected theory and model (Economic, social, environmental sustainability, effectiveness, efficiency, impact) were useful variables in formulating the research questions and research instruments, reviewing the literature in this study. The next chapter presents a review of the literature.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter explores the existing literature on electronic information resources and services, focusing on the sustainability of such resources in university libraries. The literature is reviewed in line with the research objectives, which are: to assess the effectiveness of the provision of EIRs in University libraries in North Central Nigeria; investigate the sustainability of sources of funding for EIRs; examine strategic planning and policies implemented to impact the sustainable provision of EIRs; examine the extent to which economic, social, and environmental strategies were employed in sustaining EIRs services in selected libraries; identify the challenges faced in the provision of EIRs and how libraries ameliorate these.

A literature review provides a foundation for a study whereby researchers objectively critique, infer, debate, summarise, and make conclusions based on the systematic search (Sparbel and Anderson 2000; Torraco 2005; LoBiondo-Wood and Haber 2014). According to Adogbo and Ojo (2002, p.35), a literature review examines all previously published and unpublished contributions within a field of what is known while indicating the gap to be filled by the current study. Nwabueze (2009, p.44) argues that the essence of a literature review is ‘to reveal the scholarship status and access the scholars’ contributions towards knowledge progression in the discipline’. Furthermore, Iwuchukwu (2016) posited that conducting a literature review is one of the most critical processes in the entire research procedure. The literature helps the researcher situate the study against previously conducted studies to ground the work theoretically while identifying gaps in the literature.

Similarly, Mugenda and Mugenda (2003) view the literature review as the act of locating, reading, and evaluating the findings of past studies by the author of current

research in an attempt to shape their opinion. A literature review links the present investigation to prior research and helps the researcher determine the study's significance within the broader field (Sheppard and Young 2006; Gravetter and Forzano 2018). Therefore, the literature review enables the researcher to objectively critique, infer and debate, summarise, and make conclusions based on the systematic search, categorisation, and thematic analysis of past qualitative and quantitative research studies (Sparbel and Anderson 2000; Torraco, 2005; LoBiondo-Wood and Haber 2014).

The literature reviewed in this study is derived from monographs, textbooks, scholarly journals, non-empirical works, conference proceedings, peer-reviewed books, abstracts/essays, research syntheses, and major-related databases such as ProQuest, Social Science Citation Index, Emerald, and Google Scholar. The geographic coverage of the review is extensive as it includes both national and international research. The literature covers the concept of sustainability; status of available resources in university libraries; efficient sources of funding for EIRs in university libraries; strategic planning and policy for EIRs service; problems associated with sustaining EIRs in university libraries; Nigeria LIS bibliometrics overview; and a summary of the literature review.

3.2 The concept of sustainability

As applied in this study, the term sustainability is the strategies the academic libraries adopt to maintain a consistent and uninterrupted electronic information service. Sustainability is 'the development that intends to meet the needs of the present without compromising the needs of future generations' (UNWCED 1987, p.43). Sustainability is studied in different disciplines: in environmental studies, dealing with the concepts of a sustainable ecosystem; in the field of software design, addressing smart system design issues with lower electricity consumption; in agriculture, dealing with ecological use of organic/natural means of production. However, in the context of this

study, sustainability refers to agile EIRs lifecycle management to ensure continuity of electronic services. In this context, the EIRs lifecycle addresses EIRs' plans, libraries guideline or e-resources acquisitions, the deployment and use in the libraries, and the systems' maintenance. Sustainability is an efficient process that focuses on the frugal and sensible use of resources (Viederman 1994, p.5; Freeman, Herriges, and Kling, 2014, p.82). Therefore, EIRs services' sustainability implies strategic initiatives designed and successfully implemented by information professionals to facilitate and provide consistent information resources and services by offering ways of coping with technological challenges to provide satisfactory information service.

Emas (2015) contends that strategic initiatives to provide sustainable EIRs services are a core library management role. Considering the importance of EIRs services to all academic institutions, Rathmel (2015) suggested more improvements to enhance proactive EIR services provision approaches. For libraries to accomplish their mandate by providing adequate information services in the digital age, there is a need for robust sustainability strategies such as agile library management system (LMS) for consistent maintenance of agile EIRs services in their institutional libraries.

In information science, it is necessary to devise strategies for implementing EIRs to improve the sustainability of an effective information service delivery, emphasising the use of innovation and technology. However, library managers must overcome some of the challenges in deploying modern technology of economic, social, and environmental nature. Librarians must also reengineer their role to enhance their ability in providing electronic information resources and services through rigorous planning, management, and sustaining information services (Ngulube 2012).

3.3 Challenges of EIRs adoption in Africa

Many African nations demonstrate a growing commitment to quality education by introducing ways to improve learning, for example, e-learning, adoption of social media services, and a shared digital environment (Bangura 2015). The challenge

remains, how to ensure continuous library services by providing access to information resources, especially EIRs. Authors have decried EIRs, especially in the context of Nigeria, stating that the situation is alarming (Ifijeh, Iwu-James and Adebayo 2016, p.52).

Ifijeh, Iwu-James, and Adebayo (2016, p.52) stated that ‘to attain sustainable development, the roles of information and the libraries to provide information services in this digital age should not be underestimated’. For example, primary computer and information literacy skills and advanced skills in using electronic resources are required. Lack of these can negatively affect EIRs’ usage. Similarly, Addisalem (2016) examined post-graduate students’ use of e-resources at the University of South Africa Regional Learning Centre in Ethiopia. The study established that lack of advanced operational skills, poor ICT infrastructure, limited bandwidth access, poor internet connectivity, and inadequate electricity supply negatively affected students’ EIRs usage (Addisalem 2016). The situation in North Central Nigeria is similar to that of the South African Regional Centre in Ethiopia. Electronic information resources are essential tools for academic community progress (Akpojotor 2016). The EIRs use is affected by lack of computer and information literacy skills, lack of adequate computers and inadequate full-text database subscriptions, the high cost of technology facilities, and slow internet connectivity (Gakibayo, Ikoja-Odongo and Okello-Obura 2013).

3.4 Status of available EIRs in university libraries

The integration of EIRs in libraries has become a common phenomenon to meet users’ growing information needs worldwide. In academic libraries where EIRs are adopted, they are mostly in the form of online public access catalogues (OPACs), e-journals, full-text databases, internet resources (IRs), reference databases, and websites. These e-resources are used for knowledge communication and support of teaching and learning activities.

To maximise EIRs' expectancy, university libraries perform crucial roles: such as preserving information resources, presentation of e-resources collection model, and provision of future e-resources in an evolving space (Carr 2011). The present research focused on libraries' second and third roles in ensuring information service satisfaction through EIRs. The significant lessons for focusing only on the two librarian roles are that the traditional information services system is not trendy in university libraries. The interest of the present study lies in EIRs services and their sustainability. The first crucial role deals with library management and strategic organisational commitment based on quality information service (Zafar, Zahee, Saleem-ur, and Rehman 2011). The commitment roles of librarians to access journal resources (Carr 2011) and other EIRs has been a critical issue in libraries today that affects the quality of services where strategies are not in place. The shift from print to EIRs is a drastic alteration of how information is generated, spread, situated, and accessed (Carr 2011). This change in the information system directly affects librarians' roles, which have shifted from preservation of traditional resources to sustainable provision of EIRs services and quality of services, which requires new technology skills and EIRs' management. Moynihan et al. (2001) and Zafar et al. (2011), from a human resources management and e-banking view, believe that service quality significantly impacts customer satisfaction and information services delivery. Concerning the previously mentioned studies, the current study examines the status of the EIRs services and their strategic applications in North Central Nigeria university libraries. A study by Sinha, Bhattacharjee, and Bhattacharjee (2013) investigated the South Assam N-LIST program in India, a strategic initiative on EIRs provision, and identified the following EIRs: e-books, e-journals, and online databases which the academic library users adequately utilise.

The University library has evolved over the years, especially regarding clientele and the library collections. Significantly, information resources have transformed from traditional book resources to electronic and digital information (Gaigher, Roux, and Bothma 2014). There is also increasing yearning for the quality of the information

resources and services (Oyewusi and Oyeboade 2009) that meet their patrons' needs. In this regard, Wolpert (1999) opines that in a 21st-century library environment, the format and nature of the information at the librarian's disposal have changed. Therefore, Kling and McKim (2000) and Talja and Maula (2003) argue that ULs should provide library patrons with information materials in all formats, including e-journals and e-books, Open Access resources, full-text journals, CD-ROM, databases, and the internet.

Swain (2010) found that university libraries are increasingly adopting electronic EIRs worldwide, although developing countries, especially in Africa, still lag behind their counterparts in Europe, North America, and Asia. For example, Amekuede (2005) found that EIRs were not the norm in most Ghana university libraries because of weak university administrations support and lack of skilled professionals in ICT services. In contrast, as Al-Fadhli and Johnson (2006) revealed, university libraries in Kuwait indicate that many university libraries were applying information technology (IT) to deliver information services across the country. Nevertheless, Al-Ansari (2011) believes that some libraries are not adequately automated in Kuwait, hence still operating in the traditional librarianship.

In Bangladesh, a study revealed that 38.5% of university libraries had no relevant library website, and among the 62.6% that had, they were not effectively used for services delivery (Islam and Panda 2009; Islam and Hossain 2014). Farahi and Gandhi (2011) comparatively examined the status of EIRs deployment in Iran and India's medical libraries. They revealed there are EIRs facilities such as software, hardware, and ICT facilities for information services. The study further noted that very few medical libraries were adequately automated. Olorunsola and Adeleke (2011) examined the status of e-journal subscriptions in Nigeria. The study revealed that all public academic libraries subscribe to e-journals, including e-resources databases and full-text journals. The study found that 72% of the libraries subscribed to Health Internetwork Access to Research Initiative (HINARI), 77% Access to Global Online

Research on Agriculture (AGORA), and 68% Journal Storage (JSTOR), which are majorly open access.

3.4.1 Effectiveness of EIRs in university libraries

Several authors have examined the effectiveness of EIRs services from different perspectives. Natalee (2013) evaluated the efficacy of EIRs services in the light of declining the library budget in the Northern Caribbean region, Jamaica. The study surveyed faculty staff as well as students and found that both enjoyed the use of EIRs. The EIRs service was found effective as it enhanced access to information with quality academic returns.

Habiba and Chowdhury (2012) analysed the status of EIRs facilities and services for quality academic delivery in Dhaka University Library (DUL) Bangladesh. The sample consisted of 120 library users that were randomly selected. The study found that library users were satisfied with the available resources despite the inadequate IT infrastructure. Besides, 20.0% of respondents acknowledged that only a limited number of titles were accessible, and 10.0% reported limited access to back issues. However, supposed academic libraries with robust EIRs, sufficient funding, and EIRs' acquisition would provide extensive e-resources needed to improve scholarship. In addition, Habiba and Chowdhury (2012) revealed that 14.0% registered their stressful experience finding relevant information; 7.0% indicated the e-resources of DUL were not accessible from home. Therefore, these findings showed the status of EIRs to be ineffective in meeting the users' needs.

Furthermore, 30.0% decried limited access to computers, and 19.0% were unhappy with slow download speed. The results also revealed that 52% of respondents used EIRs free of charge, and 35% used once-off paid online resources (Habiba and Chowdhury 2012). This indicates that a very low percentage of patrons use the available library EIRs, while most use free EIRs, and an average percentage of patrons

purchase online resources. Hence, libraries in this status may not sustain the provision of EIRs services without proactive measures.

Bracken (2014) explored the methods of measuring EIRs values comprising e-journal, e-book, and online databases in their academic institution libraries in Ireland. The findings revealed various metrics for measuring the importance of EIRs. The study identified several metrics recommended by IFLA (2012), including but not limited to informal conversation, online or paper questionnaires, surveys, focused-groups, and interviews. Plum et al. (2010) noted that EIRs' assessment is essential as it permits libraries and communities to enhance services and promote sustainability since an increasing proportion of institutions' library budgets on EIRs are about 60% (Alpperspach and Lapham 2010; Sreekumar 2012). For example, an increased budget for UL will substantially increase their flexibility, which will irrevocably improve EIRs' effectiveness.

Noh (2012) measured the effectiveness of EIRs in academic libraries in Korea using evaluation indicators such as input (resources acquisition) and output (resources use). The study found that a substantial amount of the budget was spent on e-resources and database subscription. Moreover, it was found that access and user training was highly effective and efficient.

On the other hand, Okafor (2011) observed that the failure to provide sufficient information resources in libraries has negative consequences, such as duplicating research work, low morale among library users, information needs frustration, reduced academic production, and reduced research output. However, for sustainable EIRs services in ULs, available information resources must be adequate and sufficient to satisfy user needs. Kling and McKim (2000, p.1307) added that the consequences 'may not only be suboptimal use of financial resources, but also wasted effort on the part of individual researchers and even data that suffers in the negligible, decaying, and dead system and formats'. Therefore, there is a need for a strategic initiatives

model for the sustainable provision of the EIRs services to ensure adequate and sufficient information resources in ULs.

3.5 Sources of funding for EIRs in university libraries

An institution's ability to fund its libraries is essential for an agile library management system (LMS) in the 21st Century. Such funding must also consider agile EIRs offered through digital services and information technology. This section discusses the means of financing the acquisition of the resources and facilities for EIRs services in university libraries. Adequate funding is required to ensure the sustainability of EIRs in university libraries Lankes (2014, p.17) confirms that the mission which has inspired the survival of libraries over 3,000 years strives for a better future. Therefore, tomorrow's libraries need adequate funding to keep up with the rapid pace of technological advancement. Such funding might be for library buildings, physical facilities, books, journals, electronic resources, and personnel (Ehigiator 1997). According to Herman, as cited in Sandler (2014, p.1), 'it is impractical for the academic to work in isolation; hence, the library's resources shared provide sources of information that can shape the future through collaborative engagement with the patrons'.

The technological revolution that has restructured libraries' role and practices dictate the need for access to electronic information resources and adequate funding (Hoon 2003, p.33; Hoskins and Stilwell 2011, p.51). The digital revolution opportunity has necessitated changes in the library environment (Nicholas, Rowlands, and Jamali 2010) that bring positive outcomes and challenges. These challenges include, among others, inadequate funding of libraries (Morris 2014) or budget cuts (CILIP 2012) and high cost of EIRs (Jawkowaska and Marcum 2010, p.160). Another huge challenge facing the library's ability to provide electronic information resources and services is efficient financial sustainability. This is because the libraries must be financially sustainable to provide agile EIRs (Chowdhry 2014). Because EIRs are capital

intensive, libraries wishing to develop electronic information resources and services must have reliable economic, financial support. Therefore, to ensure the sustainability of EIRs services in university libraries, the management must establish a means of financing these services (Ongus et al. 2007, p.5).

Around the globe, university libraries receive funding from sources other than their parent institutions through collaborative and consortia models. Sandler (2014, p.3) noted that Some of the most effective consortia in the U.S., Canada, and Europe were funded by sources beyond the library membership, such as a ministry, council, state legislature, governor, university president, or group of provosts. Even in relatively well-funded consortia cases, their budgets are but a tiny fraction of the overall member budgets, which may be .01% of the member budget total (Sandler 2014, p.3).

Historically, as early as the 1960s, Grants Committee on Libraries was at 6% of university allocation (Parry 1967). This 6% allocation could be far higher than the total education budget for Nigeria's institutions. Nevertheless, these advanced nations' libraries are struggling by advancing strategies for a better funding system. The situation has driven libraries globally to embark on campaigns to preserve their programs and continue their functions (Loach, Rowley, and Griffiths 2017). Moreover, libraries have resorted to fundraising and evidence gathering (Loach et al. 2017). Inadequate funding can affect information services delivery in ULs, and librarians must implement a strategy to ensure consistent patronage (Martey 2000). Nolan (1998) advised professional librarians to embed among their workforce entrepreneurs for the survival of the profession. Martey (2000) also confirmed that EIRs funding has become problematic in Ghana, and the effective use of services may influence continuous financial support for University Library services.

3.5.1 The need for efficient funding of EIRs

In recent times, campaigns were initiated to save Swindon's libraries in England, as the Swindon Council moved to cut the funding of 11 out of its 15 libraries, which as

envisaged would make Swindon's libraries sustainable (Save Swindon Library 2016). Similar campaigns were taken for Bath's libraries (Save Bath Library 2017), Lewisham's libraries (Save Lewisham Libraries 2015), and London libraries (London Libraries 2016). Aaron (2011) reveals that over 375 libraries in the United Kingdom faced the threat of closure due to high operational costs against declining budgets. In the face of these difficulties, libraries have been unrelenting in their attempts to apply strategic means of funding and survival. Dibu (2012) notes that poor reading and learning cultures existing in many countries result from library services' inadequate funding. For example, inadequate funding and budget for libraries led to a lack of relevant EIRs resources, thereby contributing to poor patronage, resource usage, and diminishing users' interest in libraries. Ensuring adequate funding is a central concern, considering the library's value in academic development (Sung et al. 2003; Ishola 2014) and as a cornerstone of societal development (Austin 1985; Levy 2000; Albert 2007).

The quest to raise funding is driving academic libraries to initiate sustainable approaches that can be leveraged to their advantage to provide efficient service delivery using EIRs. Even though academic library funding is an essential part of EIR provision in all educational institutions globally, the available literature shows that ensuring EIRs' financing has been a recurrent struggle. For example, in the United Kingdom, almost all the publicly funded universities are supported, in parts, through various charities and other organisations by raising income from a wide range of sources outside their main governmental financiers (Brown 2016; University Funding Explained 2016). It is to ensure improved efficiency and enhanced access to library EIRs (Webber and Peters 2010).

The need for alternative funding sources arises because of academic libraries' budget cuts. Their expenditures rise (Ishola 2014; Jones 2018) and their host institutions and audiences demand current information sources. Zalta (2005) noted that making the Encyclopaedia of Philosophy EIRs freely available on the internet costs roughly

US\$190000 for just one single university in the United Kingdom. Furthermore, the United Kingdom Open Universities (UKOUs) spend an average of US\$3 million per program on resource development (Beshears 2005). However, in Nigeria, most libraries cannot afford to spend such an amount due to the lack of efficient funding support and limited fundraising workforce (Ntui, Robert, and Usang 2017; Ilo, Ngwuchukwu and Micheal-Onuoha 2019). Ntui et al. (2017) reported from Cross River Nigeria that paucity of funds is a significant challenge to EIRs' utilisation in academic libraries. They recommended additional and alternative sources of funding.

In the U.K., it costs a total expenditure of US \$600 million to maintain up-to-date and comprehensive library resources, this being 40% of the entire university budget (Beashears 2005). A study over the years has shown that the maintenance of the library resources carries depreciation costs of US\$ 75 million yearly (Beashears 2005); hence, the interest to unravel the funding sources that support EIRs services in North Central Nigeria.

In the context of South Africa, academic libraries are under-funded by their host institutions. Therefore, they experience budget constraints as they receive under 6% of the institutional budget, which is the benchmark for a generally acceptable level of funding source (Hoskins and Stilwell 2011). As universities have evolved, so have their needs, especially in respect of technological facilities. Consequently, libraries have experienced a decline in their overall university budget share (Hoskins and Stilwell 2011).

3.5.2 Alternative sources of funding EIRs in libraries

Given the challenge of funding EIRs in ULs worldwide, some international, national and regional organisations have assisted libraries by providing funding or meeting some of their material needs. For example, the International Network for the Availability of Scientific Publications (INASP) subsidises the publishers' costs for making critical scientific journal databases available to developing nations (Mwai,

Kiplang'at and Gichoya 2014, p.792). Non-governmental organisations, philanthropic, and other agencies have long stepped in to bail out libraries. For example, there is evidence of support provided as early as 1935 to libraries by the Carnegie Corporation and the Rotary Club of Newcastle in Australia's New South Wales (Jones 1995). Similarly, in Toronto, Canada, public libraries have since 1997 received US\$1.9 million from the Bill and Melinda Gates Foundation for the establishment of 588 internet accessible workstations and more (Bowles 2016). It is hoped that the Foundation would extend its funding support to other regions, specifically in nations that experience critical challenges (Arabella Advisors 2015, p.5). The donations of such foundations support librarians' provision of services to library users, increase access to information, and use information resources (Cuillier and Stoffle 2011). Unfortunately, this kind of financial support is not available for the Nigerian academic libraries due to economic constraints.

According to Arabella Advisors (2015, p. 2), the Bill and Melinda Gates Foundation's Global Libraries Program has strengthened and improved public libraries for decades. It invested over a billion dollars in nearly 30,000 public libraries in over 20 countries, positively impacting the lives of more than 253 million people. The Foundation has also reached out to the National Library of South Africa, providing access to information technologies and relevant training (National Library of South Africa 2018 and Department of Arts and Culture 2014). In Nigeria, academic libraries look upon the Dangote and Tony Elumelu Foundations that can support academic libraries in the same way as Bill and Melinda Gates Foundations. Although the MTN Foundation has supported very few Nigerian university libraries (e.g., University of Benin, Ahmadu; Bello University, Zaria; the University of Lagos and University of Nigeria, Nsukka), providing technology facilities and internet access to EIRs (Ibrahim 2014, p.5), more corporations need to be on board. Scholars such as Okiy (2005), Amkpa and Tukur (2009) commended the need for more significant support from philanthropic, corporate organisations and investors for Nigerian libraries.

Dai, Chen, and Zhang (2017, p.68) identify sources of funding EIRs among Chinese academic libraries through the consortium known as the China Academic Library and Information System (CALIS). These funders include government funding, locally-sourced funds to match those of the government, and members' library funding. They also suggest more funding through commercialising CALIS (Dai et al. 2017). Apart from the China Academic Library and Information System's considerable efforts, they anticipate developing library collections, sizes/formats by ensuring the availability of funding, improving staff quality, and implementing standardised automation specifications (Dai, Cheng and Zhang 2017, p.70). Consequently, a focused and sustainable strategic funding may salvage the present situation hindering the sustainable provision of EIRs services in ULs.

MacWhinnie (2003, p.250) reports that institutions establish detailed strategies to source alternative financial and material support for sustaining the provision of EIRs and related services in the developed countries. In contrast, Ubogu and Okiy (2011) recommended alternative funding opportunities such as consortium, partnership, NGOs interventions, and others in the developing world.

In Nigeria's context, Emojorho (2004) asserts that public university libraries derive funds from government allocations, endowment funds, library fees, gifts, and other miscellaneous sources, such as the sale of duplicate materials to meet their mandate of providing information services. Ubogu and Okiy (2011) observe that the amount of financing that a library receives directly influences the quality of its services. This is evident considering the academic library is a social service organisation that is capital intensive. Therefore, inadequate funding affects university libraries' available resources, such as cancellations and subscriptions, due to reduced funding (Hoskins and Stilwell 2011).

Similarly, Chaputula and Boadi (2010) asserted that inadequate funding for library resources affects library services quality, resulting in libraries being forced to depend

on donations and exchange as a means of survival. According to Willemse (2002, p.2), given university funding challenges, the Standing Conference of African National and University Libraries in Eastern, Central, and Southern Africa (SCANUL-ECS) in 1996, designed a funding model for libraries in the region. The model considered institutional income allocation, student tuition fees allocation, library generated income and other income from library services.

Donwa (2006) points out that the Nigerian government supports accounts for 92% of information resource funding in the Nigerian university libraries through the Tertiary Education Trust Fund (TETFund). The TETFund is an arm of the Nigerian federal government responsible for most funding support to all government-owned universities, whether federal or state. Apart from building infrastructures, the body is also responsible for the roll-out of subscriptions to some electronic journals and physical library resources acquisition within Nigerian public universities. The funding sources have been insufficient and inefficient, requiring libraries to look for alternative income sources to meet library users' increasingly sophisticated demands for electronic information services (Okiy 2005). In the same vein, Hisle (2002, p.715) and Boadi (2006, p.65) point out that academic libraries in developing countries rely mainly on government funding and do not show any interest or experience in well-organised fundraising for several reasons. In contrast, in more developed nations like Belgium, Germany, Sweden, and Korea, over 50% of their information funding comes from industries and agencies.

3.6 Strategic planning for EIRs services

According to Mechan et al. (2016), strategic planning is an action plan that emphasises high flying choices in an organisation. According to Harland, Stewart, and Bruce (2018, p.262), 'The library's strategic planning involves placing the library strategic plan on the university strategic plan, allowing implementation time, and informing the university of the library's progress'. As argued by Torres-Perez et al. (2016), flexible

strategic planning can change the institution's threatening situation, prioritise the available skill, budgeting constraints, core competencies, user needs, and business objectives. Therefore, EIRs that are strategically planned can empower the libraries to provide and enhance information services.

Globally, sustainability strategies are professional methods applied to ensure that a project, system, policy, network, or other related product of an institution is enhanced, implemented, and optimally maintained (Bringezu and Bleischwitz 2017; Lin, Shyu, and Ding 2017). The implementation of these professional methods cannot be accomplished without adequate strategic planning and policy. The adoption of strategic planning in university libraries began in 1970 (Leebaw 2019). McGrath (1973) from Cornell University challenged the implementation of strategic planning in academic libraries resulting in a corporatised framework on strategic planning, which is widely applied in academic libraries specifically as a response to the rapid technological change and funding challenges in academic institutions (Leebaw 2019). According to Tatiana (2018), sustainability strategies comprise various facets set by the library to deal with specific information needs, local and external. Strategic planning is vital to organisations because it enforces innovation and adaptable (Chem et al. 2007). The strategic planning is based on the library objectives, mission, vision, long-term and short-term goals. Reasons for developing and implementing a strategic plan are:

- a) It helps to address difficulties in an organisation;
- b) It is a creative tool for the development of information systems;
- c) It helps in managing the increase and development as well as the use of multimedia communication systems; and
- d) It is useful for security and risk management (Bozorokolic, Ruzic and Mimitrijevic 2011).

Muhammad and Yafooz (2018) aver that strategic planning, for decades now, has been the most critical issue discussed in top management forums. Producing a strategic plan can be defined as a minor management practice for ULs (Leebaw 2019). The assessment is a common phenomenon in library strategic planning (Staines 2009). Therefore, a lack of strategic plan and policy that clearly states the vision, mission, and short and long-term goal of the libraries and their EIRs acquisition and maintenance would lead to a lack of sustainability and agile library systems.

Despite the importance of strategic planning, not all libraries apply it in their library management practices. For example, Pacios and Ortiz-Repiso's (2010) study from Spain revealed that only 32 universities and 22 libraries had current strategic planning documents, and 33 out of 74 universities and libraries sampled had no planning document. Similarly, in a study by Kostagiolas (2009), findings revealed that from Greece public libraries, it is only three that designed a formal strategic plan for their library. This was despite the growing accountability expectations from the librarians by the ULs community regarding how they add value to their institution's objective (Saunders 2016). Thus, It is critical for libraries to articulate the benefits and how best to sustain their services within their long-term strategic framework (Germano and Stretch-Stephenson 2012) as a mechanism for ensuring funding, implementing an action plan to enhance services, and staff performance measurement scheme (Brown and Gonzalez 2007). The importance of strategic planning for university libraries cannot be overemphasised. Staines (2009) noted that almost 80% of the Association of Research Libraries (ARL) has strategic plans.

According to Akpan and Madu (2014, p.31), in developing nations, librarians have learnt that if deprived of strategic planning as an integral component of management, the library services will be halted due to its absence. In the Nigerian university library context, Kamba (2011) pointed out that there is no strategic planning implementation in Nigerian ULs at all levels (national and institutional) to enhance policy framework that guides technology adoption for its full potential. In support of this, Akintunde

(2007) noted that a pragmatic approach to address academic library issues lies in well-designed strategic planning implementation, library management software, and budgeting.

3.6.1 Impact of strategic planning in ULs

The application of strategic planning in any organisation, including libraries, impacts the services and staff performance significantly. In Finland, Kuttunen (2007) asserts that the consortium of libraries is a useful strategic network that collaborates and exchanges resources and obtains financial benefits from the Ministry of Education and their institutions. For example, this consortium set a joint strategy for the planning (2004-2007), with a clear link to the education policy drawn from their home institutions' objectives. This consortium defined general strategic subjects upon which to measure the progress for the improved future. Kuttunen (2007, p.415) contended that 'The action plan should identify the strategic initiatives, timetables and the units and individuals responsible for implementing the strategic plan. The action plan should drill the strategic plan down into one or more action plans and include these in the operating budget'. Although the library's cooperation and consortiums are vital resource mobilisation strategies for economical purpose in sustainable information services, positive impact cannot achieve success without robust planning and policy implementation.

Tatiana (2018) examined the influence of strategic planning in ULs of Portugal in an environment of diminishing resources such as humans, materials, and financial resources. The study found that strategic planning and risk management are adaptive responses to change. Strategic planning was also found highly essential in the library as it results in a drastic change in information services delivery (Jeal 2014; Wynne, Dixon, Donohue, and Rowlands 2016; Dole, Dabbour, and Kott 2017).

The impact of strategic planning implementation in ULs can draw results from the management and leadership function (Mandeville Gamble 2015) in sustaining EIRs

services. A study of academic library leadership in Australia and the USA by Fiona, Stewart, and Bruce (2018), found that the library's strategic planning emphasised the need for the plan to be based on the university plan, giving a time framework and reporting progress to promote the values and impact of the libraries. The study also emphasised the processes senior library managers can apply to accomplish library planning based on university planning. These include: responding to the constant change in the institutional environment and its strategic plans; being a strategic thinker that is capable of implementing and impacting definite plans; being creative and customer-focused; ensuring the circle of planning commit time and effort with a focus on the university plans; and changes on vision, strategy, and goals (Fiona, Stewart, and Bruce 2018, p.277). Though the study hints at the library management's valued roles in planning, the inability to explore the impacts of the strategies on the academic library and its geographical restriction limited its relevance to the present study.

Recently, studies on information resources and their management (Benaroch and Apari 2011) have underscored the need for strategic planning implementation to enhance the quality of the agile and robust 21st-century library that can ensure sustainable and efficient services for a given period (Ngo and O'Cass 2009). Rivard, Louis, and David (2006), as well as Rapp, Kevin, and Raj (2010), have underlined the role of technological efficiency in information services as an organisational strategy and maintained that it is institutions such as university libraries that are responsible for the sustainability of their resources and services. The library management team is also responsible for setting and articulating the mission, vision, and action plans (Garrison, Ryan, and DeLong 2012). The importance of this strategic management function for libraries is also emphasised by Marsick and Watkins (1999). They concur with Maddox and Zhao (2017) that ULs' strategic planning should develop and rely on research performance data or metrics.

A study by McKay (2017) examined the end outcome of the strategic process in Academic and public libraries of New Zealand, intending to proffer a solution for the

future using content analysis to identify strategic terms, priorities, and issues. The study revealed a high prevalence of vital terminology, as they use future-oriented thinking reflective terms in their academic library plans, while the public libraries apply more performance-based language. The study also indicated a general incompleteness among the plans, specifically with public libraries, in New Zealand. The study revealed that the library's priorities were collections development, improving technology application, and staff.

Saunders (2015; 2016) found that most member libraries of the Association of College and Research Libraries examined had a broader range of strategic directions and goals. The study further identified 50 strategic areas that included, among others, staff, collections and services, budgeting, data management, digitisation project, and instruction. However, the strategic plan for the sustainable provision of EIRs services was not standard (Saunders 2015). Therefore, it is crucial to give special attention to EIRs in strategic planning for specific resources and services.

3.6.2 Strategic planning and policy for management of EIRs in university libraries

According to Nagy and Fawcett (2018, p.1), a strategy is a way of “describing how you are going to get things done; it is less specific than an action plan (which tells the who-what-when); instead, it tries to answer the question broadly, ‘How do we get there from here? (Do we want to take the train? Fly? Walk?)’. The development of strategy requires several plans, which must be aligned together into a strategic framework. These include legislation, policy, vision statement, mission statement, core values, strengths, weaknesses, opportunities, and threats (SWOT analysis), long term goals, yearly objectives, and action plans. All of these are vital such that if well-articulated, make strategic management planning adequate (Young 2003; Allison and Kaye 2011). However, ‘continuous improvement of quality management advances in smaller steps, especially during maintenance of a quality system’ (Kettunen and

Kantola 2007, p.69). Furthermore, the desire for improvement and the preferred future is the catalyst for action plan implementation.

The role of strategic planning in companies continues to be a debate. Maritz, Pretorius, and Plant (2011) reiterated that companies still plan their futures so that strategic planning remains relevant in sustainability studies (Tsai et al. 1991). Past studies have shown that strategic planning implementation helps to relate decision-making with managerial authenticity and practice (Herbert 1999; By 2005; Smith 2005). The goal of strategic planning is to design effective policies and procedures beyond the planning procedure (Ryan 2003).

3.6.3 Policy on library and information services

The strategic policy is simply a written document to guide actions such as making decisions. It offers a principle layout for operation and is employed by an organisation in the execution of its objectives. ‘Policies are operating rules that describe a way to maintain order and provide security and consistency while realising or furthering a goal or mission’ (Jose, Mohammad and Irani 2011, p.288). It provides a principle framework indicating how members and their activities should be coordinated in an organisational structure to enhance effectiveness and productive returns (Jose, Mohammad and Irani 2011, p.289). According to Rahimi and Noruzi (2011), in policy-based management, the organisation’s staff members concerned fall back on the policy rather than taking instant decisions in any challenging situation. This policy framework is a legislative document that provides rules and regulations to maintain order and indicate how organisational members coordinate to realise organisational goals (Denison and Spreitzer 1991). Hence, information providers need to be aware of such a policy guide for services.

Numerous Acts globally support library development and services. For example, the American Department for Education’s office for civil rights decreed in section 504 and section 508 that academic libraries, both private and public, must provide access to e-

resources and related facilities (Providenti and Zai 2007). In contrast, the ministry of education in Nigeria has no regulation with regards to information services. Instead, the National Library act and Ministry of Information and Communication Technology, and agencies under the ministry of education, like the Librarian Registration Council of Nigeria, design policies guiding information communication in all facets. According to Salmon, Mostert, and Mugwisi (2018, p.393), the National Library act of 1964 provides the basis for all public library activity in Nigeria as amended in 1970. The amended act was limited in scope and lacked legal support for the digital collection. This legislative gap brought about the National ICT policy of 2012 initiated by the Federal Ministry of Communication Technology in Nigeria to address policy and regulatory framework issues in the ICT sector (Salmon, Mostert and Mugwisi 2018, p.393).

The Canadian Copyright Act (copyright act, access to copyright, and license agreements) had significant inadequacies which did not cater for the emergence of information technology. This impacted Canada's library services negatively in general and caused challenges on the EIRs interlibrary loan services (Tiessen 2012, p.49). To address the issues, Canadian libraries, archives, and museums adopted three strands of the 1997 amendment to the copyright act (CanLII 2008) indicated below:

- Section 30.1 allowed libraries under a particular condition to enact entire copies of copyright works for preservation purpose;
- Section 30.2 allowed libraries to act on behalf of their users for fair dealing;
- Section 30.3 confirmed the right of educational institutions, libraries, archives, and museums to have self-serve photocopiers, but they were required to have a license from a copyright collective.

The 1997 amendment to the Act gave Canadian libraries the liberty to legally justify practices and internal copying services and interlibrary loan for EIRs (Tiessen 2012, p.49). This brought a positive impact on information services delivery. Nigeria's

efforts towards this challenge lie in the establishment of LRCN to address issues of protecting digital content (Masango 2005, p.131). Different nations have also enacted various legislations on how to address similar issues. For example, the Digital Millennium Copyright Act (DMCA) of the United States in 1998, the Copyright Amendment (Digital Agenda) Act of 2000 in Australia, and the Nigeria National Library Act of 1964 was last amended in 1970.

Lahore (1996, p.1275) asserted that these acts made provision for ‘fair dealing exception’ in the traditional information system and argued that the same should apply to EIRs services. On the contrary, the fair dealing exception act in the EIRs environment poses a limitation to users regarding information access and services (Masango 2005). Therefore, with publishers’ restrictions on ownership of copyright resources, Masango (2005, p.132) contended that libraries were restrained by the licensing agreements for performing their functions or any regulatory activities.

Some scholars also maintain that the problem with this Act is that, in most nations like the United Kingdom, South Africa, the United States of America, and Australia, it fails to provide a bright fair dealing exemption for library information digital collections (Prescott and Victoria 2000, p.754). Furthermore, Masango (2005) noted that the fair dealing act hinders scholars from accessing digital information. Other initiatives and commitments by the legislative agencies on the development of library services policy for increased access to library resources, including EIRs, are discussed in the literature by various authors (Beagrie 2008; Dawes 2008; Given and McTavish 2010; McLelland 2012; Watts 2015).

3.6.4 Legislative framework for libraries

According to Jasion (2019), the legislation guiding the establishment of a library gives a legal existence to such a library as a legal entity for national or academic purposes. The library legislative framework consists of laws established by the local, state, or federal government to develop and manage any library to enhance information

services provision (Mutula and Mostert 2010). Globally, legislation plays a significant role in library services. Library legislation can be traced back to 1850 when Anglo-American societies and the United Kingdom established the first library law (Krolak 2005). Gardner (1971, p.192) noted that in the 19th century, the United States of America formed a free public library under several permissive legislations, after which other states adopted a similar practice. Most libraries worldwide took similar steps in developing and operating information services in ULs and all other libraries (Zulu, Ngoepe, and Saurombe 2017). The information revolution has contributed to improving the information legislation system for better services (Saltman 2019). Vitiello (2000, p.10) stated that ‘access to information means the empowerment of all citizens in exerting their responsibilities in the on-going process of societal change’, which led the European Commission to enact various policies and legislation that enhances information services delivery. The legislation adopted in the American Communication Decency Act of 1996 enhances policy formulation (Vitiello 2000).

Karran (2009, p.192) noted that ‘Nowadays, academic freedom is considered a basic human right in universities across the globe and is consequently enshrined in many national constitutions and the UN Universal Declaration of Human Rights’. The enactment of library policy and legislation became more complicated with the emergence of telecommunication, audio-visual, and digital industries (Vitiello 2000, p.1). Besides, the speed of technological advancement requires review and amendment of traditional system legislation to accommodate the new system of information services.

Nigeria has a legislative framework as a legal foundation for libraries. Olden (1985) reported that the joint efforts of professional librarians and concerned government led to the enactment of library legislation and the library board’s establishment. The National Library of Nigeria was established in 1975 with the legislative mandate to develop state libraries (Olden 1985, p.409) and facilitate library development. This legal practice lacks clarity on the provision of EIRs in ULs. According to UNESCO

(1984), as cited in Olden (1985, p. 411), ‘there is no country which has had successful, effective and nation-wide public library services without foundational and legislative underpinnings’. The first library board law was established in 1955 and presented the benchmarks for library development in Nigeria (Olden 1995). Oderinde (1978), as cited in Olden (1985, p.412), also argued ‘it is a well-known fact that states with library legislation have a positive impact on library services than those without’. A close examination from Salman, Mostert, and Mugwisi (2018) revealed that libraries depend on the government for decisions and funding. Thus, the challenges to sustainable information services were inadequate funding, stakeholders’ low participation in library management, and inadequate public library legislation (Salman et al. 2018).

The Librarian Registration Council of Nigeria (LRCN) was established as an agency of the Federal Ministry of Education by Act 12 of 1995 professional Librarian skills for librarianship in Nigeria (Okojie and Omotoso 2013, p.2). In the pursuit of sustainable information services delivery in all teaching and learning places, the agency was strategically assigned with the responsibility of capacity development in the information services field such as: pursuing the attainment of professional excellence by determining librarians’ training; the standard of knowledge and skills required for registration and practice; guidelines for accreditation and minimum standards for librarians, as well as maintenance of professional discipline among librarians in Nigeria (Okojie and Omotoso 2013, p.2).

This initiative’s success was linked to government interest in standardising professional ethics to ensure professionalism for information delivery services. On this note, LRCN, in collaboration with the National University Commission (NUC), set a minimum standard for accreditation of LIS programs in the university and continuous professional development (Okojie and Omotoso 2013, p.3), intending to improve the capacity of librarians, enhance and upgrade the LIS curriculum, and professional services.

Moreover, to ensure standardisation of library services in Nigeria, a collaborative effort was initiated involving: the National Library of Nigeria (NLN), National Information Technology Development Agency (NITDA), the National University Commission (NUC) and LRCN, with the help of UNESCO, United States Mission, and Emerald Publishing UK (Okojie and Omotocho 2013, p.7). However, the impact of this collaborative effort has not been established. Besides this collaborative effort, the Tertiary Education Trust Fund (TETFund) is responsible for the disbursement of government grants for capital projects in higher learning institutions in the country. This agency (TETFund) also provides interventions for library development in the country. These interventions include the acquisition of books and journals, including online electronic information resources, development of ICT resources or support for the development of ICT infrastructure, procurement of library equipment, and training and retraining of library staff. Other bodies that have positively impacted library services in university libraries in Nigeria include: the international library framework, the Nigeria Librarians Association (NLA), affiliated to the International Federation of Library Associations and Institutions (IFLA), and the Africa Federation of Library and Institutions Association (AFLIA).

3.6.5 Intellectual property rights

Copyright law is ‘a universal concept and a form of protection for ideas created, which is provided by the laws of any sovereign state’ (Uzuegbu 2011, p.2). Chattopadhyay’s view (2013, p.2) refers to intellectual property as the owner of something intangible. The copyright issue has been a challenge to the development of sustainable services (Fabunmi 2007). However, EIR’s provision is an indispensable genuine pathway to advancing education and national development, which must be protected (Uzuegbu 2011). Copyright law needs a supportive strategy for the provision of information services in the library. According to Syeum (2008), the right to reproduce an intellectual work and the right to avail it to users are the two fundamental rights accorded to the copyright holder. The intellectual property copyright law cannot be

overlooked concerning EIRs' sustainability, as intellectual products are integral components of EIRs. The copyright law aims to reward and encourage intellectual property rights (Moorthy and Ramaiah 2014). To this effect, the World Intellectual Property Organisation (WIPO), established in 1996, takes legal decisions to protect EIRs' intellectual rights. One of the decrees is that contracting parties must provide effective legal protection and adequate legal remedies for customers' adopted technological practices, in line with the legal right.

In compliance with these laws, Europe and America implemented a similar digital copyright law (Digital Millennium Copyright Act (DMCA) and European Union (EU) Copyright Directive) for protecting EIRs' copyright (Lucchi 2005). Similarly, the US government sponsored a consortium for Open Access publishing (OAP) in physics, with the role of negotiating with journals, publishers, institutions, and countries that publish papers in the field of high-energy physics (Lucchi 2005). This initiative was essential for the library services as part of their mandate in making available the knowledge that is being catalogued in the library using OAP. As a result of the US OAP copyright law, all the funded research by the government-mandated institutions is to be made freely available six months after publication (Lucchi 2005). Similarly, research councils in the UK reviewed their rules for research funding from April 2013. As a result, all studies funded by the council must be published in journals that make the research reports available for free access (Research Councils UK 2018). In India, the government amended her copyright law in 2012 to accommodate digital collections, which mandated her higher institutions to develop a well-defined Access Management Policy and Copyright Management Policy to promote scientific and scholarly knowledge dissemination (Moorthy and Ramaiah 2014; Newton et al. 2019). In contrast, Africa suffers legal backing in its copyright jurisprudence (Andrew 2018). Moreover, many African countries are yet to reform or review their copyright law to recognise modern information technology (Koornhof 2015).

In South Africa, a copyright amendment bill was passed, and the final version released in November 2018 (Libguides 2018). The bill seeks to introduce the Digital Rights Management (DRM), emanating from the WIPO (World Intellectual Property Organisation) Articles 11 Copyright Treaty. WIPO is an exclusive agreement under the Berne Convention that deals with the digital environment and protection of authors' work (WIPO 2014). The law permits countries that have signed the treaty to adopt and implement technological security for copyrighted EIRs (Sheik 2017, p.1). The legislative and copyright law guiding the EIRs adoption and services in ULs of Nigeria has not gained traction from the policymakers. This has a severe negative impact on the sustainability of EIRs services in Nigeria ULs. Anthony, Eze, and Anthony (2015) assert that in Nigeria, though the copyright law comprehensively addresses individual creativity, due attention was not given to intellectual property rights issues until the year 2000 because the policymakers focused more on the oil economy while neglecting the knowledge economy (Andrew 2018).

The aggressive attention from the Nollywood industry over the loss of \$2 billion per year to piracy because of weak copyright law in Nigeria led to the copyright reform on piracy (Andrew 2018). Anthony et al. (2015) argued that, through the Nigerian Copyright Commission (NCC) leadership, there had been improved efforts to protect intellectual property and copyright through collaborative measures to control piracy of intellectual property. These measures were only felt by the creative industry (Nollywood) as the professional librarians have not taken their stand on copyright issues. However, the development and dissemination of information must enjoy copyright protection since it is of considerable importance; if not adequately managed, it may affect the availability and sustainability of information services (Okeke and Uzor 2014), especially the EIRs services. Faga and Ole (2011) noted that technological shortcomings make it possible for abusers of digital innovations to do so with impunity and prevent the copyright Act from being enforced. This leads to unsatisfactory service delivery and hinders EIRs services' sustainability in ULs

(Salman, Mostert, and Muqwisi 2018). However, the authors contend that when intellectual property rights are fully implemented, information services are enhanced.

3.6.6 The implementation of strategic planning and policy on EIRs

The strategic planning details the strength, weaknesses, opportunities, and threat analysis (SWOT analysis) facing the libraries operations, with the immediate long term goals, annual objectives, action plans and other policies that might encompass the libraries strategic planning and policy of specific institutions (Bringezu and Bleischwitz 2017). A vision statement describes the desired future position of a company. According to Wadas (2017), a vision statement is an internal organisational framework for strategic planning. Most libraries draw their planning from the set-out mission statement of the institution. For example, Vukanović et al. (2013) explored the mission and vision goals of the National Library of Serbia, of which the responsibilities include the integration and coordination of works of the Consortium and Libraries for Joint Acquisition of Foreign Periodicals in Print and Electronic Form. The implementation of the vision for the Serbian national library resulted in the establishment of the Serbian Library Consortium for Coordinated Acquisition (SLCCA); through it, most Serbian public libraries access information resources.

On the other hand, a general library mission serves as a framework for the library's activities, including services provided to users (America Library Association 2018). Wharton (2016) explored the library's strategic planning initiative and its implementation for future library services at Florida State University. The study applied a qualitative approach, and findings revealed that the assessment of project implementation enhances the academic library's strategic plans (Wharton 2016). On the other hand, using document analysis, McNicol (2005) examined the academic library strategic planning in the UK. The study revealed the following key issues in strategic planning: external communication on library aim, the involvement of library

staff in planning, high inclusions of the library to institution and faculty planning, goal setting, and involvement in income generation.

Amran, Lee, and Devi (2014); Hahn (2013); Baumgartner (2014); Craig and Moores (2005); Richter (2010); Fonseca (2010) and Carstens (2010) all concluded that vision and mission statements promote the sustainability of organisational services. Therefore, exploring the library mission statement and in-depth analysis of its policy might provide insights into the strategies being employed by the library to ensure sustainable EIRs provision.

3.7 Problems associated with sustaining EIRs in university libraries

Academic libraries experience several challenges in ensuring the sustainability of their EIRs services. According to Latimer (2011), these challenges vary significantly from region to region, and sometimes, from one institution to the next. For example, at Delta State University, Okite-Amugboro, Bopape and Makgahlela (2015) asserted that EIRs services were challenged by limited resources such as computers, sitting space, low internet bandwidth, and an erratic power supply. From southwest Nigeria, the constraints reported were erratic power supply, inadequate information and communication technologies, a poor maintenance culture, scarce and insufficient funding, and low bandwidth of internet access (Buhari 2016). Furthermore, Adeyoyin, Idowu, and Osowole (2016) identify a lack of awareness, poor access, poor EIR use, skills shortage, poor knowledge of hardware operation, funding issues for acquisition and technology update facilities, inadequate facilities, and reduced application software. Akpokodje and Ukwuoma (2016) observed that inadequate facilities and insufficient national education policy indirectly affected EIRs' sustainability. Chandel and Saikia (2012) listed the significant challenges facing academic libraries: acquisition, maintenance, management, and unsustainable service issues. Some of these problems impact EIRs' sustainability in Nigerian university libraries and can frustrate information delivery services if not addressed. Bogoro (2015) affirms that the

EIRs sustainability challenges facing Nigerian institutions of higher education have resulted in poor educational development.

Pollard and Tucker (2011) advocate for collaborative strategy amongst university libraries for sustainable EIRs services in this era of technological proliferation. Other authors recommend resource sharing, supportive collaboration, fundraising for higher education libraries, and professional development (Munge and Rotich 2007; Pedersen 2017; Stevenson 2018). The studies above on technology did not explore the challenges from North Central Nigeria's ULs; thus, the need for the present study to address this gap.

3.7.1 Strategies for sustaining EIRs in university libraries

According to Johnson, Whittington, and Scholes (2011, p.3), a strategy is 'the long-term direction of an organisation'. Mintzberg (1978) defines strategy as a pattern in a watercourse of decisions that consists of both planned and emergent elements. Chowdhury (2013), in the context of Australia, investigated factors that influence the sustainability of information resources. The study critically analysed policy and research documents, including environmental scanning, to understand the sustainability of information services and systems.

Nicholas et al. (2010) examined the UK and USA ULs' spending budget, using a questionnaire and focus group interview to pleat data. The findings revealed that the UK library's spending budget cut is within 15.1% and 8.1% in the US, respectively. These budget cuts mostly affected academic libraries by 39.7% (Nicholas et al. 2010). The global library budget cut and technology advancement gradually led present-day libraries into various initiatives for sustainable provision of EIRs services. Chowdhury (2013, p.621) noted that 'sustainability of information technology services have not been studied within the mainstream information science research' and advocates for intensive research efforts required to promote sustainable EIRs services provision.

3.7.2 Economic strategies to sustain EIRs services

Economic strategies emerge from the economic crisis decision making process. Economic crises cause heavy reliance on high-cost global information resources by most academic libraries, which strongly depend on single funding sources (institutions' financial allocation) (Harper and Corral 2011, p.96). The 2007-2009 recession in the United States caused intense and regular budget drops in many higher institutions (Casey 2015, p.1). Also, public support for higher education declined by 3.8% from the fiscal year (FY) 2007 to 2012 (Illinois State University 2013). Nigeria's ULs were not exempted from this recession menace. The effect of the recession required doing more with less (Casey 2015). The EIRs services were scaled down and austerity measures implemented for ULs to survive (Isaac 2017). Such measures were necessary to maintain an acceptable standard and consistent information services (Harper and Corral 2011).

According to Harper and Corral (2009), academic libraries are specifically vulnerable to any global economic distresses because of their world highly-priced information resources and their dependence on parent institution expenditure allocation, highly dependent on public funding. Harper and Corral (2009) further investigated the economic downturn on the academic libraries in the UK, using a mixed-method comprising questionnaire and semi-structured interview. Data were collected from 12 library managers in five universities. The study revealed that staff and EIRs' subscriptions were mostly affected, and projects and services were highly protected during the recession (Harper and Corral 2009). Casey (2015) argued that the library budget redirection had led the management to pursue survival rather than improvement strategies.

Economically, EIRs are quite expensive and require substantial financial, human, and technical resources (Jankowska and Marcum 2010, p.160). The financial resource is the economic aspect of EIRs that procures or provides information in the library; the

human resource is the social aspect that provides capacity and management of EIRs, while technology is the environmental aspect that provides the EIRs' technical facilities for access. Ani et al. (2016) posited that to manage the cost-based library resources, which are affordable for consistent provision of EIRs services, libraries must address their economic, social, and environmental challenges.

Before the global economic crisis, developed nations such as Britain, the USA, Australia, Germany, and the Netherlands focused on sustainable EIRs strategies in their respective academic libraries. For example, Harper and Corral (2009), from the UK perspective, empirically reviewed the effect of the downturn in libraries, using the quantitative and qualitative method. The study findings indicated a determination to protect information services over resource collection (Harper and Corral 2009), which questions whether these economic strategies are applicable in the Nigerian context considering its economic situation.

One critical factor in sustaining EIRs in college and university libraries is fundraising (Dewey 2005, p.14). In the US, Dewey (2005) observed that the Librarian's partnership program with Oklahoma's university, Texas Technology University, Penn State University, and University of South Carolina led to an excellent fundraising project and high visibility of library services. The study by Johnson et al. (2015) revealed the museum library's financial support strategy in San Diego (America), where funds were provided to sustain their library services and quality and value assurance to improve their libraries' standard among other funded institution libraries.

Collaboration is another strategic initiative where purposeful relationships exist between two or more people, companies, or organisations to share their common strategic plan, resources, design, implementation of policies, and supply chain management (Anthony 2000). The inability of a single organisation to compete by itself is the rationale for collaboration in business (Min et al. 2005, p.238). The main advantage of collaboration is the drive to supply scarce resources and economic

management ability effectively. Any library struggling at the time of economic crisis cannot stand alone in providing EIRs that are increasingly highly-priced. Min et al. (2005, p.252), supporting collaboration, noted that there is shared participant experience and a high commitment from staff to the collaborative venture. The collaborating parties have higher expectations on success, counts of efficiency and effectiveness. Therefore, a collaborative strategy can enhance EIRs services provision in libraries.

A license negotiation strategy can assist in enhancing the provision of EIRs services in ULs. License negotiation is a contractual agreement binding the memorandum of understanding between two or more people or group to pin a bond or condition of operation or services (Beh and Smith 2012). In addition, it binds a content owner and the user to the terms and conditions for usage of content (Beer et al. 2017), thus, necessitating access to EIRs such as electronic database, e-books and more. License negotiation strategies for library database was examined by Ruth and Collins (2008), who argued it helps to improve the negotiation skills of librarians with vendors and understanding of legal issues involved in licensing. Therefore, skilled professionals in licensing must be at the frontiers of the negotiation.

According to Lunden et al. (2018), from the Swedish perspective, the root of any contract should contain a substantial Open Access element without increasing the overall cost. Lunden et al. (2018) also argued that licensing enables warranties, copyright ownership, compensation, usage conditions, rights, and obligations of those involved to be understood. The market contracts usually set the business relationship, terms and conditions binding both parties involved to which in-depth understanding of conditions is clear to the negotiator. The challenges are the rigorous parts the librarians must go through to determine exact provisions granted previously and their inability to know the previously subscribed contents to make decisions regarding current user needs (Beh and Smith 2012). Library penalty was reported as a major challenge when

one deviated from the non-negotiable subscription contract (Zhang and Seidmann 2010).

Consortia, in legal terms, means partnership with the external body to empower the library in offering state-of-the-art services. Essig (2000, p.13) introduced consortium as a supply management concept combining symbiotic horizontal relationships and strategic understanding to gain a competitive advantage'. Consortia have, therefore, long been viewed as a means of increasing purchasing power and reducing costs (Turner 2014, p.33). The emergence of new technology networks led to publishers' continued growth and new libraries resources (Moyo 2004). Thus, many libraries became mindful that they could not approach these new resources alone (Alexander 1999) because of their high financial implication and national, state, and institutional alliance. Numerous impacts have been recorded from consortia's commitments to libraries. For example, Illinois Digital Academic Library (IDAL) established a consortium to serve the 150-member public and private academic libraries with the information resources, including EBSCOhost full-text databases, etc. (Brooks and Dorst 2002). Influencing the pricing model and license negotiations for EIRs were identified as the library consortia's primary responsibility (Allen and Hirshon 1998). The consortia survey by Perry (2009) also reported that license negotiation, budget management, and licensing new acquisition are the most vital issues in the alliance. For sustainable EIRs services in libraries, budget management, and license negotiation are the most critical issues in the future (Perry 2009). Similarly, Turner (2014) identified other vital areas for local consortiums that include: Cooperative Collection Development (CCD) and acquisition approaches.

The challenges include a limitation to local spending autonomy by boundaries placed on acquisition fund provided for individual institutions' needs (Turner 2014); escalating cost commitment on multiyear licensed Big Deal e-Journal (Kinner and Crosetto 2009); equity sharing of the complex price quotations (Westmoreland and

Shirley 2004); and inflation cost impact on acquired resources budget (Kinner and Crosetto 2009).

Institutional Repository (IR) is an institution's local database, housing the institution's local collections in a digital form. Lagzian, Abrizah, and Wee (2013) view IR as a kind of digital library. The success rate with IR depends on the management's effort to ensure updates, local collection policies, and awareness of the availability of and value to the community (Dorner and Revell 2012). Markey et al. (2009), in a comparative study of five IRs in higher institutions, postulated that successful implementation of IR strongly depends on its internal and external supporting factors. These factors include management and organisation, content, and services, organisation network, policy, advocacy and the commitment of human and financial resources (Cullen and Chawner 2012).

Pay per view strategic initiative is one of the economic strategies that can be applied to ensure EIRs' services provision in ULs. It is a common application for e-book purchases for cost-effective information services delivery (Macicak and Schell 2009). This strategy was applied for interlibrary loans and cost-effective measures at the University of Nebraska Medical Centers McGroogan library of medicine in the USA (Brawn 2012). Direct purchase of articles from the publishers was piloted, and study findings showed that continuous practice results in significant savings for the library (Brawn 2012). A study result indicated pay-per-view strategy could be applied in the financial crisis-era and also serve as economies of scale (Fought, Gahn and Mills 2014), since most libraries are struggling to control their expenditure and provide a user with valued and quality information content at the same time (Jarvis and Gregory 2016). The PPV initiative can help libraries purchase directly to meet the users' information needs, where funding poses a problem to bulk purchase of EIRs. Carr and Collins (2009) reported simultaneous cost control and broad access to EIRs in six US academic libraries by offering a PPV access strategy. Significantly, PPV can save costs from procurement of needed quality from volumes of irrelevant collections. As

evidenced in St John's University Library, Wiley subscriptions were converted to PPV applications resulting in substantial cost savings (Weicher and Zhang 2012). Therefore, without the PPV consideration, libraries will continue in financial struggle, purchasing quantity resources with a low value to users' needs, thereby frustrating the provision of sustainable EIRs services.

The studies above are highly relevant regarding economic strategies for sustaining EIRs services in university libraries, but these strategies are not common in Nigeria's LIS literature. Hence, the need to conduct the current study on strategies for sustaining electronic information resources services in North Central Nigeria's university libraries, which attempts to bridge the existing literature gap. The strategy challenges were indicated in a survey from 2010-2013 on Association of South-Eastern Research Libraries (ASERL) USA (Atkins, Greenwood and Whaley 2014), which includes an embargo on e-journal bibliography, licensing permission, skilled leadership and expertise workforce, a major change to workflow and staff responsibility as well as managing all users' individual expectations.

In Ireland, Latimer (1996) identified other strategies that include fee-based and targeted environment-specific professional information services. Latimer (1996) reveals that fees-based library services got high support. Hernon and Altman (2010), Myers (1984), Lee (1993), Ward (1997), Miller (2000) as well as Anyaoku and Nwosu (2009) indicate support for the fee-based library services initiative as the best strategy for securing and sustaining provision of library services, especially EIRs services. However, university libraries that are non-profit educational agencies may not subscribe to fee-based services. Even if university libraries were willing to subscribe to these services, all the dues and penalties they charge for years could not cover an EIR's library maintenance cost.

3.7.3 Social strategies for sustainable provision of EIRs services

Social strategies mean human engagement, community inclusions, and sensitisation initiatives towards ensuring usage of the available EIRs (Gaston et al. 2016). Economic strategies cannot sustain EIRs alone without strategic social initiatives for delivering service to the university library's end-users (Goulding 2016). Psychological engagement is essential because consumers are not passive recipients of information; they are participants (Schmitt 2012). Most libraries have divergent ways of socially promoting and advancing EIRs access and usage. For example, the Online Computer Library Center (OCLC) represents a strategic approach to sustainable EIRs services. It offers information sharing in online cataloguing data to subscribe to American academic libraries (Maciuszko 1984). Since its early development, the OCLC has been sharing catalogue-based resources on a central catalogue to member libraries (Maciuszko 1984).

Salmon, Kerr-Cambell, and Kerr (2017) examined the digital curation strategic approach on hidden special collections in ULs of West Indies in the context of the declining financial support. The study was concerned with librarians' service to users, and its focus was mainly on special collections, which are often unavailable to all users. Yan Hu and Hu (2015) further explored the use of the structural equation model (SEM) and the tetras-class model (TCM) to improve services to libraries. The study evaluates the structural initiative deployed to measure user satisfaction in the libraries as a social strategy to enhance sustainability in libraries.

Another social initiative in India is adduced by Nazir (2017), who investigated the e-resources preservation initiative from a global perspective by focusing on protecting information assets. The study found that though libraries subscribed to EIRs, that did not give them ownership to the content acquired because publishers may at a point end business or publication while terminating subscription contracts (Nazir 2017). This non-ownership of subscribed resources poses a massive challenge to the library

services (Hockx-Yu 2006 in Nazir 2017). Therefore, for consistency in EIRs provision, libraries must devise a means of local preservation licensed resources.

Most of the well-known examples of social initiatives applied in sustaining access to resources and usage in university libraries are online interlibrary loan, e-reference, digital archiving, institutional collaboration, user training, continuous staff development, management information system, marketing EIRs services and many more.

Online interlibrary loan strategies: Online interlibrary loan (ILL) provides EIRs resources to users, and the use of this initiative is for cost savings for the library (Baich 2012). Weible and Janke (2011, p.95) use an ILL management system for advanced automation and practice of ILL procedure that is better than OCLC WorldCat Resource Sharing. Given this set-up, interlibrary loan requests are sent electronically to libraries that are listed as owning resources, and the database is in the context of subscribing libraries known as ‘WorldCat’ (Musser and Coopey 2016). The social benefit of online interlibrary loan strategies is based on its unique platform for American university library cooperation in sharing EIRs. ILL has significant savings for most libraries and their lending partners, specifically in cutting down the cost of purchase (Baich 2012). Despite the ILL advantages, it is also with some disadvantages. According to Ponsford and Vanduinkerken (2007), the ILL is not intuitive for users; it wastes users’ time and is complex to apply. The procedure of applying for the online ILL is tagged as endless obstacles to access needed resources (Kenefick and DeVito 2013).

E-Reference strategies: The advancement in technology has enhanced the changing nature of reference services and users’ changing information search behaviour (Trott 2012). Zanin-Yost (2004) outlines the different names given to e-reference, including digital reference, online reference, virtual, and electronic reference. Malik and Mahmood (2013) defined e-reference as traditional referencing support served in an

EIR environment with technological facilities. The emergence of e-reference resulted from software development and the internet (Lankes 2000). In Pakistan, Khan et al. (2017) conducted a study that examined factors that influenced the adoption of E-references; the study revealed ICT skills and type of library as a strategy for sustaining EIRs in university libraries.

Khobragade and Lihitkar (2016) assert that e-reference is an initiative that improves academics' output, user supports, e-learning, and distance education. Despite e-reference relevance to the education system, most developing nations are reluctant to adopt its application (Malik and Mahmood 2013), possibly because of poor skills, policy, and operational framework. In addition, Kumari (2016) explained that teachers and students in developing nations are not aware of the use and relevance of e-referencing; thus, it is recommended for proactive programs to facilitate awareness and application. Malik and Mahmood (2013) recommended e-references as librarians' innovative approach in enhancing access to their collection. According to Dougherty (2002), over 1000 ULs in the USA by 2002 had adopted e-reference services initiatives. The collaborative e-reference services were introduced as a cooperative strategy by OCLC and the Library of Congress (Hirko 2002). The study by Bridges, Gascho, and Griggs (2010) provides an overview of global mobile usage, mobile technology, and a review of catalogue options, including the application of library services concept into mobile technology operation in the USA. The findings revealed that the mobile EIRs databases such as 'EBSCO Mobil, Summon, IEEE Explore Mobile, and PubMed' are strategic means for sustaining library services (Bridge et al. 2010, p.317). The adoption and application of the e-reference service's initiative are scarce within Nigerian LIS literature.

Digital Archiving strategies: Digital archiving is a strategy for data preservation and sharing (Cliggett 2013). Digital preservation is a broader term and a vital facet in a digital management environment, though overlooked by library administrators (Oehlerts and Liu 2013). The study of Nazir (2017) revealed some digital archiving

initiatives that include the Web Archiving Services initiative at the University of California in the USA, the LOCKSS Program (a digital strategy that connected 164 libraries and 88 publishers' collections), and CLOCKSS. These archiving strategies are designed for EIRs in web closure cases, expiration of license duration, and blockage. Importantly, Nazir noted that institutions in Australia, Germany, and America have adopted and implemented archival initiatives as a social strategy for sustaining EIRs services.

Further, Nazir (2017, p.194) states that archiving makes e-resources available, accessible, and usable for posterity and information needs satisfaction. Various archival initiatives have been designed and applied in Indian institutions. They include Digital Publishing Solution (DPS), scanning of online resources, SAMPRADAYA documentation, and preservation initiative by South Indian music collection, and JAVA Archiving by Indian National Archives, and Digital Library India (DLI) (Nazir 2017). Nazir recommends that information professionals, stakeholders, and funders need to design and implement a social strategy that enforces information security, longevity, safety, and accessibility in all information environments.

3.7.4 Environmental strategic initiatives for sustainable provision of EIRs services

The provision of information resources to ULs users has been the primary aim of librarians and library management (Kassim 2009). Accomplishing this task will only be possible if there is efficient technological infrastructure in a standard environment such as internet connectivity, computers technology, and any other electronic facilities to leverage EIRs services. Ongus et al. (2007, p.5) posited that library managers must design possible strategies to sustain EIRs services. The use of technology facilities increases energy consumption and environmental cost. For sustainability, libraries should adopt an EIRs initiative for their information services (Chowdhury 2016). The energy consumption of EIRs services in ULs was examined from China by Xuan and

Hongyan (2011, pp.4-5), who revealed that libraries established before the mid-1990s consumed low electricity and that the cost of maintaining such ULs are lesser in comparison with those established after mid-1990s, which consumed a considerable percentage of the institution energy. The energy consumption gap might be attributed to the technological facilities and other technologies to regulate the environment and temperature, such as air conditioners, security cameras, projectors, internet connection, and computers (Chowdhury 2013). These environmental issues in the library require strategic management efforts.

Makori (2015) considers and evaluates micro factors influencing electronic information resources usage by postgraduate students in Kenya's higher learning institutions. The study revealed that the effectiveness of available resources, usage skills, and adequate facilities enhances EIRs' usage. The study recommended that libraries should enhance their environmental facilities to improve the use of EIRs. Another study in Nigeria by Oduwole and Akpati (2003) examined the issues of access and retrieval of EIRs at the University of Agriculture Abeokuta. Significant constraints highlighted in this study pertain to infrastructure unavailability and electricity outages. Ani, Esin, and Edem (2005) examined the extent of EIRs adoption in libraries and revealed that the significant constraints to fulfilling EIRs services are inadequate funding and poor electricity supply.

Magoi and Gani (2014) assert that the lack of electricity supply poses an existential threat to library collections, like EIRs and other cloud-based services. It is mainly if the UL is located in an environment where electricity supply is not guaranteed (Magoi and Gani 2014; Yaya 2015; Ntui, Robert and Usang 2017). Another threat to providing EIRs services is the 'chronic financial constraints and inadequate basic infrastructure' (Jain and Akakandelwa 2016, p.147). Nevertheless, backup power supply, technological facilities, and robust strategic initiative application could be adopted to limit such environmental challenges in ULs. Some of the thriving identified examples of EIRs' environmental initiatives for university libraries' information services are

constant power supply, adequate green learning space, information literacy space, adequate up-to-date computer system, and system networking connection.

EIRs common: According to Aabø and Audunson (2012, p.139), ‘the library is a complex arena, being a public, parochial and private realm’. Leckie and Hopkins (2002) observe that two Canadian metropolitan libraries have implemented users’ activities, including writing, reading, talking, and computer practices. In contrast, Fisher et al. (2007), in a study, revealed that users regard the library as a social place and that a library has a unique role in meetings. The question remains whether libraries are creating common spaces for users’ meetings. Bryant et al. (2009) investigated British UL student use of the open common space using observation. The findings revealed that common space in this library accommodated a range of academic work and social activities. Johnson and Griffis (2009) posited that students’ use of the library is a deliberate action and a strategy to meet with their fellow students. In addition, the study found that the relevance of the library is not only in resources but also common space and physical structure for meetings. Therefore, libraries need to plan space that would attract patrons for social events, reading, interactive purposes, and personal computer (PC) connections.

Green Library strategy: Kraljevic and Lukacic (2015, p.2) note that green library strategy is designed to change human relationships to nature, that is, ‘parasitical to symbiotically one’ (from unsustainable to sustainable). They contend that green library initiatives provide access to ‘green’ information and relevant ideas on green topics. From the library context, it is awareness of the sustainable earth, planning the present alongside the future. Tseng (2008) surveyed users’ opinions in Taipei public libraries to investigate green libraries’ relevance. The study revealed that the improved library patronage was from their innovative design, unique furniture, and architecture, creating inclinations for the new design. It also led to multifaceted benefits that include finding support and generally being satisfied with environmental services. The study concluded by highlighting the features of green libraries as follows:

they create environmentally friendly, ecological architecture; develop local features; shape unique reading environments, and upgrade the quality of reading space. It includes attracting high patronage of users, experts, and professionals; increases the visibility of the library; embodies the principles of ecological education and multi-faceted learning centre; gains the support of resident and professional expertise (Tseng 2008, p.333).

A study from the Chinese University of Hong Kong by Jones and Wong (2016) explored the library green strategies in the context of sustainability. It revealed that Chinese libraries formulate, develop, and implement a green strategy, which positively affects library services. The study further noted that in the USA, there are very few libraries in a leadership position in energy and environmental design (Jones and Wong 2016). In the Nigerian context, green library initiative adoption and application are unknown in the literature despite their relevance to education and national development.

Constant electricity supply strategy: This is the most vital part of the EIRs environmental services. Lack of or low power supply in any given library can obstruct information access and retrieval as EIRs strongly depend on it. According to Noble (2004, p.12), ‘environmental issues define a new agenda for energy research and energy policy development’. In Canada, efforts were put in place at the national, provincial, and sector levels to identify options and energy policies that can improve Canada’s electricity future (Noble 2004). There was a high emphasis on renewable energy, ‘electricity diversification and improvements in fossil-fuelled technologies as preferred options for their electricity future’ (Noble 2004, p.27). Leibowicz (2014) posited that Japan has not settled for a long-term electricity strategy but has identified energy efficient strategies that can enhance their supply, such as nuclear generation, liquefied natural gas (LNG), and fossil fuels- through costly and risky. These efforts are deemed as poor long-term electricity strategies (Leibowicz 2014).

Eze and Uzoigwe (2013) investigated academic library contributions to education in South-East, Nigeria. The study revealed that libraries provide EIRs services but not without challenges, specifically environmental issues such as low electricity supply. Ezeani and Igwesi (2012) reported unreliable power supply and that the low supply of electricity poses a serious challenge for EIRs services within the library. Similarly, Aina, Ogundipe, and Adebawale (2013) reported that poor electricity discourages users' participation in online services. The authors recommended the need for strategic applications to solving this electricity crisis in Nigeria. Therefore, it is highly significant for ULs' planning to provide EIRs services to review their environmental strategies and prioritise electricity supply.

Information literacy space: Most libraries find value in advancing access and utilisation of resources by users. For this reason, libraries fix the time for teaching students information literacy skills (Julian 2013). Literacy space energises instruction if the instructor applies teaching techniques in a more flexible learning environment (Julian 2013). Such innovative space attracts the active participation of the patrons because of the modified environment and practical application. Therefore, information literacy space is good for sustainable EIRs services provision in ULs that must be embraced for users' training. Head (2016) investigated 22 academic libraries' learning spaces in the US and Canada to identify their approaches, best practices in planning, and designing library space and their challenges. The study reported that most of these libraries allocate learning space for tutoring or occasional class by an instructor, collaborative and individual studies. Shared commitments by librarians and architects to meet users' information needs was the practice of the day. The challenges highlighted include library common space with tutoring, providing electricity enough for IT devices, communication gaps with the planning committee, building consensus, inadequate knowledge of architectural and IT library issues (Head 2016). The learning space strategy is a recent technological innovation in libraries, which must be incorporated into the libraries' architectural planning for sustaining EIRs services in ULs.

Constant update of facilities is another environmental strategy for sustaining EIRs services. This strategy applies maintenance and security measures to the available technological facilities within the library environments. The hardware and software used in the library need constant updates to protect facilities from environmental deterioration. According to Lewis (2019), the threat facilities, especially hardware and software, are cyber threats that lead to loss of service, data, and loss of security. The hacking of social network needs a countermeasure to address the critical infrastructural protection issues.

In a study, Ling et al. (2004) suggested that brands should maintain a social presence across social channels with fresh and frequent content, including incentives for consumer participation such as an update of facilities. In a related study, Ashley and Tuten (2014) confirmed the importance of frequent updates and participation incentives. The technology facility updates in Nigerian ULs are not prioritised in planning and providing EIRs services to enhance sustainability.

3.8 Nigeria's LIS bibliometrics overview

Scholars have widely used bibliometric studies to evaluate research and scientific literature worldwide (Ani, Ngulube, and Onyancha 2017). Bibliometrics, as a discipline, is concerned with the quantitative study of bibliographic materials or written publications (Merigo, Gil-Lafuente and Yager 2015, p.420). Ani and Okwueze (2017) applied bibliometric analysis publications between 2005 to 2014 by Nigerian scholars in the LIS field. They found that these scholars' major research areas within the specified period were information technology/information and communication technology, library and information services, and library automation/computerisation. In a similar study, Udo-Anyawu (2018) found that library and information communication technology was the most researched area in 2004-2013.

From the two bibliometric studies reported above, further analysis revealed that North Central Nigeria (NCN) institutions did not significantly contribute to Nigeria's LIS

field (Udo-Anyanwu 2018; Ani, Ngulube and Onyancha 2017). This indicates that there is low LIS research output from the North Central region of Nigeria. Ani and Okwueze (2017), in a study at the University of Ibadan, Ibadan; University of Nigeria; and Delta State University, Abraka, found these institutions made the most important contributions to LIS research in Nigeria. These institutions are from Southern Nigeria. Because of the low level of research activities in the LIS field from the North Central region of Nigeria, Udo-Anyanwu (2018) and Edewor (2013) recommended more research output from North-Central Nigeria.

Further, Tella and Olabooye (2014) evaluated LIS research in Nigeria from 2000 to 2012 and reported that 218 articles were published in the LIS discipline. Out of this number, 126 (57.8%) were focused on information resources. Most importantly, the bibliometric studies revealed little or no studies on either EIRs or sustainability strategies on EIRs in Nigeria's North Central region. Globally, empirical studies on EIRs services from the African continent are incredibly low compared to the other continents (Onyancha 2007). Anunobi and Onyebinama (2016), in a study, explored the strategic initiatives applied by the University of Technology Owerri (FUTO) in the South-East. The result showed that innovative initiatives employed in FUTO led not only to high-class library services but improved library patronage, academic advancement, and productivity.

Xu (2016), in a study in the US, found that libraries and librarians could advance sustainability projects in their communities by providing adequate information services to patrons through various initiatives, which would impact teaching, learning, and research. Therefore, the current study similarly investigates sustainability practices regarding EIRs and related services in university libraries in North Central, Nigeria. The study also considers sustainability approaches, the theories and scope used to study sustainability, and methods applied to collect empirical data on libraries' strategic initiatives in sustaining their EIRs. The current study uses quantitative and

qualitative methods to elucidate data from four selected universities in North Central Nigeria.

3.9 Summary

The present study aimed to uncover and bridge the existing gaps in knowledge about EIRs' sustainability in North Central Nigeria's ULs. This chapter reviewed the literature in print and electronic formats, including books, journals, conference proceedings, and other information-carrying formats. During the review of related literature, some new findings were unearthed. Firstly, there is a lack of literature on strategies for sustaining EIRs' services provision in North Central Nigeria's university libraries. Secondly, information literacy, which is a crucial aspect of sustaining EIRs, was lacking, leading to the integration of information literacy skills in the universities' curricula.

The literature reviewed on Nigeria and the rest of the African continent revealed limited studies on EIRs; most applied a case study approach focusing on EIRs adoption, usage, access, challenges, and various other aspects of library services. The literature reviewed also focused on concepts of sustainability, status, and effectiveness of EIRs, sources of funding for libraries and EIRs, strategic planning and policy adopted by the libraries for EIRs implementation, economic, social and environmental strategic initiatives employed in sustaining EIRs services and the challenges of sustaining EIRs. The next chapter discusses the research methodology.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the research methodology and design adopted in the study. The research design presents a holistic frame and methodological architecture of a scientific study. Research design is regarded as the architectural design of a scientific enquiry that provides the researcher with the ability to examine the real-life context (Robson 2011; Lee-Abbott and McKinney 2013). Adams (2014, p.1) defines research as a detailed search, inquiry, or examination to detect new facts and reach new conclusions. Therefore, research may relate to any subject of inquiry and involve gathering information, understanding facts, and reviewing existing theories or laws in the light of newly discovered facts or practical ideas. Research improves the documentation and understanding of concepts and activities in one's surroundings or broad environment, expanding present knowledge for future reference. It covers data collection techniques, population overviews, sampling procedure, sample size, and data analysis. This chapter presents the research paradigm and methodology, population, sampling techniques, research methods, and data collection. It further covers the validity, reliability of the instruments, data analysis, and ethical considerations of the study.

The methodology is viewed as a means or model for data gathering, often involving a process of articulating results and findings (Howell 2013). Myers (2009) defines research methodology as a strategy of enquiry, which moves from underlying assumptions to research design and data collection. It is a means by which data is collected and analysed, and generalisations and representations are derived from the findings (Myer 2009).

Therefore, the study seeks to answer the following questions regarding the electronic information resources in university libraries:

- i. How effective is the provision of EIRs in University libraries in North Central Nigeria (NCN)?
- ii. How sustainable are sources of funding for EIRs?
- iii. What strategies and policies are implemented to ensure the sustainable provision of EIRs?
- iv. To what extent have libraries applied economic, social, and environmental strategies for the sustainable provision of EIRs services?
- v. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

According to Dawson (2002, p.22), research methodology entails the philosophy or the general principle that guides one's research. It involves the comprehensive approach to studying the research topic and the related issues that need reviewing, such as challenges, gaps, and changes occurring in transition and ethical choices necessitated by the research. Kothari (2004) sees the research methodology as a way of solving a research problem systematically. Bogdan and Biklen (1992), Sarantakos (2005) and Marczyk, DeMatteo and Festinger (2005), on their part, affirm that a research method is a guideline drawn from principles, procedures, approaches, and governing investigations.

Every study concentrates on the gathering of data as an essential part of its procedures. The overall research process intends to gain a broader understanding of a situation, phenomena, community or person; often, the need for a study arises from a lack of basic information in a new area of interest (Bless, Higson-Smith and Kagee 2006, p.41). According to Davis (2015) and Bertram and Christiansen (2014, p.8), the research aims to develop a clear understanding of the world in a specific focus area and build awareness of existing knowledge, beliefs, values, attitudes, and practices. The activities involved in any study compel the researcher to discover new insights

into, and aspects of, the subject of study to add value to existing practices or expose certain phenomena that occur in these practices (Lawson 1997, p.126).

4.2 Research paradigms

A research paradigm is an essential philosophical aspect of a study because it grounds a study through a philosophical nuance of knowledge-creating (what we learn and how we learn). As defined by Kuhn (1962, p.7), a paradigm is ‘an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools’. Kuhn (1962) viewed paradigm as a research tradition that relies on the belief, principles, assumptions, and values in all findings. Olsen, Lodwick, and Dunlop (1992, p.16) define a paradigm as ‘a design and styles or scientific system of investigation’.

The concept ‘paradigm’ involves adopting principles to solve problems by applying relevant procedures that may lead to findings (Creswell 2003). It describes a set of beliefs and dictates the scientist’s role in a specific discipline as the person who decides what should be studied, how to study it, and how to analyse the study results (Bryman 2012, p.630). Guba and Lincoln (2005) stated that the paradigm contains assumptions that guide the researcher’s enquiry in a study. To ensure validity and relevance, Myers and Avison (2002) indicate that research needs to adhere to a method recommended in the research paradigm; this ‘determines what questions are considered worthy of investigation and what processes are required for the answers to these questions to be acceptable’ (Plooy-Cilliers 2014, p.19).

There are different schools of thought or communities such as positivism, positivists, post positivists, and interpretive (explanatory or revelatory). However, other researchers contended that there was at a time five types of research paradigms that existed which were categorised as logical deduction, natural analogue, case analysis, human studies, and ecology study (Li and Hu 2005).

Nevertheless, Mack (2010) categorised the three genres of research philosophies (positivist, interpretive and post-positivists) into two strata to outline their ontological and epistemological assumptions (see table 4.1).

Table 4.1: Comparison of ontological and epistemological assumptions

Positivist ontological assumption	Positivist epistemological assumption
Reality is external and devoid of human influence.	Natural science methodology is applicable in the social science context.
Reality can be captured and predicted	Knowledge is deductively generated from a hypothesis or theory and is objective.
Objects have meaning independent of our conscience.	Truth can be achieved because knowledge rests on a firm indisputable truth from which we can deduce our beliefs.
Post positivist ontological assumption	Post positivist epistemological assumption
There is more than one universal way to obtain knowledge, such as learning about IT alignment.	Theories can never obtain the truth but can lead a researcher closer to the knowledge of truth.
There is more than one way to obtain the truth or learn about reality.	The methodology can be adjusted to provide objective research within social science.
Interpretivist ontological assumption	Interpretivist epistemological assumption
Reality (IT alignment) is indirectly constructed based on the SMEs individual interpretation (jobs).	Knowledge is gained through a strategy (such as the SMEs strategic IT alignment through SAM model) that respects the difference between people and the object of research (such as the SMEs and IT) and require social scientists to grasp the unbiased and objective.
People interpret and make their meaning of events.	
There are multiple perspectives on one incident (using methods of triangulation to understand IT alignment).	Knowledge is obtained through inductive reasoning to create or come up with a theory.
Understanding the cause of a social event is based on the researcher's interpretation, and meaning arrived at.	Knowledge is gained through personal experiences.

	Knowledge is gained through a particular social situation and not reduced to a simplistic but rigorous interpretation of the complex social phenomenon.
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(Source: Mack 2010)

Although Willcocks and Mingers (2004) list four major paradigms widely used in information system research, namely positivism, interpretative approach, advocacy, and pragmatism, the philosophical approach research adopts must be appropriately justified based on its epistemology and ontological assumptions. Creswell and Cheryl (2018) suggest an agenda for research paradigms that point out that social reality can be classified into five paradigms: the ontology issue, epistemology issue, rhetorical issue, axiological issue, and methodological issue (Creswell and Cheryl 2018). Ontology deals with the nature of reality concerning the concept of knowledge. In contrast, epistemology is concerned with connecting the researcher and the research topic (Creswell and Clark 2007). A rhetorical aspect is concerned with the content of spoken words, images, and gestures, including the styles and forms for which they are presented to the audience (Borchers and Hundley 2018).

On the other hand, the axiological aspect is a philosophical study of values that enables the researcher to identify specific situations and determine research courses meaningful to both researcher and participants (Peer 2018). The methodological deals with the system of approaches applied in a study to ethical problem-solving. Paradigms and interpretations of social reality explain inductive and deductive viewpoints concerning social reality from a subjective or objective position which should be part of any adopted study method (Creswell and Cheryl 2018). Creswell and Cheryl (2018) further limit paradigms' relevance to the qualitative strand in social reality studies. Creswell and Plano-Clark (2007) and Tashakkori and Teddlie (2003) posit that qualitative research can be quantified to explain the results from the research findings.

The proponents of the positivism paradigm believe that true knowledge can be obtained through observation and experiment. Hence, positivists usually select a scientific method to produce knowledge. Positivism is also referred to as a scientific method, empirical science, post-positivism and quantitative research. Levine, Sober and Wright (1987) argued that reality is highly considered remaining stable and can be objectively observed or described in positivism. The question of the positivist paradigm being appropriate or not for social sciences is intensely debated (Hirschheim 1985).

On the other hand, the interpretative approach's proponents believe that the ontology issue implies that the researcher, the individuals being researched, and the reader of the resulting study interpret the information differently (Creswell 2009), hence, the interpretative paradigm. The advocacy paradigm supporters claim that knowledge obtained through this paradigm is also known as a critical paradigm. In a debate that started in the 1980s and continued into the 1990s, Aliyu et al. (2014) argued that the positivist paradigm does not adequately address social and political issues. Given this, authors such as Kemmis and Wilkinson (1998), Fay (1987) have stressed the advocacy paradigm's prominence in their scholarships. These researchers believe that inquiry must consider political and social issues. Thus, research should contain an agenda of reform and address questions of empowerment, productivity, sustainable development, information common, funding crises, and satisfactory services (Nahman, Wise and Lange 2009).

According to Healy and Perry (2000), Realism is a scientific paradigm adequate and mostly applied in qualitative research. Realism is an increasingly valuable worldview for some social scientists and a rising movement in management investigation (Sobh and Perry 2006). Its findings from a study are extended by analytical generalisation that shows how a study project's empirical results nestle within theories (Yin 1989, p.21). In other words, realism aims to generalise to theoretical prepositions and not populations (Yin 1989). The object of realism enquiry exists indecently of the

researcher whose mission is to discover the unbiased reality (Kukla 2006). According to Keohane (1986), realism is also a necessary component in a coherent analysis of world politics because it focuses on power, interest, and reality; rationality is crucial to understanding a phenomenon. Riege (2003) posited that realists acknowledge differences between the real world and their particular view of it and try to construct various views of this reality regarding which ones are relative in time and place. However, in social research, the underlying structures investigated are only contingently linked to the researcher's experience in the field.

In social science research, pragmatism is viewed as an approach that explores various theories or beliefs and practices based on their practical application success to social settings. Creswell and Plano Clark (2011), Johnson and Gray (2010), Scotte and Briggs (2009), Teddlie and Tashakkori (2009), Morgan (2007), and Onwugbuzie and Johnson (2006) perceived the pragmatism paradigm as a philosophy that is applied as an alternative for theoretical and logical science and appropriate paradigm for conducting mixed-method studies. According to Goldkuhl (2004, p.1), 'pragmatism has a clear foundation in empiricism, but goes beyond a pure orientation to observation of a given reality'. The pragmatism paradigm focuses on what might be and what has been (Goldkuhl 2004). Goldkuhl (2004, p.1) further posits that 'action is the way to change' and sees the pragmatism paradigm as 'a theory that completely acknowledges the mutual permeation of knowledge and action'. In addition, Goldkuhl (2004) states that activities in information science study results should be directed by information and purpose in all certainty. Pierce (1912), as cited in Kilpinen (2008, p.1), stated that was derived from pragma – or behaviour – so that it should be understood. Pragmatism aims to identify a weakness and transform it through a mixed-method application (Tashakkori and Teddlie 1998; Johnson and Onwuegbuzie 2004). This school of thought believes that true knowledge can be produced using mixed-methods (Rahi 2017).

Creswell (2009) and Morgan (2007) affirm that the pragmatic approach permits qualitative and quantitative research methodologies for data collection and makes inquiries into complex phenomena in social and natural contexts. The pragmatic research philosophy offers the researcher the opportunity to be objective and subjective in analysing the findings obtained from participants by permitting mixed-methods for data collection (Saunders et al. 2009). As researchers are free to use quantitative and qualitative methodologies, the critical point is to determine which techniques and study procedures are best suited for solving their problem statements. Table 4.2 shows the mapping of philosophical approaches and the four paradigms.

Table 4.2: Mapping of philosophical approaches and the four paradigms

Philosophical approaches	Interpretive	Positivism	Pragmatism	Realism
Ontology	Things are socially constructed, leading to subjective reasoning which may change and which involves multiple realities	Emphasises that the researcher is external to, objective towards, and independent of, his or her study	The researcher is external, multiple, and their methodology is chosen as suitable for providing the best answer to the research questions	The researcher is objective and exists independently of the human mind but as interpreted from a social situation
Epistemology	Towards subjective meanings of social phenomena, looking at details and the realities behind them, motivating actions	Things are observed to prove the credibility of facts, focusing on causality, law, and generalisations, thereby reducing phenomena to their simplest constituents.	Subjective or objective observations can provide factual answers to a research question. Thus, merging views are practically applied to issues and thereby help to interpret data	The insight that observing an event leads to the credibility of facts being approved. Scarcity of data and facts creates imprecision and misinterpretation . To find explanations, the researcher must restrict their focus to the context(s) of the research problem.

Philosophical approaches	Interpretive	Positivism	Pragmatism	Realism
Axiology	The research is value bound, such that the researcher is part of what is being studied and not isolated from the study topic. He or she is, thus, bound to be subjective	The research is value-free, hence, independent of the data and the study objective in the analysis of data	Values play a vital role in the interpretation of results, using subjective and objective reasoning	The research is value-laden. Hence, the researcher is biased by world views, culture, values and experiences, which will affect the research and its results
Approach	Qualitative	The quantitative but qualitative method can also be used	Uses both qualitative and quantitative approaches	The adopted approach depends on the research matter
Method	Mixed or multiple methods	Mono-method but mixed methods can be applied in certain cases	Mixed or multiple methods	The method to be used depends on the research problem or situation

(Source: Ihuah and Eaton 2013)

Based on the above considerations, the pragmatism paradigm was considered the best choice for the present study. It enabled the researcher to use both qualitative and quantitative methods to collect empirical data from the library management teams, academic librarians and ICT library support staff at the four federal universities in North-Central Nigeria. The collected data described the effectiveness of the available EIRs services in selected libraries, efficiency of funding sources, strategic planning and policy implementation impact, the extent of applying economic, social and environmental strategic initiatives for sustaining EIRs services and hindrances to providing EIRs services.

The application of pragmatism in investigating the strategies for sustainable provision of EIRs presents a deep understanding of strategic management in providing EIRs for sustainable information service delivery in ULs. The researcher's perspective is to examine the strategies applied by libraries in sustaining the provision of EIRs in their respective institutions. Another focused area is the status of the available EIRs that requires sustainability attention—also funding sources to see how efficient the funding is to sustain the provision of EIRs and the strategic planning and policy implementation that guides the activities for sustainable EIRs services. The ontological point of the researcher is the logical footing that pre-empts this study. In terms of epistemology, the primary understanding of how university libraries in North Central Nigeria sustain EIRs is yet to receive adequate attention. A subjective and objective enquiry is required in investigating a complex and challenging phenomenon such as library management of EIRs.

According to Creswell (2008), a mixed-method is the method and methodology for research procedure, which enhances data collection, analysis, and interpretation of quantitative and qualitative findings in a single investigation study. It is also seen as logical enquiries that regulate the choice of research methods from its broad context and is conversant by conceptual positions common to the researcher adopting mixed methods (Tashakkori and Teddlie 2010). More importantly, a mixed-method is a mixture of quantitative and qualitative techniques deployed in research to reveal extensive findings to answer the various research questions raised.

Flicks (2018) presented guiding questions for consideration when combining qualitative and quantitative research; these are as follows:

- i. Are both approaches given equal weight? (planning, the relevance of result and judging the quality of research?)
- ii. Are the two approaches merely applied separately, or are they really related to each other?

- iii. What are the logical relations between the two? Or are they integrated into a multi-method design?
- iv. What are the criteria used for evaluating the research overall?

4.3 Research approach

Research method techniques are used for conducting research (Kothari and Garg 2014, p.6). In other words, they are approaches used by the researcher in performing research operations. A research approach is a way to solve the research problem systematically. It is a science of studying how research is done scientifically by looking at the various steps adopted by the researcher in studying the research problem and the logic behind them (Kothari and Garg 2014, p.7). Thus, it is incumbent for researchers to know the research techniques and the methodology (Kothari and Garg 2014, p.7). Ngulube (2005, p.129) emphasises the importance of researchers identifying the methods they apply as a guideline for future researchers regarding the testing and adopting or rejecting a specific design in similar studies. Garaba (2010, p.144) states that a comprehensive, detailed presentation of the methods used in a research study may instigate readers to compare the procedures with those applied in related studies. According to Babbie and Mouton (2001), Creswell (2003), Punch (2005), Terre Blanche, Kelly and Durrheim (2006), Teddlie and Tashakkori (2009), the major research design used in social science studies are the quantitative, qualitative and mixed methods design. Mixed method research design is ‘a means for collecting and analysing data by a mixture of quantitative and qualitative research methods in order to understand a research interest’ (Creswell and Plano 2007, p.6). For mixed methods to be adequately used in any research, the adopted paradigm should align with the research method to be used in the research.

Lather (2006) motivates for combining quantitative and qualitative research methods because increasingly, pragmatists are opposed to purist methodology (Guba 1990). Cho, Okuboyejo and Dickson (2017) believe that methodological triangulation plays a

vital role in in-depth social phenomena investigations. Hong and Espelage (2011), Creswell (2012), as well as Frels and Onwuegbuzie (2013) argue that the combination of quantitative and qualitative methods explores details in the contributions of respondents. Moreover, multi-methods help counter salient weaknesses in a research design (Gall, Gall and Borg 2007; Salehi and Goafshani 2010; Truscott et al. 2010; Creswell 2012; Greenwood and Terry 2012; Venkatesh, Brown and Bala 2013). Cronholm and Hjalmarsson (2011) and Venkatesh et al. (2013a) also argue that the rich exploration resulting from the mixed approach reveals insights into and leads to robust conclusions on the phenomenon under evaluation, so the ability to generalise the study's findings gets considerably enhanced. Therefore, the present study applied a multi-method approach to investigate the strategies applied for sustainable EIRs provision in ULs.

The adoption of multi-methods in the current study results from various approaches in exploring the strategic approach in social phenomena as recommended in the pragmatist paradigm. This way, the results of the study will be more comprehensive and resourceful. While the qualitative information demands some explanation by the respondents, the quantitative gives direct answers to questions that might not be comprehensive. From the five (5) research questions guiding this study, the qualitative interview schedule (see appendix 1) was used to augment the quantitative instrument – the questionnaire (see appendix 4). The interview schedule questions, questionnaire, document analysed (see appendix 2), and observation checklist (appendix 3) were guided by the conceptual framework drawn from the two theories' main constructs underpinning this study. They sought to find answers to the research questions on strategic initiatives (economic, social, and environmental), impact, effectiveness and efficiency of EIRs in the various university libraries sampled in this study.

4.4 Research design

A pragmatic paradigm multi-methods design was used in this study to investigate the strategies applied in sustaining EIRs services in selected university libraries. Research design is a scientific framework that drives the connection between the research exercise and the outlined research questions. It is a planned action or a blueprint that reflects what the researcher intends to achieve in a particular study (Babbie and Mouton 2001; Creswell 2014). Polit and Beck (2004) viewed the research design as the general plan to answer the research questions and solve its challenges. Similarly, Yin (1989, p.21) defines a research design as a logical sequence of activities that links the empirical data to a study's original research question and that reflects how its action plan progresses from research question to data collection, data analysis, the interpretation of data and recommendations related to the research problem. Yin (1989), Sekaran (2003), Flick (2009), and Kothari (2004) add that a research design points out several critical choices to be made on how data can be proficiently collected and analysed to reach conclusions. Apart from quantitative and qualitative research designs, a researcher may choose a survey research design, an experimental research design, a cross-sectional research design or a longitudinal research design; all are evidence that a research design offers a much broader scope than the research methods (Neuman 2014).

The present study used a pragmatic, multi-method design (Morse 2003). The pragmatic multi-method was adopted because it enabled the researcher to collect, analyse and draw conclusions accurately from the collected data. Multi-method design refers to using more than one data collection technique and applying multiple methods to analyse the data using non-numerical (qualitative) procedures to answer the research question (Mohajan 2018).

However, the multi-method design was chosen because it combines quantitative and qualitative approaches (Hallebone and Priest 2009; Saunders et al. 2009, p.119). To

elucidate data from the strategies' applications in library enquiry is a complex multilevel phenomenon, and research can be developed along with different levels of analysing the finding. It provides a design that is most appropriate for this study. Ngulube and Ngulube (2015, p.4) argued that methodological triangulation research enables the researcher to obtain a complete picture of a marvel under investigation and achieve their research objective efficiently. The approach's application holds great promise for successfully investigating various research situations in context (Ngulube and Ngulube 2015).

According to Green et al. (2015), multiple data gathering methods can upturn the depth of inquiry as it enhances the reliability and validity of discoveries. Multi-method adoption is possible for methodological triangulation as it helps in a comprehensive understanding of given phenomena (Patton 2015). The multi-method approach was possible and effective because the researcher could employ different statistical methods in analysing the collected data. At the same time, SPSS was used in analysing the quantitative data; and thematic content analysis was used to analyse the qualitative data. The study's findings using these methods have a complementary effect on quantitative and qualitative instruments (interview, questionnaire, observation checklist and Document analysis) used in the study, making the study robust. It also contributes to the originality of the study. Patton (2015) advocated for this type of triangulation as a robust method for rich data collection and suitable for information research (Elo and Kyngas 2008). Besides, a new lens from a multi-method design perspective is highly required for exploratory inquiries of such strategic applications for sustainable provision of EIRs services in ULs to shed light on existing practices and open a range of vital options for sustainable EIRs services.

4.5 Population of the study

Wiid and Diggines (2013) define a population as 'the total group of people or entities from whom information is required'. The population drawn from the larger population

was based on its appropriateness and is considered the sample population (Pascoe 2014, p.135). The North-Central region of Nigeria has seven federal universities: University of Ilorin; University of Abuja; the Federal University of Technology Minna; University of Jos; Benue State University of Agriculture; the Federal University Lokoja, and Federal University Nassarawa. Out of these seven federal universities within the region, four were purposively selected for inclusion in this research. These are the University of Ilorin, University of Abuja, The Federal University of Technology, Minna, and the University of Jos.

North Central Nigeria is the sixth geo-political zone in Nigeria. Abuja is at the centre of the region, surrounded by North Central Nigeria's states: Lokoja state to the South East, Benue state to the West, Jos North-East, Nassarawa North, Kwara State (Ilorin) South and Niger state (Minna) South. The researcher's choice of the North-Central region was inspired by the ranking positions of its institutions. In the national university ranking, four of the selected universities made it into the top twenty-five out of two hundred universities in Nigeria.

The study population further consisted of academic librarians, library management teams (heads of sections in the library), ICT library support staff from UniMinna, UniAbuja, UniJos and UniIlorin. These staff categories were included in the study as they are charged with library management and information handling processes, including EIRs, where it is available in the selected university libraries. Academic librarians are library staff members who hold bachelor's degrees in library and Information Science, possibly with additional qualifications. At the same time, management teams comprised the University Library staff managing the library sections, whereas the ICT library support staff have a computer science degree and a vast knowledge of computer programs and hardware maintenance. The population of the individuals in the study consisted of 126 respondents, as presented in Table 4.3. The choice of respondents was based on their ability to provide relevant information

and on their management profiles related to electronic information resources and services.

Table 4.3: Population of university library staff in the selected universities

S/N	Institution	Rank	Librarians + Support staff	Library Management team
1	University of Abuja (UniAbuja)	9	14 + 4	5 (Echezona 2017)
2	University of Ilorin (Unilorin)	5	11 + 6	5 (Isah 2017)
3	University of Jos (UniJos)	23	26 + 7	7 (Akintunde 2017)
4	Federal University of Tech Minna (FUTMina)	11	28 + 6	7 (Alhassan 2017)
	TOTAL: 126		102	24

4.6 Sampling size

A sample is a sub-grouping of the target population that the study plans to cover and serves to obtain information concerning the general group (Asiamah, Mensah and Oteng-Abayie 2017). Extracting information covering the general population is the primary purpose of drawing samples from a large population (Meerwijk and Sevelius 2017). The sample must represent the population in its entirety (Coughlan, Cronin, and Ryan 2007). Sampling is as vital in qualitative as it is in a quantitative study. According to Bernard (2002, p.136), ‘data gathering is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework’. Hence, it is crucial to justify the manner and means of obtaining data, precisely the data sources (Etikan 2016, p.2). Sampling respondents is one systematic means of gathering data from a large population in research.

A census of the entire population was used for the present study. Sarantakos (1998, p.140) points out that a census is useful for small populations of 200 or less. There is no need for sampling in such a case, as the entire population involvement is possible. In the present study, the sample population included all academic librarians, including the EIRs library staff and the library management in the four selected universities and the ICT support staff (also known as Management of Information Systems staff). The reason for this choice was because all have experiences in the provision of EIRs services to share. Simultaneously, the EIRs library staff are responsible for the provision and for managing EIRs in university libraries. The selected respondents can report EIRs services issues in their respective libraries and recommend possible sustainable EIRs services.

4.7 Data collection instruments and procedure

The data collection instruments indicate the researcher's roadmap for gathering relevant information based on the research questions to support the study's empirical findings. According to Pickard (2013), data collection techniques involve interviews, questionnaires, and focus groups. Authors such as Creswell (2003), Knafl, and Breitmayer (1989) argue that for the analysis of research findings, data combination and validation, the application of triangulation is imperative. The data collection procedure depends on the researcher's action plan for obtaining data relevant to the outlined research questions. This study used a structured interview, document analysis, observation checklist, and questionnaires as data collection instruments. Miles, Huberman, and Saldana (1994) stated that the combination of quantitative and qualitative data collection methods presents the researcher with a good and valued mix. Greene and Caracelli (2003) add that a combination of data collection methods enables a complex view of social phenomena. Moreover, data collection using diverse approaches leads to a holistic perspective on study questions and their implications if adequately presented (Creswell 2014).

4.7.1 Structured interview

A structured interview is a qualitative method of data collection that permits the researcher to send questions to a participant to understand their personal opinion, views, and beliefs of a particular phenomenon (Strydom and Bezuidenhout 2014, p.188). According to Bertram and Christiansen (2015), interviews in research are very significant and excellent instruments for data collection since they promote an understanding of what a respondent knows, likes and dislikes, and an individual's perception of a specific phenomenon. An interview is a form of a conversation between researcher and respondent to gather data based on open-ended questions (Strydom and Bezuidenhout 2014, p.188). Saunders et al. (2012) identified three categories of interviews: structured, in-depth, and semi-structured. A structured interview was applied to solicit qualitative data from twenty-four (24) management librarians (Uniabuja 5, UniIlorin 5, Unijos 7, and FUTMinna 7) skilled in the use of EIRs and issues regarding them rather than the head of the sections. To ask predetermined sets of questions, the researcher employs a structured interview to use the same word or order of questions listed in the interview schedule (Okite-Amugboro 2017).

Yin (2011) and Kumar and Deo (2011) viewed an interview schedule as a list of outlined open-ended questions organised for discussion between interviewer and respondent in a face-to-face meeting. Kumar and Deo (2011) noted that uniform information that assures the researcher comparability of data is one primary advantage of a structured interview. Jamshed (2014) posits that structured interviews are based on an interview pre-set guide, a schematic presentation of questions or theme that need to be explored by the researcher. The present study presented pre-set questions for a qualitative interview to obtain data from a purposively selected participant rather than a statistically representative sample of a broader population. The interview is an instrument that provides the researcher with first-hand information provided by the respondents out of their volition. It is usually intended to collect verbal or undiluted

data regarding management practices from the ULs management teams understudied in this research. The quantitative structured interview will be used for a specific area of this finding, such as identifying strategic practices and challenges hindering EIRs' services provision in ULs. There was interest in understanding strategies applied to sustain EIRs services in ULs of North Central Nigeria despite the adverse reports in LIS literature.

The UL management teams were purposively selected for the interview. They form the selected university libraries' decision-making bodies and perform essential roles in adopting strategic initiatives to sustain EIRs services in these university libraries. In addition, they have a wealth of knowledge concerning library management activities. Simultaneously, the management teams are familiar with the library's policy, funding, and strategic planning for EIRs and related services. Because qualitative research experts argued that there is no direct response rate to participants' size, the sample size is contingent on specific influences connecting to epistemological, methodological, and practical issues (Baker and Edwards 2012). Morse (2000) posits that high relevant data can be collected from each participant in qualitative interviews. To overcome this, the researcher applies discretion in selecting several participants, time, and venue, including the pattern of incentives to attract participation (Rabiee 2004). Therefore, the researcher made appointments with the selected universities' library Heads at a convenient and suitable venue for the interviews. Twenty-four (24) sectional heads of the institutions' library under study were interviewed. Interview participants were selected based on their management skills to enhance the richness of data collection.

The interview schedule for heads of the sections was purposively selected as follows: five management librarians from the University of Ilorin, five management librarians from the University of Abuja, seven management librarians from the Federal University of Technology Minna, and seven management librarians from the University of Jos. Nevertheless, the participants' attendance recorded as four (4) from UniIlorin, five(5) from UniAbuja, five (5) from FUTMinna and six (6) from UniJos.

However, four (4) participants failed to partake in the interview. The interview was conducted in their open meeting space of the library, but in Jos and Abuja, the interview was conducted in the library's e-library section. Upon commencement of the interview, the interviewees signed the consent form accepting to participate. The interview response to questions was dominated by two participants (University Librarian, e-reference librarian, or e-librarian) in each of the scheduled meetings since they are custodians in managing EIRs services than other traditional services sectional heads and are knowledgeable with relevant data. With the qualitative structured interview questions, data were solicited from themes (see Appendix 1):

A. How effective are the provision of EIRs in University libraries in North Central Nigeria? This question had two interview sub-theme questions.

B. How efficient are sources of funding for sustainable EIRs? The following questions had four sub interview questions.

C. What strategies and policies are implemented that impact the sustainable provision of EIRs? This also had nine interview sub-questions and

D. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

This question had four interview sub-questions.

However, the interview was intended as an occasion for deeper reflection from professional experience on general knowledge regarding EIRs services management. All interviews with the library managers were audio-recorded.

4.7.2 Document evaluation

Document analysis has a different meaning in research. It is sometimes called a content review/analysis or document review. According to Bowen (2009), the

systematic procedure for reviewing or examining print and non-print vital information resources is known as document analysis. This procedure requires examining data and clear interpretation to better understand the phenomena under study and empirical knowledge production like other instruments in qualitative research (Corbin and Strauss 2008). Shah and Corley (2006) state that qualitative researchers can use written documents to access and obtain data as well as gain an understanding of the phenomenon under study. Document analysis involves examining data in written form, such as artefacts or other authors' works. The present study consulted written library documents such as library strategic planning and policy documents, national legislative document for libraries, and funding documents (see Appendix 2). Documents analysed were: from the University of Ilorin includes TETFund budget allocation 2015 and 2017, and the library strategic planning document; the University of Abuja presented only financial budget allocation document for 2017/2018 and Abuja University Library 2018 annual report; the Federal University of Technology Minna presented 2017 Annual Report Document of FUTMinna; the University of Jos presented University of Jos Annual Report of 2017/2018, strategic planning 2018 and University of Jos collection development policy document. The documents were coded following themes such as strategic planning on EIRs and services, a policy guiding EIRs and services, national legislative on EIRs and EIRs funding or grants. The examination of these documents delivered good insight and understanding of the studied libraries' statutes regarding the examined items. Documents for analysis are presented in table 4.4.

Table 4.4: Documents for analysis in surveyed ULs (Source: empirical data)

Institution	Team Number	Document selected	Data Analysed
University of Ilorin	1	1. TETFund Budget Allocation 2015 and 2017 2. Library strategic planning document 3. University of Ilorin Library Policy Document 4. Legal framework for EIRs services 5. NUC legal framework for EIRs services 6. LRCN legal framework for professionals in EIRs services	1a. Funds allocated for the library 1b. Funds allocated specifically for EIRs 1c. Funding procedure 2a. The institution strategic planning (library section)
University of Abuja	2	1. Financial budget Allocation document for UniAbuja 2017 and 2018 2. Abuja University Library 2018 Annual Report 3. University of Abuja policy Document 4. Legal framework for EIRs services 5. NUC legal framework for EIRs services 6. LRCN legal framework for professionals in EIRs services	1a. Library Funds for 2017 and 2018 2a. Library planning for 2018. 3a. No policy document available for EIRs services

Institution	Team Number	Document selected	Data Analysed
Federal University of Technology Minna	3	1. 2017 Annual Report document 2. Annual report 2017 3. University of Technology Minna library policy document 4. Legal framework for EIRs services 5. NUC legal framework for EIRs services 6. LRCN legal framework for professionals in EIRs services	1a. Funds. allocation for 2017 2a. library planning for 2018 3a. No policy document for evaluation
University of Jos	4	1. University of Jos Annual Report for 2017 and 2018 2. University of Jos Library strategic planning 2018 3. University of Jos policy document. 4. Legal framework for EIRs services 5. NUC legal framework for EIRs services 6. LRCN legal framework for professionals in EIRs services	1a. Funds allocation for 2017 and 2018 2a. library strategic planning 3a. collection development policy document

4.7.3 Observation checklist

The observation checklist was used to validate qualitative data obtained from the library management team. In a qualitative study, the observation checklist is a

fieldwork-based description of activities, behaviours, actions, conversations, interpersonal activity, organisational or community processes, or any other observable human experience aspect. Data from observations consists of field notes, which are rich, detailed descriptions of the contexts in which observations have been made (Patton 2003, p.2). Taylor-Powell and Steele (1996) viewed an observation checklist as a list of questions for respondents by a researcher when he or she is observing and assessing a social phenomenon. The observation checklist (Appendix 3) was relevant in monitoring an assessment in real-time and enabled the researcher to observe, record, and attend events or practices in the field and define their status. Observation is an essential element in good teaching, program development and an appropriate means for dealing with specific research requirements (Taylor-Powell and Steele 1996). These requirements include direct information, understanding ongoing behaviours, processes and unfolding situations, examining physical evidence, products or an outcome that can be seen and where other data collection procedures seem inappropriate (Taylor-Powell and Steele 1996). In the present study, the observation checklist was employed to determine the physical evidence of available electronic information resources in the selected university libraries. The libraries' database collections were explored to get an insight and background of the available resources and their status for sustainable EIRs services in selected surveyed libraries. The process took place alongside the data collection period; a day was dedicated to this process in each surveyed institution library.

4.7.4 Survey questionnaire

According to Acharya (2010, p.3), 'Questionnaire design is a very crucial and important part of the research'. Plooy-Cilliers and Cronje (2014) posit that closed-ended questionnaires are very useful because they simplify and quantify responses. Respondents are more willing to tick boxes than they are to write or type out long answers. There are two types of questionnaires: open-ended questionnaires (this has no predetermined response and respondents are free to their right of opinion) and closed-

ended questionnaires (in this, respondents are restricted from given multiple choices) (Outsource2india 2016). The present study adopted closed-ended questions for data collection.

Questionnaire design is a generally used method and useful tool for amassing needed information, providing numerical data, administering the questionnaire without the researcher's presence, and often straightforward and easy to analyse (Wilson and McLean 1994). Leedy (2005) stated that the significant factors in the design of a questionnaire are that they must be relevant to the respondents' research questions. According to Saunders, Lewis, and Thornhill (2012), questionnaire design has three approaches: adopting questions used in related studies, adopting questionnaires used in previous studies, or designing one's questionnaire. The survey instrument for this study was a self-owned questionnaire. The researcher used a self-designed questionnaire for efficient data response to research questions. Saunders, Lewis, and Thornhill (2012) also noted that questionnaires are two types: the interview-completed questionnaire and self-completed questionnaire. The study used a self-completed questionnaire because it gives the respondents greater anonymity (Phellas, Bloch and Seale 2011). It also offers the advantages of brevity and ease of completion (Jackson, Little and Wilson 1990). Standardisation of a questionnaire measure increases its reliability; consulting a specialist for content evaluation was adopted for instrument reliability (Boynton and Greenhalgh 2004).

According to Deng (2010), the general standard structured instrument for gathering data from potentially huge groups of respondents is the questionnaire. A survey questionnaire was considered to solicit data because of its versatile nature; a candidate can anonymously respond to questions, which is inexpensive (Ploopy-Cilliers and Johannes 2014, p.160). The closed-ended questionnaire was used to gather quantitative data, a flexible instrument with a limited number of responses, time friendly to respondents, but ensures standard for easy coding of data during analysis. However, the questionnaire was designed to solicit information from the respondents

based on the research questions; hence, whatever information was provided is an accurate representation of the study's entire population (Wiid and Diggins 2013, p.186). The questionnaire items were rated based on Matrix questions which are scaled questions for respondents to select related options that best reflect their opinions (Ploopy-Cilliers and Johannes 2014, p.154). The questionnaire items were rated based on a Likert point scale (1=Strongly Agree, 2=Agree, 3=Disagree, and 4=Strongly Disagree; 1=Very Great extent, 2= Great extent, 3=Low extent, 4 Not Applied; 1= available and effective, 2=available not effective, 3=Not available). The questionnaire had thirteen preliminary items and nine main items. The questionnaire was made up of A to E sections. Section A had preliminary items 1 to 7 (see Appendix 4) and sought demographic data of respondents (such as institutions affiliation, gender, age, qualification, years of experience, work responsibility, adoption years of EIRs). Section B to E had items based on research questions guiding the present study as available EIRs services, the effectiveness of available EIRs, strategies and policies implementation, economic/ social/ environmental strategies for sustainable EIRs services, and factors hindering sustainable as well as the best approach to alleviate the issues.

The questionnaires were administered to the four ULs' librarians that include all academic librarians (library workers with at least first degree in Library and information science) and the ICT library support staff (responsible for technology facilities services provision) in the selected ULs. Out of the 126 questionnaires distributed, 98 (77.8%) were duly filled and returned; all were valid for analysis. The structured questionnaires (see Appendix 4) were intended to elicit quantitative data from all categories of librarians who formed the respondents through trained research assistants. Szolnoki and Hoffmann (2013, p.58) asserted that questionnaires are of three types: face to face, mailing after completion by respondents, and the telephone survey. The present study applied face-to-face administration of a questionnaire to respondents. The researcher collected the duly filled instrument in August 2018 after administering it.

4.8 Validity and reliability of the research instruments

Validity is the degree to which research methods or procedures adequately measure the intended target (Saunders, Lewis and Thornhill 2012). Similarly, validity measures what is intended to be measured, and triangulation enhances validity (Kerlinger, 1973; Smith and Bowers-Brown, 2010). Hence, the present study adopted a questionnaire, interview, document analysis and observation checklist to ensure data validity. Dillman (2002) presents two data validity processes (pre-test and instrument review) to evaluate the research instrument's questions. A pre-test is administering the instruments to a small number of different participants before the specific participants. Williams (2006) posits that the reason behind the pre-testing/ instrument review is to ensure the questionnaire instrument is clear, concise, and unambiguous, to enhance readers' understanding of the phenomenon. The instruments were validated by the supervisor (advisor) to ensure content validity. Evaluation of instruments was conducted with other librarians similar to the research population.

On the other hand, there are methods for testing instrument reliability which include: Parallel forms reliability (administering different styles of an assessment tool to the same group of participants); Test-retest reliability (administering the same test over and over again in the space of time on the same individual); Inter-rater reliability (the assessment of the degree of participants' opinions in their assessment decision); and internal consistency reliability (the evaluation of the level to which different test instruments produce the same result) (Kothari 2004; Cohen, Manion, and Marrison 2007; Creswell 2008; Saunders, Lewis, and Thornhill 2012; Kumar 2019). The present study used the Dillman process, which requires that professionals in the field review the instruments' content before they are administered to the respondents. In other words, a content evaluation was adopted for this study. The questionnaire, interview document, observation checklist and document analysis was presented for evaluation. For reliability, the study reviewed senior colleagues in a similar Institution library

(University of Nigeria Nsukka Library). To ensure adequate structure, vital and relevant information was captured in the instruments.

Scholars like Tobin and Begley (2004, p.389-390), Twycross and Shields (2005, p.36), Onwuegbuzie and Leech (2007, p.239) emphasise the need for rigour in ensuring reliability and validity in qualitative research. Similarly, Golafshani (2003) confirmed that the examination of trustworthiness is crucial in ensuring reliability in qualitative research. In measuring validity in research, many scholars like Davies and Dodd (2002), Strenbacka (2001) and Mishler (2000) have used rigour, quality, and trustworthiness concepts as appropriate terms in this contest. The present research emphasised the need to establish rigorous integrity, quality, reliability, and capability in ascertaining the accuracy of the research procedure. Hence, the various criteria for credibility, dependability, authenticity, and confirmation, which directly affect the overall planning and implementation of the research procedure to secure its validity and trustworthiness, were used in this study. A careful assessment, correction and verification of the instrument by the researcher and other professional colleagues to ensure that instruments were up to standard was carried out (Teddlie and Tashakkori 2009).

In particular, to establish the research study's reliability, various methods such as pilot study, content evaluation or pre-test could be deployed. It is usually deployed for a small-scale assessment on a small and separate group of individuals based on convenience, availability of funding, and facilities (Kumar 2008). The validity testing was adopted to ascertain the reliability of the instrument. The validation was conducted at the Nnamdi Azikiwe University Library, Nsukka, between 13 and 17 August 2018, with the university library management's approval. The instrument's validation was done from 10 participants (all are senior librarians) from the UL. Amongst the academic librarians involved in the validation were the University Librarian, the sectional heads of MTN e-resource, serial collections, African collection, the acquisition section, the ICT section, circulation section, the catalogue

and classification section, the reference section, the reserve section and a subject librarian. The instrument's authenticity was validated, and its suitability for data gathering and the questionnaire's efficiency was ascertained (Converse and Presser 1986, pp. 54-65; Teddlie and Tashakkori 2009). The reliability of the instrument was measured by carefully effecting identified corrections and recommendations in the instrument.

Instrument validation of the questionnaire and other instruments (interview, checklist and document evaluation) was done before administering the instrument. This is imperative to root out ambivalent and ambiguous questions and professionally present the purpose of the questions. The validation was also done to check the time required for questionnaire completion and to identify unclear questions. The result showed that there is a need to include ICT support staff in the library. It also ruled out students' inclusion in the study as it is based solely on management issues in the library, hence the low participant population. Finally, the content evaluation helped in resolving some challenges identified in the instrument.

4.9 Problems encountered in data collection

The researcher experienced numerous challenges in the process of data gathering. The first problem was the librarians who had to meet with the researcher within their working hours while paying attention to library users. The problem resulted mainly from their busy work schedules. A good example is the University of Ilorin, where the University Librarian had to change the interview appointment three times because some participants were unavailable.

The significant difficulty posed in this study was the dispersed locations of the universities. Some have more than one campus with management staff spread across campuses. Getting them together was problematic. The campus location in various cities and their libraries in most selected university libraries was a significant challenge; hence, only the main campus library administrations were selected to

represent all the other campus libraries. To reduce the financial burden while administering the instrument, the researcher employed two research assistants to help administer the questionnaire and follow-up in retrieving the filled document from the various respondents.

Bringing together the university library's management staff to attend the interview was an exceedingly difficult task because they had busy schedules. The only available time was during the periods set aside for their ULs management meetings. These interviews were scheduled to coincide with management meetings leading to many distractions during interviews.

In some cases, the respondents were apprehensive about giving any information regarding funding- which indicates that disclosing such information was not allowed or that other staff members except the ULs had little or no knowledge of the funding of services they provide. During the data collection exercise, the University of Ilorin was without electricity, making assessing available online resources impossible; this resulted in the researcher revisiting the university, thus incurring additional costs. Similarly, when the researcher visited the University of Abuja, electricity fluctuation was a significant challenge leading to interviews' re-scheduling.

Some university management teams had limited knowledge of strategic planning for EIRs services, especially those staff members from the traditional services sections within the library, which affected their participation in the interview process, making them somewhat passive. Security was another hindrance that prevented the researcher from gathering pertinent information from major university libraries, as the respondents seemed to be affected by a strong sense of insecurity. The University of Jos environs had experienced many Christians and travellers' deaths due to actions by political herdsmen in the region. Before this situation, the researcher could not interact with the intended audience at the University of Jos, who replaced a resident professional librarian that volunteered to assist the researcher for data collection in the

University of Jos Library. Other universities included in the study posed similar problems as travelling at certain times of the day was not safe due to risks of kidnapping and attacks by herdsmen. Research assistance was used to collect returned questionnaires because there were resident librarians in the state and fluent in the local language. In addition, there was a transportation challenge; travelling from the state capital to some locations (Ilorin, Minna, and from Abuja University) was expensive. These problems slowed down the research process, and the planned duration of the research had to be extended as follows: the interview took place on 2nd August for University of Jos; the University of Ilorin was 12th-13th September, the University of Minna was 18th-19th September; and the University of Abuja was 21st September and repeated 25th September 2018 respectively. However, the questionnaire instruments were administered to the individual participants in their respective libraries from 13th – 20th July 2018 as planned earlier.

4.10 Data collection procedure

The data collection process commenced in August 2018 and lasted until December 2018. A letter of identification was obtained from the researcher's advisor to legitimise the research process (see appendix 5, 6, 7 and 8). Gatekeepers' letters were obtained from the University of Ilorin (appendix 9), University of Abuja (appendix 10), University of Technology Minna (appendix 11) and University of Jos (appendix 12) to ensure the smooth gathering of data from the various universities as a proof of acceptance and permission to research the institutions' libraries. Thereafter, ethical clearance was granted by the University of KwaZulu-Natal (UKZN) to proceed with the study (appendix 13). Advance notifications of visits were sent via email to the University Librarians under the selected libraries and follow-up phone calls to the correspondents. The interview schedule was discussed, and the interview time was scheduled simultaneously with their management' monthly meeting for each university library. The researcher, along with the research assistants, conducted the interview schedules at the appointed times with the University of Abuja, the Federal

University of Technology Minna and the University of Ilorin, while the research assistant conducted the interview schedule for the University of Jos.

Concurrent with the university libraries' interview, strategies and policy documents were carefully examined and analysed, while the observation checklist examined the available EIRs status. The questionnaires were administered, and those duly completed were collected during the same period the interviews were conducted. The research assistants proved very resourceful and helped in retrieving the remaining questionnaires that were not filled and ready for collection at the time of the researcher's departure from the various universities.

4.11 Data analysis

Multiple sources for data collection and analysis consisted of interview transcripts, checklist reports, document analysis reports, and a questionnaire statistic report. Babbie and Mouton (2005) posited that multiple sources could enhance the internal credibility of a study. Effective application of multiple data analysis sources entails trends and theme confirmation, how particular data extends the findings area, concluding report or refuting existing findings (Miles, Huberman and Saldana 1994). The process by which data is systematically arranged for better understanding and orderly presentation of findings to readers in research is generally known as data analysis (Marshall and Rossman 1995; Fain 2017). Data analysis involves statistical applications and a thematic approach in presenting findings. Gay, Mills and Airasian (2006) and Ryan, Coughlan and Cronin (2007) opine that data analysis is meaningful in relation to research findings, helping to make sense of them and assisting the researcher in responding to the research questions. The analysis procedure involves three main steps, namely: to present the data, interpret the presented data, and visualise the findings in clear figures and illustrations (Bertram and Christiansen 2015). The present study's primary data was collected through interviews, questionnaires, document evaluation, and an observation checklist. The triangulation of instruments in

this study was informed by Anthonuis' (2003, p.2) view that there is a need for clear interpretation of findings because there is high sensitivity in data gathering, analysis and interpretation. Therefore, data analysis and interpretation require applying a logical deductive and inductive approach to research (Best and Khan 2016).

Schostak and Schostak (2008) indicated that qualitative and quantitative are two methods of analysing data. Quantitative data produce and analyse data using a quantitative approach (symbols and numeric), and qualitative use direct words, concepts, and interpretations of the phenomena (Teddlie and Tashakkori 2009). The study applied the statistical package for social sciences for data analysis (SPSS), a computer package for quantitative data analysis and data presentation (Polit and Beck 2004). Larson-Hall (2010) affirms that SPSS saves time and performs complex data manipulation by providing clear directions. Leech, Onwuegbuzie and Combs (2011) agree that descriptive and inferential statistics are best interpreted using SPSS. Descriptive statistics and frequency counts were applied to the presentation of findings, analysed, and interpretation of the quantitative data were presented using frequency tables, graphs, bar charts and pie charts. According to Bertram and Christiansen (2015, p.138), 'descriptive statistics transform or summarise a set of data into either a visual overview such as a table or a graph or into a single or a few numbers that summarise the data'. It is also fundamental in compiling a summary of the quantitative data analyses and reporting the quantitative findings (Bertram and Christiansen 2015).

Qualitative data collected through interviews were analysed using thematic content analysis. The use of thematic content analysis represents a straightforward, accessible theoretical approach to analysing qualitative data (Braun and Clarke 2006). The qualitative data analysis enhances data reduction, straightforward interpretation, and summary of outcome for readers understanding. Qualitative analysis involves reading the interview and transcribing it in thematic order, known as thematic analysis. This analysis is suitable as it facilitates organising information systematically and drawing

conclusions from the responses' records (Alreck and Settle 1995). An interview, observation checklist, and document evaluation were observed to support and augment the qualitative data's thematic analysis (Alvarez and Urla 2002). Table 4.5 shows the mapping of the research questions, approach, research instrument, analysis and underpinning theories and variables.

Table 4.5: Mapping research questions, approach, source of data, data analysis strategy and theories

Research Questions	Instruments	Analysis	Variables
How effective are the provision of EIRs in University libraries in North Central Nigeria?	Observation checklist Questionnaire	Thematic analysis Descriptive statistics	HC Bridge model: effectiveness
How efficient are sources of funding for sustainable EIRs?	interviews and Document analysis	Descriptive statistic	HC Bridge model: efficiency
What strategies and policies are implemented to impact the sustainable provision of EIRs?	interviews /document analysis/ Questionnaire	Thematic analysis	HC Bridge Decision Model: Impact
To what extent have the libraries applied economic, social, and environmental strategies for the sustainable provision of EIRs services?	Questionnaire	Descriptive statistics	Triple Bottom Line theory: Economic, social, and environmental
What challenges are encountered in the provision of EIRs, and how are these ameliorated?	Questionnaires interviews	Descriptive statistics/ Thematic analysis	Triple Bottom Line Theory: economic, social, and environmental

4.12 Ethical considerations

The integrity of research remains the essence of ethical considerations. Walliman (2017) highlights that working with human involvement in research always nurtures ethical issues about how an investigator treats the respondents. To protect the participants' interests, create trust, and promote research integrity, the researcher should refrain from plagiarism and any other form of misconduct that may reflect negatively on institutions involved in the research. At the same time, they have to cope adequately with other, more challenging problems (Israel and Hay 2006). Vital elements in ethical considerations are questions of anonymity and confidentiality (Walliman 2017). De Vaus (2002) explains that anonymity is concerned with a researcher's undertaking not to identify respondents in their study, while confidentiality involves the researcher's responsibility to protect respondents' privacy.

The ethical procedures were adhered to by ensuring potential respondents were fully informed on the study and their participation. The researcher clarified all aspects guaranteeing participants' privacy, thus gaining their trust that collected data would be used for no other purpose than the study's academic intentions. At the time of the interviews, the researcher ensured that the respondents' consent was duly obtained before recording responses. Part of the ethical protocol is that the researcher conforms to the ethical standards required by the University of KwaZulu-Natal's policy on research ethics (UKZN 2017), seeks ethical clearance and acquires permission to conduct the study from the universities selected for the research. For the present study, participants were adequately informed, guaranteed anonymity, and assured that their participation would be voluntary and liberty to withdraw from the research at any stage if they so desired.

The researcher made efforts to obtain permission (gatekeepers' letters) from the four university libraries under study. To ensure that the gatekeepers of the universities involved gave their approval before data collection, the researcher attached consent

forms to each of the questionnaires and respondents were advised to confirm their consent as they filled the instrument. The consent forms contained detailed information about the study enabling potential participants to make an informed decision whether to get involved or decline to fill the instrument (Louw 2014). Walliman (2017) states that universities should design codes of practice for their researchers, including a clause that obtaining ethical approval automatically should involve the completing of forms. Louw (2014) also emphasised that consent should be given in writing and that participants should sign consent forms. In that way, participants would be assured of confidentiality, the right to withdraw at any stage of the study and for any reason without having any penalty.

The moral principle by Strydom (2011) on ethical strands was applied. The researcher adhered to all standard and ethics of research from all selected institutions regarding the issue of plagiarism. A plagiarism check was conducted under the Advisor plagiarism check ID provided in the UKZN Turnitin software (see Appendix 17, page 347).

4.13 Summary

Chapter four discussed the methodological approaches used in the study. The purpose of the research methods is to ensure conformity with different components while conducting research. Although there are different paradigms reviewed in this study, the researcher adopted pragmatism in investigating the strategies for sustainable provision of EIRs, which presents a deep understanding of strategic management in providing EIRs for sustainable information service delivery in ULs. This paradigm was used based on its philosophical approach to solving social issues and combining different theories. The study also adopted mixed methods using a qualitative method to complement the quantitative method. The application of a multi-method design was possible and effective because the researcher could apply different statistical methods in analysing the collected data.

The study population comprised the entire library staff of the four sampled university libraries in North Central Nigeria. A total of 126 respondents from the population were investigated. The population was drawn from distinct categories of staff within the library, and they included: library management team, professional librarians and library support staff.

To ensure adequate coverage and robust results, the researcher deployed quantitative and qualitative methods in eliciting information from the respondents. The study used different data collection instruments, including a questionnaire, interview, observation checklist, and document evaluation. The questionnaire and interview schedule were evaluated on face value before they were administered to the respondents. The instruments were administered on a face-to-face basis and helped the researcher understand the respondents' views on the study area. The collected data were subjected to statistical analysis and content analysis as the instruments complemented each other in gathering information for the study.

CHAPTER FIVE

DATA PRESENTATION AND ANALYSIS

5.1 Introduction

This chapter presents the study's findings on the strategies for sustaining electronic information resources in North Central Nigeria's university libraries. The findings were sub-divided into five thematic sub-headings in line with the study objectives. The data analysis was a crucial aspect of the study to arrive at an appropriate interpretation of the data. The study objectives and aims guided the researcher in formulating the themes from the following measurable objectives:

- i. To assess the effectiveness of the provision of EIRs in University libraries in North Central Nigeria.
- ii. To investigate the sustainability of sources of funding for EIRs.
- iii. To examine the strategic planning and policies implemented to impact the sustainable provision of EIRs.
- iv. To examine the extent to which economic, social, and environmental strategies were employed in sustaining EIRs services in selected libraries.
- v. To identify the challenges faced in the provision of EIRs and how libraries ameliorate these.

Creswell (2012, p.195) posited that a distinctive approach to analyzing data is to attend to specific research questions in their presented order. The statistical procedure used in analysing collected data is featured in quantitative data analysis (Anthonius 2003), while qualitative data usually adopts thematic analysis in most studies (Onwuegbuzie, Leech and Collins 2012). Before concluding the research questions or problems, data are presented, analysed and interpreted (Bhattacharjee 2012, p.23). In the same vein, Creswell (2014) asserts that from data analysis, multi-method interpretation focuses on

the assessment of how collected data address qualitative and quantitative questions in a given study.

This chapter was sub-divided into five main sections. The initial section covered the introduction, the response rate, and the demographic information about the research respondents such as age, gender, and other pertinent information such as the distribution of librarians by their year of experience, academic qualifications, and based on their library units or sections of activity. It was followed by the year of adoption of e-resources by each library. A multi-method research design was adopted in the research questionnaire, interview schedule, document analysis, and observation checklist used for data collection purposes. The multi-method was applied because the study focused on complimenting the quantitative data with qualitative data that can only be achieved using interview schedules to solicit such information from the various university libraries management team.

This section presents the findings of the study to provide answers to the research questions. The results present quantitative and qualitative findings in the thematic order of the research objectives. The presented data were obtained from the participants' responses regarding the strategies for sustaining electronic information resources in North Central Nigeria's university libraries. The study intends to find answers to the following research questions:

- i. How effective is the provision of EIRs in University libraries in North Central Nigeria?
- ii. How sustainable are sources of funding for EIRs?
- iii. What strategies and policies are implemented to ensure the sustainable provision of EIRs?
- iv. To what extent have libraries applied economic, social, and environmental strategies to sustain EIRs services?
- v. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

The findings of the study were presented in line with the research questions as follows: section 5.4.1 presents the findings on the effectiveness of available EIRs in University Libraries; section 5.4.2 presents the efficiency of EIRs funding in the surveyed library; section 5.4.3 presents strategic planning and policies implementation impact; section 5.4.4 presents the extent to which economic, social, and environmental strategies have been 5.4.5 presents the challenges encountered in the provision of EIRs and the amelioration.

5.2 Respondents' response rate

A good feature of the response rate is its ability to articulate respondents' population in any given survey (Johnson and Wislar 2012). The response rate is the percentage of respondents divided by the total number of instruments distributed multiplied by one hundred. In a typical research study, non-response is inevitable, and it is expected of the researcher to accept whatever response rate is received for analysis (Burkell 2003, p.240; Majumdar 2008, p.249). In other words, it is not compulsory that all respondents must participate in the research or return their instruments before analysis. Corral, Kennan and Afzal (2013), Maxfield and Babbie (2015) affirm that a response rate of 50% is adequate for data analysis and presentation. A total population of 126 librarians, comprising of management librarians, ICT support staff and other academic librarians from the selected institutions were recruited to partake in the survey, out of which 98 completed and returned their questionnaires, giving a relevant response rate of 77.8% (98). The summary of the questionnaire distributed is presented in table 5.1.

Table 5.1: Summary of questionnaire distributed (n=98)

Institutions	Number of respondents (contacted)	Responses (frequency)	Percent	Valid percent
University of Abuja	23	11	11.2%	23.0%
University of Ilorin	22	22	22.4%	22.0%
University of Jos	40	31	31.6%	40.0%
University of Minna	41	34	34.7%	41.0%
Total	126	98	77.8%	100%

(Source: the data)

A total of 126 library staff from the four selected universities' libraries, namely: the University of Ilorin, University of Abuja, University of Jos, and the University of Technology Minna, participated in the study. At the University of Ilorin, 22 copies of questionnaires were distributed and duly completed representing 22.4% of all questionnaires distributed across all universities. At the University of Abuja, 23 questionnaires were distributed, and only 11 were completed representing 11.2% of all questionnaires distributed across all universities. At the University of Jos, 40 copies of questionnaires were distributed, and 31 were duly completed representing a success rate of 31.6%, while at the University of Technology Minna, 41 questionnaires were distributed, 34 were returned, representing 34.7%. In all, 98 copies of questionnaires were duly completed and returned, giving a response rate of 77.8%. The response rate shows that the valid or duly completed instruments represent the study population. Table 5.2 shows a summary of the distribution of participants.

Table 5.2: The distribution of interview participants (n=20)

S/N	Institution	Team Number	Number of participants		Active participants	
			Frequency	%	Frequency	%
1	University of Ilorin	1	4	20	2	10
2	University of Abuja	2	5	25	2	10
3	Federal University of Technology Minna	3	5	25	2	10
4	University of Jos	4	6	30	2	10
	Total		20	100	8	40

(Source: the data 2018)

The interview participants from the four selected university libraries were 20 (75.0%) out of 24. The twenty-four (24) from the library management team were participants from UniIlorin (7), FUTMinna (6), UniAbuja (5) and UniJos (5) head of sections. Babbie and Mouton (2001, p.261), Joyner, William and Glatthorn (2013, p.168) state that the response rate of 70% and above is adequate for analysis in reporting research results; 60% is regarded moderate and 50% as an acceptable response rate. These response rates of 77.8% (questionnaire) and 75.0% (interview) are appropriate for such a study (Nathan 1999) in the absence of a standard acceptable pass rate. The Interview for five librarians (management team) was arranged at the University of Ilorin; four team members were available, and at the University of Abuja, five participants were available. At the University of Jos, three participants were available, while at the Federal University of Technology Minna, six participants were available for interview. The respondents from the four universities were fully represented in the interview. Twenty-four interviewees were drawn from the four universities, out of which 20 were in attendance; only 8(40%) actively participated from this population. It implies that

not all management librarians are familiar with electronic information resource services. The participants were those who have broad or little knowledge of the technology services in the examined libraries.

From table 5.2, the University of Jos (UniJos) had the highest number of team members, (6) representing 30%, and the active participants (2) representing 10%. This is closely followed by the University of Abuja (UniAbuja) and Federal University of Technology Minna (FUTMinna) with 5(25%) team members with active participants of 2 each representing 10% respectively, while the University of Ilorin (UniIlorin) was represented by 4 in the team representing 20% and active participants were 2 (10%). These findings imply that very few librarians from surveyed university libraries were committed to the interview because they were conversant with EIRs issues. Table 5.3 below presents the documents analysed.

Table 5.3: Summary of analysed documents

Institution	Team Number	Document selected	Data Analysed
University of Ilorin	1	1. TETFund Budget Allocation 2015 and 2017. 2. Library strategic planning document. 3. University of Ilorin Library Policy Document. 4. Legal framework for EIRs services. 5. NUC legal framework for EIRs services. 6. LRCN legal framework for professionals in EIRs services.	1a. Funds allocated for the library. 1b. Funds allocated specifically for EIRs. 1c. Funding procedure. 2a. the institution strategic planning (library section). 3a. No EIRs services policy.

Institution	Team Number	Document selected	Data Analysed
University of Abuja	2	1. Financial budget Allocation document for UniAbuja 2017 and 2018. 2. Abuja University Library 2018 Annual Report. 3. University of Abuja policy Document. 4. Legal framework for EIRs services. 5. NUC legal framework for EIRs services. 6. LRCN legal framework for professionals in EIRs services.	1a. Library Funds for 2017 and Library fund for 2018. 2a. Library planning for 2018.
Federal University of Technology Minna	3	1. 2017 Annual Report document. 2. Annual report 2017. 3. University of Technology Minna library policy document. 4. Legal framework for EIRs services. 5. NUC legal framework for EIRs services. 6. LRCN legal framework for professionals in EIRs services.	1a. Funds allocation for 2017. 2a. Library planning for 2018.
University of Jos	4	1. University of Jos Annual Report for 2017 and 2018.	1a. Funds allocation for 2017 and 2018.

Institution	Team Number	Document selected	Data Analysed
		2. University of Jos Library strategic planning 2018. 3. University of Jos policy document. 4. Legal framework for EIRs services. 5. NUC legal framework for EIRs services. 6. LRCN legal framework for professionals in EIRs services.	2a. Library strategic planning.

(Source: the data 2018)

The documents from the four selected university libraries presented in table 5.3 were analysed using Bowen's (2009, p.33) recommendations for document analysis which ensures completeness, precision and accuracy of the document and recording of events as they occurred. The ULs were coded according to number, the documents for evaluation from each UL were outlined, and the data analysed were also listed in table 5.3. The University of Ilorin were team number 1. The TETFund Budgetary Allocation for 2015 and 2017 were the only available funding documents analysed in the sampled university libraries in North Central Nigeria. This is followed by the University of Abuja as team 2; the financial budget allocation 2017 and 2018 document was made available for analysis and other items as indicated in table 5.3. Next is the Federal University of Technology, Minna, as team 3; only the 2017 annual report document was available for analysis as indicated above. Last on the list is the University of Jos as team 4. The University of Jos Annual report for 2017 and 2018 was analysed for EIRs funds. The other documents provided include the library strategic planning 2018 and policy document.

The rest of this chapter presents the respondents' demographic information; quantitative and qualitative data analysis in response to the research questions guiding the study. The findings are presented in the following structure under each research question: questionnaire analysis, the interview data analysis, document content analysis, and last, the results of the observation checklist.

5.3 Respondents' demographic data

The data collected through the questionnaire are analysed using quantitative methods analysis. This data presented uses SPSS descriptive statistics and frequency counts (frequency tables, graphs, and charts) as shown hereunder. The qualitative data are presented thematically following the research questions (see section 5.1).

5.3.1 Quantitative demographic data

The respondents' demographics in this study include the institution, gender, academic qualification, years of experience, sectional work responsibilities, e-resources adoption in the library. Figure 5.3 clearly shows the results of the affiliation of the respondents. Thirty-four (34), representing 34.7%, were from the Federal University of Technology, Minna; closely followed by 31(31.6%) respondents from the University of Jos; the next 22 (22.4%) were from the University of Ilorin; and 11 representing 11.2% from the University of Abuja. This result indicates that FUTMinna has more respondents than UniJos, UniIlorin, and UniAbuja, as shown in figure 5.1.

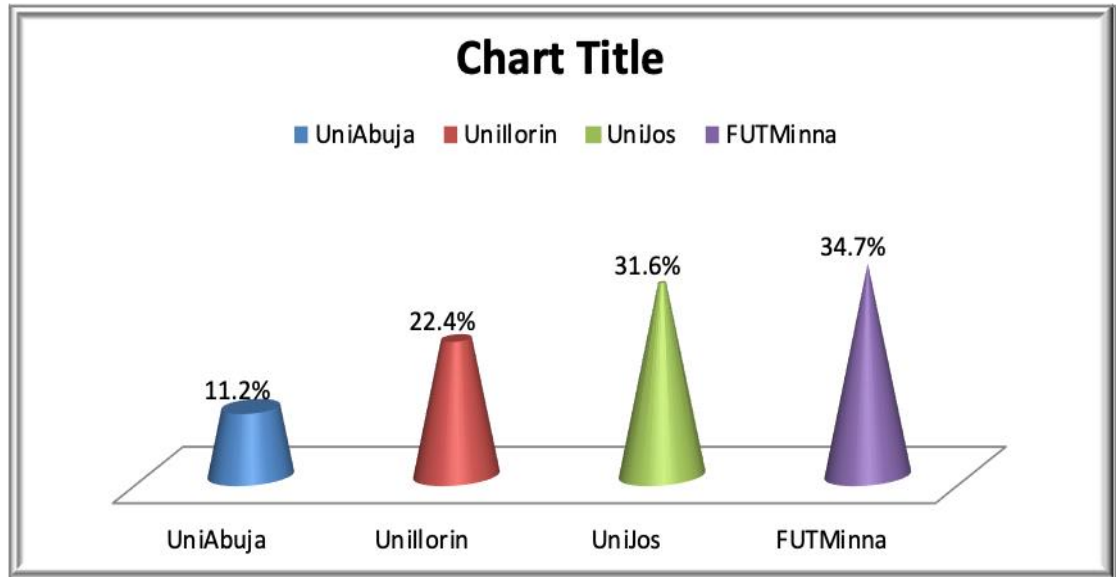


Figure 5.1: Librarians institution affiliation (source: research data)

5.3.1.1 Distribution of librarians by gender

The results of the gender analysis of the respondents are shown in table 5.4 and figure 5.2. The findings indicate more males than females participated in this study from the various universities. Table 5.4 below presents the participants' gender status.

Table 5.4: Distribution of participants' gender (n=98)

Institution	Gender	Frequency	Percent (%)
University of Abuja	Male	7	7.1%
	Female	4	4.1%
University of Ilorin	Male	12	12.2%
	Female	10	10.2%
University of Jos	Male	14	14.3%
	Female	17	17.3%
Federal University of Technology Minna	Male	23	23.5%
	Female	11	11.2%
	Total	98	100%

(Source: the data)

Table 5.4 indicates that out of a total of 98 participants, the university of Abuja was represented by 7(7.1%) male and 4(4.1%) female librarians, University of Ilorin was represented by 12(12.2%) male and 10(10.2%) female librarians, this is followed by the University of Jos represented by 17(17.4%) female and 14(14.3%) male librarians. The University of Technology, Minna, was represented by 23(23.5%) male and 11(11.2%) females librarians. These findings indicate more males (56.57%) than female (42.43%) librarians participated in this study from the studied university libraries, as shown in figure 5.2.

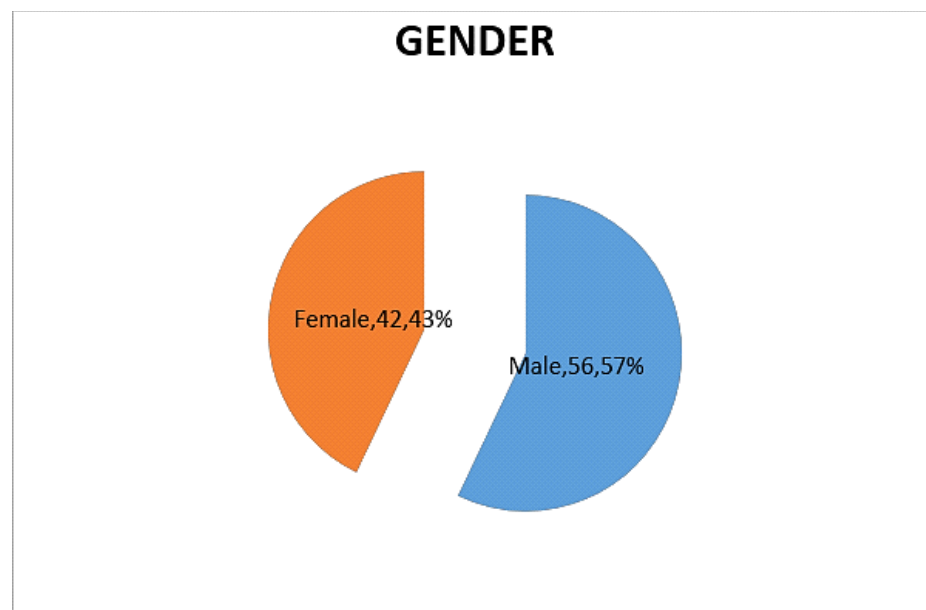


Figure 5.1: Gender of participants (Source: the data)

5.3.1.2 Distribution of librarians by age

The descriptive statistics on the respondents' age distribution from the selected universities indicated that 98 filled the questionnaires. The findings showed that respondents whose age is 51 and above were 23(23.5%); closely following this are those whose age ranges between 31-35 who were 21(21.4%), while those within the age range of 36-40 were 19 (19.4%). Those within 41-45 years were represented by 12(12.2%), others within 46-50 years were represented by 11(11.2%), and the least

represented by 6 (6.1%) were within 20-25 and 26-30 years. Thus, the findings indicate that the younger professionals were very few in the selected libraries and confirm the commonly held view that there is a high unemployment rate in Nigeria (Kayode, Arome and Silas 2014). Table 5.5 presents participants' age.

Table 5.5: Distribution of participant's age (n=98)

Age group	Frequency	%
20-25	6	6.1%
26-30	6	6.1%
31-35	21	21.4%
36-40	19	19.4%
41-45	12	12.2%
46-50	11	11.2%
51 and above	23	23.5%
Total	98	100.0%

(Source: the data)

5.3.1.3 Distribution of librarians by academic qualification

Data were evaluated to determine the respondents' highest educational qualifications. The results are presented in table 5.6 and figure 5.3.

Table 5.6: Respondents' highest education qualification (n=98)

	Frequency	Percent	Valid Percent
BSc/BA/BLS	31	31.6	31.6
MSc/MLS	48	49.0	49.0
PhD	14	14.3	14.3
Others (non identification)	5	5.1	5.1
Total	98	100.0	100.0

The results as presented in table 5.6 indicate that out of 98 respondents, 48(49.0%) are Master's degree holders, this is closely followed by 31(31.6%) who were Bachelor's degree holders, while 14(14.3%) of the respondents are PhD degree holders. However, 5(5.1%) declined, indicating their qualifications. The findings will possibly inform library management from the surveyed institutions on the gap in staff development.

5.3.1.4 Distribution of librarians' years of experience in selected ULs

Data collected were analysed to determine the distribution of librarians by years of experience. The results are presented in Table 5.7.

Table 5.7: Percentage distribution of respondents by years of experience (n=98)

Years of experience	Frequency	%
1-5 years	19	19.4
6-10 years	32	32.7
11-15 years	12	12.2
16-20 years	9	9.2
21-25 years	6	6.1
25 years and above	20	20.4
Total	98	100.0

(Source: research data)

Table 5.7 shows out of 98 respondents, 32(32.7%) worked in the library for 6-10 years, 20 (20.4%) for 25 years and above, 19(19.4%) for 1-5 years, 12 (12.2%) for 11-15 years, 9(9.2%) for 16-20 years and 6(6.1%) for 21-25 years. These results indicate that the respondents' highest populations have 6-10 years of work experience in their respective libraries.

5.3.1.5 Distribution of librarians by library sectional work responsibility

Data were analysed to determine the distribution of Librarians by their sectional responsibility. The results are shown below in table 5.8.

Table 5.8: Percentage distribution of library sectional work responsibility (n=98)

Respondents	Frequency	%
e-librarian	14	14.3%
MIS support	11	11.2%
Digital/archival	8	8.2%
Catalogue/Classification	19	19.4%
Serials	14	14.3%
Others	32	32.7%
Total	98	100%

(Source: research data)

The findings in Table 5.8 and Figure 5.3 indicate that the respondents' highest population (32, 32.7%) work from different sections of their respective libraries. This indicates that most librarians are kin to traditional library services than technical services. This is closely followed by 19 (19.4%) who were from the cataloguing and classification section, the next is 14(14.3%) respondents who work from their e-library section, 14 (14.3%) from serial section, and finally 11(11.2%) from MIS support and 8 (8.2%) from digital/archival section respectively. The above data is illustrated in figure 5.3 below.

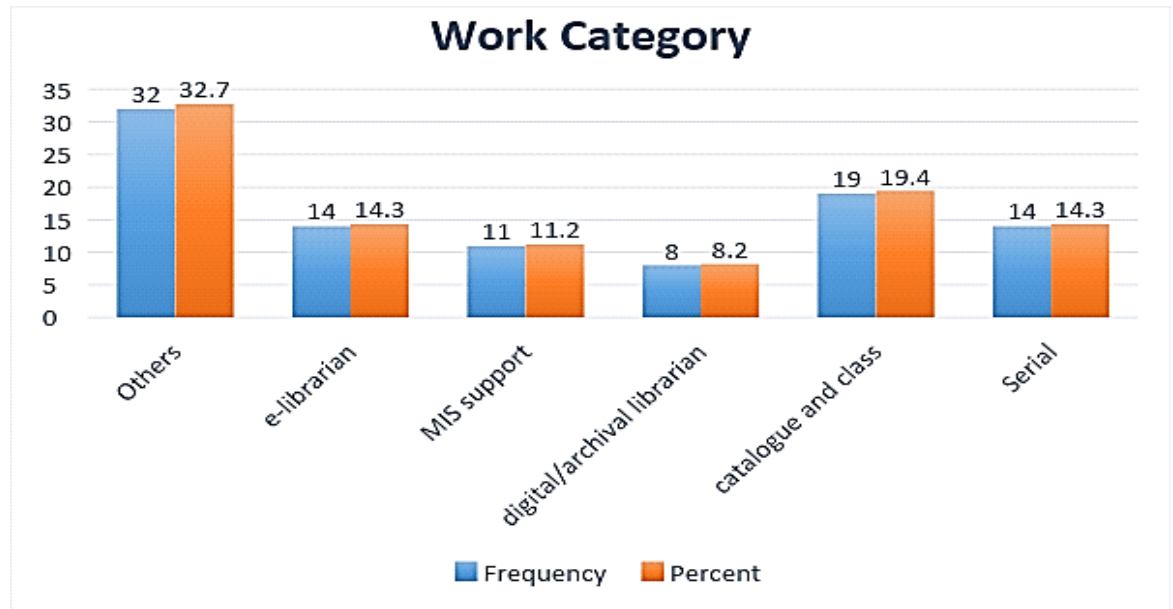


Figure 5.3: Respondents section representation (n=98) (Source: research data)

5.3.1.6 Distribution of years of e-resources adoption in the libraries

Data were analysed to determine the distribution of Librarians by ULs' years of adoption and use of electronic information resources (EIRs). The data shown in figure 5.4 indicates that 32 (32.7%) response adopted and used EIRs in the last 7-9 years, 29(29.6%) adopted and used EIRs in the past 13 years and above, 20 (20.4%) adopted and used EIRs within 4-6 years, 14 (14.3%) adopted and used EIRs for about 10-12 years and 3(3.1%) adopted and used EIRs for less than 3 years. This result is illustrated in figure 5.4.

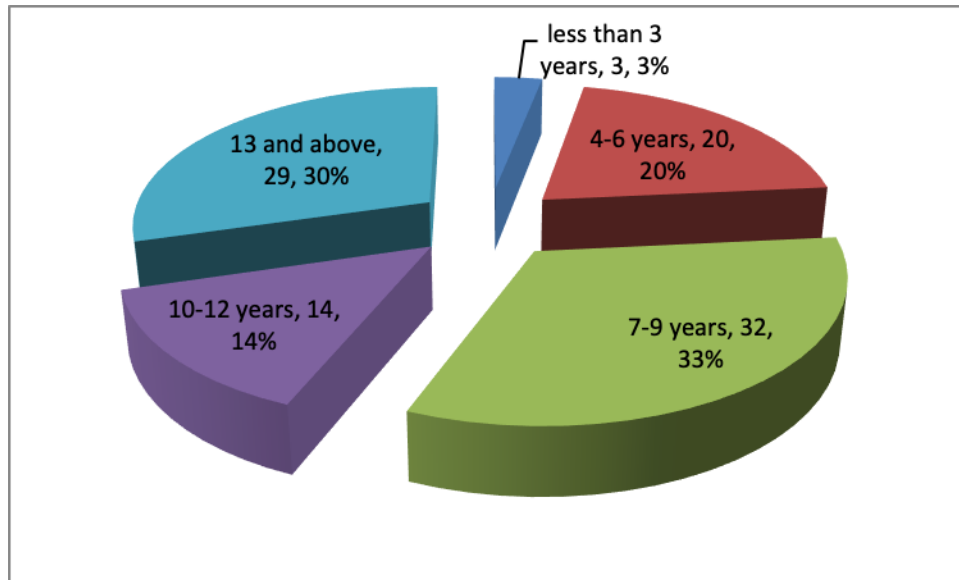


Figure 5.4: Years of e-resources adoption in the library (n=98) (Source: research data)

5.4 Data analysis based on research questions

This section presents the results of the collected data based on the research questions that guided this study as follows: How effective are the provision of EIRs in University libraries in North Central Nigeria, sources of funding for sustainable EIRs, strategies and policies implemented to impact the sustainable provision of EIRs, extent libraries have applied economic, social, and environmental strategies for sustainable provision of EIRs services and the challenges encountered in the provision of EIRs.

In the following sections, the data is presented under the order of the research instruments used in the study in response to the research questions: questionnaire data, interview data, observation data and document analysis data.

5.4.1 RQ1: How effective is the provision of EIRs in university libraries in North Central Nigeria?

5.4.1.1 Questionnaire data analysis

Q1. The available EIRs services in the ULs under study

The first research question sought to reveal the available EIRs services in the selected ULs., The respondents were required to answer questions by selecting answers from given data ranging from strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD) To ascertain the availability of electronic information resource services in the respective institutional libraries that should be sustained. Table 5.9 below illustrates the percentage of responses on the available EIRs and services in the four (4) selected institutions.

Table 5.94: The EIRs services provided in the selected libraries (n=98)

S/N	ITEMS	SA		A		D		SD	
		F	%	F	%	F	%	F	%
1	The university has electronic information resources	56	57.1	25	25.5	13	13.3	4	4.1
2	The EIRs are working effectively	44	44.9	45	45.9	8	8	1	1
3	There is a good strategic initiative for sustaining the EIRs	31	31.6	58	59.2	7	7.1	2	2.0
4	There is effective archival unit for updating EIRs	29	29.6	51	52.0	16	16.3	2	2.0
5	strategies implemented have enhanced effective EIRs services provision within the university	27	27.6	63	64.3	6	6.1	2	2.0
6	The available e-resources can only be accessed within the library environment	32	32.7	32	32.7	23	23.5	11	11.2
7	Users access the e-resources from outside the campus	25	25.5	34	34.5	34	34.5	5	5.1
8	The subscription databases are adequate for provision of EIRs services	31	31.6	45	46.9	17	17.3	4	4.1

(Source: research data)

When the statement was made about the EIRs services provided in the selected libraries, and if the university has electronic information resources, 56(57.1%) strongly agreed to the statement, 25(25.5%) agreed, 13(13.3%) disagreed, and 4(4.1%) strongly disagreed respectively. Forty-five (45, 45.9%) of the respondents agreed that the EIRs are working effectively, 44(44.9%) strongly agreed, 8(8.0%) disagreed, with a marginal respondent (1) who strongly disagreed. On whether there is a good strategic initiative for sustaining the EIRs, 58 (59.2%) agreed, 31(31.6%) strongly disagreed, 7 (7.1%) disagreed and 2 (2.0%) strongly disagreed. As part of the EIRs services provided in the selected libraries, on the statement of whether there is an effective archival unit for updating EIRs, 51 (52.0%) agreed, 29(29.6%) strongly agreed, 16(16.3%) disagreed and 2(2.0%) strongly disagreed. On whether the strategies

implemented have enhanced effective EIRs services provision within the university, 63 (64.3%) agreed with the statement, 27(27.6%) strongly agreed, while 6(6.1%) disagreed and 2(2.0%) strongly disagreed. The statement about the EIRs services provided in the selected libraries shows that the available e-resources can only be accessed within the library environment; a total of 32 (32.7%) strongly agreed and agreed, while 23(23.5%) disagreed and 11(11.2%) strongly disagreed, respectively. The EIRs services provided in the selected libraries shows that users access the e-resources from outside the campus; a total of 34(34.5%) agreed and disagreed, while 32(32.7%) strongly agreed and 11(11.2%) disagreed. When the statement on the EIRs services provided in the selected libraries was expanded to enquire if the subscription of databases is adequate for provision of EIR services, 45(46.9%) agreed, 31(31.6%) strongly agreed, 17(17.3%) disagreed and 4 (4.1%) strongly disagreed.

Q.2 Status of the available EIRs in the university libraries

The second research question sought to determine the availability and status of the available EIRs in these selected libraries by requesting that respondents answer the functionality status of the following EIRs: Virtual library, subject databases, institutional repository, Open Access database, license database, library web page, OPAC, KOHA, CD-DVD, e-journal, online theses, e-book, internet, computers, and printers. This was to ascertain that EIRs are available and effective. The results are shown in Table 5.10.

Table 5.10: Availability and functionality of the resources in the selected libraries (n=98)

	Electronic information resources	Institution	Available and effective		Available not Functional		Not available	
A	Virtual library		F	%	F	%	F	%
		UniAbuja	7	7.1	0	0	4	4.1
		UniIlorin	16	16.3	3	3.1	3	3.1
		UniJos	27	27.6	3	3.1	1	1.0
		FUTMinna	20	20.4	9	9.2	5	5.1
		Total	70	71.3	15	15.4	13	13.3%
B	Subject Databases	UniAbuja	6	6.1	2	2.0	3	3.1
		UniIlorin	21	21.4	1	1.0	0	0
		UniJos	28	28.6	2	2.0	1	1.0
		FUTMinna	26	26.5	5	5.1	3	3.1
		Total	81	82.7%	10	10.1	7	7.2
C	Institutional Repository	UniAbuja	6	6.1	2	2.0	3	3.1
		UniIlorin	18	18.4	1	1.0	3	3.1
		UniJos	30	30.6	1	1.0	0	0
		FUTMinna	27	27.6	5	5.1	2	2.0
		Total	81	82.7%	9	9.2%	8	8.2%
D	Open access Database	UniAbuja	10	10.2	0	0	1	1.0
		UniIlorin	20	20.4	2	2.0	0	0
		UniJos	30	30.6	0	0	1	1.0
		FUTMinna	27	27.6	6	6.1	1	1.0
		Total	87	88.8%	8	8.1	3	3.0
E	License Database	UniAbuja	7	7.1	1	1.0	3	3.1
		UniIlorin	16	16.3	2	2.0	0	0
		UniJos	26	26.5	1	1.0	4	4.1
		FUTMinna	27	27.6	4	4.1	3	3.1
		Total	76	77.5	8	8.1	10	10.3
F	Library Web Page	UniAbuja	10	10.2	1	1	0	0
		UniIlorin	20	20.4	1	1	1	1.0
		UniJos	31	31.6	0	0	0	0

	Electronic information resources	Institution	Available and effective		Available not Functional		Not available	
		FUTMinna	29	29.6	5	5.1	0	0
		Total	90	91.8%	7	7.1%	1	1.0
G	OPAC	UniAbuja	6	6.1	2	2.0	3	3.1
		UniIlorin	21	21.4	1	1	0	0
		UniJos	29	29.6	1	1	1	1.0
		FUTMinna	26	26.5	7	7.1	1	1.0
		Total	82	83.6	11	11.1	5	5.1%
H	KOHA	UniAbuja	9	9.2	1	1.0	1	1.0
		UniIlorin	22	22.4	0	0	0	0
		UniJos	29	29.6	2	2.0	0	0
		FUTMinna	28	28.6	5	5.1	1	1.0
		Total	88	89.8%	8	8.1	2	2.0%
I	CD-DVD	UniAbuja	7	7.1	2	2.0	2	2.0
		UniIlorin	18	18.4	4	4.1	0	0
		UniJos	23	23.5	2	2.0	6	6.1
		FUTMinna	24	24.5	9	9.2	1	1.0
		Total	72	73.5%	17	17.3%	9	9.1
J	E-journal	UniAbuja	9	9.2	1	1.0	1	1.0
		UniIlorin	20	20.4	1	1.0	1	1.0
		UniJos	30	30.6	0	0	1	1.0
		FUTMinna	29	29.6	5	5.1	0	0
		Total	88	89.8%	7	7.1%	3	3.0
K	Online theses	UniAbuja	7	7.1	0	0	1	1.0
		UniIlorin	16	16.3	3	3.1	3	3.1
		UniJos	29	29.6	1	1.0	1	1.0
		FUTMinna	22	22.4	7	7.1	5	5.1
		Total	74	75.4	11	11.2%	10	10.1
L	E-book	UniAbuja	8	8.2	1	1.0	2	2.0
		UniIlorin	18	18.4	3	3.1	1	1.0
		UniJos	29	29.6	0	0	2	2.0
		FUTMinna	30	30.6	3	3.1	1	1.0

	Electronic information resources	Institution	Available and effective		Available not Functional		Not available	
m		Total	85	86.8	7	7.1%	6	6.0
	Internet	UniAbuja	8	8.2	1	1.0	2	2.0
		UniIlorin	21	21.4	1	1.0	0	0
		UniJos	31	31.6	0	0	0	0
		FUTMinna	31	31.6	2	2.0	1	1.0
		Total	91	92.8	4	4.0	3	3.0
N	Computers	UniAbuja	10	10.2	0	0	1	1.0
		UniIlorin	21	21.4	1	1.0	0	0
		UniJos	31	31.6	0	0	0	0
		FUTMinna	31	31.6	3	3.1	0	0
		Total	93	94.6	5	4.1	0	1.0
O	Printers	UniAbuja	10	10.2	0	0	1	1.0
		UniIlorin	21	21.4	1	1.0	0	0
		UniJos	30	30.6	0	0	1	1.0
		FUTMinna	27	27.6	6	6.1	1	1.0
		Total	88	89.8%	7	7.1%	3	3.0

(Source: research data)

From table 5.10, the librarians attested to the various available EIRs in the library. It was clear that virtual library resources were available and effectively used in university libraries in North Central Nigeria as UniJos ranked highest with 27 (27.6%); FUTMinna with 20(20.4%); next are librarians from UniIlorin with 16(16.3%), and the least on the virtual library are librarians from UniAbuja with 7 (7.1%); hence, total respondents were 70 (71.3%). The subject database was also found to be available and effectively used as UniJos ranked highest with 28 (28.6%), FUTMinna ranked second with 26(26.5%), UniIlorin with 21(21.4%), and lastly UniAbuja with 6 (6.1%); hence, a total of 81(82.6%) respondents. On Open Access database, UniAbuja (10, 10.2%), UniIlorin (20, 20.4%), UniJos (30, 30.6%) and FUTMinna (27, 27.6%) all have open-access database; hence, total respondents of 87(88.8%).

When the license database was mentioned, all four universities were represented as follows: UniAbuja 7 (7.1%), UniIlorin 16(16.3%), UniJos 26(26.5%) and FUTMinna 27 (27.6%); hence, a total of 76(77.5%) respondents. Regarding the availability of library web page, UniAbuja responded represented by 10 (10.2%); UniIlorin 20 (20.4%), while UniJos responded with 31(31.6%), and FUTMinna 29 (29.6%). On the issue of the library web page as an available EIR within the libraries understudy, the responses are in the following order: UniJos 31(31.6%), FUTMinna 29(29.6%), UniIlorin 20(20.4%) and UniAbuja 10(10.2%); hence, total respondents of 90(91.8%). On OPAC, the response is in the following order: UniJos 29(29.6%), FUTMinna 26 (26.5%), UniIlorin 21(21.4%) and UniAbuja 6(6.1%). Whether KOHA as an EIR is available in the sampled universities, their responses indicate positive reaction: UniJos 29(29.6%), FUTMinna 28(28.6%), UniIlorin 22.4% and UniAbuja with 9(9.2%); therefore, total respondents of 88(89.8%).

With regards to the availability of CD-DVD, all the sampled university libraries attested that CD-DVD is available and effectively used as indicated by the response rates: UniAbuja was represented by 7(7.1%), UniIlorin 18(18.4%), UniJos 23(23.5%), and FUTMinna 24(24.5%); hence total respondents of 72(73.5%). On e-journals, UniAbuja response rate was at 9(9.2%), UniIlorin 20(20.4%), UniJos 30(30.6%), and FUTMinna 29(29.6%), with total respondents of 88(89.8%). On the availability and effective use of online, theses response rates were as follows: UniAbuja 7(7.1%), UniIlorin 16(16.3%), UniJos 29(29.6%), and FUTMinna 22(22.4%); thus, total respondents of 74(75.4%). When the respondents were asked about the internet, those who said it was available and effective were as follows: UniAbuja 8(8.2%), UniIlorin 21(21.4%), UniJos and FUTMinna 31(31.6%); hence, total respondents of 91(92.8%). Concerning the availability of a computer, the respondents who said available and effective were UniAbuja 10(10.2%), UniIlorin 21(21.4%), while UniJos and FUTMinna were each 31(31.6%); hence, total respondents of 93(94.6%). More so, respondents who said the printer was available and effective were UniAbuja

10(10.2%), UniIlorin 21(21.4%), UniJos 30(30.6%) and FUTMinna 27(27.6%); hence, total respondents of 88(89.8%).

5.4.1.2 Research interview data analysis

Interview question 1: The effectiveness of the available EIRs by satisfactory status in surveyed ULs

Regarding the above question on the effectiveness of the available EIRs status in surveyed ULs, the following excerpts indicate that to a reasonable extent, the EIRs are satisfactory, as available resources are used to meet some information needs of patrons in their libraries. Some reported that the available EIRs are not satisfactory, but users augment library services with personal resources, owing that poor funding contributes to dissatisfaction. It also reported that open access is a basic database resource available, and very few subscription-based resources are rarely satisfactory to users. Moreover, poor planning and policy implementation was reported. Excerpts of the interview reports regarding this evidence are documented below.

Team 1: Respondent

1st respondent – ‘Yes, to a reasonable extent, the provided EIRs are satisfactory.’

2nd respondent – ‘We readily make use of what is available as long as they meet some of our needs.’

Team 2:

1st respondent – ‘The available EIRs do not fully satisfy our needs; however, we make use of what is provided and augment from personal efforts.’

2nd respondent – ‘The EIR services are epileptic due to paucity of funds.’

Team 3:

1st respondent – ‘The available EIRs cut across open access and subscription-based resources. These have to be given approval by the faculty staff and other users before purchase can be effected.’

2nd respondent – ‘The EIRs services are really satisfactory. Some of the e-resources include Agora, HINARI, OARE, Ebscohost etc. They are multidisciplinary.’

Team 4:

1st respondent – ‘The services are not satisfactory as a result of poor planning, poor policy implementation and insufficient funding.’

2nd respondent – ‘The use of EIRs can only be satisfactory where there is good planning, robust policies that support EIRs use. More so, availability of funds can equally facilitate effective implementation of EIRs and improve research output wherever it is fully deployed.’

Interview question 2: Cause of dissatisfaction with EIRs services

The interview outcome on backgrounds to EIRs’ services dissatisfaction in surveyed libraries reveals that the libraries experience some satisfaction but with challenges. They include epileptic power supply, insufficient funds, lack of skilled workforce, poor cooperation within the community, poor planning, and poor management strategic approach. The following excerpts are provided as evidence from the interviewees’ responses below.

Team 1:

1st respondent – ‘There is satisfaction with the EIRs services.’

2nd respondent – ‘Epileptic power supply has made the use of EIRs unsatisfactory.’

Team 2:

1st respondent – ‘Paucity of funds and manpower are causes of EIRs services dissatisfactory.’

2nd respondent – ‘there should be collective interest on the part of the university administrators and staff on the implementation of EIRs.’

Team 3:

1st respondent – ‘The available EIRs are satisfactory.’

2nd respondent – ‘More is required to convince the staff to make good use of EIRs.’

Team 4:

1st respondent – ‘The cause of dissatisfaction with the available EIRs is as a result of insufficient funding, poor planning and management poor approach. All of these make it difficult for EIRs to be fully implemented and utilised, especially as it facilitates and enhances research output for institutional visibility.’

2nd respondent – ‘Insufficient funds is a major problem as funds are needed for acquisition and maintenance of the available EIRs.’

5.4.1.3. Observation checklist report data

Observation 1: The electronic information resources status

The four university libraries’ websites were studied to evaluate the status of the EIRs collections of the libraries. The result showed that in most libraries, EIRs were available but not sufficient regarding facilities and subscriptions of databases. However, the available subscription databases are being managed by providers. The observation checklist reports are presented.

Institution 1: The library website of the University of Illorin was examined, and it was observed that subject database, institutional repository, library web page, OPAC, KOHA, CD-DVD, e-journal, online thesis, internet, computers, printers, and digitised resources were available and accessible within the university for information services. Further, the Open Access database was available but not functional. The virtual library, Open Access databases, licensed databases and online thesis were available in this library, and computer facilities were not adequate as many of the computers were not in good working condition.

Institution 2: The University of Technology, Minna Library website was also examined, and it was observed that subject databases, institutional repository, library webpage, CD-DVD, e-journal, internet, computers, printers, and digital resources were available and functional. Other important observations include: 1) e-books are not adequate in the library; 2) The virtual library, KOHA and online thesis are not functional; and 3) Open Access databases, licensed database, and OPAC are not available.

Institution 3: University of Technology Minna Library website was examined, and it was observed that virtual library, subject databases, institutional repository, library web page, OPAC, KOHA, CD-DVD, e-journal, online thesis, internet access, adequate and updated computers facilities, printers and digitised resources were all available for services. In contrast, the Open Access database was available but not functional; licensed databases and e-books were not available on the library webpage for access.

Institution 4: University of Jos library website was also examined, and the study revealed that virtual library, subject databases, institutional repository, Open Access database, licensed database, library web page, OPAC, KOHA, DC-DVD, e-journal, online thesis, e-book, internet bandwidth, computers, printers were available and adequate for use to sustain services for the library user in the community.

5.4.2 RQ2: How sustainable and efficient are sources of funding for EIRs?

5.4.2.1 Research interview data analysis on funding

Interview question 3: What sources of government funding are available to your library for EIRs services?

The excerpts from the interview on sources of government funding for EIRs to ULs under investigation reveal that institutions' annual budget allocation of 10% to the library and TETFund intervention is the only revenue for funding EIRs in the surveyed libraries. This excludes the University of Jos report that the library gains extra support from foreign institutions. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – 'The Unillorin allocates the **ten percent (10%)** to the university library.'

2nd respondent – 'This **allocation comes very regularly** to the university library.'

Team 2:

1st respondent – 'Beside the **TETFund and University allocations**, there is **no other alternative sources** of funding for EIRs development and sustainability.'

2nd respondent – 'The government provides funds to the university library through **TETFund interventions**. The **university administrator** also makes regular allocation of funds to the library for their financial needs on information resources such as EIRs.'

Team 3:

1st respondent – ‘UniMinna sources of funding EIRs services are basically from TETFund intervention and institution funding annual allocation.’

2nd respondent – ‘EIRs are sourced for and paid for by the university administrator through budgetary allocations on an annual basis.’

Team 4:

1st respondent – ‘EIRs development is funded by TETFund intervention and other donor agencies and grants. These agencies include TEEAL Cornell University Albert R.Mann Library and Cliff Menseh University of North Carolina.’

2nd respondent – ‘The EIRs are often from donations made by international donors and organisations.’

Alternative sources of funding for EIRs

Interview question 4: What alternative does the library apply in funding EIRs services?

Regarding the above question on alternative ways libraries fund EIRs besides government funds, the following excerpts revealed no alternative or special funding model for EIRs. But the University of Ilorin and University of Jos (Team 1 and Team 4) acknowledged having alternative supports from collaboration, grants, United Bank donation, structured innovative consortium with other libraries, sharing of subscription cost and supports from international organisations. This supports may be mainly for book supply. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘The library collaborates with other libraries, and they also got grants from various sources.’

2nd respondent – ‘The library also gets donations from the united bank and structured innovative consortium with other libraries, as well as sharing of subscription cost in certain consortium, thus, indicating that collaboration and consortium sharing are strategic approaches adopted in sustaining services.’

Team 2:

1st respondent – ‘There are no special alternative sources of funds for EIRs in the library.’

2nd respondent – ‘Alternative sources of funds are not available at the moment. However, we look forward to creating and enjoying some in the future.’

Team 3:

1st respondent – ‘Apart from the government funding, there are no other sources of funding for EIRs development and sustainability.’

2nd respondent – ‘There is no bulk funding from other sources outside government interventions.’

Team 4:

1st respondent – ‘Only the university librarian can disclose the information on alternative sources of funding.’

2nd respondent – ‘The library gained support from Carnegie and other international organizations.’

The necessary efforts considered by libraries surveyed for funding EIRs

Interview question 5: What efforts do you consider necessary to be in place for sourcing alternative funding for EIRs?

The interview response on efforts to be considered necessary for sourcing funds revealed that efficient management, good accountability to available funds, sourcing alternative funds, grant application, considering Private-Public-Partnership (PPP), and outreach fundraising are important factors to consider. Designing funding programs, advocacy and consultancy services are also important. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘Sustainable funding could be achieved through efficient management and good accountability to TETFund intervention support. It is only when management shows convincing evidence of efficient management of funds released by TETFund that an institution can collect additional funding.’

2nd respondent – ‘The University of Ilorin has been managing the finances from TETFund efficiently, including funds allocated specifically for EIRs projects. This has made it possible to sustain EIR projects and services in this library.’

Team 2:

1st respondent – ‘Sourcing for alternative funds for EIRs could be realised nongovernmental organisations (NGOs), University Alumni, etc.’

2nd respondent – ‘sourcing for alternative avenues for funds is quite necessary, especially as my university is concerned as there are not enough funds for the acquisition of EIRs. Having alternative sources for funding EIRs can leverage the availability of EIRs and reposition the university for better services to her community.’

Team 3:

1st respondent – ‘Efforts geared toward sourcing alternative funding should focus on grants application for libraries and Private Public Partnership (PPP) initiatives.’

2nd respondent – ‘There is no alternative source of funds for the acquisition of EIRs at the moment.’

Team 4:

1st respondent – ‘Sourcing for alternative funding for EIRs is possible through reaching out to international organisations, like Carnegie, NGOs, Corporate social organisations and SDG program as well as rebranding. Other means for alternative funding sources include sensitisation program for saving the library and advocacy via social media to gain support for libraries. This advocacy was adopted in the University of Jos, and it attracted computer supplies from various organisations.’

2nd respondent – ‘The library can engage in consultancy services that can facilitate or provide the much-needed funds for the acquisition of EIRs to boost the academic output of the university.’

The efficiency of EIRs funding sources

Interview question 6: How efficient is this government funding?

The interview outcome on the government intervention funds’ efficiency revealed that the government funding (TETFund) is not fully efficient and can be efficient with adequate and strategic management. It was also indicated that funding was stable with the introduction of the TETFund; however, the TETFund allocation processing takes a longer time. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘TETFund intervention has been efficient with adequate management.’

2nd respondent – ‘It is not totally efficient but can be placed on average.’

Team 2:

1st respondent – ‘It is moderate, and accessing the TETFund allocations takes a very long procedure and time.’

2nd respondent – ‘Funds are usually from TETFund on a regular basis even though the funds are also moderate and can hardly cover all the required EIRs for robust academic excellence.’

Team 3:

1st respondent – ‘Since the introduction of TETFund intervention, library funding has been stable though it has dropped over the years.’

2nd respondent – ‘The introduction of TETFund has seen some degree of an additional fund to the University for the acquisition of EIRs to support academic learning, teaching and research.’

Team 4:

1st respondent – ‘It is highly efficient but can be difficult to access the TETFund yearly allocation if the library is unable to retire the previous allocations.’

2nd respondent – ‘The yearly interventions from TETFund has liberated the university libraries from persistent financial struggle and eventual collapse of the university system.’

5.4.2.2 Document evaluation data analysis on funding

The researcher examined the selected libraries' funding documents and found that the major funding source TETFund allocation to the institution and allocation to the library by its parent institution. However, the university libraries have no specific allocation for EIRs and do not have control over their fund allocations, meaning that the university management takes control of all procurements, including the EIRs. This challenge impacts the sustainability of EIRs, provision, and services negatively.

Funding sources and the efficiency in surveyed libraries

Institution 1: The TETFund Budget Allocation 2015 and 2017 were selected for data analysis. It was revealed that thirteen million nairas (N13,000,000 = \$33,553.00) were allocated to the university library to provide electronic information resources and services. In 2014/2015 session and from TETFund allocations, eight hundred thousand (N800, 000 = \$2,064.80) was set aside for books and N50 million for journals. Moreover, 70% was allocated to books and journals (both print and electronic) and 30% were for furniture. The funds were not released to the university library directly. A procedure is followed in which the list is submitted to the institution. After the approval, the allocated fund is sent to the contractor based on the budget after the institution's supply. Even at the level of university funding, monies are not sent directly to the university library. The library sends the list of what is needed to the university, and the university releases money for the procurement of the approved product or service. In 2017 alone, thirteen million (N13,000,000 = \$ 33,553.00) was spent on database subscription. This fund is deposited in the institution's bank account for disbursement to the library. The study further revealed that the Ebscohost database package alone cost 7million naira (N7,000,000 = \$18,067.00) out of the 13million budgeted. The balance was found to have been spent outside what it was meant for (Source: Unversity of Illorin: TETFund Budget Allocation 2015 and 2017).

Institution 2: The University of Abuja financial budget allocation document for 2017 and 2018 was examined for data analysis, and the finding from the funding document revealed that N37 million was allocated to the University library for the purpose of electronic information services in 2016/2017 and about twenty-nine million nairas (N29,000,000 = \$74,849.00) in 2017/2018 session. The finding revealed that the library does not have direct access to the funds but the institution management (Source: Abuja University Financial Budget Allocation 2017 and 2018).

Institution 3: The Federal University of Technology, Minna 2017 Annual Report document was examined. It was revealed from the fund allocation document provided that the financial Allocation for EIRs was not regular. In 2017, thirty million nairas (N30,000,000 = \$77,430.00) was generally allocated to the university library and not specifically for EIRS. The expenditure detail could not be reviewed because the details were not provided for analysis in the library. Still, it was noted that the detailed document is with the university management (Source: Federal University of Technology Minna Annual Report of 2017).

Institution 4: University of Jos 2017 and 2018 annual report was analysed, and the data revealed TETFund allocation for 2017 was thirty million nairas (N30, 000,000 = \$ 77,430.00), and in 2018, twenty million nairas (N20, 000,000 = \$51,620.00) was allocated for the acquisition of general facilities that include information resources comprising print and non-print resources. The analysis revealed that the library has no direct access to the fund and has minimal control over the use of the fund in the library (Source: University of Jos 2017 and 2018 Annual Report).

The results from document analysis are presented for clear illustration in table 5.11 below:

Table 5.11: Funding documents analysis

S/N	Institutions	2014-2017	2017-2018	Funding Source	Data Source
1	University of Ilorin	₦50,000,000	₦13,000,000	TETFund	TETFund Budget allocation 2015 -2017
2	University of Abuja	₦37,000,000	₦29,000,000	TETFund	Financial Budget allocation 2016-2018
3	Federal University of Minna	₦ 30,000,000	₦ -	TETFund	Annual Report 2017
4	University of Jos	₦30,000,000	₦20,000,000	TETFund	Annual Report 2017

(Source: research data)

5.4.3 RQ3: What strategic planning and policies are implemented to impact on sustainable provision of EIRs?

5.4.3.1 Questionnaire data analysis on strategies and policies for EIRs services

The third research question sought to determine if there are strategies and policies in place for EIRs services concerning its sustainability. The items were structured to collect data from the respondents by requesting them to indicate strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) based on the questions posed to them on the EIRs strategies. The results of the analysis are displayed in table 5.12.

Table 5.12: Strategies and policy for sustaining EIRs and services (n=98)

	Strategies	SA		A		D		SD	
		F	%	F	%	F	%	F	%
a	The library has adequately Designed policy to impact EIRs services	39	39.8	42	42.9	15	15.3	2	2.0
b	Policy framework is adequately implemented in provision of EIRs services	27	27.6	49	50.0	21	21.4	1	1.0
c	Provision of EIRs services are guided by the strategic planning	35	35.7	48	49.0	13	13.3	1	1.0
d	The strategic planning implementation is adequately monitored and evaluated	30	30.6	45	45.9	21	21.4	1	1.0
e	Staff performance are measured by Strategic planning of the UL	30	30.6	58	59.2	7	7.1	3	3.1
f	Strategic planning and policy are impactful for sustaining EIRs services in the UL	37	37.8	52	53.1	8	8.2	1	1.0

(source: research data)

Table 5.12 shows the strategies and policies applied in sustaining EIRs and services in the four university libraries.

As part of strategies and policy for sustaining EIRs and services, 39 (39.8%) of the population sampled strongly agree that the library has adequately designed policy to impact EIRs services, 42(42.9%) agreed to the statement, 15 (15.3%) represent those who disagreed and 2(2.0) strongly disagreed. Those who agreed that the policy framework is adequately implemented in the provision of EIRs services were 49 (50.0%), those who strongly agreed were 27(27.6%), 21(21.4%) disagreed and 1 (1.0%) strongly disagreed. Regarding the provision of EIRs services guided by the strategic plan, a total of 48 (49.0%) strongly agreed, 35 (35.7%) agreed, 13(13.3%) disagreed and 1(1.0%) strongly disagreed. Whether the strategic planning implementation was adequately monitored and evaluated, a total of 45(45.9%)

strongly agreed, 30(30.6%) agreed, while 21(21.4%) disagreed and 1(1.0%) strongly disagreed. To determine if strategic planning objectives of the UL measure the staff performance, a total of 58 (59.2%) agreed to this statement, 30(30.6%) strongly agreed, those who disagreed were 7(7.1%) and 3(3.1%) strongly disagreed. Strategic planning and policy are impactful for sustaining EIRs services in the ULs, with 52(53.1%) stating they agree with the statement, 37(37.8%) strongly agreed, while those who disagreed were 8(8.2) and 1(1.0%) who strongly disagreed.

5.4.3.2 Interview data on strategic implementation measures in the library

Interview question 7: How does your library measure the performance of librarians in your library?

Regarding the above interview question on the measurement of librarians' performance, the following excerpts indicate that the quality of results on assigned tasks and on-the-job-training and feedback on service delivery are performance measures. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – 'The staff of EIRs department work as a team and the quality of results obtained from staff on the tasks assigned to them is used as a performance indicator.'

2nd respondent – 'Staff performance is also measured by feedback received from the patron.'

Team 2:

1st respondent – 'The staff are effective and efficient in performance due to on-the-job training given to them.'

2nd respondent – ‘The librarians are corporative and take their service delivery seriously. Those deployed to electronic units take very good care of the materials and try their best to render effective services to their clients.’

Team 3:

1st respondent – ‘Through the feedback from the library, customer’s staff performance is measured.’

2nd respondent – ‘Periodically, respondents are required to comment on the services they receive from librarians. Through this means, we are able to determine the degree of confidence and level of performance the librarians are putting up.’

Team 4:

1st respondent – ‘In- house staff training is the yardstick for measuring staff performance as it is expected of staff to apply the knowledge gained in the delivery of services.’

2nd respondent – ‘To ensure consistency and uniformity of services, we regularly organise workshops to share novel ideas and every new staff is made to undertake training for alignment in the modus operandi within the library.’

Priority in the strategic planning framework

Interview question 8: What do you prioritise in your library strategic plan?

Regarding the above question on the priority of the library strategic planning, the following excerpts indicate that the development of EIRs and services to meet international standard, adequate information resources availability and electricity supply were prioritised plan. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘The library prioritised development of EIRs services to meet international standards.’

2nd respondent – ‘Top priority is to acquire EIRs services of international standard, and reposition the academic research output of academics improve students’ research and independent learning.’

Team 2:

1st respondent – ‘The library prioritised e-resources availability and usage.’

2nd respondent – ‘To ensure that EIRs are available and effectively used by lecturers and students.’

Team 3:

1st respondent – ‘Adequate information resources and provision of latest electronic resources to satisfy the information needs of users constituted the library’s priority.’

2nd respondent – ‘The inability of the government to provide stable power supply negates viable EIRs services; the availability of power is a major concern; hence, power and EIRs services must be strategically planned to ensure the maximum advantage of EIRs.’

Team 4:

1st respondent – ‘Provision of information resources, both print and electronic to students, was the priority of the library.’

2nd respondent – ‘The library’s main concern is to make sure that EIRs are concurrently made available for researchers and students at all times.’

5.4.3.2.1 Interview data on EIRs services policy framework

Interview question 9: Do you have an EIRs services policy?

In response to the above question, respondents indicated that the ULs have not incorporated the EIRs policy in providing services and that it is in the development stage or not operational. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘The EIRs services policy is partially available. In fact, there is a policy in place for Institutional Repository which is part of EIRs, but an independent policy for EIRs is still undergoing development.’

2nd respondent – ‘There is strategic initiative for EIRs policy, this is enshrined in the institutional repository policy. Separating EIRs policy from institutional repository policy will make the EIR policy more comprehensive and proactive.’

Team 2:

1st respondent – ‘EIRs policy is partially in place because it is in the development stage.’

2nd respondent – ‘The EIRs policy is undergoing modification from the draft. Once this is fully developed, it will stand the test of time.’

Team 3:

1st respondent – ‘There is a policy in place for EIRs.’

2nd respondent – ‘For the available EIRs policy to be viable, it has to be improved upon with the inclusion of sustainable power provision.’

Team 4:

1st respondent – ‘At the UniJos library, there is EIRs services policy in place.’

2nd respondent – ‘The EIRs policy has not been fully operational as it has not been approved by the university management.’

The extent of the policy implementation

Interview question 10: If yes to the above question, is the content of the policy fully implemented in the provision of EIRs services?

In response to the above question, respondents indicated that the implementation of the EIRs policy in surveyed libraries was not fully operational to deliver EIRs services. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – ‘The EIRs policy is partially implemented because it is not yet fully developed.’

2nd respondent – ‘It is not fully implemented by the library in services provision.’

Team 2:

1st respondent – ‘EIRs policy is not implemented.’

2nd respondent – ‘EIRs policy is still undergoing modification.’

Team 3:

1st respondent – ‘The content of the policy is not implemented yet.’

2nd respondent – ‘Lack of adequate power supply has negatively affected the implementation of the available EIR.’

Team 4:

1st respondent – ‘EIRs policy is **not fully implemented** at the UniJos library.’

2nd respondent – ‘The policy is currently **not fully operational** as at now.’

5.4.3.2.2 Interview data analysis on implementation impact of EIRs strategic planning and policy

How does your library comply with the following statements to impact sustainable EIRs services?

Table 5.13: Application of strategic planning and policy in performance expectancy

Question	UniIlorin	FUTMinna	UniAbuja	UniJos
Clearly defined working policy for EIRs is in place.	Partially	Partially	It is being developed	A clearly defined working policy for EIRs is in place
Clearly articulated EIRs strategic plan with commensurate implementation timeframe is in place.	Partially	not sure	yes available but not implemented	yes available
The e-librarians serve adequately within the strategic plan timeframe.	Yes	Yes	Partially	Yes
Librarians' job expectancy is measured using the strategic plan framework.	Yes	Yes	Partially	Yes
The library's strategic planning is monitored and evaluated at regular intervals	Yes	Annually	Yes	Yes
EIR services are prioritised in the main strategic planning framework of the library	the team all accepted that EIRs services are prioritised in the library strategic planning	Yes accepted	Yes it is	Yes, EIRs are given priority in the strategic planning of the library

(Source: research data)

The participants' responses on how the library applied strategic planning and policy indicate that strategic planning is a useful library management tool that might promote libraries ability to sustain their EIRs. The findings revealed that only UniJos has a clearly defined policy for EIRs. With FUTMinna, it appears that the EIRs strategic plan is available in a few libraries, but its implementation was the problem with regards to the examined libraries. Thirdly, the study's findings revealed that all the libraries provide EIRs services with the strategic plan except UniAbuja. Fourthly, the whole team agreed that librarians' job expectancy is measured with the strategic planning framework except UniAbuja. Finally, all the participants agreed that the library's strategic planning is monitored and evaluated at regular intervals and that EIRs are given priority in the library strategic planning framework.

5.4.3.3 Document data analysis on strategic planning/ policy implementation in surveyed libraries

5.4.3.3.1 Analysis on strategic planning document of selected ULs

The data collected from the evaluation of university libraries' strategic planning documents revealed that most libraries relied on the institutional strategic plans to draw their routine duties. Though the University of Ilorin strategic planning document covers the institution's mission goals and vision, it was found that EIRs services, literacy skill, and user information needs were prioritised in the document. UniAbuja also presented an annual report of 2018, and the strategic planning analysis revealed the library's aim to develop the EIRs database and information space to a world-class standard. The Federal University of Technology Minna 2017 annual report on the strategic plan could not be evaluated as it was not available. Though the objective of the strategic planning document of the UniJos library was to design a centralised EIRs system with active and useful collections capable of supporting the present and the future education and research needs of the university community, active planning implementation was not indicated in the analysed document. The four library strategic

planning documents' evaluation indicated that most libraries, excluding the University of Jos, have no strategic plans for EIRs sustainability.

Institution 1: The library strategic planning document of the University of Ilorin was selected for data analysis. The findings revealed that the strategic planning document of the University of Ilorin highly covers the institution's vision, mission and goals. The library's strategic planning document was made available to the researcher, and it prioritises literacy skills, user information satisfaction, and EIRs services. However, the implementation approach was not detailed in the surveyed document.

Institution 2: University of Abuja Library Annual Report was selected for the data analysis. The University of Abuja's strategic planning was identified in the 2018 Library annual report. The analysis revealed that the annual report does not have a comprehensive strategic planning implementation for sustainable EIRs services, even though it prioritised EIRs' collections and services. There is a great expectation in the strategic planning section of the Annual report examined, showing the plan to develop the EIRs database and information space based on best practices and world-class standards. Thus, there is no significant impact found with the UniAbuja strategic planning implementation for EIRs services.

Institution 3: The Federal University of Technology Minna 2017 Annual Report was selected for data analysis, but the findings revealed no strategic planning report reflecting on EIRs services of the library. However, there was no content to analyse the impacts of strategic plans implementation in the surveyed library.

Institution 4: The University of Jos library 2018 strategic planning document was provided for analysis. The findings revealed that the data analysed has a robust library mission and vision statement and strategic planning to provide satisfactory library services to the user community. Another specific objective identified, focused on EIRs services stated thus, 'to develop a centralised, active but useful collection to support current and future educational and research needs of the institution, both

undergraduate, postgraduate, and professional programmes of the university'. Nevertheless, the analysis did not find the strategic planning implementation focus.

5.4.3.3.2 Data analysis on EIRs services policy development

EIRs policy document evaluation of the ULs under study

The study revealed that none of the university libraries, except for the University of Jos, have a policy developed for the EIRs services. Still, only policy documents for acquisition purpose were made available. For instance, the UniJos policy document contains EIRs selection and acquisition guidelines and a statement on library collaboration. The results revealed that there is no clear specific policy developed for EIRs services.

Institution 1: The University of Illorin library policy document selected for data analysis revealed that the UniIllorin have **no specific policy developed** and no significant impact of policy on the sustainability of EIRs services in University of Illorin.

Institution 2: The policy document selected for data analysis in the University of Abuja was not provided for evaluation; therefore, **no policy document was analysed**. This indicated that the library had not developed an EIRs services policy.

Institution 3: Like Abuja University, The University of Technology Minna failed to provide a policy document for analysis. Therefore, indicating that the library **has not developed or implemented a specific policy** for EIRs services.

Institution 4: The policy document of the University of Jos library was selected for data analysis. The finding revealed that the policy document available for analysis was specifically designed for UniJos **collection development purpose**. **No specific policy document was designed for EIRs** services in this library. Though this policy document was intended for general library collections, it also contains some guidelines for

selecting free web-based EIRs and provides useful information on library collaboration. This indicated that the collection development policy analysed enhances the implementation of library collaboration that positively impacted EIRs services in UniJos library.

5.4.3.3.3 Data analysis on legal framework impact

The study sought to determine whether a legal framework (a national instrument) guided the sustainable provision of EIRs services in the selected ULs.

The EIRs services legal framework evaluation analysis in selected ULs

The institutions under study were aimed to explore their legal framework guiding EIRs' services provision. The study revealed that none of these libraries could provide any legal framework document on EIRs services. However, most library administrators from the four universities acknowledged they are not aware of any stand-alone legal frameworks guiding EIRs services in their respective libraries. Though they affirmed their awareness of the intellectual property (IP), they had no evidence of the document on IP for EIRs services in their respective libraries. The study's analysis indicates no legal framework specifically for EIRs services in the four universities under study.

National University Commission (NUC) legal framework guiding library EIRs services

The four Institutions under study were explored to examine the implementation impact of the NUC legal framework. However, as revealed from the study analysis, there were no NUC legal framework or legislative documents specifically for EIRs services in all the ULs under study. It can be noted that no NUC legal document was made available from any of the libraries for evaluation. However, the administration of institution 1 acknowledged that they are aware of the NUC minimum standard legal

framework for institutional library accreditation. The result indicates no specific NUC legal framework designed for EIRs services; therefore, there is no significant impact from the NUC legal framework for EIRs services.

Librarian Registration Council of Nigeria (LRCN) legal framework governing professional services

The study sought to determine whether Librarians Registration Council of Nigeria legal frameworks governed EIRs services in ULs under study. The analysis result showed that there is no LRCN legal framework specifically for EIRs services. It can be noted that none of the ULs under study could provide any LRCN legal document deposited in their libraries for evaluation. Though they acknowledged their awareness of the LRCN legal framework for professional librarians, it was found that they are not aware of any specific framework designed for EIRs services.

The findings indicate that libraries under study have no legal framework to enhance their libraries' EIRs services. This validates the significance of the present study for libraries surveyed to adopt a strategic framework for the sustainable provision of EIRs services, as described in chapter two of this study.

5.4.4 RQ4: To what extent have the libraries applied economic, social, and environmental strategies in sustaining EIRs services in their libraries?

5.4.4.1 Questionnaire data analysis on strategies applied in selected ULs Surveyed

The fourth research question sought to determine the extent to which libraries have adopted and implemented strategic initiatives in sustaining EIRs and services. The strategic initiatives adopted and implemented in sustaining EIRs and services were measured by the economic, social, and environmental strategies or practices in these selected libraries.

The respondents were asked to identify the strategic initiatives adopted by their libraries in sustaining the EIRs services by choosing one of these options: very great extent (VGE), great extent (GE), low extent (LE) or not applied (NA). The items listed under economic, social and environmental strategies were used to understand what has been done in each aspect of the strategic initiatives to reveal the extent of adoption of the initiatives in sustaining EIRs in the libraries under survey. The initiatives are presented in table 5.14.

5.4.4.1.1 Economic strategies

Table 5.14: Economic strategies adopted for sustaining EIRs and services (n=98)

	Economic strategies	VGE		GE		LE		NA	
		F	%	F	%	F	%	F	%
a	Subscription to licensed databases	42	42.9	45	45.9	8	8.2	3	3.1
b	Annual and timely renewal of data-base subscription license	36	36.7	42	42.9	15	15.3	5	5.1
c	Regular updating of institutional Repository	46	46.9	40	40.8	10	10.2	2	2.0
d	Direct purchase of e-resources to Populate library database	38	38.8	42	42.9	12	12.2	6	6.1
e	Vendor negotiation of licensed e-resources	26	26.5	44	44.9	21	21.4	7	7.1
f	Constant upgrading of internet bandwidth	38	38.8	39	39.8	18	18.4	3	3.1
g	Seeking and accessing grants for e-resources	26	26.5	45	45.9	25	25.5	2	2.0
h	Collaborating and advocating for e-resources funding from parent institution	29	29.6	46	46.9	20	20.4	3	3.1
i	Government direct funding adequate for e-resources specifically	21	21.4	40	40.8	26	26.5	11	11.2
j	Alternative source of funding for e-resources	22	22.4	34	34.7	26	26.5	16	16.3

	Economic strategies	VGE		GE		LE		NA	
		F	%	F	%	F	%	F	%
k	There is a conscious decision to invest in EIRs	35	35.7	50	51.0	10	10.2	3	3.1
l	Library provides current and relevant EIRs	52	53.1	40	40.8	5	5.1	1	1.0
m	Access to national virtual library provided by NUC	27	27.6	35	35.7	20	20.4	17	17.3
n	Digitising print resources	46	46.9	37	37.8	12	12.2	3	3.1
o	There is a conscious drive to collaborate in acquisition of EIRs	39	39.8	39	39.8	13	13.3	7	7.1

(Source: research data)

From table 5.14, the economic strategies adopted for sustaining EIRs and services on subscription to licensed database shows that respondents who attested that economic strategies are adopted to a great extent were 45 (45.9%), while those who indicated to a very great extent were 42(42.9%). Those who indicated to a low extent stand at 8 (8.2%), and the least in the ranking are those who indicated not applicable (3, 3.1%). Regarding the strategies adopted for sustaining EIRs and services through the annual and timely renewal of database subscription of licenses, 4(42.9%) respondents who indicated to a great extent ranked the highest; next to this are those who indicated to a very great extent (36, 36.7%), while those who indicated to a low extent were 15(15.3%) and those who indicated not applicable were 5 (5.1%) respectively.

On regular updating of the institutional repository as a way of sustaining EIR services, those who indicated to a very great extent ranked highest (46, 46.9%), closely followed by those who indicated to a great extent (40, 40.8%); while those who indicated to a low extent were 10 (10.2%) and the least ranked response was not applicable by 2 (2.0%). The respondents were also asked questions on the direct purchase of e-resources to populate the library database as an economic strategy for sustaining EIR services. The highest rank were those who indicated to a great extent

(42, 42.9%). Next were those who indicated to a very great extent (38, 38.8%), while those who indicated to a low extent were 12(12.2%). Finally, those who indicated not applicable were 6 (6.1%) respectively. The next economic strategies on vendor negotiation of licensed e-resources were highlighted by 44 (44.9%), the highest rank, who indicated to a great extent, and closely followed by those who indicated to a very great extent (26, 26.5%). Those who indicated to a low extent were 21 (21.4%), while the least were 7(7.1%) who indicated not applicable.

Constant upgrading of internet bandwidth is another economic strategy for sustaining EIRs services in academic libraries, as a total of 39 (39.8%) indicated it is to a great extent, while 38(38.8%) indicated to a very great extent. Those who indicated to a low extent were 18(18.4%), and those for not applicable were 3 (3.1%) respectively. On the issue of seeking and accessing grants for e-resources, a total of 45(45.9%) respondents indicated to a great extent, while those who said to a very great extent were 26(26.5%). Consequently, collaborating and advocating for e-resources funding from parent institutions has as the highest-ranked 46(46.9%) respondents who indicated the abovementioned happens to a great extent; 29(29.6%) indicated to a very great extent, while those that indicated to a low extent and not applicable were 3 (3.1%). To supplement the sources of funds, a statement was made on alternative sources of funding for e-resources. The highest rank was 34(34.7%), who indicated to a great extent in favour of the above statement. Those who indicated to a low extent were 26 (26.5%), while those who indicated to a very great extent were 22(22.4%). The least were 16(16.3%) who indicated not applicable.

In response to the statement whether there is a conscious decision to invest in EIRs, 50(51.0%) respondents representing the highest rank indicated to a great extent; those who indicated to a very great extent were 35 (35.7%), while those who indicated to a low extent were 10(10.2%) and those for not applicable were 3(3.1%) respectively. Another important economic strategy is on whether the library provides current and relevant EIRs, to this 52 (53.1%) admitted to a very great extent; 40(40.8%) admitted

to a great extent; 5(5.1%) admitted to a low extent, while 1(1.0%) indicated not applicable. Access to a national virtual library provided by NUC is another economic strategy to which 35 (35.7%) respondents admitted happens to a great extent; 27(27.6%) to a very great extent, 20 (20.4%) to a low extent and 17 (17.3) admitted it is not applicable. An economic strategy such as digitising print resources was supported by 46(46.9%) respondents who indicated the strategy's application to a very great extent, while those who indicated to a great extent were 37(37.8%). Those who indicated to a low extent were 12(12.2%), while 3 (3.1%) indicated not applicable. On the statement, whether there is a conscious drive to collaborate in the acquisition of EIRs, 39 (39.8%) admitted to a very great extent and to a great extent, respectively.

5.4.4.1.2 Social strategies

The respondents were asked to show their libraries' social strategic initiatives applied in sustaining EIRs by indicating the extent of these initiatives' adoption. The results of the data analysis are displayed in table 5.15.

Table 5.15: Social strategies applied for EIRs sustainability (n=98)

	Social strategies	VGE		GE		LE		NA	
		F	%	F	%	F	%	F	%
A	Design and implementation of a strategic planning for EIRs	39	39.8	45	45.9	11	11.2	3	3.1
B	Design and implementation of a policy on EIRs	32	32.7	47	48.0	16	16.3	3	3.1
C	Staff continuous development on EIRs trends	46	46.9	35	35.7	16	16.3	1	1.0
D	Integration of social media services	29	29.6	47	48.0	17	17.3	5	5.1
E	Online selection and dissemination of services	41	41.8	40	40.8	14	14.3	3	3.1
F	Online inter-library loan	30	30.6	38	38.8	23	23.5	7	7.1
G	Institutional collaboration	30	30.6	44	44.9	22	22.4	2	2.0
H	Users training	44	44.9	39	39.8	14	14.3	1	1.0
I	Digital archiving of e-resources	35	35.7	45	45.9	15	15.3	3	3.1
J	Marketing EIRs services and resources	22	22.4	50	51.0	20	20.4	6	6.1
K	Establishment of management information system	34	34.7	40	40.8	16	16.3	8	8.2
L	Customer support on resources Discovery	25	25.5	42	42.9	17	17.3	4	4.1
M	Online organisation and description of resources	35	35.7	42	42.9	17	17.3	4	4.1
N	Management emphasis on EIRs services skills for staff	39	39.8	40	40.8	17	17.3	2	2.1
O	E-reference services	25	25.5	46	46.9	23	23.5	4	4.1

(Source: research data)

In Table 5.15, in response to the social strategies applied towards the sustainability of EIRs concerning design and implementation, 45 (45.9%) respondents who were the highest number admitted to the statement indicating to a great extent. Those who indicated to a very great extent were 39(39.8%), while 11(11.2%) admitted to a low extent and 3(3.1%) not applicable. The respondents' highest number of responses on design and implementation of a policy on EIRs is 47(48.0%)who admitted to a great extent, followed by 32(32.7%) who indicated to a very great extent. Those who indicated to a low extent were 11(11.2%), while 3(3.1%) indicated not applicable. Staff continuous development on EIR trends as a social strategy, this was admitted by 46(46.9%) who indicated to a very great extent 46(46.9%); 35(35.7%) who admitted to a great extent; 16(16.3%) to a low extent; and the least (1, 1.0%) who indicated not applicable. Regarding the integration of social media services, 47 (48.0%) agreed with the statement indicating to a great extent, while 29(29.6%) admitted to a very great extent. Those who indicated to a low extent were 17(17.3%) while another 5(5.1%) indicated not applicable.

Moreover, other social factors considered include online selection and dissemination of services, with the highest number of respondents indicating to a very great extent (41 41.8%), while those who indicated to a great extent were 40(40.8%). Some indicated to a low extent (14, 14.3%), while 3(3.1%) indicated not applicable. In response to online inter-library loan services, the highest response rate was from 38 (38.8%) respondents who agreed with the statement, indicating to a great extent, while 30 (30.6%) indicated to a very great extent. Others indicated to a low extent (23, 23.5%), while 7(7.1%) indicated not applicable. Institutional collaboration is another social strategy for sustaining EIRs; the respondents with the highest response rate who attested to a great extent were 44 (44.9%), followed by those who attested to a very great extent (39, 30.6%). Those who indicated to a low extent were 22(22.4%), and the least (2, 2.0%) indicated not applicable. On users training as a social strategy for EIR sustainability, 44 (44.9%) said to a very great extent, while 39(39.8%) said to a great extent; those who indicated to a low extent were 14(14.3%) and 1 (1.0%)

indicated not applicable. On digital archiving of e-resources, 45(45.9%) agreed, indicating to a great extent, while 35(35.7%) indicated to a very great extent. Those who said to a low extent were 15(15.3%), and 3 (3.1%) indicated not applicable. Regarding marketing of EIRs services and resources, the highest number of responses were from those who indicated to a great extent (50, 51.0%), while those who indicated to a very great extent were 22(22.4%). Those who admitted to a low extent were 20 (20.4%), while the least number of responses came from 6 (6.1%) who indicated not applicable. Furthermore, the establishment of a management information system had the highest responses from 40 (40.8%) respondents who indicated to a great extent, while 34(37%) indicated to a very great extent. Those who indicated a low extent were 16 (16.3%), while the least responses indicated not applicable (8, 8.2%).

Regarding customer support on resources discovery, those who indicated to a very great extent were 42 (42.9%), while those who said to a great extent were 25 (25.5%). Those who indicated to a low extent were 17 (17.3%), and the least number of responses were from those who indicated not applicable 4 (4.1%). Online organisation and description of resources had the highest responses from 42 (42.9%) who attested to a great extent, while 35 (35.7%) indicated to a very great extent. Those who indicated to a low extent were 17(17.3%), while the least responses were from those who said not applicable (4, 4.1%). Management emphasis on EIRs services for staff has its highest response from those who indicated to a great extent 40 (40.8%), while those that indicated to a very great extent were 39 (39.8%). Those who indicated to a low extent were 17(17.3%), and the least responses were from those who indicated not applicable (2, 2.1%). The last social strategy is on e-reference services with a high response rate from those indicating to a great extent (46, 46.9%), while those who said to a very great extent were 25 (25.5%). Those who said to a low extent were 23(23.5%), and the very least responses emanated from those who indicated not applicable (4, 4.1%).

5.4.4.1.3 Environmental strategies

The respondents were asked to show their libraries' environmental strategic initiatives applied to sustain EIRs by indicating the extent of adopting these strategies. The results of the data analysis are shown in Table 5.16.

Table 5.16: Environmental strategies (n = 98)

	Environmental strategies	VGE		GE		LE		NA	
		F	%	F	%	F	%	F	%
A	Constant power supply	34	34.7	37	37.8	22	22.4	5	5.1
B	Provision for alternative electricity supply	38	38.8	36	36.7	20	20.4	4	4.1
C	Adequate green learning space	25	25.5	46	46.9	22	22.4	5	5.1
D	Air-conditioned information common space	37	37.8	37	37.8	17	17.3	7	7.1
E	Information literacy space	28	28.6	43	43.9	21	21.4	6	6.1
F	Adequate and up-to-date computer systems	44	44.9	41	41.8	12	12.2	1	1.0
G	System networking connections	44	44.9	43	43.9	10	10.2	1	1.0
H	Constant systems' maintenance	42	42.9	38	38.8	17	17.3	1	1.0

(Source: research data)

Respondents were further asked questions on the environmental strategies in their various institutions concerning EIRs' sustainability. From their responses, the provision of adequate green learning spaces (46, 46.9%) was adopted to a great extent. The data presented indicated that environmental strategies had been applied in sustaining EIRs services in the selected ULs. The findings revealed that system networking connection received the highest rating (87, 88.8%), followed by adequate and up-to-date computer systems with 85 (86.7%) responses. Constant systems' maintenance received 80(81.7%) responses; information common space received 79

(80.6%); provision for alternative electricity supply had 74 (75.5%); air-conditioned space for e-resources received 74 (75.6%); and constant power supply, information literacy space and adequate green learning space received 71 responses (72.5%).

5.4.4.2 Interview data on strategic initiatives for EIRs

Management report on strategic initiatives employed for sustainable EIRs services

Interview question 11: How do you view the extent of EIRs strategic initiatives for the sustainability of service provision in your UL?

The following excerpts are responses from the interview on the extent of EIRs strategic initiatives for the sustainability of service provision in the surveyed ULs.

Team 1:

1st respondent – ‘EIRs are available in the form of institutional repositories, databases, uninterrupted internet facilities, technological innovation and upgrading, Open Access resources online with high awareness strategy to the university community to encourage usage that implies **it is sustained in UniIlorin.**’

2nd respondent – ‘Our university library is collaborating with other specialized and larger university libraries. This is done to enjoy effective benefits of collaboration, sustain services and enhance users’ access and usage. For us, the extent of EIRs strategic initiatives for the sustainability of service provision in our UL are **to a high extent.**’

Team 2:

1st respondent – ‘The EIRs is **not adequately sustained** as expected due to paucity of funds and manpower.’

2nd respondent – ‘EIRs would be well sustained or can be better enhanced if the library staff develop their competencies in the area of EIRs skills. Furthermore, increased subscription time to allow users, especially lecturers, to access and deploy and effectively render their services from home will increase sustainability.’

1st and 2nd respondent concluded that – ‘EIRs are moderately okay.’

Team 3:

1st respondent – ‘There is EIRs strategic sustainability in terms of staffing, equipment and training. Almost all, at least 80% of the staff are IT compliant, that is why they are able to use the computer to access information.’

2nd respondent – ‘There is available funding for EIRs; adequate funding is available for the provision of EIRS. In summary, the level of EIRs sustainability is high in UniMinna.’

Team 4:

1st respondent- ‘Based on the available funds, EIRs should be adequately available, and as the world is becoming global, awareness should be on the sustainability of the resources, and without strategic initiative, it’s a waste of funding.’

2nd respondent – ‘For the Sustainability of EIRs services at UniJos, there is a plan to sustain the EIRs in all Nigeria Universities that includes UniJos; however, this is unattainable because there is a poor individual or collective seriousness, adding that the high cost of database resources subscription, challenges the sustainable development and hinders the free flow of services.’

1st respondent – ‘The extent to which the UniJos has sustained her EIRs services is through annual renewal of databases by subscription. Though this takes quite a long

time for renewal processes to be completed, consistent change to better bandwidth service provider is necessary for robust services.'

2nd respondent – *'It is also clear that to sustain EIRs in UniJos, the university library switched from Multi Telecommunication Network (MTN) to Global Communication (Glo) for higher Bandwidth services. This attendant change did not bring about the much-needed change as there still remained other challenges for effective EIRs services.'*

Interview question 12: What specific strategic initiatives were adopted for sustainable EIRs services in your library?

In response to the above question, respondents indicated that information literacy, user sensitisation strategies, partnerships, social media communication strategies, online current awareness strategies and the integrated library management system's application were the common strategic initiatives adopted. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – *'To enhance EIRs usage in the library, sensitisation of patron strategy was adopted.'*

2nd respondent – *'Users training and sensitisation programmes were organised to expose users to new databases or services acquired and how to use available resources (i.e., information literacy skill).'*

The second interviewee said they also partner with other university libraries for EIRs subscription and loan services.

Team 2:

1st respondent – ‘Seminars and workshops, as well as user education, are organised for both staff and users from time to time.’

2nd respondent – ‘The library uses both institutional and private e-mails to communicate with the library clientele.’

Team 3:

1st respondent – ‘Social media communication strategy is applied, whereby the e-library communicates with users through their e-mail addresses. These email addresses are also used for online current awareness services. The library uses this strategy to provide online services to users.’

2nd respondent – ‘Through the social media portal, the library communicates with the staff and library users.’

Team 4:

1st respondent – ‘Use of open source integrated library management system such as KOHA, subscription to online databases in different disciplines in house training of staff on OPAC, and sponsorship to conferences, workshops, seminar etc. are the common strategies that we adopted for EIRs services.’

2nd respondent – ‘The University has experienced TETFund intervention funding, collaboration and other grants for sustaining the EIRs services.’

5.4.5 RQ5: What challenges are encountered in the provision of EIRs, and how these were ameliorated?

5.4.5.1 Questionnaire data analysis on challenges encountered in EIRs services

Factors hindering the adoption of strategies in sustaining EIRs

The fifth research question sought to determine the factors that hinder EIRs services sustainability in the selected ULs. The response categories on the statements measuring these factors were based on a 4-point Likert scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The analysis is presented in Table 5.17. In the analysis, SA and A are merged to give a score of agreement on each item, and D and SD are merged to give a score of disagreement on each item measured.

Table 5.17: Factors hindering adoption of strategies in sustaining EIRs (n =98)

	Hindrances	SA		A		D		SD	
		F	%	F	%	F	%	F	%
A	Lack of required EIRs sustainability skills	30	30.6	39	39.8	20	20.4	9	9.2
B	Lack of EIRs sustainability policy in the Library	17	17.3	49	50.0	26	26.5	6	6.1
C	Lack of strategic planning for EIRs	18	18.4	48	49.0	25	25.5	7	7.1
D	Poor management support for sustainability program	15	15.3	51	52.0	28	28.6	4	4.1
E	Librarians' nonchalant attitude to EIRs sustainability	16	16.3	34	34.7	39	39.8	9	9.2
F	Poor advocacy on sustainability of EIRs services	18	18.4	46	46.9	25	25.5	9	9.2
G	Lack of sustainability program and team	13	13.3	51	52.0	28	28.6	6	6.1
H	Poor knowledge of sustainability initiatives	13	13.3	33	33.7	40	40.8	11	11.2
I	Poor funding for EIRs	35	35.7	43	43.9	13	13.3	7	7.1
J	Poor internet access and electricity supply	25	25.5	45	45.9	19	19.4	9	9.2

(Source: research data)

From table 5.17, the respondents were requested to identify factors that hinder the adoption of sustainable EIRs in their university libraries. From their responses, it was revealed that 78(79.6%) respondents agreed that poor funding for EIRs was the strongest factor. This was followed by poor internet access and electricity supply (70, 71.4%), lack of required EIRs sustainability skills (69, 70.4%), lack of strategic planning for EIRs (66, 67.4%), lack of EIRs sustainability policy in the library and poor management support for sustainability program (66, 67.4%), poor advocacy on

the sustainability of EIRs services and lack of sustainability program (64, 65.3%). Furthermore, the results revealed that 51 (52.0%) disagreed that poor knowledge is a factor that hinders EIRs' sustainability initiatives.

5.4.5.2 Interview data analysis on challenges to sustainable EIRs services

Interview question 13: What are the key challenges that hinder the goal of sustaining EIRs services in your library?

In response to the above question, respondents indicated that funding, poor electricity supply and internet instability, lack of staff training and poor staff skills, and unrenewed license subscriptions are challenges that hinder EIRs services' sustenance in surveyed ULs. The following excerpts are provided as evidence from the interviewee responses.

Team 1:

1st respondent – *'One major hindrance to sustaining EIRs services in UniIlorin is funding.'*

2nd respondent – *'Poor electricity supply has been a major challenge in the provision of EIRs. Another strong challenge is poor staff skills and students' apathy towards EIRs services such that, sometimes the school spend money to provide resources and services, while a reasonable number of students do not patronise the resources.'*

Team 2:

1st respondent – *'One major challenge that hinders the goal for sustaining EIRs is funding, followed by staffing.'*

2nd respondent – *'Poor staff training on the use of EIRs is responsible for low use by staff and disinterest on the part of students, especially postgraduate students.'*

Team 3:

1st respondent – ‘It is basically electricity supply.’

2nd respondent – ‘Without electricity, the use of EIRs is impossible. There are constant power outages and most often no power at all and makes EIRs use almost impossible.’

Team 4:

1st respondent – ‘Internet connectivity problem and insufficient funds constantly challenge the sustainability of EIRs services.’

2nd respondent – ‘It includes inability of the institution to renew licensed subscription immediately before the expiration time. There is also the issue of internet instability.’

5.4.5.3 Questionnaire data analysis best approaches to enhance the sustainability of EIRs services

The last research question sought to determine the best approach to enhance EIRs services sustainability in the respective libraries. The responses were measured using a 4-point Likert scale from strongly agree (SA), agree (A), disagree (D) to strongly disagree (SD). The data analysis results were presented in Table 5.19, in which SA and A are merged to represent agreement and D and SD are merged to represent disagreement.

Table 5.18: Best approaches for EIRs services sustainability (n=98)

S/N	Best Approaches	SA		A		D		SD	
		F	%	F	%	F	%	F	%
A	Integrating EIRs sustainability as a separate department in the UL	46	46.9	35	35.7	11	11.2	5	5.1
B	Advocating for EIRs sustainability committee in the University	39	39.8	48	49.0	8	8.2	3	3.1
C	Prioritising sustainability of EIRs services in the Library Strategic Plan	54	55.1	34	34.7	6	6.1	3	3.1
D	Integrating EIRs sustainability program in the library policy	49	50.0	37	37.8	9	9.2	3	3.1
E	Employing EIRs sustainability skilled staff in the UL	51	52.0	34	34.7	8	8.2	2	2.1
F	Allocating special funds for the EIRs sustainability program	58	59.2	26	26.5	10	10.2	4	4.1
G	Promoting and marketing EIRs sustainability programs from the UL to the university management	51	52.0	39	39.8	5	5.1	3	3.1
H	Monitoring and evaluation of strategic plans for EIRs and presenting reports of outcome	52	53.1	36	36.7	8	8.2	2	2.0
I	Strong commitment by the library Management team	48	49.0	43	43.9	5	5.1	2	2.0
J	Government direct intervention through national policy initiative	51	52.0	34	34.7	8	8.2	3	3.1

(Source: research data)

The study sought to reveal the best approaches for enhancing EIRs services sustainability in North Central Nigeria's university libraries. The results show that the respondents strongly agreed on six out of the ten statements in Table 5.18. Specifically, the findings revealed that the best approach for enhancing EIRs services' sustainability is a commitment by the library management team with 91(92.9%) responses, followed by promoting and marketing of EIRs sustainability programs for the UL to the University management (90, 91.8%). Other approaches, as shown in the table, include prioritising sustainability of EIRs services in the library strategic plan (89.8%); integrating EIRs sustainability program in the library policy (89.8%); monitoring and evaluation of strategic plans for EIRs and presenting reports of outcome (89.8%); advocating for EIRs sustainability committee in the university; 87(88.8%), employing EIRs sustainability skilled staff in the ULs (86.7%); and government direct intervention through national policy initiative 85(86.7%) as part of critical approaches to enhance EIRs. Besides the disagreement on the allocation of special funds for the EIRs' sustainability program (85, 86.7%) and integrating EIRs' sustainability as a separate department in the UL (81, 82.6%), these results indicate that the respondents agreed on most of the suggested approaches for enhancing the sustainability of EIRs services in the university libraries.

5.4.5.4 Interview data analysis on sustainability team implementation

Interview question 14: Do you think that with EIRs' sustainability team, EIRs services will be enhanced in your library?

The interview responses showed that respondents believe that a well-managed skilled EIRs sustainability team can enhance EIRs services in ULs. The following excerpts are the respondents' thoughts on the question posed above.

Team 1:

1st respondent – *'Yes, it will, if well established.'*

2nd respondent – ‘It can actually lead to satisfactory output if adequately implemented.’

Team 2:

1st respondent – ‘Yes, it is possible.’

2nd respondent – ‘The team, if given the freedom to perform according to their mandates, will facilitate EIRs services in the library.’

Team 3:

1st respondent – ‘Yes, it will certainly enhance the sustainability of EIRs services in our library.’

2nd respondent – ‘The team will certainly enhance the sustainability of EIRs services in our library.’

Team 4:

1st respondent – ‘Yes if the team will be effective.’

2nd respondent – ‘With a good vision and strong management support, the team can enhance the EIRs services.’

Interview question 15: From your point of view, what are the key solutions to the sustainability of EIRs services in your library?

The interview findings indicate that adequate funding, stable sources of power supply, staff training, maintenance of EIRs, and subscription to online databases are key solutions in the sustainability of EIRs services in the surveyed ULs.

Team 1:

1st respondent – ‘Funding and staff training are key major issues.’

2nd respondent – ‘There has to be an alternative source of power supply to enable EIRs use in the library.’

Team 2:

1st respondent – ‘There should be adequate funding for the acquisition of EIRs and its maintenance in the library.’

2nd respondent – ‘Training and retraining of manpower.’

Team 3:

1st respondent – ‘There should be available funding for EIRs in all areas of need.’

2nd respondent – ‘improved electricity provision.’

Team 4:

1st respondent – ‘Provision of sufficient bandwidth, more computers, common space, more professional librarians (senior librarians) and adequate subscription to online databases are serious challenges.’

2nd respondent – ‘databases should be adequately subscribed to and well-funded for its impact to be felt.’

5.5 Summary

The data collected were analysed according to the research questions that guided the study. The quantitative data collected using a questionnaire and the qualitative data collected using interview, documents analysis and observation checklist were presented according to the response to research questions. The quantitative aspects analysed include; demographic profile, availability of EIRs services, the status of the available information resources, sources of funding EIRs and its efficiency in

sustaining provision of EIRs services. The study further addressed and presented data on strategic planning and policy applied in sustaining EIRs; the extent of adopting a strategic initiative to sustain the EIRs services; economic, social and environmental initiatives adopted in sustaining EIRs services; factors hindering EIRs services, and best approaches to enhance sustainable EIRs services.

The qualitative analysis dealt with multiple data gathered from the study: Firstly, the extent of EIRs strategic initiatives, available EIRs and their satisfactory status, funding sources/issues and services provision efficiency, strategic planning and policy implementation. Secondly, these libraries' strategic initiatives in sustaining EIRs services, possible options for enhancing EIRs services, and the challenges to sustaining the services. Thirdly, the documents examined were: funding documents where TETFund allocation was identified as the primary source of funding; strategic planning documents indicated that most of the libraries did not implement strategic planning approach in services provision; and EIRs policy documents showed that the University of Jos developed without full implementation of the policy. Finally, the observation checklist was utilised to identify the available electronic information resources in the university libraries studied. The next chapter discusses the presented findings in detail.

CHAPTER SIX

DISCUSSION OF FINDINGS

6.1 Introduction

This chapter presents the discussion of findings from a multi-method data gathering approach in line with the research questions that guided the study (Leedy and Ormrod 2005). The findings are discussed with the support of extant empirical and theoretical literature. The essence of the discussion of findings is to report the research process outcome to the relevant audience (Zohrabi 2013, p.265). Creswell (1994, p.199) observes that the most critical issue in discussing the results is ‘how the outcome compares and contrasts with other related studies and theories’. Leedy and Ormrod (2005) observed that discussion and interpretation of results cut across the study’s aim, research problem, and research questions raised in the research.

This study set to determine the sustainability strategies of electronic information resources in North Central Nigeria’s university libraries. The focus of the study was on: the effectiveness of the available EIRs in the ULs; the efficiency of the funding sources for sustainable provision of EIRs in the ULs; the strategies and policies implemented to ensure sustainable provision of EIRs services; the strategic initiatives employed to enhance the provision of EIRs services; and finally, the challenges faced and how they are ameliorated.

The study participants comprised academic librarians, ICT support staff, and the four university libraries’ management team in North Central Nigeria. The universities surveyed included the University of Abuja, University of Ilorin, Federal University of Technology Minna, and the University of Jos. The study is underpinned by two theories: the Bridge Decision Model and the Triple Bottom Line Theory.

According to Johnson and Onwuegbuzie (2004), the data presentation and interpretation enhance the assessment of the trustworthiness of both quantitative and qualitative data gathered. Moreover, data interpretation in research helps respond to the research objectives to give a reasonable understanding of the study results (Kothari, 2004) through logical analysis of the research objectives, research questions, theories, and related literature. Fain (2013) and LoBiondo-Wood and Haber (2014) posited that the researcher presents results by deducing and discussing the meaning.

This chapter covers available EIRs and their status, sources of funding EIRs, strategic planning and policy for EIRs, innovative initiatives for sustaining EIRs, and challenges hindering EIRs sustainability strategies. Two relevant theories were adopted to underpin the study that includes: the HC Bridge Decision Model by Boudreau and Ramstad (2005) and the Triple Bottom Line (TBL) theory by Elkington (1994).

6.2 Response rate

The survey questionnaire was distributed to 126 participants, including academic librarians, ICT support staff, and the libraries' management teams.

The response rate showed that the distribution of librarians is highest in the following order (See Section 5.2): the Federal University of Technology Minna had the highest response, followed by the University of Jos, and the University of Ilorin, then the University of Abuja had the least population.

Out of the 126 survey questionnaires distributed, 98 were duly completed, returned, and all useful; this gives a 77.8% response rate. A response rate of 84.6% (22) was achieved from the four university libraries' interviews out of the proposed 26 participants. According to Rogelberg and Stanton (2007), it is difficult to achieve a 100% response rate except where there is pressure on the participant from the researcher. The high response rates (77.8% and 84.6%) in this study indicate the

researcher's effort to attract the target group's participation. The participants' high participation may be attributed to the motivation from the researcher and the libraries' management. The respondents' positive turnout contradicts the Brick and Williams (2013) report, which highlights the intrinsic rate of increase in nonresponse from research participants in the USA. This is prevalent with some data collection modes (Brick and Williams 2013), which can present error in survey estimates. The response rate from the current research is within an accepted standard rate of 75-85% (Dooley and Lindner 2003), representative of the respondents surveyed.

6.3 Demographic profile analysis of the participants

The assessment of the participants' profiles was necessary to establish the following: institutional affiliation, gender, age, academic qualification, work experience, department/sections of duty, and years of EIRs' adoption.

6.3.1 Distribution of respondents by university

The study's findings revealed the distribution of academic librarians (see Figure 5.1) as follows: the University of Abuja had the list response, followed by the University of Ilorin and the University of Jos, then the Federal University of Technology, Minna at a top percentage. The higher number of participants from the Federal University of Technology, Minna and the University of Jos was attributed to the high number of cumulative percentage at 65.3% (41) and 62.4% (40), possibly because the University Librarians were interested in the study and consequently encouraged their staff to participate as well. The low turnout from the University of Abuja (23, 11.2%) and the University of Ilorin (22, 22.4%) was attributed to absenteeism and the participants' problematic coordination.

6.3.2 Gender distribution of respondents

The survey results show (Table 5.5) that fewer female and more male respondents took part in the study. This result reflects the findings on gender representation in federal universities in Nigeria since the National Economic Empowerment and Development Strategy revealed that academic staff consisted of 85% male and 15% female (International Organisation for Migration 2014, p.36). Though there is a generally held view that women dominate employment in libraries (Simpson 2004, p.350), this is not the case in Nigeria. However, Lee, Oh and Burnett (2016) and Beveridge, Weber, and Beveridge (2011) affirmed that in the United States of America, women in librarianship represent 83%. The dominance of one gender against the other in librarianship may vary from one jurisdiction to another and between developed and developing countries.

6.3.3 Distribution of respondents by age

The study's findings revealed that most respondents, at 23.5%, were over 50 years. Those within the age range of 31-35 years were 21.4%, and those within 36-40 years were 19.4%. Moreover, those within the age range of 41-45 years represented 12.2%, followed by 46-50 years, represented by 11.2%. Furthermore, the youngest age group in the library profession was 20-25 years with 6.1% and 26-30 years, representing 6.1% respectively. This result reveals that young professionals are the minority in the libraries surveyed. This result also highlights the high unemployment level among Nigerian youths (Onoh 2011; Uddin and Uddin 2013).

6.3.4 Librarians' academic qualifications

The findings showed that the majority of librarians are with MSC/MLS (48, 47%), followed by those with Bsc/BA/BLS (31.6%), and very few of the respondents have PhDs (14, 14.3%). About (5.1%) of respondents did not indicate their qualifications.

6.3.5 Librarians' years of working experience

The study's results indicated that most librarians (32.7%) have 6-10 years of working experience, followed by 20.4% with 25 years and above, while 19.4% have only 1-5 years of working experience in the library. Moreover, 12.2% have 11-15 years, 9.2% have 16-20 years of working experience, and 6.1% have 21-25 years of experience. Overall, the result showed that the majority of librarians have less than ten years of working experience.

6.3.6 Librarians' duty posts

The results of the study showed that a significant number of respondents (see Figure 5.4) worked in sections of the libraries other than cataloguing and classification sections, followed by e-librarian, then serials librarian, and circulation librarian sections, followed by MIS support section, then digital / archive and management section as the least participants. These results suggest that only a few staff provide services in the EIRs sections. These results are similar to those from libraries in China (Xu et al. 2015), UK and the USA (Hawthorne 2015), where self-service and mobile reference services are common.

6.3.7 Libraries' years of EIRs adoption

Most of the respondents (32.7%) agreed that their libraries adopted the EIRs 7 to 9 years ago, followed by 29.7% of respondents who reported their library adopted EIRs over 13 years ago. Another 20.4% of respondents revealed that their libraries' EIRs existed 4 to 6 years ago, and 14.3% of respondents noted that their library adopted EIRs service 10 to 12 years ago. Additionally, 3.1% of the respondents reported that their libraries adopted EIRs in the last three years. The findings further showed that most libraries adopted and used EIRs from 7 to 9 years. The findings suggest maturity for the implementation of strategic initiatives for the sustainable provision of EIRs services.

6.4 Available EIRs services in selected ULs

6.4.1 Effectiveness of the provision of EIRs in university libraries in North Central Nigeria

In the HC Bridge theory, effectiveness captures how programs and practices affect talent and organisation pools (Boudreau and Ramstad 2005). Additionally, effectiveness also applies to ‘the ability to exercise one’s talent in a financial constraint working environment to achieve the desired success by individuals who have been trained and given incentives for this purpose’ (Boudreau and Ramstad 2005, p.13). This section presents the findings to the first research question that sought to address the HC Bridge Theory’s effectiveness and its application on EIRs in University Libraries in North Central Nigeria. The survey questionnaire results indicated that 57.1% strongly agreed that their libraries have EIRs available, followed by 25.5% who agreed to have EIRs in their library. However, 13% disagreed that EIRs were available in their library, followed by 4.1% who strongly disagreed.

Regarding the effectiveness of the available EIRs, the responses shown in table 5.10 revealed that 45.9% of respondents agreed that the EIRs are effectively provided within the universities surveyed. Another 44.9% of respondents strongly agreed with the effectiveness of EIRs services, while 8.2% disagreed. There was strong support from 90.8% of respondents who agreed that the provision of EIRs was effective. This finding is against 8.1% of respondents who disagreed. Also, 81.6% of the respondents agreed that the libraries have an archival unit for EIRs. Whether the strategic implementation of EIRs has enhanced services provision in the libraries surveyed, 91.9% of respondents agreed. In addition, 65.4% agreed that access to EIRs is strictly confined within the library, while 34.7% of the respondents disagreed. User access to EIRs outside the institution environment received 60.0% of respondents who agreed, while 39.6% disagreed. Lastly, on the adequacy of EIRs, 78.5% of respondents agreed, while 21.4% disagreed.

The results established the availability of electronic information resources services for information needs support in most of the libraries under study (82.6%). These results concur with Ridwan, Felix and Mohammed's (2019) study results that examined universities in Benue State, North Central Nigeria, to explore the lecturers' ICT competencies using EIRs. The study showed that EIRs are highly available for use in the surveyed libraries, which indicates the organisational management efficiency and commitment to ensure that ULs' information resources are effective and adequate for community use. Accordingly, Moynihan et al. (2001) examined strategic organisational commitment as a mediator in human resources practices and service satisfaction. They revealed that organisational commitment enhances management practices in service delivery and users' satisfaction. According to Akpojotor (2016), the essential tools for the progressive academic community lies in the availability and effectiveness of its EIRs collections. Ardently, EIRs cannot be effectively available without supportive managerial strategies. Ngulube (2012) noted that librarians not only adopt EIRs but advance their planning, management, and sustenance. Through the planning implementation, management commitments, and a high emphasis on sustainability, libraries can achieve effectiveness with their information services provision.

Furthermore, the findings revealed that the university libraries' strategic approaches had enhanced the provision of EIRs services, with 91.9% of respondents agreeing that EIRs services' effectiveness had been enhanced. The study by Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) and Addisalem (2016) revealed that inadequacy of EIRs facilities negatively affects the student usage of the EIRs. Therefore, library professionals must endeavour to put in place mechanisms to sustain EIRs' provision in their libraries.

Regarding the EIRs services' scope and extent, 65.4% of respondents confirmed that the services are limited within the university library environment. In comparison, 25.5% of respondents indicated that the services had no limit as users could access

EIRs services from out offside campus. For libraries' EIRs to have a broader impact on patrons' satisfaction, they must be available to patrons both on and off-campus (Zafar, Zahee, Saleem-ur and Rehman 2011). The findings confirmed the adequacy of subscription to database resources in the libraries surveyed, as confirmed by 78.5% of the respondents. However, this finding contradicts Gakibayo, Ikonja-Odongo, and Okello-Obura (2013), who observed that low utilisation of electronic information resources resulted from reduced EIRs availability.

The observation checklist results revealed that EIRs services were highly available in all the studied ULs but not sufficient to satisfy users' information needs. This result is similar to the Pakistan academic library report's findings, which revealed that most of the respondents acknowledged that lack of e-resources, insufficient technology, and inadequate subscription of information resources were significant challenges to EIRs' effectiveness (Khan, Masrek and Nadzar 2015). Nevertheless, Okello-obura (2010), Habiba and Chowdhury (2012) posited that EIRs' use had improved many libraries' statuses. The importance of EIRs in raising the image of university libraries cannot be overemphasised. Okafor (2011) postulated that one of the primary evaluation criteria for ranking universities worldwide is the availability of electronic information resources, such as the Internet, online databases, and journals to support research, teaching, and learning.

This present study's findings also revealed that EIRs services listed in table 5.3 were available within the libraries, and 40.1% of respondents disagreed that the EIRs were not accessible outside the campuses. Scholars Kuh and Gonyea (2003), Ekere (2006), Oyewusi and Oyeboade (2009), Okunu, Akalumhe and Monu (2011), Nkamnebe, Udem, and Nkamnebe (2014) underline the importance of EIRs accessibility from outside the university campuses. The survey findings further revealed the availability of EIRs facilities by 94.9% of respondents (see table 5.4), who revealed the availability of computer facilities for EIRs in the selected libraries. The finding also reported by 71.4% of respondents indicated the availability of virtual libraries in their

institutions, underscoring the strategic importance attached to EIRs by the libraries.

The observation report results also showed that in most libraries, EIRs were available but insufficient, especially the subscriptions of databases. This finding resonates with Hussien and Mokhtar's (2018) study that found that EIRs' availability was inadequate, ineffective, and unsatisfactory. In examining references services and quality of services, librarian responsiveness, communication skills, and accessibility of services to users' satisfaction with reference services, Hussien and Mokhtar (2018) found a correlation between the quality and user satisfaction.

6.4.2 Effectiveness of EIRs in the university library

The study results (see table 5.11) indicated that computers' availability and effectiveness had a 95% response rate, followed by internet with 93%, Library website with 92%, and KOHA, e-journal, and printers with 90% respectively. Open Access had 89%, the e-book received 87% response, and OPAC effectiveness received 84% response, followed by the subject database and institutional repository with 83% response, respectively. The least responses were obtained for the virtual library with 71%, followed by CD-DVD with 74%, online thesis with 76%, and licensed database with 78%. The university library's primary aim is to support teaching, learning, and research (Reitz 2004; Aiyegunle and Moneme 2006), which cannot be accomplished without adequate and effective EIRs services.

The findings, in general, revealed that in the ULs surveyed, the EIRs are available and effective, excluding the online thesis/dissertation in UniAbuja that received the least response of 45.5% (see table 5.11). Thus, EIRs in the surveyed libraries were deemed sufficient for service provision in university libraries and are considered a determinant of a university's quality (Adigun et al. 2013; Mole and Mesagan 2017). Okafor (2011) adds that the failure to provide diverse and quality EIRs has negative consequences, such as users' frustration, poor academic productivity, and low research output. Kling and McKim (2000, p.1307) added that the consequences 'may not only be suboptimal

use of financial resources, but also wasted effort on the part of individual researchers and even data that languishes in the marginal, decaying, and dead system and formats'. As revealed by 92% of respondents, the current study's findings indicated that most surveyed libraries had an active library website. This contrasts with the results from Iran and India as cited by Farahi and Gandhi (2011), which revealed that very few medical libraries were effectively automated.

Similarly, findings from Bangladesh by Islam and Hossain (2014) and Islam and Panda (2009) reported that 62.6% of respondents noted that library websites were not used effectively in services delivery. Another 38.5% confirmed no relevant library website. Souca (2011) and Bambale, Gani and Ado (2020) observed that if library service is effective, it enhances customers' satisfaction and EIRs' usage. Knight's (2013) study revealed that the efficacy of EIRs services in Northern Caribbean libraries made staff and students enjoy the mentioned services.

Any given institution of higher learning aims to support teaching and learning by providing effective information resources (Ekere 2006; Gakibayo and Okello-Obura 2013; Kau and Gaur 2017; Iroaganachi and Izuagbe 2018). Thus, the university library does provide the enabling environment and facilities for information access and usage (Oyewusi and Oyeboade 2009; Okunu, Akalumhe, and Monu 2011; Nkamnebe, Udem and Nkamnebe 2014). These facilities were revealed to be adequately available and effective (see table 5.11) for services delivery in North Central Nigeria's ULs. Oyewusi and Oyeboade (2009) underscore the importance of sufficient and quality information resources, including technology in the ULs.

The available EIRs in ULs (see table 5.4) included a virtual library, subject databases, institutional repository, Open Access databases, and licenses database resources. Others included libraries web page, OPAC, KOHA, CD-DVD, e-journals, printers, e-books, and electronic thesis/dissertations. These EIRs were reported to be used effectively in the ULs surveyed. This was attributed to the strategic initiatives put in

place by the respective university libraries. This result seems to corroborate Bambale and Gani's (2017) report, which revealed that resources and services' effectiveness enhances quality services delivery to customers. Similarly, Boudreau and Ramstad (2005) argued that resources and services' effectiveness could be a proxy to the quality of programs and practices. Souca (2011) asserts that libraries must ensure the available EIRs in their collections are adequate and sufficient for sustainable information delivery services in a challenging financial scenario.

The results of management teams from Unilorin and UniMinna revealed that available EIRs and services in their libraries were on average satisfactory, while UniAbuja and UniJos services were found unsatisfactory (see 5.4.2.1.1). The cause of unsatisfactory EIRs services was attributed to inadequate funding, poorly skilled personnel, poor planning, and managerial approach (see 5.4.2.1.2). Mawere and Sai (2018), in this regard, noted that developing nations are struggling to provide database subscriptions to their institutions. The same situation was found in the Nigerian ULs (Okello-obura 2010; Habiba and Chowdhury 2012).

The observation checklist results also showed that in most libraries, EIRs are adequately and effectively available. However, very few licensed database resources such as books, newspapers, journals, magazines, thesis archives, conference papers, government reports, examination papers, research reports scripts, and monographs were available. This finding tallies with Boudreau and Ramstad's (2005) model on the organisation's aligned actions, resulting in its effectiveness. The findings contradict Mawere and Sai's (2018) study that examined the EIRs usage in the Great Zimbabwean University, which showed that Zimbabwean libraries have EIRs services available that are not adequate for delivery. Thus, Organisational talent pools and human capacity like professional libraries should align action for their resources' effectiveness (Boudreau and Ramstad 2005). The study revealed that the library offered access to a wide range of EIRs collections through subscription. The EIRs are

highly significant for research quality and productivity (Ezema 2010). Thus, adequate attention must be towards meeting the universities' EIRs needs in Nigeria.

6.5 Funding sources for EIRs services in selected ULs

6.5.1 Efficient funding sources for EIRs provision in North Central Nigeria's university libraries

According to Boudreau and Ramstad (2005), efficiency focuses on the resources used to deliver services (policies and investment) (this links approaches, practices, policy, and investment). When applied to EIRs' sustainability, efficiency focuses on how effective the funding source is for investment in EIRs services' sustainability. This section discusses findings to the second research question, which addressed 'how efficient are sources of funding of EIRs provision in North Central Nigeria's university libraries?' The interviews revealed that the TETFund intervention and 10% institution allocations to the library were the major government funding in the surveyed libraries. Only UniJos indicated having other sources of funding, such as donor agencies and grants. These agencies include TEEAL Cornell University, Albert R. Mann Library, and the Cliff Mensah University of North Carolina (see 5.4.2.2.). The study results revealed that government funding for libraries was inadequate but could be efficient where there is transparency in managing such funds. However, the results indicated that the TETFund level of funding had dropped, coupled with disbursement delays (see 5.4.2.2.1).

The study further revealed alternative sources of funding from external sources such as library collaboration, international grants, United Bank donation, innovative consortium sharing, Carnegie intervention, and other international institution partnerships (see 5.4.2.2.2). The results revealed the need to extend funding sources to include Private-Public Partnerships (PPP), non-governmental organisations, university alumni and more (see 5.4.2.2.3). Further analysis of the results revealed that only UniIlorin and UniJos have access to external support for EIRs.

The results from document analysis presented in table 5.13 indicate N13 million was allocated to the university of Ilorin library for general procurement of library facilities. Within the 2017 financial year, N13 million was budgeted for database subscription at UniIlorin library, while Ebscohost database alone cost N7 million; by implication, the remaining funds would not be enough for any other relevant database. The second library in the University of Abuja, in the 2016/2017 financial year, received N37 million and a severe drop to N29 million for EIRs in 2018. The Federal University of Technology, Minna got N30 million in 2017, while 2018 has no record of how much was budgeted for EIRs; however, all funding was from TETFund. Overall, there was a decline in allocations to university libraries. Finally, the University of Jos library in 2017 and 2018 financial years received N30 million and N20 million, reflecting a decline of N10 million for the university library. However, the funding of EIRs in Nigerian University libraries is quite dire.

Reliance by the university on government funding is not peculiar to Nigeria. Government funding support is equally prevalent in the United States and Europe (American Library Association 2010). Nevertheless, strategic funding and sustainable provision of EIRs are common in U.S.A, Canada, and Europe, where sources beyond government funding are available (Sandler 2014). Even then, such government funding is hardly sufficient to meet library needs (Brown and Malenfant 2016), and this inadequacy negatively affects electronic information services delivery in libraries.

Lankes (2014, p.17) points out, the mission that has inspired the survival of libraries over the years is predicated on a better future, and the funding is available for the libraries. Chowdhury (2014) attests that financial sustainability is a massive challenge for EIRs in libraries. This challenge is exacerbated by a global economic recession, budget cuts, and EIRs' high cost (Jawkowaska and Marcum 2010, p.10; CILIP 2012; Morris 2014).

Nicholas et al. (2010) also assert that digital resources acquisition is aggravated and hampered by limited funding and budget. Similarly, Swindon Library (2016), Save Bath Library (2017), London Library (2016), and Lewisham Library (2015) observe that libraries are struggling with funding to sustain the provision of information services. Ishola (2014) and Albert (2007) state that library services are the cornerstone to societal development. Consequently, adequate funding is critical; hence, libraries must devise a strategic approach for efficient funding to provide EIRs services in ULs.

Ongus et al. (2007, p.5) believe, in ensuring sustainable EIRs services, the library managers must establish a means of financing these services. University libraries around the world have taken various initiatives, including the campaign for resources, preservation for continuing services (Loach, Rowley, and Griffiths 2017), restructuring of the library, fundraising (Loach et al. 2017), and consortia measures (Sandler 2014) to try and address funding shortfalls.

Hoskins and Stilwell (2011) revealed poor funding of libraries in the context of South Africa. The study indicated that 6% of the institutional budget was made available for sustaining general library services. This inadequate funding is ascribed to budget cuts for academic libraries (Ishola 2014; Jones 2018). This is a far cry from the United Kingdom Open University (UKOU), which freely provides Encyclopedia of Philosophy EIRs at the cost of roughly US\$190,000 and also spends an average of US\$ 3 million per academic program on information resources collection (Beshears 2005). Furthermore, the study further revealed that maintaining state of the art EIRs collection means the UKOU spends US\$ 600 million, which is 40% of the institution's budget. Mawere and Sai's (2018) study on the Great Zimbabwean University indicated access by the libraries to various resources through subscription to different consortia like Zimbabwean University Library Consortium (ZULC), International Federation of Library Associations and Institutions (IFLA), Electronic Information for Libraries (ELFL), and the International Network for the Availability of Scientific Publication (INAPS). Okiy (2005), Amkpa and Tukur (2009) suggest the need for university

libraries to seek more funding from philanthropic and cooperate organisations in Nigeria.

The results from document evaluation of the surveyed ULs revealed that the libraries' funds are through TETFund. Similarly, in a study, Emojorho (2004) revealed that most public institution libraries in Nigeria depend heavily on government allocations for survival. Hisle (2002) and Boadi (2006) also showed a dependency level of academic libraries from developing nations on government funding to be very high, and libraries do not have experience in organised fundraising strategies. The government funding supporting EIRs services in University libraries in developing countries is modelled on the developed nations' financial support strategies despite the former not having adequate resources (Johnson et al. 2015). Johnson et al. (2015) revealed that museum libraries in San Diego (America) acknowledged that special funds were made available to the libraries to sustain library services and quality assurance. However, such funds are not compared to the cost of EIRs. The observation from UniIlorin indicated that N13 million was allocated for EIRs acquisition, out of which N7 million was used to subscribe to the Ebscohost database. This allocation indicates insufficient funding for libraries' databases subscription.

Therefore, university libraries must design alternative funding for EIRs' sustainability (Guthrie, Griffiths and Maron 2008). Beshear's (2005) report asserted that Nigerian ULs' funding has severe shortfalls for sustainable education provision. Jones (1995) revealed improvement in support of alternative funding to libraries in Africa from such agencies as INASP publishers, Carnegie Corporation, Rotary Club of NC South Wales, Australia, as well as Bill Gates and Melinda Gates Foundation (Mwai, Kiplang'at and Gchoya 2014; Arabella Advisors 2015; Bowles 2016). This support has helped enhance the advancement of information dissemination, academic productivity, access, and utilisation of information (Cuillier and Stoffle 2011). Okiy (2005), Amkpa and Tukur (2009), and Arabella Advisors (2015) noted that this kind of support is evident in most university libraries in Nigeria.

Brown and Malenfant (2016) noted that inadequate funding has often driven academic libraries to initiate sustainable approaches towards the provision of EIRs services strategically. In contrast, libraries from the developed nations faced similar issues but are in a much stronger position than libraries in developing countries, including Nigeria. For example, Kyrillidou and Young's (2008, pp.22-23) study revealed the spending on EIRs in major libraries of North America to be in excesses of \$400million per annum, exclusive of hardware and software facilities. These findings are not similar to those from the surveyed ULs of North Central Nigeria.

In North America, alternative funding strategy includes pay-per-view, direct purchase from publishers, subscription cancellation, online library acquisition, and inter-library services (Chamberlain and MacAlpine 2008; Schell, Ginanni and Heet 2010; Brown-Sica 2012; Hosburgh 2012; Sammonds 2012; Weicher and Zhang 2012). These strategies are not practised in surveyed ULs of North Central Nigeria.

Donwa (2006), in a study, found that 92% of library funding for EIRs in developing countries come from the government, while 50% of such funding in developed nations such as Belgium, Germany, Sweden, and Korea are from industries. This government solely funds libraries to date in some ULs in Nigeria, as revealed in the present study. Boudreau and Ramstad (2005) propose other strategies to raise university libraries' funds, including fundraising capital. Barney (1995) emphasised that finance is critical in delivering services to end-users, for without efficient funds, EIRs may not attain sustainability. Dibu (2012) asserts inadequate funding to university libraries results in poor reading culture and inadequate information services.

6.6 Strategic planning

According to Boudreau and Ramstad (2005), strategic success in any organisation requires well-articulated strategies. The impact anchor point supports sustainable strategic advantages such as strategic planning and policy as a structural talent pool that enables an organisation's success (Boudreau and Ramstad 2005). It is an attempt

to find out how the various ULs are harnessing their knowledge or talent pools to achieve their strategic goals for success within the institution where they are attached. This section presents the discussion of the results to research question three.

6.6.1 Impact of strategic planning implementation on sustainable provision of EIRs

According to Nagy and Fawcett (2018), strategy refers to a means of getting things or programs accomplished. Strategic planning and policy play a significant role in management and provide a principle framework indicating how members and their activities should be coordinated in an organisation to enhance effectiveness and productive returns (Jose, Mohammad and Irani 2011). The relevance of strategic planning in an organisation cannot be underestimated in sustainability discussions (Maritz, Pretorius, and Plant 2011). For this reason, Smith (2005) noted that the strategic planning and policies for library management are related to: the vision statement, mission statement, core values, strengths, weaknesses, opportunities and threats (SWOT) analysis, long term goals, annual objectives, action plans, and strategic policy. Through these strategic statements, the strategic initiatives can be fixed, and if adequately implemented, lead to effective, sustainable development and Strategic planning of EIRs service activities.

The study's findings indicated that the respondents agreed that strategic planning and policy impact EIRs services' sustainability in the University Library (see table 5.12). Moreover, performance expectancy is dependent on strategic planning and policy framework in the provision of EIRs services. The impact of the strategic planning on sustainable EIRs provision was indicated by 90.9% of the respondents; in addition, 89.8% indicated strategic planning impact returns on services investment. Furthermore, 84.7% indicated that strategic planning guides library services in the provision of EIRs. The University libraries which had designed policy for EIRs services were indicated by 77.6% of respondents. Study results from interviews

revealed that none of the libraries surveyed applied strategic performance evaluation in measuring staff performance. Regarding the availability of EIRs policy, the UniIllorin, UniMinna, and UniJos acknowledged having EIRs policy. UniAbuja indicated that the EIRs policy was undergoing development.

Pacios and Ortiz-Repiso (2010) study from Spain revealed that 33 ULs out of 73 had no strategic planning in their libraries. In their strategic plan, the libraries prioritised standards in providing EIRs to meet customer's information needs and satisfaction (see 5.4.2.3.1). Thus, EIRs services' sustainable provision is the librarian's responsibility (Rivard, Louis and David 2006; Rapp, Kevin, and Raj 2010). Therefore, strategic planning and implementation is a social bottom line that must be prioritised to impact sustainable EIRs services positively.

In a study by Kanyengo (2006), findings highlighted that efforts should focus on funding, creating, enabling policy framework, and prioritising sustainability strategies for effective digital resources management in Africa. Mangemba (2015) concluded that with sound strategic planning, libraries could consistently provide services to the present and future users and ensure users' information satisfaction. Roberts and Woods (2012) defined strategic planning as a means to a desired future through defined goals and objectives. Similarly, Fenton (2008) opined that any organisation's strategic success requires well-articulated strategic planning for an impactful outcome. In North America, the university libraries prioritise and incorporate users' needs and expectations into their strategic planning documents (Cline Library Strategic Plan 2019-2025). Moreover, the talent pool application is also needed to achieve strategic goals (Boudreau and Ramstad 2005). Therefore, North Central Nigeria's university libraries should emulate America, Canada, and others' practices to sustain EIRs services.

6.6.2 EIRs services policy impact

Regarding policy, results from document evaluation on EIRs services in the selected libraries revealed no clear policies for EIRs services' sustainable provision (section 5.5.3). However, two university libraries (UniIlorin and UniAbuja) indicated that they have their policy document under development. UniMinna and UniJos agreed they have an operational EIRs services policy in place though not fully implemented in the Library (see 5.4.2.3.3). The University of Jos indicated having a clearly defined policy for EIRs services. Without EIRs policy, there is no significant impact from the policy perspective in ensuring sustainable EIRs services in ULs surveyed. Thus, the lack of policy and the implementation of EIRs services is a massive challenge to providing EIRs services. This finding is not in line with Boudreau and Ramstad's argument that strategic success in any organisation requires well-articulated strategies. They add it is the ability to exercise one's talent in a financially constrained working environment to achieve the desired success by individuals who have been trained and given incentives for this purpose (Boudreau and Ramstad 2005).

Tshuma and Chigada (2018), in a similar study in Zimbabwe, found that there was no specific policy except a general standard library guide. Policy design and implementation of strategic planning in an organisation is the goal (Ryan 2003). Rahimi and Noruzi (2011) argued that the organisation relies on policies for decisions in any given challenge. Therefore, without clear EIRs policies in North Central university libraries, decisions cannot be made based on a sound framework. The librarians of the ULs must address this policy gap to achieve sustainable EIRs services provision.

6.6.3 Legislative framework

The study findings revealed no solid legal framework available within the university libraries surveyed for managing EIRs (see 5.5.3.1). The absence of a legal framework is a big challenge to EIRs' sustainability and the general provision of services

predicated on information and communication technologies in the university libraries. This situation impacts the provision of library services negatively (Tiessen 2012). The study further revealed that Nigeria's legal system does not adequately support EIRs services' sustainable provision in the surveyed ULs. Therefore, a clear legal framework and policies are needed in the University libraries surveyed to ensure EIRs services' sustainability.

6.7 Economic, social, and environmental strategies for sustainable EIRs services

This section addressed the fourth research question that sought to investigate the extent to which university libraries have adopted the economic, social, and environmental strategies for sustainable EIRs services provision. This section seeks to address the economic, social, and environmental constructs of Triple Bottom Line Theory, which use management tools to enhance cooperative work and impact operations (Spreckley 2015; Elkington 2018). Measuring investment returns (economic) alongside social and environmental values (Spreckley 2015) will enhance library productivity. Unfortunately, the current study results did not identify any unique strategic approach for sustainable EIRs services from the three (3) Bottom lines.

6.7.1 Economic strategies for sustainable EIRs services

The study findings revealed that 93.9% of respondents confirmed that University libraries surveyed provide current and relevant EIRs, while 89.8% of respondents indicated subscription to licensed databases as a challenge. Another 86.7% of respondents agreed there is a conscious decision to invest in EIRs, while others indicated digitising print resources (84.7%) and direct purchasing of EIRs for the library database (81.7%). The results also revealed a drive to collaborate with other libraries to acquire EIRs (79.6%). Moreover, the constant upgrading of internet bandwidth (78.6%) was mentioned as one economic strategy to enhance provision and access to EIRs in the university libraries. It was also revealed by 76.5% of the

respondents that parent organisations provided funding for EIRs, while another 72.4% mentioned grants specifically for building EIRs' stock.

This study revealed that 88.8% of respondents in the various surveyed universities claimed that the university libraries could maintain their database subscription to a great extent (see Table 5.15). These findings contrast with the findings of Kuchma (2010), which revealed that university libraries in low-income nations are struggling to sustain e-journals subscriptions. The current study results also highlight a high interest by the university libraries surveyed in investing in EIRs, as revealed by 86.7% of the respondents. Zabed, Amed, and Hossain- Shoeb (2009), Kiran (2010), Ajala, Arinola and Adigun (2014), and Mole and Mesagan (2017) view the quality of a university by its quality in information collections and services.

The result showed that libraries, to a great extent, seek alternative sources of funding for EIRs, such as accessing grants. This result is in line with the findings of Sandler (2004, p.3), who revealed that in the USA, Canada, and Europe, external funding support from well-structured consortia, ministries, councils, state legislature, governors and university presidents are available to libraries to build their electronic collections. Similarly, in the United Kingdom, Brown and Malenfant (2016) indicated that various charity organisations fund public university libraries. Moreover, in the US, Dewey's (2005) study revealed how Oklahoma's university, Texas Technology University, Penn State University, and the University of South Carolina use sports clubs to raise funding for their libraries. However, it is not the same with economic initiatives in North Central Nigeria's university libraries compared to the aforementioned developed nations.

Min et al. (2005) reported that organisational collaboration was used in many libraries worldwide to raise money for building electronic collections. Pritting (2017) noted that most libraries explore multiple funding models to provide EIRs services that include resources sharing, purchase of articles and collaborative subscription. This study's

findings further revealed other strategic initiatives applied to build electronic collections to include negotiating with vendors. In this regard, Lunden, Camilla, and Britt-Marie (2018) indicated that license negotiation reduces EIRs' cost. Similarly, Savelyev (2018) noted that vendor negotiation enables warranties, copyrights ownership, usage conditions, and obligations to be enjoyed by the libraries.

The current study's results revealed that 56.1% of respondents believed that National Virtual Library services that served as a consortium for all the public, academic libraries in Nigeria were less effective in promoting EIRs services. In contrast, Brooks and Dorst's (2002) study indicated that the Illinois Digital Academic Library (IDAL), designed to provide EIRs services amongst 150 public libraries by consortia commitments, effectively played this role. Sachin and Prasanna Kumara (2018) also outline various national consortia in India such as CeRA (Consortia for e-Resources in Agriculture), DRDO E-Journal Consortia (The DRDO E-Journal Service), IIM's Consortia (Indian Institutes Management), AICTE INDEST Consortia (The Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortia) that libraries are using to meet the electronic resources needs of users. In Nigeria, HELINET (Health Science Library and Information Network), a national initiative, was not encouraging in promoting sustainable EIRs in the surveyed ULs.

Willinsky and Rusk (2019) presented examples of how Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP3) helps libraries fund their EIRs through open access. The initiative has the economic essence to sustain EIRs services in the Physics discipline by funding license subscription. The initiative brings gold open access journals, libraries, publishing industries, and national funding agencies into an international partnership (Romeu et al. 2014); it is a unique practice of sustainability of EIRs that Nigerian Libraries may wish to pursue. The surge in library economic initiatives has been motivated by the economic downturn (Corrall, Kennam and Afzal 2013). Chowdhury (2013) asserts that facilitating affordable and improved EIRs access is the libraries' central aim. Besides, EIRs' services provision can become

cost-effective only when libraries can take advantage of economies of a larger scale (Walter 2013).

6.7.2 Social strategies for sustaining EIRs services

According to Savitz (2006), The Triple Bottom Line captures the essence of sustainability by measuring the impact of an organisation's activities on the world, including its profitability and shareholder values and its social, human, and environmental capital. The findings of this study showed that, to a great extent, libraries have strategically implemented various social initiatives to sustain EIRs services provision. In preferential order, the majority (85.7%) of respondents reported that they strategically planned for the implementation of sustainable activities for their EIRs. Another 83.4% of the respondents observed user training provision to enhance EIRs' usage, while 82.6% indicated staff development on EIRs and online selection and dissemination of information. Moreover, 81.6% mentioned preserving and archiving EIRs, while 80.7% were engaged in an online organisation and a description of resources. Furthermore, 78.6% used social media services to provide EIRs services, and 77.6% were engaged in institutional collaboration and had established integrated information systems. Finally, 72.4% of respondents provided e-reference services, followed by 69.4% who offered online inter-library networking, while 68.4% offered customers' support for EIRs discovery (see section 5.3.2.5.2).

Regarding staff development, the result showed that librarians were provided with technical skills to support EIRs services. Mwaniki (2018) observed that librarians' future roles affected by the technology advancement required investment in the librarians' training to meet the challenges of new modern technologies. The importance of a skilled workforce for the application of effective advanced technologies has also been underscored by Jain (2014), Delaney and Bates (2015), Anyaoku, Ezeani and Osuigwe (2015), and Emiri (2017). Nonthacumjane (2011), Clark and Visser (2011), and Mackey and Jacobson (2011) also found information

literacy as a requisite skill to advance and sustain information services in all academic libraries.

Anyaoku et al. (2015) revealed that librarians in Nigeria attend training to acquire library skills, including Boolean search technique and creating a web page. Akuffo and Budu (2019) revealed in Ghana theological school that failure to provide adequate search skills resulted in poor information usage challenges. Watts and Ibegbulam (2006, p.59), Ozoemelem (2009, p.8), Gakibayo, Ikoja-Odongo and Okello-Obura (2013, p.13) observed that the low usage of EIRs in Uganda was attributed to lack of ICT skills. Therefore, staff development is a social bottom line aiming to enhance EIRs services sustainability in ULs in North Central Nigeria.

Other social imperatives in EIRs' sustainability include customer support on resource discovery, online organisation and description of resources, social media integration in EIRs services, e-reference services, online interlibrary networking, institutional collaboration, etc. (see table 5.7). Though the archiving strategy, data preservation, and information sharing (Cliggett 2013) seem overlooked by library management generally (Ochlerls 2013), it is the opposite for North Central University libraries. The findings regarding archiving in NC university libraries in Nigeria bear some similarities with USA and India, where archiving of EIRs is reported (Nazir 2017) in initiatives such as LOCKSS (a digital archiving initiative connecting 164 libraries and 88 publishers) at the University of California USA; DPS (digital publishing solution) used for scanning of online resources, DLI (digital library India), JAVA archiving, Indian National Archives, and more (Nazir 2017).

Ramesh, Gaur, and Tripathi (2012) also identified different aspects of digital archiving strategies in sustaining EIRs, including refreshing, data migration, technology preservation, and software emulation. The study found that Virtual Library (see table 5.13) was the only national archiving project for university libraries in Nigeria. At the same time, India has LOCKSS (lots of copies keep stuff safe) at the Stanford

University Library (Ramesh, Gaur and Tripathi 2012). Additionally, KOPAL (cooperative development of long term digital archiving of German National Library and universities bibliography), and PubMed Central (free archive of biomedical and life sciences journal literature) for US National Institutes of Health, national library of medicine, PANDORA (Preserving and Accessing Networked Documentary Resources of Australia).

The findings further revealed that most North Central Nigeria libraries have designed and implemented various social strategic initiatives such as user and staff literacy skills, user awareness, social media communication, and digital curation strategy (Salmon, Kerr-Campbell and Kerr 2017). Goulding (2016) points out that strategic social initiatives in service delivery complement economic strategies in providing EIRs services in ULs.

6.7.3 Environmental strategies adopted for sustaining EIRs services

The Environment Bottom Line encompasses all environmental dimensions such as waste, energy use linked to architectural, technological hardware, and facilitating instruments for EIRs such as air-conditioner, internet, computers, green information common space, electricity, and others (Elkington, 1994). The findings established that strategic environmental initiatives applied for sustainable EIRs services in the selected ULs were adequate. Computer systems were up to date, as revealed by 88.8% of the respondents. In addition, 81.7% stated system networking connection, 81.7% noted constant system maintenance, and 75.5% indicated provision of alternative electricity supply and air-conditioned space for EIRs services. Also, 72.5% attested to a constant power supply, adequate green learning space, and information literacy space (see table 5.15).

Mostly unsustainable EIRs services and the poor usage of such resources are attributed to lack of access to environmental strategies in planning such services (Watts and Ibegbulam 2006, p.59). Some of these environmental factors are inadequate ICT

facilities (Ani, Ngulube and Onyancha 2014, p.170; Ani et al. 2010, p.542), constant unstable electricity (Ossai-Ugbah 2012; Amankwah 2014; Chukwusa 2015), high cost of bandwidth and low internet speed (Kwafoa et al. 2014, p.13). For University libraries in North Central Nigeria, inadequate electricity supply issues are addressed through a solar backup system (Chukwusa 2008). In this regard, Arubayi's (2011) study revealed that Delta state university spent N13 million on diesel monthly to power the generators to sustain EIRs services.

The findings further revealed that there is inadequate green learning space (22.4%), information literacy space (21.4%), and provision of alternative means to mitigate the shortage of electricity supply (20.4%). Electricity supply is a huge environmental issue that can hinder effective access and use of EIRs if it is not addressed, especially in University libraries in Nigeria. Environmental issues that need addressing for sustainable implementation of EIRs are green space, adequate and updated computer systems, network connections, system maintenance, and information literacy spaces. Chowdhury (2013) posited that electricity supply influences the implementation of technological innovations, air conditioners, security cameras, and computers.

Noble (2004), in a study carried out in Canada, revealed that energy policy was enacted at the national, provincial, and local levels for improvement of Canada's electricity. Leibowics' (2014) report noted that in Japan, electricity supply initiatives in libraries include nuclear generation, liquefied natural gas (LNG), and fossil fuels. In Nigeria, the surveyed libraries indicated that sustainable electricity supply is not backed up with a national policy. Aina, Ogundipe, and Adebawale (2013) noted that electricity failure in Nigeria negatively impacted EIRs' access and recommended prioritisation of electricity solutions in Nigeria.

Freeman, Herriges, and Kling (2014, p.82) assert that sustainability rests on 'basic principles that are dependent on the general environment and its resources'. The surveyed libraries revealed they had flexible learning environments, which, according

to Julian (2013), energises information access and use. Head (2016) noted, from a Canadian perspective, that most academic libraries allocate learning spaces. Akpojotor (2016) highlighted that because EIRs are essential tools for academic community progress, strategic initiatives need to be integrated into the university library systems to enhance EIRs services. These studies show that the University libraries surveyed had adopted economic, social, and environmental strategies to enhance EIRs services. Therefore, the financial strategies (economic) report cannot be valuable and comprehensive in the sustainable provision of EIRs services without incorporating social and environmental strategies in the library.

6.8 Challenges hindering adoption of sustainability strategies for EIRs in university libraries

This section presents discussions from the results addressing research question five, which sought to determine the challenges of providing EIRs and how they are ameliorated. The questionnaire findings revealed reduced funding as the key factor hindering the adoption of sustainability strategies for EIRs in the selected university libraries, as reported by 79.6% of respondents. This was followed by poor internet access and electricity (71.4%), lack of EIRs sustainability framework (70.4%), Lack of EIRs sustainability policy (65.7%), lack of strategic planning (67.0%), poor advocacy on the sustainability of EIRs services (65.3%), and poor management support on sustainability program (67.3%). On the other hand, the interview findings revealed poor funding, low electricity supply, poor technology skilled professionals, poor technology support facilities, and delay in renewing licensed database resources as factors hindering the adoption of sustainability strategies for EIRs in the selected ULs.

Most of the challenges hindering EIRs services' sustainability are not new, as highlighted from the study findings. Buhari (2016) examined the impact of library information resources and services utilization in South-west Polytechnics, Nigeria.

The findings indicated erratic power supply, inadequate technology facilities, poor maintenance, low internet access, and inadequate funding as significant constraints in sustainable EIRs services. Similarly, Okite-Amughor, Bopape, and Makgahlela's (2015) study examined challenges to EIRs use by 150 postgraduate students of Delta State University. Their findings revealed limited access to resources, low internet connection, inadequate space, and erratic electricity supply as challenges.

Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) noted that EIRs' utilisation is affected by a lack of computer skills and information literacy skills, limited computers, inadequate database subscriptions, high cost of technology facilities, and slow internet connectivity. In addition, the lack of funding was highlighted, even though the funding that a library receives directly influences the quality of its services (Ubogu and Okiy 2011). Funding challenges seem to be a common challenge facing libraries (Balley, Scott, and Best 2015). For example, the South African university library journal cancellation resulted from poor funding (Hoskins and Stilwell 2011).

Chaputula and Boadi's (2010) study in Botswana found that inadequate funding for library resources was a major challenge. Consequently, the libraries depended on donations and exchange as a means of survival. The economic (funding), social (information technology skills), and environmental (erratic electricity supply and other facilities) factors are crucial in the sustainability strategies of EIRs and must be addressed. These challenges are common in African LIS literature. For example, Rosenberg's (2006) study of Sub-Saharan Anglophone Africa investigated 107 libraries from 20 countries with a 72% response rate using a survey questionnaire. The study findings revealed challenges of limited EIRs, poor technology facilities, low acquisition of databases, low retention of skilled staff, and limited library automation. Rosenberg further found the acquisition of e-resources was heavily dependent on external funding.

Furthermore, in the current study, findings from questionnaire and document analysis

revealed a lack of policy on sustainable EIRs services. This result is concurrent with a similar study by Posigha, Godfrey, and Seimode (2015), which examined EIRs' provision in four academic Libraries of North-Eastern Nigeria and found that academic libraries had EIRs policy. Posigha, Godfrey, and Seimode (2015) recommended that various EIRs' implementation challenges can be alleviated by increasing funding, joint budgeting, collective development of interlibrary networking, and union catalogue.

Obasola and Mabawonku (2013) examined strategies for protecting EIRs from abuses of plagiarism, piracy, and infringement of intellectual property rights in South-Western, Nigeria. The study revealed that none of the respondents was aware of anti-circumvention laws and the digital right management system. The study recommended, among other things, policy development and regulations for the management and use of the EIRs. Gbaje's (2007) study examined The National Virtual Library initiative and challenges in Nigeria. It revealed misconceptions of what constitutes the virtual library, lack of basic amenities, poor policy implementation and lack of skilled digital librarians. The lack of relevant EIRs policies does not seem confined to Nigeria. For example, at Indiana University in Canada, it was reported that libraries did not have any written e-book policies (Lukes, Markgren, and Thorpe 2016). The study revealed that the collection development policy was used as the basis for monographic acquisition.

Due to Nigeria's lack of an effective policy framework, there is often a delay in EIRs subscription. It is unlike what university libraries in other jurisdictions do, for example, in a study by Moisil (2015) at the University of Ottawa, Canada, where renewal timeframe for EIRs subscription are clearly stipulated to ensure the sustainability of information services. Moreover, the University of Ottawa policy ensures that decisions affect journals' cancellation due to high rising cost, value, price, and usage (Moisil 2015).

The formation of consortia in some jurisdictions is used to address the challenge of the inadequate subscription of EIRs by university libraries. For example, Mohd, Yusof, and Umar (2014), in a study, reported that Malaysia's national consortium facilitated the subscription to EIRs by libraries. Moreover, the study revealed the formation of commercial databases committee in 2000, which is used as a platform for academic libraries to evaluate, select, negotiate, and manage EIRs services. Kamau and Ouma (2008) posited that information services would be inefficient and ineffective without providing sustainable EIRs services by libraries.

6.8.1 Best approaches for the sustainable EIRs services in ULs in Nigeria

The respondents proposed some approaches that would help to enhance the sustainability of EIRs services in North Central Nigeria ULs that included: a strong commitment by the library management team; promoting and marketing EIRs sustainability programs to the university management; monitoring and evaluation of strategic plans for EIR; presenting reports regularly on the use of EIRs services; the establishment of the EIRs sustainability committee in ULs; integrating EIRs sustainability program in the policy document; employing skilled staff, and direct government interventions through national policies; allocation of special funds for the EIRs' sustainability program and its integration.

Additionally, the result of the interview revealed other best practices that include: implementation of EIRs services policy, seeking better funding models for EIRs, the establishment of sustainability section and team in the libraries, strategic framework, alternative sources of funding and strategies, policy implementation for EIRs collaboration between libraries, continuous staff development, and users training. Hoskins and Stilwell (2011) also advocate for a better power supply, journal conciliation/negotiation, access to EIRs, adequate funding, etc. Ongus et al. (2007) averred that to ensure sustainable EIRs services provision in ULs, management teams must establish various financing means. Jankowaska and Marcum (2010) advocate for

a green library building in measuring and improving sustainability. Ifijieh, Iwu-James, and Adebayo (2016) noted that ‘basic computer and information literacy skills are required, plus more advanced skills on the use of electronic resources, as lack of these have negatively affected usage of electronic information resources’. March and Gerald (1996) and Huber (2000) asserted that sustainable services and the acceptance of services’ values strongly lie in the effectiveness of resources, the efficiency of funding, and the impact of the procedure in providing services.

Boudreau and Ramstad (2005) argued that human procedures and talents applied in delivering potentials in an organisation enhance a positive impact on sustaining services. In addition, the aligned actions, capacity, and resources effectiveness, influence organisation services positively. Moreover, the efficiency of investments such as funding influences service provision positively, thereby ensuring sustainability in the organisation. Spreckley (2015) advocated for the application of accounting procedures to enable social enterprises and environmental values in measuring financial performance. Elkington (1994) opined that integrating the three fundamental perspectives (economic, social, and environmental) is essential rather than the traditional financial reporting system to measure sustainable organisational performance. Elkington (1994) maintained there is a need for simultaneous pursuit of economic prosperity, social equity, and environmental quality for sustainable services. Moreover, Elkington (1999) pointed out that a single financial bottom line cannot advance electronic information services’ sustainability. Therefore, Libraries should look beyond their single bottom line and report achievements in EIRs’ provision from the three perspectives of economic, social, and environmental strategies.

6.9 Summary

This chapter discussed the findings from the results reported in chapter 5. The research questions guided the discussion supported by related extant empirical literature and theoretical framework. The discussion demonstrated that the surveyed libraries applied

various strategies in sustaining their EIRs services to a certain extent. The discussion also revealed the gaps in all the surveyed libraries regarding strategic planning and policy implementation. The findings highlighted that none of the surveyed libraries implemented strategic planning in the delivery of EIRs. The study also discussed economic, social, and environmental strategic perspectives in the management of EIRs. From these perspectives, the libraries surveyed seemed to have improved EIRs' provision in one way or another. The study presented possible ways of alleviating EIRs' sustainability issues in the university libraries surveyed, including ensuring the effectiveness of available resources and services, improving funding efficiency, ensuring strategic planning and policy implementations, and reporting the economic, social, and environmental investment outcome of providing EIRs.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter presents the summary of findings, conclusions, and recommendations of the study. It also contributes to policy, practice, theory, and suggestions for further studies. The concluding chapter discusses how findings contribute to the existing literature and the recommendations for further research (Samson 2012). This study aimed to determine the strategies for sustaining electronic information resources services in North Central Nigeria's university libraries. The following research questions guided the study:

- i. How effective are the provision of EIRs in University libraries in North Central Nigeria?
- ii. How efficient are sources of funding for sustainable EIRs?
- iii. What strategies and policies are implemented to impact the sustainable provision of EIRs?
- iv. To what extent have the libraries applied economic, social, and environmental strategies?
- v. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

The paradigm adopted to underpin this study was the pragmatic approach using the multi-method design, which facilitated the combination of quantitative and qualitative methods for collecting data. The HC Bridge Decision Model (Boudreau and Ramstad 2005) and the Triple Bottom Line (TBL) theory (Elkington 1994) were used to guide the current study. The study population comprised of librarians and library managers from four university libraries in North Central Nigeria. Data collection involved using a self-administered survey questionnaire, interview, observation checklist, and document analysis procedure. Qualitative data were recorded, transcribed, and analysed thematically, while quantitative data were analysed using SPSS to report descriptive statistics (frequency/percentages tables, charts). The following sections

present chapter summaries, conclusions, and recommendations of the study, including the study contributions to knowledge and future research.

7.2 Summary of the chapters

This study aimed to explore the strategies applied in sustaining EIRs services in ULs of North Central Nigeria. The study was motivated by a limited understanding of alternative economic sources for EIRs and the scarcity of literature on the strategies for sustaining EIRs services. Chapter one provided an introduction to the study, which contextualised the university libraries' role based on extant literature. The study also investigated the sustainability of strategies adopted by the sampled universities to provide effective EIRs services in Nigeria. The study was guided by five (5) research questions and limited to four (4) university libraries in North Central Nigeria. The study focused on addressing the following objectives: to assess the effectiveness of the provision of EIRs in University libraries in North Central Nigeria; investigate the sustainable sources of funding for EIRs; examine strategic planning and policies implemented to impact the sustainable provision of EIRs; examine the extent to which economic, social and environmental strategies were employed in sustaining EIRs services in selected libraries; and identify the challenges faced in the provision of EIRs and how libraries ameliorate these. The study was considered significant as it could contribute to developing a strategic sustainability framework for EIRs in university libraries.

Chapter two presented the theoretical framework, which reviewed the HC Bridge Model founded by Boudreau and Ramstad in 2005, and the Triple Bottom Line (TBL) theory by Elkington in 1994. These were suitable for the current study in investigating sustainable EIRs services. The selected theory and model constructs (economic, social, environmental sustainability, effectiveness, efficiency, impact) were useful variables that guided the study's direction. These theories helped formulate the research

questions, facilitated the review of relevant literature and influenced the structure of data collection instruments used in this study.

The review of extant literature uncovered the existing gaps and new information. Literature in print and electronic formats, including books, journals, conference proceedings, and other information-carrying forms, was reviewed. The findings include but are not limited to, the following:

- i. There is a lack of literature on strategies for sustaining electronic information resources services in North Central Nigeria's university libraries.
- ii. Information literacy which is a crucial aspect of sustaining EIRs is lacking, leading to the integration of information literacy skills in the universities' curriculum.

The literature reviewed on Nigeria and the rest of the African continent revealed limited studies on EIRs. The majority applied a case study approach focusing on EIRs adoption, usage, access, challenges, and various other aspects of library services. The literature also focused on concepts of sustainability, status, and effectiveness of EIRs, sources of funding for libraries and EIRs, strategic planning and policy adopted by the libraries for EIRs implementation, economic, social and environmental strategic initiatives employed in sustaining EIR services, as well as the challenges of maintaining EIRs.

The fourth chapter discussed the methodological approaches used in the study. The purpose of the research methods is to ensure conformity with different components of conducting research. This study adopted the pragmatism approach in investigating the strategies for sustainable provision of EIRs and presenting a deep understanding of strategic management in providing EIRs for sustainable information service delivery in ULs. This paradigm was used based on its philosophical approach to solving social issues and combining different theories. The study also adopted the mixed methods

design using a qualitative method to complement the quantitative. The multi-method design application was possible and practical because the researcher could use statistical and thematic methods to analyse the collected data. The study population consists of the four sampled university libraries' entire library staff in North Central Nigeria. A total of 126 respondents from the study's population were investigated. The population was drawn from different library staff categories, including the library management team, professional librarians, and library support staff.

To ensure adequate coverage and robust results, the researcher deployed quantitative and qualitative methods in eliciting information from the respondents. The study used different data collection instruments, including a questionnaire, interview, observation checklist, and document evaluation. A face-value evaluation of the questionnaire and interview schedule were conducted before they were administered to the respondents. The instruments were issued on a face-to-face basis and helped the researcher understand the respondents' views on the study area. The collected data were subjected to statistical analysis and content analysis as the instruments complement each other in gathering information for the study.

The data collected were analysed in chapter five, according to the research questions that guided the study. The quantitative data collected using a questionnaire and the qualitative data collected using interview, documents analysis and observation checklist were presented according to their respective response to each research question. The following aspects of this study were analysed quantitatively: the demographic profile, availability of EIRs services, the status of the available information resources, sources of funding EIRs, and its efficiency in sustaining the provision of EIRs services. The study further addressed and presented data on strategic planning and policy applied in sustaining EIRs; the extent of adopting strategic initiatives to sustain EIRs services; economic, social and environmental initiatives adopted in sustaining EIRs services, including factors hindering EIRs services; and best approaches to enhance sustainable EIRs services.

The analysis focused firstly on the extent of EIRs strategic initiatives; available EIRs and their satisfactory status; funding sources and their efficiency in services provision; strategic planning and policy implementation. Secondly, the analysis covered the strategic initiatives adopted by these libraries to sustain EIRs services, the possible options for enhancing EIRs services, and challenges in sustaining the services. Thirdly, some documents were analysed, which include: funding documents, where TETFund allocation was identified as the primary source of funding; strategic planning documents, where it was evident that most libraries did not implement strategic planning approaches in services provision; and EIRs policy documents, where it was found that only the University of Jos developed without full implementation of the policy. Finally, the observation checklist was used to identify the available electronic information resources in the university libraries studied.

Chapter six discussed the findings presented in chapter 5. The research questions guided the discussion supported by extant empirical related literature and theoretical framework. The discussion demonstrated that the surveyed libraries applied various strategies in sustaining their EIRs services to a certain extent. The discussion also revealed the gaps in all the surveyed libraries regarding strategic planning and policy implementation. The findings revealed that none of the surveyed libraries implemented strategic planning in the delivery of EIRs. The study also discussed economic, social, and environmental strategic perspectives in the management of EIRs. From these perspectives, the libraries surveyed seemed to have, in one way or the other, improved the provision of EIRs. The study presented possible ways of alleviating sustainability issues of EIRs in the university libraries surveyed. These included ensuring the effectiveness of available resources and services, improving funding efficiency, ensuring strategic planning and policy implementations, and reporting the economic, social and environmental investment outcome of providing EIRs.

Finally, chapter seven provides a summary of all chapters and the findings of the study. This study's findings revealed that there is insufficient funding for EIRs. Many

do not agree with the effectiveness of available EIRs; strategic planning and policy for EIRs services in the selected ULs are not fully implemented, leading to a negative impact on EIRs' provisions. The findings further revealed that more efforts are expected of the libraries in sustaining EIRs services. The chapter further presents recommendations and contributions to policy, theory, and practices and relevant suggestions for further study.

7.3 Summary of findings

This section presents a summary of the findings of the study. Based on the sequence of the following research questions: How effective are the provision of EIRs in University libraries in North Central Nigeria? How efficient are sources of funding for sustainable EIRs? What strategies and policies are implemented to impact the sustainable provision of EIRs? To what extent have the libraries applied adopted economic, social, and environmental strategies? What challenges are encountered in the provision of EIRs, and how are these ameliorated? Also, the findings on the demographic information of the respondents are presented.

7.3.1 Summary of the demographic characteristics of the respondents

The demographic analysis was conducted to determine the demographic variables. This revealed distribution by librarian's gender at 43% (42) female and 57% (56) Male, distribution by age, highest academic qualification, and librarian's years of experience, librarian's sectional roles, and years of adoption of EIRs in the library by respondents in the research institution. Furthermore, results showed a response rate of 77.8% (98) out of the administered 126 questionnaires distributed to the four selected ULs. The population present for interviews were 20 respondents as opposed to the expected 24. The active participants were 8(40%) out of 20 (100%).

7.3.2 Effectiveness of available EIRs

The first research question sought after the effectiveness of available electronic information resources and services in ULs of North Central Nigeria. The study revealed that electronic information resources are available in most libraries surveyed, but 17% of participants responded that EIRs are not available in their libraries. A response rate of 91% from participants indicated that the available EIRs are effective, and 82% agreed that strategies applied for sustainable provision of EIRs were effective. Furthermore, this study's findings revealed that strategic implementation enhanced EIR services provision in their libraries, as shown by a 91% response rate, although to a lesser extent than the interview responses. Access to available EIRs was revealed to be restricted within the Library caring by a 65% response rate. The finding also indicated an adequate subscription to information database EIRs for information services in most libraries by 78%, while 22% indicated the inadequacy of available EIRs. The observation checklist clearly showed that EIRs are highly available in all the surveyed ULs but not sufficiently sustained to users' satisfaction to fulfil information needs. This finding is similar to that of Khan et al. (2015), whose study revealed the effectiveness of available EIRs but with challenges such as lack of adequate resources, insufficient technology, physical facilities and inadequate database subscription, hindering the provision of EIRs services. The study further confirmed the availability of the following EIRs: virtual library, subject databases, institutional repository, Open Access databases, and licenses database resources, which include libraries web page, OPAC, KOHA, CD-DVD, e-journal, printers, e-book, and electronic thesis/dissertations. These EIRs are available and effectively functional, as stated by the librarians.

7.3.3 Efficiency of the EIRs funding sources

The second research question sought to determine the efficiency of the EIRs funding sources in the selected ULs. The results revealed that the TETFund intervention and

10% institutional allocations to the library were the significant sources of government funding for EIRs in the surveyed libraries. However, the University of Jos indicated having other funding sources apart from the above mentioned, including donor agencies such as TEEAL Cornell University Albert R. Mann Library and the Cliff Mensah University of North Carolina (see 5.4.2.2.). The findings further revealed that libraries' government funding could be efficient only with transparency and management appropriateness. Concerning the TETFund, this study's findings revealed a drop-in library funding and access to the funds is tedious and time-consuming (see 5.4.2.2.1). The study further revealed that the funds available to the surveyed libraries are not adequate compared to the cost of subscription by other institutions' libraries in developed nations, suggesting alternative sources of efficient funding.

Furthermore, the study identified alternative funding sources from two libraries: the University of Jos and the University of Ilorin. The funding comprises library collaboration, international grants, United Bank donation, innovative consortium sharing, Carnegie intervention, and other international institutional partnerships. In contrast, the other two remaining institutions depend solely on government allocations (see 5.4.2.2.2). The study revealed the necessary effort expected from the Library for adequate funding of EIRs in respective ULs were efficiency in management, good accountability, grants applications, and Private Public Partnership (PPP). Also, sourcing for funds from a non-governmental organisation, university alumni, international organisation support, corporate social organisation, the Sustainability Developmental Goal program (SDG) and library rebranding and sensitisation program showed other avenues for funding these institutions. The findings indicated that there are inadequate funding sources to sustain EIRs services in surveyed libraries from the analysed documents. The TETFund and institutions (10%) are not adequate to sustain EIRs' rising high cost, which corroborates with the findings of Ongus et al. (2007, p.5), Sung et al. (2003), and Ishola (2014). They revealed that the established body inadequately funds most libraries, thus hindering the libraries' information services. Therefore, it requires that libraries seek alternative measures to improve their EIRs

funding sources since they may not sustain their information services using EIRs. According to Boudreau and Ramstad (2005), the central anchor to funding efficiency is policies and investment practices. Thus, without the substantial financial commitment drawn from policies and librarians' proactiveness, the available funds may not be sufficient to sustain EIRs services in selected university libraries.

7.3.4 Impact of strategic planning and policy implementation

The third research question sought to determine the impact of strategic planning and policy implementation for sustainable EIR services in the selected ULs. The findings revealed that the policy framework was not satisfactory in the provision of EIRs. The strategic planning impact on sustainable EIRs provision indicated a 90.9% response rate, while 89.8% strongly agreed with ensuring impact returns from professionals' investment. Additionally, a response rate of 84.7% indicated that the strategic planning guided the provision of EIR services in the library and that libraries have adequately designed a policy for EIR services. A response rate of 77.6% indicated implementing a policy framework, and 76.5% agreed to strategic planning implementation.

The study further revealed that staff performance measurement was not dependent on the implementation of library strategic plans but on staff being given tasks, users' feedback, assigned roles, and in-house training. The questionnaire responses indicated that the examined libraries acknowledge having an EIRs policy framework. On the other hand, the interview responses revealed that the University of Abuja Library has a policy framework for EIRs' services provision, although under development. Moreover, the study revealed that the surveyed libraries claimed to have policy frameworks but have not adequately implemented them in EIRs services delivery. The findings indicated no significant impact on the strategic planning and policy framework; hence, the negative results from the ULs' EIRs services. The findings of this study are similar to those of Pacios and Ortiz-Repiso (2010). They reported having 33 university libraries out of 73 that had no strategic planning in their libraries, which

negatively impacted EIRs' services provision. Lin, Shyu and Ding (2017) posit that strategic planning is an approach that fosters optimal project completion. Despite strategic planning relevance, there were no clear policies for sustainable provision of EIRs services. This finding concurred with Tshuma and Chigada's (2018) study that revealed no policies for information literacy in the libraries surveyed in Zimbabwe and that lack of policies hurts library services. Boudreau and Ramstad (2005) pointed out that for sustainable service provision, the anchor point must be on the impact of strategic advantage, planning processes derived from the talent pool, and management.

7.3.5 The application of economic, social, and environmental strategies

The fourth research question explores how economic, social, and environmental strategies are applied for sustainable EIRs services in the selected ULs. The findings revealed that to a great extent, surveyed ULs: duly provide current and relevant EIRs; regulate updates of the institutional repository; have a conscious decision to invest in EIRs; are digitising print resources; direct purchase of EIRs to populate library database; have a conscious drive to collaborate in the acquisition of EIRs; always upgrade internet bandwidth; are collaborating and advocating for EIRs funding from the parent institutions; as well as seeking and accessing grants for e-resources. The study results showed that ULs of North Central Nigeria had applied economic, strategic initiatives in sustaining EIRs provision in their respective libraries, despite their economic challenges with EIRs acquisition. This study's outcome reveals the difference in experience compared to the developed nations on economic strategies for sustainable provision of EIRs in their libraries (University Funding Explained, 2016). A study by Brown Malenfant (2016) revealed that various charity organisations funded public libraries. Dewey (2005) also reported the fundraising initiative in libraries of Oklahoma University, Texas Technology University, Penn State University, and the University of South Carolina libraries via sports clubs. The findings of the current study from the interview also revealed that economically the libraries have subscribed

to various information resources through intervention grants from a government agency (TETFund).

The results on the social strategies showed that, to a great extent, libraries have strategically implemented various social initiatives to sustain EIRs services provision. In preferential order, the majority (85.7%) reported applying strategical planning and implementation to a great extent in selected libraries. This result is followed by an 83.4% response rate on user training, 82.6% response to staff continuous development on EIRs, and online selection and dissemination. The study findings revealed preservation and archiving of EIRs had an 81.6% response rate, followed by design and implementation of EIRs policies (80.7%), online organisation and description of resources (78.6%), application of social media services (77.6%), as well as institutional collaboration and establishment of management of integrated information systems (75.5%). The least response rates were e-reference services at 72.4%, online inter-library networking at 69.4% and customers' support on discovering EIRs at 68.4%.

The findings on the extent of environmental strategies indicated that: 88.8% of respondents agreed to adequate and up to date computer systems, 81.7% indicated system networking connection, 81.7% indicated constant system maintenance, 75.5% indicated provision of alternative electricity supply and air-conditioned space for EIRs services, and 72.5% indicated constant power supply, adequate green learning space and information literacy space. Some ULs indicated epileptic power supply and inadequate green learning space (22.4%), information literacy space (21.4%), and provision of alternative electricity supply (20.4%).

Moreover, findings indicated that some libraries such as UniAbuja are yet to adopt specific environmental initiatives to sustain the EIRs services, corroborating Ossai-Ugbah's (2012) findings that criticised the status of Nigeria's electricity generation system. Similarly, Amadi (2011) reported the limitation of Nigeria meeting the

expected electricity supply. Furthermore, the current study results showed that surveyed University libraries adopted economic, social, and environmental strategies to enhance EIRs services. These include providing current and relevant EIRs, continuous staff development on EIRs, and system networking connections mostly adopted. This result complied with Elkington's (1994) Triple Bottom Line Theory view on management of economic, social, and environmental impact in a given organisation operation. The economic, social, and environmental strategies are an integral part of library services; therefore, their strategic performance needs to be measured concurrently (Spreckley, 2015).

7.3.6 Challenges hindering sustainable EIR services

The study's fifth research question examined the challenges hindering the sustainable EIRs services in the selected ULs and possible ways of solving these. The results revealed that reduced funding is the critical factor hindering sustainable EIRs in the selected university libraries (79.6%). Besides, poor internet access and electricity (71.4%), lack of required EIRs sustainability framework (70.4%), lack of EIRs sustainability policy in the library (65.7%), lack of strategic planning (67.0%), poor advocacy on the sustainability of EIRs services (65.3%) and poor management support on sustainability program (67.3%) were indicated as challenges hindering sustainable EIRs services in the selected ULs. The focused group interview revealed poor funding, low electricity supply, poor technology skilled professionals, technology support facilities, delayed renewal of licensed database resources and discouraging low use of EIRs by patrons as the key challenges hindering sustainable EIRs services in ULs under study. These findings are similar to the report of Buhari (2016) from the Southwest institution, Nigeria, which indicated inadequate technology facilities, poor electricity supply, poor technology maintenance, low internet access, and inadequate funding. Inadequate funding was the significant disruption to EIRs services, as evidenced in Chaputula and Boadi's (2010) study, which reported inadequate funding

frustrations, dependence on donations and external support to sustain EIRs services in libraries.

Furthermore, the study finally revealed that the best approaches proposed to enhance the sustainable EIRs services in North Central Nigeria ULs include: a strong commitment by the library management team in ensuring effectiveness and adequacy of available EIRs; promoting and marketing EIRs sustainability programs for the UL to the university management; monitoring, and evaluation of strategic plans for EIRs; and presenting reports of the outcome as well as prioritising sustainability of EIRs services in the library strategic plan as fundamental approaches to enhance sustainability strategies. Additionally, the study advocates establishing the EIRs sustainability committee in ULs, integrating the EIRs sustainability program in the policy document, employing skilled sustainability staff, and directing government interventions through national policy initiatives. More so, allocating special funds for the EIRs sustainability program and integrating EIRs sustainability as a separate department in the ULs.

7.4 Conclusion

Conclusively, ULs in North Central Nigeria have available EIRs in the libraries to provide information services. Hence, the effectiveness of these is crucial for service providers. On the other hand, the management team perceived EIRs' availability as merely satisfactory. The study's findings concluded that the absence of adequate funding due to government shrinking allocations of funds from TETFund has dramatically impacted EIRs' availability. Moreover, the current study's findings reveal that sustaining EIRs would be a total failure without palliative measures and alternative funding.

The study revealed other relevant options adopted around the globe on ULs provision of EIRs. The present ULs can emulate the global efforts in the provision of EIRs for information service delivery. Furthermore, the study also revealed that non-

implementation of strategic planning and EIRs policies indicate inadequacy with EIRs services and low impact of policies and planning in services delivery in surveyed libraries. The report from the study showed that surveyed ULs, to a great extent, have adopted economic, social, and environmental strategies in sustaining the provision of EIRs services in their respective libraries. Still, more effort is lacking, and more expected strategies are untapped. The challenges hindering the sustainable provision of EIRs were identified, including possible measures to alleviate these.

7.5 Recommendations

The following recommendations are based on the findings of the study, theory, and reviewed literature. The recommendations are on the following aspects: ensuring the effectiveness of the available EIRs, efficient funding sources for EIRs services, strategic planning, and policy implementation impact services. Economic, social, and environmental strategies for EIRs are also considered and reported, including the challenges hindering EIRs' services provision and the possible solutions.

7.5.1 Effectiveness of the available EIR services

The findings highlighted that surveyed libraries have established and adopted EIRs in providing patrons with information services. Nevertheless, the available resources' effectiveness was not satisfactory for sustainable services, as reported from literature and the survey results. Therefore, the surveyed ULs' management should ensure the effectiveness of their EIRs service provision by evaluating available services for adequacy to meet their clients' information needs. The study also recommends an adequate subscription to database resources as well as other relevant information resources.

7.5.2 Efficient funding sources for EIRs services

The surveyed libraries' findings and reviewed literature indicated funding sources had been an issue in most libraries, including the surveyed ULs. Therefore, library managers, stakeholders, and government-sponsored agencies must devise alternative means for adequate funding for EIRs services. The study also recommends that ULs should employ skilled fundraising personnel to enhance funding processes for EIRs services.

7.5.3 Impacts of strategic planning and policy implementation

The study showed that strategic planning and policy positively impact the provision of EIRs services; without it, libraries' performance cannot be accounted for in reference to the sustainable objectives outlined. Therefore, ULs must adopt and implement strategic planning in the provision of their EIRs services. The strategic planning framework should prioritise EIRs services to enhance its sustainability in the surveyed libraries.

The policy framework is significant if libraries aim to sustain EIRs services. It is vital that surveyed libraries develop institutional EIRs policy and judiciously implement it for a positive impact on available EIRs and services. The policy should guide the EIRs funding, acquisition, practices, partnership, license negotiation and EIRs services sustainability objectives. The development of national policy guiding all ULs in Nigeria is also recommended, emphasising the sustainable provision of EIRs services.

7.5.4 Enhancement of economic, social, and environmental strategies

The findings from section 5.15 provide evidence that surveyed libraries have applied various strategies for sustainable provision of EIRs services in their libraries and yield a positive return. However, these reported strategies need enhancement. Economic strategies need the libraries to apply various measures, such as consortium in purchase

and negotiation of resources, PPV, fundraising programs and many others. The extent to which surveyed libraries have applied social strategies for the sustainable provision of EIRs is in good order. The libraries cannot advance to sustainable EIRs in university libraries without a robust legal back-up.

The findings of the current study showed that, to a great extent, the surveyed ULs had applied various social initiatives to sustain the provision of EIRs. The initiatives applied include continuous staff training, application of strategic planning, user training, preservation and archival of EIRs, social media application in services delivery and more. The study, therefore, recommends a review of librarian roles and their contribution to technology advancement and skilled workforce for EIRs be considered; libraries should also have clear preservation archiving programs for their ULs (Nazir 2017).

This study recommends that surveyed libraries should seek to advance social initiatives that support economic and environmental strategies. Furthermore, the study explored the extent to which strategic environmental initiatives were applied in the surveyed ULs. The findings revealed that to a great extent, libraries surveyed have strategically sustained EIRs services in their libraries by providing computers, technology facilities, common learning space and more. The study recommends that libraries should explore more adaptable alternative sources of energy (nuclear generation, liquefied natural gas (LNG), and fossil fuels) as reported in Noble's (2004) and Leibowics' (2014) studies. Electricity is a critical environmental issue in most libraries, including the surveyed ULs. The enactment of energy policy at the national and state level can enhance EIR services in surveyed libraries. It is also recommended that stakeholders should prioritise electricity policy for ULs.

The study revealed that various challenges hinder the sustainable provision of EIRs services in surveyed libraries. Thus, applying strategic frameworks for sustainable EIRs services is recommended to overcome the challenges. Such frameworks should

include the effectiveness of resources, efficiency of EIRs funding, strategic planning and policy implementation, strategic initiative applications (economic, social, and environmental), and the reporting of the strategies for evaluating services.

7.5.5 Promotion of EIRs sustainability programs

Based on the findings of this study, it is recommended that the surveyed University libraries should: promote and market EIRs sustainability programs to the stakeholders with strong commitment and pro-activeness of the library management; run an evaluation of strategic planning documents, prioritising EIRs, and reporting results. Moreover, the establishment of sustainability committees in libraries, integration of sustainability designed programs in the policy document, employment of skilled EIRs services sustainability staff, as well as national policy initiatives for EIRs services, allocation of a special fund for EIRs provision and integration of sustainability programs in the surveyed ULs are also recommended.

7.6 Originality of the study

The present study agreed with all the views on originality (Tanggaard and Wegener 2017, p.38) as put forward by Francis cited in Philip and Pugh (2015), since the sustainable provision of EIRs in ULs of North Central Nigeria is one area that professionals in the field of librarianship have over-looked. The study also indicated originality by integrating the management model (HC Bridge Decision Model) and Accounting theory (Triple Bottom Line Theory) to develop a framework to guide ULs on sustainable EIRs services provision. Consequently, this study sought to break new ground for the benefit of scholarly research and professional practice in Library and Information Science (LIS). Evidence from the extant literature worldwide showed that studies from developed nations such as Britain, the USA, Australia, Germany, and the Netherlands have long focused on sustainable services strategies from a general institutional perspective. For example, a study by Xu (2016) focused on highly-engaged local stakeholders; Jankowska and Marcum (2010) focused on the

multidimensional issues of sustainability strategies; Armstrong, Edward, and Ray (2002) focused on e-book based on existing papers, and the result was from position papers on electronic publishing. Other research like Chowdhury (2016), Finkbeiner et al. (2010), Costello et al. (2014), Baumgatner and Ebner (2010), Johnson et al. (2015), and Brazier (2016) centred their study on library environment sustainability. On the other hand, Baumgatner and Ebner (2010) examined corporate sustainability strategies, sustainability profile, and maturity levels in Australia. Blummer and Kenton (2017), Torma and Vakkari (2004), Yan et al. (2015), Bridges et al. (2010), Ruth and Collins (2008), Johnson et al. (2015), Salmon et al. (2017), Nazir (2017), Chowdhury and Koya (2017), as well as Chowdhury (2013) explored strategic approaches, while a related study by Costello et al. (2014) focused on open access. There is a wide variety of reports on EIRs services in academic libraries, but there is scarce literature on strategies and sustainable provision of EIRs services in ULs. The study empiricism, tools for data collection, and study location were at variance with the previous studies.

7.7 Contributions to knowledge

The study outcome has extensive inferences for policy and theory practice. Concerning theory, the study used the Triple Bottom Line (TBL) theory (Elkington 1994) and the HC Bridge Model (Boudreau and Ramstad 2005) to investigate the management approach for sustainable provision of EIRs services in surveyed ULs. The theory and model's key variables shaped the developed framework for the sustainable provision of EIRs services. The concepts used included: effectiveness- to ascertain the effectiveness of the available resources for services; efficiency- to examine the adequacy of the funding sources for sustainable provision of EIRs services in surveyed libraries; impact- used to know the impacts of strategic planning and policy implementation for sustainable provision of EIRs service; finally the economic, social and environmental (Triple Bottom Line) strategic application for sustainable provision of EIRs services. The study expects that most survey libraries may apply the framework for the sustainable provision of EIRs services in their

respective libraries. They will be informed of the issues hindering the sustainable provision of EIRs. Global libraries may also review EIRs services in ULs of North Central Nigeria and present strategies that enhance EIRs services. Thus, the current study's findings may inform stakeholders to ensure EIRs' effectiveness, adequate funding, impactful implementation of planning and policies, and evaluate economic, social, and environmental strategies applied.

The study contributes to the policy by providing the stakeholders, ULs, librarians, institution management, library managers, and library funding agencies with indicators for policy development that emphasise EIRs services' sustainable provision. Thus, placing the effectiveness of available resources as a priority.

In the context of the practical implication, the study contributes to the various strategies as designed in the framework for the sustainable provision of EIRs services in ULs, if adopted. It describes sustainable EIRs services' constituents with specific reference to strategies applying economic, social, and environmental dimensions, effectiveness, efficiency, and impact. It also addresses issues concerning funding sources with options for alternative funding channels. The study further addresses the importance of implementing strategic planning and policy to impact sustainable EIRs services. Exposing the challenges hindering EIRs' services provision serves as a Library management model in scaling up managerial approaches that address the explored issues.

7.8 Suggestions for further study

- This study investigated the strategies for sustainable provision of EIR services in ULs of North Central Nigeria using the Triple Bottom Line (TBL) theory (Elkington 1994) and the HC Bridge Model (Boudreau and Ramstad 2005) to develop the conceptual framework. This study's findings provide the basis for further research to examine other aspects of strategies for EIR services not

mentioned in this study. More relevant management theories can be used to study other institutions.

- Moreover, the study results show that most ULs surveyed experience funding challenges in sustaining EIRs services, despite large funding allocation from the funding government agency. Thus, further study may examine libraries' funding management and compare studies on EIRs funding for public and private universities in the region.
- The study location was streamlined to the North Central Region of Nigeria because of limitations to research funding. Further study may explore other regions to examine EIRs' strategic practices regarding their services' sustainable provision.
- The present study investigated the extent of economic, social, and environmental strategies in providing EIRs services in North Central University Libraries. Nigeria comprises six geopolitical regions, and this study was limited to the selected North Central region Universities. It is suggested that a similar study be conducted in other regions in Nigeria. The study was also limited to only four public universities; therefore, it is recommended that further study be conducted in other academic libraries like state universities, private universities, colleges of education, and Polytechnics. The study scope was also limited to only Universities in Nigeria. It is recommended that research of a similar nature be conducted on University libraries in other nations or comparative studies of university libraries.
- Finally, the study investigation is limited to funding efficiency in surveyed university libraries for sustainable EIRs services provision. The funding agencies like the Tertiary Education Fund were not considered. Therefore, it is

recommended that further study be conducted on the University funding agencies and their policy designs for sustainable EIRs services provision.

REFERENCES

Aabø, S and Audunson, R 2012, 'Use of library space and the library as place', *Library and Information Science Research*, 34(2), pp.138-149.

Aaron, T 2011, Musings about librarianship: 4 successful social media campaigns for and by posted on blogspot <<http://musingsaboutlibrarianship.blogspot.com/2011/01/4-successful-social-media-campaigns-for.html>>

Adams, G 2014, 'Decolonising methods: African studies and qualitative research', *Journal of social and personal relationships*, 31(4), pp.467-474.

Adams, R, Jeanrenaud, S, Bessant, J, Denyer, D and Overy, P 2016, 'Sustainability-oriented innovation: a systematic review', *International Journal of Management Reviews*, 18(2), pp.180-205.

Adams, WM 2001, *Green development: environment and sustainability in the Third World*, 2nd edn, London, Routledge.

Addisalem, GD 2016, The use of electronic information resources by postgraduate students at UNISA Regional Learning Centre in Ethiopia, Master of Information Science Dissertation, University of South Africa, Pretoria.

Adegoke, KA 2015, 'Marketing of library and information services in University libraries: a case study of Usmanu Danfodiyo University Library, Sokoto-Nigeria', *Intellectual Property Rights: Open Access*, 3 (2), pp.1-5.

Adeniran, P 2013, 'Usage of electronic resources by undergraduates at the Redeemers University, Nigeria', *International Journal of Library and Information Science*, 5 (10), pp.319-324.

Adeyoyin, SO, Idowu, TA and Osowole, AO 2016, 'Awareness, access and use of electronic information resources among the seminarians in Nigeria', *Journal of Religious and Theological Information*, 15 (1-2), pp.1-18.

Adigun, GO, Kotso, JA and Kolajo, FS, 2013, 'Changing roles of academic and research libraries in scholarly information communication landscape: a case study of Ahmadu Bello University, Zaria, Nigeria', *Greener Journal of Social Sciences*, 3(3), pp.156-165.

Agaba, DM, Kigongo- Bukenya, IMN and Nyumba, JB 2004, 'Utilisation of electronic information resources by academic staff at Makerere University', *University of Dar es Salaam Library Journal*, 6 (1), pp.18-28.

Agyeman, OT 2007, ICT for Education in Nigeria. Survey of ICT and Education In Africa: Nigeria Country Report, Retrieved date? <www.infodev.org>

Aiyegunle, SA and Moneme, NA 2006, Communication and publicity in Nigerian academic libraries, Ekere, FC 2006 Ed., Administration of Academic Libraries, A book of readings, Nsukka, UCO-Academic publishers Nigeria Limited.

Ajala, IO, Arinola, AA, Adigun, GO and Ogunmodede, TA, 2014, 'Extended hours in academic libraries: the experiences of three public universities in South-Western Nigeria', *American International Journal of Contemporary Research*, 4(4), pp.165-172.

Ajzen, I 1991, 'The theory of planned behaviour', *Organisational Behaviour and Human Decision Processes*, 50(2), pp.179-211, Accessed 22 April 2018, <<http://www.nottingham.ac.uk/~ntzcl1/literature/tpb/azjen2>>

Akinsola, O, Herselman, M and Jacobs, S 2005, 'ICT provision to disadvantaged urban communities: A study in South Africa and Nigeria', *International Journal of Education and Development using ICT*, 1(3), pp.19-41.

Akintade, A 2011, 'Student representative's organisation variety programme', *University of Ilorin Bulletin*, 4 (66), pp. 1-4.

Akintunde, SA 2007, Selection and acquisition of materials for digitisation in libraries, In Compendium of Papers Presented at the 2007 National Information Seminar on Digitisation of Library Materials Processes and Tools, University of Jos, 16-20 July 2007, p.1.

Akpan, A and Madu, UA 2014, 'Effective planning strategies: a key component for implementation of automation in academic libraries', *In Information and knowledge management*, 4 (1), pp.31-36.

Akpojotor, LO 2016, Awareness and usage of electronic information resources among postgraduate students of library and information science in southern Nigeria, Accessed 16 January 2018, <<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3876&context=libphilprac>>

Akpokodje, VN and Ukwuoma, SC 2016. Evaluating the impact of eBook on reading motivation of students of higher learning in Nigerian universities. Paper presented at IFLA World Library and Information Congress 82nd IFLA General Conference and Assembly, Columbus, Ohio, USA 13–19 August.

Al-Baridi, SA 2016. Survey of selected US academic library consortia: a descriptive study, *The Electronic Library*, 34 (1), pp. 2014-0153

Albert, KM 2007, 'Integrating knowledge-based resources into the electronic health record: history, current status, and role of librarians', *Medical Reference Services Quarterly* 26 (3), pp.1-19.

Alexander, AW 1999, 'Toward the work of perfection', *Journal of Library Administration*, 28 (2), pp.2-5.

Al-Fadhli, MS and Johnson, IM 2006, 'Electronic document delivery in academic and research organisations in the Gulf States: a case study of Kuwait', *Information Development*, 22 (1), pp.32-47.

Alhaji, IU 2018, Digitisation of library resources and the formation of digital libraries: a practical approach, Accessed 27 April 2018, <http://182.74.145.166/jspui/bitstream/1/16/1/alhaji_paper.pdf>

Allen, BM and Hirshon, A 1998, 'Hanging together to avoid hanging separately: opportunities for academic libraries and consortia', *Information Technology and Libraries*, 17(1), pp.36-44.

Al-Rahmi, W, Alias, N, Othman, MS, Alzahrani, AI, Alfarraj, O, Saged, AA and Rahman, NSA 2018, 'Use of e-learning by university students in Malaysian higher educational institutions: a case in university of technology Malaysia', *IEEE Access*, 6, pp.14368-14276.

Amekuedee, J 2005, 'An evaluation of library automation in some Ghanaian university libraries', *The Electronic Library*, 23(4), pp.442-452.

American Library Association. 2018, Fund libraries: tell congress to invest in libraries, Accessed 8 July 2018, <<https://www.districtdispatch.org/2018/01/ala-2018-continue-to-fundlibraries/>>

Amkpa, SA and Tukur, A 2009, 'Factors inhibiting the implementation of information and communication technologies (ICTs) in Nigerian university libraries', *Information Technologist*, 6 (1), pp.4-16.

Anglo-American Cataloguing Rules (AACR2) 2005, *Anglo-America cataloguing rules*, 2nd ed., Washington, DC, American Library Association.

Ani, EO, Ngulube, P and Onyancha, OB 2017, 'A bibliometric analysis of the visibility of library and information science research in Nigeria in the web of science, 2000-2014', *African Journal of Library, Archives and Information Science*, 27(1), pp.41-51.

Ani, OE, Edem, MB and Ottong, EJ, 2010, 'Analysis of internet access and use by academic staff in the University of Calabar, Calabar, Nigeria', *Library Management*, 31 (7), pp. 535-545.

Ani, OE, Ngulube, P and Onyancha, B, 2014, 'Accessibility and utilisation of electronic information resources for research by academic staff at selected Nigerian universities between 2005 and 2012', *International Information & Library Review*, 46(1-2), pp.51-60.

Anthony, A, Eze, S and Anthony, AT 2015, 'Intellectual Property rights in Nigeria: a critical examination of the activities of the Nigerian copyright commission', *Journal of Law, Policy and Globalisation*, 35 (1), pp.56-61.

Antonelli, C 2008, *Localised technological change: towards the economics of complexity*, London, Routledge Taylor and Francis Group.

Anunobi, CV and Onyebinama, C 2016, The university library as an innovation and knowledge services centre: a case from Nigeria, Paper presented at the 82nd conference of IFLA World Library and Information Congress Conference, Columbus, Ohio, 13-19 August.

Anyaoku, E and Nwosu, O 2009, 'Potentials of fee-based library services in Nigeria: with a case report of a fee-based service in a medical library', *Information Technologist*, 6(2), pp.13-24.

Anyaoku, EN, Ezeani, CN and Osuigwe, NE, 2015, 'Information literacy practices of librarians in universities in South-East Nigeria', *International Journal of Library and Information Science*, 7(5), pp.96-102.

Arabella Advisors 2015, Cultivating global library leadership: a review of leadership training programs for librarians worldwide Accessed 4 December 2018, <https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/27331/Cultivating_Global_Library_Leadership_January_2015.pdf>

Armstrong, C, Edward, L and Ray, L 2002, 'Virtually there e-book in UK academic libraries', *Electronic Library and Information Systems* 36 (4), pp.216-227.

Aronson, B 2004, 'Improving online access to medical information for low-income countries', *New England Journal of Medicine*, 350 (10), pp.966-968.

Arowoshegbe, AO, Uniamikogbo, E and Atu, G 2016, 'Sustainability and triple bottom line: an overview of two interrelated concepts', *Igbinedion University Journal of Accounting*, 2, pp.88-126.

Asiamah, N, Mensah, HK and Oteng-Abayie, EF, 2017, 'General, target, and accessible population: demystifying the concepts for effective sampling', *The Qualitative Report*, 22(6), p.1607.

Asogwa, BE, Ugwu, CI and Ugwuanyi, FC 2015, 'Evaluation of electronic service infrastructures and quality of e-services in Nigerian academic libraries', *The Electronic Library*, 33(6), pp. 1133-1149.

Association of Commonwealth Universities 2017, Bulletin: Development of curious minds, Np 191 August 2017.

Atkins, PDT, Greenwood, J and Whaley, P 2014, 'Benchmarking and pondering ASERL interlibrary loan operations, 2010 and 2013', *Interlending and Document Supply*, 42(1), pp.16-25.

Auroux, L, KöNings, KD, Zufferey, JD and Gurtner, JL 2014, 'Mobile and Online Learning Journal: effects on apprentices' reflection in vocational education and training', *Vocations and Learning: Studies in Vocational and Professional Education*, 7, pp.215-239.

Austin, AW 1985, 'Involvement the cornerstone of excellence', *change, The Magazine of Higher Learning*, 17(4), pp.35-39.

Awwad, MS and Al-Majali, SM 2015, 'Electronic library services acceptance and use', *Electronic Library*, 33(6), pp.1100–1120.

Ayoo, PO and Lubega, JT 2014, 'A framework for e-learning resource sharing (FeLRS)', *International Journal of Information and Education Technology*, 4(1), pp.112- 119.

Babbie, E and Mouton, J 2005, Qualitative studies, In E, Babbie, and J, Mouton (Eds.), *The practice of social research*. (pp. 269-311), Cape Town.

Babbie, E and Mouton, J 2001, *The practice of social research*, CapeTown, Oxford University Press.

Baich, T 2012, 'Opening interlibrary loan to open access', *Interlending and Document Supply*, 40 (1), pp.55-60.

Baker, SE and Edwards, R 2012, How many qualitative interviews is enough? Expert voices and early career reflections on sampling and cases in qualitative research, National Centre for Research Methods Review Paper. Accessed 14 April 2020 <http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf>

Bakri, A and Willett, P 2017, 'The Malaysian journal of library and information science 2001-2006: a bibliometric study', *Malaysian Journal of Library and Information Science*, 13(1), pp.103-116.

Balasooriya, S 2018. Are the macro-prudential policies applicable to microfinance institutions? a case of Srilankan microfinance institutions, *South-East Asia Journal of Contemporary Business, Economics and Law*, 15 (5), pp. 79-90.

Bambale, SA, Ghani, MB and Ado, AB 2020, How service quality affects customer satisfaction: a study of Malaysian electric train service (ETS), *Journal of International Business and Management*, 3(2), pp.01-07.

Bandura, A 1986, *Social foundations of thought and action: a social-cognitive theory*, Englewood Cliffs, NJ, Prentice Hall.

Bangura, AK 2015, Promoting sustainability and predicting tipping points in Africa: suggestion for a collaborative initiative via e- clustering, Paper presented at the CODESRIA 14 General Assembly Conference on creating African futures in an era of global transformations: challenges and prospects, Dakar, Senegal, 08-12 June.

Baral, P 2020, Perceived effectiveness of information sources in meeting information needs of rice growers in Nepal', *Agricultural Socio-Economics Journal*, 20(4), pp.299-310.

Barbier, E 1987, 'The concept of sustainable economic development', *Environmental conservation*, 14(2), pp.101–110.

Barney, JB 1995, 'Looking inside for competitive advantage', *Academy of Management Perspectives*, 9(4), pp.49-61.

Barton, C 2018, Transforming an academic library to a learning commons model: strategies for success, A PhD Dissertation in School of Education: Concordia University Irvine.

Batista, AADS and Francisco, ACD, 2018, 'Organisational sustainability practices: A study of the firms listed by the corporate sustainability index', *Sustainability*, 10(1), p.226.

Baumgartner, RJ 2014, 'Managing corporate sustainability and CSR: a conceptual framework combining values, strategies and instruments contributing to sustainable development', *Corporate Social Responsibility and Environmental Management*, 21(5), pp.258-271.

Baumgartner, RJ and Ebner, D 2010, 'Corporate sustainability strategies: sustainability profiles and maturity levels', *Sustainable Development*, 18 (2), pp.76-89.

Beagrie, N 2003, 'National preservation initiative: an overview of development in Australia, Netherland and the United Kingdom and of related investment activities strategies and tools for digital library', *Council on Library and Information Resources*, 6 (20), pp.1-64.

Beagrie, N 2008, 'Digital curation for science, digital libraries, and individuals', *International Journal of Digital Curation*, 1(1), pp.3-16.

Beh, E and Smith, J 2012, 'Preserving the scholarly collection: an examination of the perpetual access clauses in the Texas A&M University Libraries' major e-journal licenses', *Serials Review*, 38(4), pp.235-242.

Benaroch, M and Apari, A 2011, 'Pricing e-service quality risk in financial services', *Electronic Commerce Research and Applications*, 10(5), pp.534-544.

Beshears, F 2005, The economic case for creative commons textbooks Paper presented at the Open Education Conference, Logan, Utah, 28- 29 September.

Best, JW and Kahn, JV, 2016, *Research in education*, New Delhi, Pearson Education, India.

Best, JW and Kahn, JV 2006, *Research in Education*, 10th ed, Cape Town, Pearson Education Inc.

Bezuidenhout, RM 2014, Theory in research. In: Du Plooy-Cillier, F, Davic, C and Bezuidenhout, R ed, *Research matters*, Cape Town, Juta Publication, pp. 36-58.

Bhattacharjee, A 2012, *Social Science Research: Principles, Methods, and Practices*. Accessed 23 April 2019, <<https://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oatextbooks>>

Boadi, BY 2006, 'Income-generating activities: a viable financial source for African academic libraries', *The Bottom Line*, 19 (2), pp.64-77.

Bogoro, SE 2015, Sustainability of higher education institutions in Nigeria: challenges and prospects, Lecture paper presented at the Convocation of 44th AIR Force Institute of Technology, TETFund, Nigeria, 18th August.

Borchers, T and Hundley, H 2018, *Rhetorical theory: an introduction*, Middle Tennessee State University, Waveland Press.

Boudreau, J and Cascio, W 2017, 'Human capital analytics: why are we not there?' *Journal of Organisational Effectiveness: People and Performance*, 4(2), pp.119-126.

Boudreau, JW and Ramstad, PM 2005, 'Talentship, talent segmentation and sustainability: a new HR decision science paradigm for a new strategy definition', *Human Resource Management*, 44(2), pp.129-136.

Bowen, GA 2009, 'Document analysis as a qualitative research method', *Qualitative Research Journal*, 9 (2), pp.27-40.

Bowles, V 2016, Toronto Public Library, Letter from the office of the city Librarian to the Executive Committee City of Toronto, October 11, Toronto, Ontario, Accessed 4 December 2018, <<https://www.toronto.ca/legdocs/mmis/2016/ex/bgrd/backgroundfile-97260.pdf>>

Boynton, PM and Greenhalgh, T 2004, 'Selecting, designing, and developing your questionnaire', *BMJ*, 328(7451), pp.1312-1315.

Bozonokolic, L., and Ruzic, M. 2011, Risk assessment of technology system. Accessed 12 December 2019, <<http://wlv.summon.serialssolutions.com>>

Bracken, F 2014, 'Measuring the value of e-resources', *The Irish Library*, 23 (1), pp.4-11.

Braun, V and Clarke, V 2006, 'Using thematic analysis in psychology', *Qualitative research in psychology*, 3(2), pp.77-101.

Brick, JM and Williams, D 2013, 'Explaining rising nonresponse rates in cross-sectional surveys', *The ANNALS of the American academy of political and social science*, 645(1), pp.36-59.

Bridges, L, Gascho, RH and Griggs, K 2010, 'Making the case for a fully mobile library website: from floor maps to the catalogues', *Reference Services Review*, 38(2), pp.309-320.

Bringezu, S and Bleischwitz, R 2017, *Sustainable resource management: global trends, visions and policies*, London, Routledge.

Brink, HC, Walt, VC and Rensburg, GV 2012, *Fundamentals of research methodology for healthcare professionals*, Cape Town, Juta and Company.

Brooks, S and Dorst, TJ 2002, 'Issues facing academic library consortia and perceptions of members of the Illinois digital academic library portal', *Libraries and the Academy*, 2 (1), pp.43–44.

Brown, BJ, Hanson, ME, Liverman, DM and Merideth, RW 1987, 'Forum global sustainability: towards definition', *Environmental Management*, 11 (6), pp.713-719.

Brown, K and Malenfant, KJ, 2016, Documented library contributions to student learning and success, Association of College and Research Libraries, Chicago. pp. 1-26.

Brown-Sica, MS 2012, 'Library spaces for urban, diverse commuter students: a participatory action research project', *College & Research Libraries*, 73(3), pp.217-231.

Brundtland, G 1987, *Our common future: the world commission on environment and development*, Oxford, England, Oxford University Press.

Bryant, J Matthews, G and Walton, G 2009, 'Academic libraries and social and learning space: a case study of Loughborough University Library, UK', *Journal of Librarianship and Information Science*, 41 (1), pp.7-18.

Bryson, JM 2018. *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organisational achievement*, New Jersey, John Wiley & Sons.

Buela-Casal, G, Gutiérrez-Martínez, O, Bermúdez-Sánchez, MP and Vadillo-Muñoz, O 2007, 'Comparative study of international academic rankings of universities', *Scientometrics*, 71(3), pp.349-365.

Buhari, GI 2016, Library information resources and services utilisation as correlates of creativity of senior administrative staff of polytechnics in South West, Nigeria, Accessed 18 April 2018 <<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.co.za/&httpsredir=1&article=3841&context=libphilprac>>

Burkell, J 2003, 'The dilemma of survey non-response', *Library and Information Science Research*, 25 (3), pp.239-263.

Campbell, E, MacKintosh, PJ, Bahnmaier, S, Brown, A, Escobar, R and Shoecraft, H 2015, Managing the e-resource ecosystem: creating a process for sustainable e-resource life cycle workflow analysis and oversight, Paper presented at Association of college and Research Library (ACRL) conference, 25-28, March, Portland, Oregon, Accessed 29 June 2018, <http://www.ala.org/acrl/sites/ala.org/acrl/files/content/conferences/confsandpreconfs/2015/Campbell_et_al.pdf>

CanLII. 2008, Freedom of Information and Protection of Privacy Act, RSBC 1996, c 165, Accessed 7 January 2019 <<https://www.canlii.org/en/bc/laws/stat/rsbc-1996-c-165/46389/rsbc-1996-c-165.html#history>>

Carbery, R, Garavan, TN, Sheehan, M, Darcy, C, Hill, J, McCabe, TJ and McGovern, P 2014, 'A consideration of organisational sustainability in the SME context', *European Journal of Training and Development*, 38(5), pp. 398-414.

Carr, PL 2011, 'The commitment to securing perpetual journal access: a survey of academic research libraries', *Library Resources and Technical Services*, 55(1), pp.4-16.

Carr, PL and Collins, M 2009, 'Acquiring articles through unmediated, user-initiated pay-per-view transactions: An assessment of current practices', *Serials Review*, 35(4), pp.272-277.

Carstens, L 2010, 'Defining, inspiring and implementing sustainability', *National Civic Review*, 99 (3), pp.11-16.

Casey, AM 2015, 'Strategic priorities: a roadmap through change for library leaders', *Library Leadership and Management*, 29(2), pp.1-17.

Chamberlain, C and MacAlpine, B 2008, 'Pay-per-view article access: a viable replacement for subscriptions?' *Serials*, 21(1), pp.30-34.

Chandel, AS and Saikia, M 2012, 'Challenges and opportunities of e-resources', *Annals of Library and Information Studies (ALIS)*, 59 (3), pp.148-154.

Chao, CM 2019, 'Factors determining the behavioural intention to use mobile learning: an application and extension of the UTAUT model', *Frontiers in Psychology*, 10, pp.1652- 1662.

Chaputula, A and Boadi, BY 2010, 'Funding for collection development activities at Chancellor College Library, University of Malawi', *Collection Building*, 29 (4), pp.142-147.

Chaputula, AH and Kanyundo, AJ 2014, 'Collection development policy: how its absence has affected collection development practices at Mzuzu University Library', *Journal of librarianship and information science*, 46(4), pp.317-325.

Charalabidis, Y, Zuiderwijk, A, Alexopoulos, C, Janssen, M, Lampoltshammer, T and Ferro, E 2018. Open data evaluation models: theory and practice, In *The World of Open Data* (pp. 137-172). Springer, Cham.

Charles, BL and Denise, AT 1996, 'Carnegie Mellon University and University Microfilms International Virtual Library Project', *Serials Librarian*, 28 (1-2), pp.160–61.

Chattopadhyay, S 2013, *Intellectual property rights in digital environment*, Accessed 25 December 2018, <http://eprints.rclis.org/32511/1/Intellectual%20Property%20Rights%20in%20Digital%20Environment_ISI.pdf>

Chen, H, Butler, E, Guo, Y, George Jr, T, Modave, F, Gurka, M and Bian, J 2019, 'Facilitation or hindrance: physicians' perception on best practice alerts (BPA) usage in an electronic health record system', *Health communication*, 34(9), pp.942-948.

Chisita, CT and Chiparausha, B 2019. 'Open Access initiatives in Zimbabwe: a case of academic libraries', *The Journal of Academic Librarianship*, 45(5), p.102047.

Chiware, E and Mathe, Z 2015, 'Academic libraries' role in research data management services: a South African perspective', *South African Journal of Libraries and Information Science*, 81(2), pp.1-10.

Chowdhury, G 2013, Sustainability of digital information services, *Journal of Documentation*, 69 (5), pp.602-622.

Chowdhury, G and Koya, K 2017, 'Information practices for sustainability: Role of iSchools in achieving the UN sustainable development goals (SDGs)', *Journal of the Association for Information Science and Technology*, 68(9), pp.2128-2138.

Chowdhury, G 2014, 'Sustainability of digital libraries: a conceptual model and a research framework', *International Journal on Digital Libraries*, 14(3-4), pp.181-195.

Chowdhury, GG 2016, 'How to improve the sustainability of digital libraries and information Services', *Journal of the Association for Information Science and Technology*, 67 (10), pp.2379-2391.

Chunsheng, W 2014, 'The phenomenon of foreign libraries opting out of big deals', *Journal of Academic Libraries*, 4, pp. 1-12.

CILIP 2012, *A changing landscape: a survey of public library authorities in England, Wales and Northern Ireland 2012-2013*, London, Chartered Institute of Library and Information Professionals Survey Report.

Cline Library Strategic Plan 2019- 2025 2019. Norther Arizona University. Accessed 7 July 2019
<https://nau.edu/wpcontent/uploads/sites/4/ClineLibrary_StrategicPlan_2019-2025.pdf>

Cohen, L, Manion, L and Morrison, K 2007, 'Observation', *Research methods in education*, 6, pp.396-412.

Conway, GR 1985, Agroecosystem analysis, *Agricultural Administration*, 20 (1), pp.31-55.

Cooper, S 2017, *Corporate social performance: a stakeholder approach*. London, Routledge.

Coughlin, DM, Campbell, MC and Jansen, BJ 2016, 'A web analytics approach for appraising electronic resources in academic libraries', *Journal of the Association for Information Science and Technology*, 67(3), pp.518 – 534.

Creswell JW 2008, *Educational research: planning, conducting and evaluating quantitative and qualitative research*, 3rd ed, Upper Saddle River, NJ, Pearson/Merrill Prentice Hall.

Creswell, JW 2003, *Research Design: Qualitative. Quantitative, and mixed methods*, Los Angeles, Sage Publications.

Creswell, J.W. 2008. Qualitative, quantitative, and mixed methods approach. Thousand Oaks, CA: Sage.

Creswell, JW and Plano Clark, VL 2007, *Designing and conducting mixed methods research*, Thousand Oaks, CA, Sage.

Creswell, JW 2009, *Research design: qualitative, quantitative and mixed methods approaches*, ed., Los Angeles, Sage Publications.

Creswell, JW 2012, *Educational research: planning, conducting and evaluating quantitative and qualitative research*, 4th ed, Boston, MA, Pearson Education, Inc.

Creswell, JW 2014, *Research design: qualitative, quantitative and mixed methods approaches*, 4th ed, Los Angeles, Sage Publications.

Creswell, JW and Cheryl, N.P 2018, *Qualitative Inquiry and Research Design: Choosing among Five Approaches*, Boston, MA, Pearson Education, Inc.

Creswell, JW and Plano Clark, VL 2011, *Designing and Conducting Mixed Methods Research*, 2nd ed, Sage, Thousand Oaks, CA.

Cuillier, C and Stoffle, CJ 2011, 'Finding alternative sources of revenue', *Journal of Library Administration*, 51(7-8), pp.777-809.

Cullen, R and Chawner, B 2012, 'Institutional repositories, open access, and scholarly communication: a study of conflicting paradigms', *The Journal of Academic Librarianship*, 37(6), pp.460-470.

Dadzie, PS 2005, 'Electronic resources: access and usage at Ashesi University College,' *Campus-Wide Information Systems*, 22 (5), pp.20–28.

Dai, L, Chen, L and Zhang, H 2017, 'China Academic Library and Information System: an academic library consortium in China', *Information Technology and Libraries*, 19(2), pp.66-70, Accessed 12 February 2018, <><https://ejournals.bc.edu/ojs/index.php/ital/article/viewFile/10080/8735>

Damayanthi, KPN 2006, An assessment of electronic information resources usage and management: a case study at University of Peradeniya, Master's thesis from faculty of graduate studies, University of Colombo, Sri Lanka.

Davis, FD, Bagozzi, RP and Warshaw, PR 1989, 'User acceptance of computer technology: a comparison of two theoretical models', *Management Science*, 35(8), 982-1003.

Davis, GF 2015, 'Editorial essay: What is organisational research for?' *Administrative Science Quarterly*, 60(2), pp.179-188.

Denison, DR and Spreitzer, GM 1991, Organisational culture and organisational development: a competing values approach. *Research in organisational change and development*, 5(1), pp.1-21.

Denzin, NK 1978, *The research act: a theoretical orientation to sociological methods*, 2nded, New York, McGraw-Hill.

Department of Arts and Culture 2014, *The Bill and Melinda Gates Foundation supports the National Library of South Africa with a grant of R32 million*, Accessed

4 December, 2018, <<http://www.dac.gov.za/content/bill-and-melinda-gates-foundation-supports-national-library-south-africa-grant-r32-million>>

Deshwal, P 2015, Green HRM: An organisational strategy of greening people, *International Journal of Applied Research*, 1(13), pp.176-181.

Dewey, BI 2005, 'The embedded librarian: strategic campus collaborations', *Resource Sharing and Information Networks*, 17 (1-2), pp.5-17.

Dibu, O 2012, Eroding the university culture. Inaugural lecture at Federal University of Technology, Akure, Ondo State, 26 April.

Dole, WV, Dabbour, K and Kott, K 2017, 'Dialogic approaches to strategic planning in academic libraries: an appreciative inquiry case study at Oviatt Library', *Journal of Library Administration*, 57(4), pp.468-480.

Donwa, PA 2006, *Funding of academic research in Nigeria universities*, Accessed 18 May 2018, <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.630.7837&rep=rep1&type=pdf>>

Dorner, DG and Revell, J 2012, 'Subject librarians' perceptions of institutional repositories as an information resource', *Online Information Review*, 36 (2), pp.261-277.

Dougherty, R 2002, 'Reference around the clock: is it in your future?' *American Libraries*, 33 (5), pp.44-46.

Duxbury, N and Jeannotte, MS 2010, Culture, sustainability and communities: exploring the myths, Paper presented at the 6th International Conference on Cultural Policy Research, Jyvaskyla, Finland, 24-27 August.

Echezona, RI, Okafor, VN and Ukwoma, SC 2011, Information sources used by postgraduate students in library and information science: a citation analysis of dissertations, Accessed 11 April 2017, <<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://scholar.google.co.za/&httpsredir=1&article=1590&context=libphilprac>>

Edewor, N 2013, An analysis of a Nigerian library and information science journal: a bibliometric analysis, *Library Philosophy and Practice (e-journal)*, Accessed 12 December 2018, <<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2422&context=libphilprac>>

Ehigiator, LI 1997, 'Financial support for public library services in Nigeria', *Nigerian Libraries*, 31, (1), pp.67-76.

Ekere, FC 2006, *Administration of academic libraries: A book of readings*, Nsukka, Enugu State, UCO Academic Publishers Nigeria Limited.

Ekerete, BI and Ekanem, JT 2015, Availability and Utilization of Information and Communication Technology by Students of University of Uyo, Uyo, Akwa Ibom State, Nigeria.

Elkington, J 1994, 'Towards the sustainable corporation: Win-win-win business strategies for sustainable development', *California Management Review*, 36 (2), pp.90–100.

Elkington, J 2018, 25 Years ago I coined the phrase 'Triple Bottom Line. Here's why it's time to rethink it', *Harvard Business Review*, 25 June 2018, page?

Elkington, J 1999, *Cannibals with forks: the triple bottom line of 21st century business*, UK, Oxford Capstone Publishing.

ElNashar, A, El-Saidny, MA and Sherif, M 2014, *Design, deployment, and performance of 4G-LTE networks: a practical approach*, West Sussex, John Wiley and Sons.

Elo, S and Kyngas, H 2008, 'The qualitative content analysis process', *Journal of Advanced Nursing*, 62 (1), pp.107-115.

Emas, R 2015, The concept of sustainable development: definition and defining principles, *Brief for GSDR, 2015*, Accessed 22 February 2020, <https://s3.amazonaws.com/academia.edu.documents/43652555/5839GSDR_2015_S_D_concept_definiton_rev.pdf?responsecontentdisposition=inline%3B%20filename%3DThe_Concept_of_Sustainable_Development_D.pdf>

Emojorho, D 2004, 'Budgets and budgeting in selected Nigeria university libraries', *The Bottomline Managing Library Finances*, 17(3), pp.98-101.

Enslin, C 2014, Limitation, delimitations and recommendations, In Plooy-Cilliers, F, Davis, C and Bezuidenbout, R (ed), *Research Matters*, Cape Town, Juta and Company Ltd.

Environmental Protection Agency (EPA) 2013, *What is sustainability?* Accessed 3 November 2017, <<http://www.epa.gov/sustainability/basicinfo.htm>>

Eze JU and Uzoigwe, CU 2013, 'The place of academic libraries in Nigerian University education: contributing to the 'education for all initiative'', *International Journal of Library and Information Science*, 5(10), pp.432-438.

Ezeani, CN and Igwesi, U 2012, 'Using social media for dynamic library service delivery: The Nigeria experience', *Library Philosophy and Practice*, 814, <<https://www.semanticscholar.org/paper/Using-Social-Media-for-Dynamic-Library-Service-The-Ezeani-Igwesi/de4d690f86aae0d459b9b5224de0531368b6e152>>

Ezema, IJ 2010, 'Competencies for successful knowledge management applications in Nigerian academic libraries', *International Journal of Library and Information Science*, 2(8), pp.184-189.

Fabunmi, BA 2004, Planning the university libraries for effective customer services in Nigeria, In: Madu, EC (ed.), *Technology for information management and service: Modern libraries and information centers on developing countries*, Ibadan, Evi-Coleman, pp.147-158.

Fabunmi, BA 2007, 'The role of librarians in copyright protection in Nigeria', *International Journal of African and African American Studies*, 5 (1), pp.84-93.

Faga, HP and Ole, N 2011, 'Limits of copyright protection in contemporary Nigeria: re-examining the relevance of the Nigerian copyright act in today's digital and computer age', *Nnamdi Azikiwe University Journal of International Law and Jurisprudence*, 2, pp.211-225.

Federal University of Technology Minna 2017, FUTMinna website, Accessed 12 December 2017 <<https://www.futminna.edu.ng/index.php/latest-links>>

Fink, A 2019, *Conducting research literature reviews: From the internet to paper*, 5th ed, Thousand Oak: Sage publications,

Fiona, H, Stewart, G and Bruce, C 2018, 'Aligning Library and University Strategic Directions: A Constructivist Grounded Theory Study of Academic Library Leadership in Australia and the U.S.A', *New Review of Academic Librarianship*, 24 (3-4), pp.263-285.

Fishbein, M and Ajzen, I 1975, *Belief, attitude, intention, and behaviour: an introduction to theory and research*, Reading, MA, Addison-Wesley.

Fonseca, A 2010, 'How credible are mining corporations' sustainability reports? A critical analysis of external assurance under the requirements of the international council on mining and metals', *Corporate Social Responsibility and Environmental Management*, 17 (6), pp.355-370.

Fought, RL, Gahn, P and Mills, Y 2014, 'Promoting the library through the collection development policy: a case study', *Journal of Electronic Resources in Medical Libraries*, 11(4), pp.169-178.

Freeman, AM, Herriges, JA and Kling, CL 2014, *The measurement of environmental and resource values: theory and methods*, 3rd ed, New York, Routledge Press.

Gaigher, S, Le Roux, E and Bothma, T 2014, 'The predictive value of disruptive technology theory for digital publishing in the traditional publishing environment: A South African case study', *Journal of Scholarly Publishing*, 45 (3), pp.261-288.

Gakibayo, A, Ikoja-Odongo, JR and Okello-Obura, C 2013, Electronic information resources utilisation by students in Mbarara University Library, *Library Philosophy and Practice* (e-journal). Accessed 2 April 2017, <<http://digitalcommons.unl.edu/libphilprac/869>>

Gakibayo, A and Okello-Obura, C 2013, Electronic information resources utilisation by students in Mbarara University Library, *Library Philosophy and practice*, p.1.

Garaba, F 2010, An investigation into the management of the records and archives of former liberation movements in East and Southern Africa held by national and private archival institutions, PhD Thesis in Information Studies, University of KwaZulu-Natal, Pietermaritzburg.

Gardner, FM 1971, *Public library legislation: a comparative study*, Paris, UNESCO.

Garrison, J, Ryan, M and DeLong, K 2012, Moving up: positioning for director roles in academic libraries, In BL Eden (Ed.), *The associate university librarian handbook: A resource guide* (pp. 137-159), Lanham, MD, Scarecrow Press.

Gaston, NM, Fields, A, Calvert, P and Lilley, S 2016, 'Raranga te kete aronui: Weaving social and cultural inclusion into New Zealand library and information science education', *Perspectives on Libraries As Institutions Of Human Rights And Social Justice Advances in Librarianship*, 41, pp.373-398.

Gbaje, SE 2007, 'Implementing a National Virtual Library for Higher Institutions in Nigeria', *Library and Information Science Research Electronic Journal*, 17 (2), pp.1-15.

Geurts, L 2016, Non-profit organisations, contribution to sustainability: within the case cross your borders, Master's thesis of Human Geography, Faculty of Management Science, Nijmegen, Radboud University.

Given, LM and McTavish, L 2010, 'What's old is new again: the reconvergence of libraries, archives, and museums in the digital age', *The Library Quarterly*, 80(1), pp.7-32.

Gladwin, TN, Kennelly, JJ and Krause, TS 1995, 'Shifting paradigms for sustainable development: implications for management theory and research', *Academy of Management Review*, 20 (4), pp.874-907.

Goldsmith, D 2013, 'Rethinking the company's competitive advantage', *Financial Executive*, 29 (6), pp.14-17.

Gould, E and Gomez, R 2010. 'New challenges for libraries in the information age: a comparative study of ICT in public libraries in 25 countries', *Information Development*, 26(2), pp.166-176.

Goulding, A 2016, *Public libraries in the 21st century: defining services and debating the future*, London, Routledge.

Grant, C and Osanloo, A (2014), Understanding, selecting, and integrating a theoretical framework in dissertation research: creating the blueprint for your “house”, *Administrative Issues Journal: Connecting Education, Practice, and Research*, 4(2), 12–26.

Gravetter, FJ and Forzano, LAB 2018, *Research methods for the behavioural science*, 6th edn, Boston, MA, Cengage.

Green, CA, Duan, N, Gibbons, RD, Hoagwood, KE, Palinkas, LA and Wisdom, JP 2015, ‘Approaches to mixed methods dissemination and implementation research: methods, strengths, caveats, and opportunities’, *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), pp.508-523.

Greenwood, MD and Terry, KJ 2012, ‘Demystifying mixed methods research: participation in a reading group: signposts the way’, *International Journal of Multiple Research Approaches*, 6 (2), pp.98–108.

Gunasekera, D 2019, ‘Authority control: sharing cataloguing experiences practised at the library of Open University of Sri Lanka’, *Journal of the University Librarians Association of Sri Lanka*, 22(2), pp.56-73.

Habiba, U and Chowdhury, S 2012, ‘Use of electronic resources and its impact: a study of Dhaka university library users’, *The Eastern Librarian*, 23 (1), pp.74-90.

Hackett, T 2007, eifL.net: supporting libraries in developing and transition countries, Paper presented at EBLIDA 15th Annual Council meeting, 20 May 2013, <http://www.eblida.org/Special%20Events/Programme/2007-Presentation-Teresa_Hackett_eIFL.net_Supporting_Libraries.pdf>

Hahn, R 2013, ISO 26000 and the standardisation of strategic management processes for sustainability and corporate social responsibility, *Business Strategy and the Environment*, 22 (7), pp. 442-455.

Hamwaalwa, N, Teasdale, RM, McGuire, R and Shuumbili, T 2016, Promoting innovation in Namibian libraries through leadership training, Paper presented at IFLA World Library and Information Congress, Columbus, Ohio. 9- 19 August, Accessed 12 December 2018, <<http://library.ifla.org/1509/1/189-hamwaalwa-en.pdf>>

Harland, F, Stewart, G and Bruce, C 2018, 'Aligning library and university strategic directions: A constructivist grounded theory study of academic library leadership in Australia and the USA', *New Review of Academic Librarianship*, 24(3-4), pp.263-285.

Harper, R and Corrall, S 2011, 'Effects of the economic downturn on academic libraries in the UK: positions and projections in mid-2009', *New Review of Academic Librarianship*, 17(1), pp.96-128.

Head, A 2016, Planning and designing academic library learning spaces: expert perspectives of architects, librarians, and library consultants, A project information literacy research report: the practitioner series, *Librarians, and Library Consultants* (December 6, 2016), Accessed 11 March 2020
<<https://files.eric.ed.gov/fulltext/ED571288.pdf>>

Heale, R and Noble, H 2019, 'Integration of a theoretical framework into your research study', *Evidence-Based Nursing*, 22 (2), pp. 36-37.

Health InterNetwork Access to Research Initiative (HINARI) 2018, *Research for health*, Accessed 3 May 2018, <<http://www.healthinternetwork.org>>

Healy, M and Perry, C 2000, 'Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm', *Qualitative Market Research: An International Journal*, 3 (3), pp.118-126.

Hecht, AD and Fiksel, J 2015, 'Solving the problems we face: The United States Environmental Protection Agency, sustainability, and the challenges of the twenty-first century', *Sustainability: Science, Practice and Policy*, 11(1), pp.75-89.

Herbert, TT 1999, 'Multinational strategic planning: matching central expectations to local realities', *Long Range Planning*, 32 (1), pp.81-87.

Hernon, P and Altman, E 2010, *Assessing service quality: satisfying the expectations of library customers*, Chicago, American Library Association.

Hirko, B 2002, 'Live, digital reference marketplace', *Net Connect*, 127 (17), pp.16-19.

Hisle, WL 2002, 'Top issues facing academic libraries: a report of the focus on the future task force', *College and Research Libraries News*, 63 (10), pp.714-715.

Hoffman, TK, Franks, T and Edson, B 2015, 'Cultural awareness training: preparing new instructors for the millennial student', *Basic Communication Course Annual*, 27(1), pp.10-19.

Hosburgh, N 2012, 'Getting the most out of pay-per-view: a feasibility study and discussion of mediated and unmediated options', *Journal of Electronic Resource Library*, 24 (3), pp.204-211.

Hoskins, R and Stilwell, C 2011, 'Library funding and journal cancellations in South African university libraries', *South African Journal of Libraries and Information Science*, 77 (1), pp.51-63.

Hossaini, SB 2017, 'Use and impact of electronic resources: a study on two selected academic libraries', *International Journal of Law, Humanities & Social Science*, 1(1), pp.23-59.

Huber, GP 1990, 'A theory of the effects of advanced information technologies on organisational design, intelligence, and decision making', *The Academy of Management Review*, 15 (1), pp.47-71.

Hussien, FRM and Mokhtar, WNH 2018, 'The effectiveness of reference services and users' satisfaction in the academic library', *Development*, 7(3).pp. 327-337.

Ibrahim, H 2014, Accessibility and use of electronic information resources and services in MTN Universities connect libraries in Nigerian Universities, Masters Theses in Department of Library and Information Science, Ahmadu Bello University: Zaria, 6 December 2018, <<http://kubanni.abu.edu.ng/jspui/bitstream/123456789/7897/1/ACCESSIBILITY%20AND%.pdf>>

Ifidon, BI 2000, 'Management problems in readers' services: the Nigerian experience', *World Libraries*, 10 (1-2), pp.43-52.

Ifijeh, G, Iwu-James, J and Adebayo, O 2016, Digital inclusion and sustainable development in Nigeria: the role of libraries, Paper presented at the 3rd International Conference of Covenant University on African Development Issues. Ota, Covenant University, 9-11 May, Accessed 17 May 2018, <<http://eprints.covenantuniversity.edu.ng/6631/1/icadi16pp052-057.pdf>>

Igwe, KN 2013, 'Open access repositories in academic and research institutions for the realisation of Nigeria's vision 20: 2020', *International Journal of Information Science and Management (IJISM)*, 12(1), pp.33-46.

INASP Annual Report 2017, Annual Report and Financial Statement, Accessed 12 October 2018, <<https://www.inasp.info/sites/default/files/2018-05/INASP%20TrusteesReport.pdf>>

International Federation of Library Association and Institutions (IFLA) 2012, *E-Metrics Special Interest Group* [online], Accessed 12 January 2019, <<http://www.ifla.org/e-metrics/pdf>>

International Institute for Sustainable Development 1992, *Business strategy for sustainable development: leadership and accountability for the 90s*, Deloitte and Touche/BCSD.

Iroaganachi, MA and Izuagbe, R 2018, 'A comparative analysis of the impact of electronic information resources use towards research productivity of academic staff in Nigerian Universities', *Library Philosophy and Practice* (e-journal), 15 August 2019 <<http://eprints.covenantuniversity.edu.ng/10292/1/A%20Comparative%20Analysis%20of%20the%20Impact.pdf> >

Isaac AA 2017, Sustainable provision of digital information systems and services in academic libraries: a case of the University of Nairobi Library System, Master's Thesis in Library and Information Science, University of Nairobi.

Isah, A 2010, 'Use of electronic library by the academic staff of the University of Ilorin, Nigeria', *Journal of Library and Information Science*, 7(1-2), pp.138-147.

Ishola, BC 2014, 'Funding problems in Nigerian University Libraries: fee-based library and information services to the rescue, focus on pricing policy', *Library Philosophy and Practice* (e-journal) pp.1-28, Accessed 18 May 2018, <<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3049&context=libphilprac>>

Islam, A and Panda, K 2009, 'IT in special libraries in Bangladesh: a case study', *The Electronic Library*, 27(1), pp.149-161.

Islam, M and Hossain, M 2014, 'Marketing information resources and services on the web: existing status of university libraries in Bangladesh', *The Electronic Library*, 32(5), pp.742 – 759.

Iwata, JJ and Hoskins, R 2020, 'Management of intellectual capital held by Tanzania's higher learning institutions: strategies and challenges', *South African Journal of Information Management*, 22(1), pp.1-12.

Iwuchukwu, MO 2016, 'Literature review and use of Benjamin bloom's taxonomy', *International Journal of Humanities and Cultural Studies (IJHCS)*, 2(3), pp.436-444.

Jackson, ME 2004, Assessing ILL/DD services: new cost-effective alternatives, American Research Library ARL Bimonthly Report 236 (October 2000), p.9.

Jackson, N, Little, J and Wilson, AD 1990, 'Comparison of diet history interview and self-completed questionnaire in assessment of diet in an elderly population', *Journal of Epidemiology and Community Health*, 44(2), pp.162-169.

Jain, P 2014, 'Knowledge management in academic libraries in developing countries: a case of Southern Africa', *Journal of Politics, Economics and Society*, 4(1-2), pp.7-37.

Jain, P and Akakandelwa, A 2016, 'Challenges of twenty-first century academic libraries in Africa', *African Journal of Library, Archives and Information Science*, 26(2), pp. 147.

Jamshed, S 2014, 'Qualitative research method-interviewing and observation', *Journal of basic and clinical pharmacy*, 5(4), pp.87-88.

Jankowaska, MA and Marcum, JW 2010, 'Sustainability challenge for academic libraries: planning for the future', *College and Research Library*, 71 (2), pp.160- 170.

Jantz, RC 2012, 'Innovation in academic libraries: an analysis of university librarians' perspectives', *Library and Information Science Research*, 34, pp.3–12.

Jasion, JT 2019, *The international guide to legal deposit*, London, Routledge.

Jeal, Y 2014, 'Strategic alignment at the University of Manchester Library: ambitions, transitions, and new values', *New Review of Academic Librarianship*, 20(3), pp.278-295.

Johnson, B and Gray, R 2010, 'A history of philosophical and theoretical issues for mixed methods research', *Sage handbook of mixed methods in social and behavioural research*, 2, pp.69-94.

Johnson, G, Whittington, R, and Scholes, K 2011, *Exploring corporate strategy: text and cases*, 9th edn, England, Pearson Education.

Johnson, L, Becker, SA, Estrada, V and Freeman, A 2015, *NMC horizon report: 2015 library edition*, Austin, Texas, The New Media Consortium.

Johnson, RB and Onwuegbuzie, AJ 2004, 'Mixed methods research: A research paradigm whose time has come', *Educational researcher*, 33(7), pp.14-26.

Johnson, TP and Wislar, JS 2012, 'Response rates and nonresponse errors in surveys', *Jama*, 307 (17), pp.1805-1806.

Jones, DJ 1995, 'From Munn-Pitt to Library Act: stimulating support for public libraries in New South Wales 1935–1939', *The Australian Library Journal*, 44(2), pp.55-66.

Jones, JL 2018, 'Mandatory student fees and the academic library', *Journal of Library Administration*, 58 (1), pp.54-64.

Jones, L and Wong, W 2016, 'More than just a green building', *Library Management*, 37 (6/7), pp.373-384.

Joyner, RL, William, AR and Glatthorn, AA 2013, *Writing the winning thesis or dissertation: a step-by-step guide*, 3rd edn, London, SAGE Publications.

JSTOR 2018, *About JSTOR: JSTOR is a digital library for scholars, researchers and students*. Accessed 7 May 2018, <<https://about.jstor.org/>>

Kadekodi, GK 1992, 'Paradigms of sustainable development', *Journal of Society for Information Display (SID)*, 3, pp.72-76.

Kahn, M and Underwood, PG 2013, 'Issues related to the adoption of e-books in academic libraries: a literature review', *South African Journal Libraries and Information Science*. 79(2), pp. 10-17.

Kamba, MA 2011, 'Implication of ICT's in libraries of higher education institutes: a panacea for catapulting library development in Africa', *DESIDOC Journal of Library and Information Technology*, 31 (1), pp.65-71.

Kanyengo, CW 2009, 'Managing digital information resources in Africa: preserving the integrity of scholarship', *The International Information & Library Review*, 41(1), pp.34-43.

Karimi, HA, Zgibor, JC, Piatt, GA and Socharoentum, M 2016, A novel wayfinding service for empowering physical activity, In *Smart City 360°*, pp.192-200, Springer, Cham.

Karran, T 2009, 'Academic freedom in Europe: reviewing UNESCO'S recommendation', *British Journal of Educational Studies*, 57(2), pp.191-215.

Kayode, A, Arome, A and Silas, A 2014, 'The rising rate of unemployment in Nigeria: the socio-economic and political implications', *Global Business and Economics Research Journal*, 3(1), pp. 68-89.

Kenchakkanavar, AY 2014, 'Types of e-resources and its utilities in library', *International Journal of Information Sources and Services*, 1(4), pp.98-104.

Kenefick, C and DeVito, JA 2013, 'Google expectations and interlibrary loan: can we ever be fast enough?' *Journal of Interlibrary Loan, Document Delivery and Electronic Reserve*, 23(3), pp.157-163.

Keohane, RO 1986, 'Theory of world politics: structural realism and beyond', *Neorealism and its Critics*, 158, pp.190-97.

Kerlinger, EN 1973, *Behavioural research: a conceptual approach*, New York, Holt, Rinehart and Winston.

Kettunen, J and Kantola, M 2007, 'Strategic planning and quality assurance in the Bologna Process', *Perspectives*, 11(3), pp.67-73.

Khan, A, Masrek, MN and Nadzar, FM 2015, 'Technology management competencies and job satisfaction of Pakistani university librarians: an empirical assessment of relationship', *Journal of Management Research*, 7(2), p.27-45.

Khan, A, Masrek, MN, Mahmood, K and Qutab, S 2017, 'Factors influencing the adoption of digital reference services among the university librarians in Pakistan', *The Electronic Library*, 35 (3), pp.573-597.

Khan, SA and Bhatti, R 2012, A review of problems and challenges of library professionals in developing countries including Pakistan. *Library Philosophy and Practices* (e-journal), Accessed 2 December 2017,

<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://scholar.google.co.za/&httpsredir=1&article=1831&context=libphilprac>>

Khobragade, AD and Lihitkar, SR 2016, 'Evaluation of virtual reference service provided by IIT libraries: a survey', *Journal of Library and Information Technology*, 36 (1), pp.23-28.

Kinner, L and Crosetto, A 2009, 'Balancing act for the future: how the academic library engages in collection development at the local and consortial levels', *Journal of Library Administration*, 49 (4), pp.427.

Kiran, K 2010, Service quality and customer satisfaction in academic libraries. *Library Review*, 59 (4), 261-273.

Kling, R and McKim, G 2000, Not just a matter of time: field differences and the shaping of electronic media in supporting scientific communication, *Journal of the American Society for Information Science*, 51 (14), pp.1306-1320.

Knight, N 2013, 'Enhancing access to library resources at Northern Caribbean University through an e-library initiative', *The Electronic Library*, 31 (6), pp. 753-769.

Koornhof, PGJ 2015, Intellectual Property: What Can Be Learnt from South Africa's "Please Call Me Case", *The Conversation*, Accessed 21 February 2020, <<https://theconversation.com/intellectual-property-what-can-be-learnt-from-southafricas-please-call-me-case-46582>>

Kothari, CR 2004, *Research methodology: methods and techniques*, Delhi, New Age International.

Krolak, C 2005, The role of libraries in the creation of literate environments, Background paper prepared for the Education for All Global Monitoring Report 2006, Literacy for Life, Paris, UNESCO Institute for Education, Accessed 2 May 2018,

<https://www.ifla.org/files/assets/literacy-and-reading/publications/role-of-libraries-in-creation-of-literate-environments.pdf>>

Kuchma, I 2010, Advocating for open access to research results in developing countries: a case study from EIFL, Paper presented at the Berlin 8th Open access Conference held 25-26th October 2010, Beijing China.

Kuh, GD and Gonyea, RM 2003, 'The role of the academic library in promoting student engagement in learning', *College & Research Libraries*, 64(4), pp.256-282.

Kuhn, T 1962, *The structure of scientific revolutions*, Chicago, Univ. Chicago Press.

Kukla, R 2006, 'Objectivity and perspective in empirical knowledge', *Episteme: A Journal of Social Epistemology*, 3(1-2), pp.80-95.

Kumar, A, Sah, B, Singh, AR, Deng, Y, He, X, Kumar, P and Bansal, RC 2017. 'A review of multi-criteria decision-making (MCDM) towards sustainable renewable energy development, *Renewable and Sustainable Energy Reviews*, 69, pp.596-609.

Kumar, D and Deo, JM 2011, Stress and work-life of college teachers'. *Journal of the Indian Academy of applied psychology*, 37(1), pp.78-85.

Kumar, R 2019, *Research methodology: a step-by-step guide for beginners*, London, Sage Publications Limited.

Kumar, SA 2008, *Entrepreneurship development*, New Delhi, New Age International.

Kumari, MP 2016, 'Academic library services through social networking sites with reference to Facebook', *Imperial Journal of Interdisciplinary Research*, 2(2), pp.329-334.

Lagzian, F, Abrizah, A and Wee, MC 2013, 'An identification of a model for digital library critical success factors', *The Electronic Library*, 31 (1), pp.5-23.

Lahore, J 1996, *Digital Agenda-The Copyright Amendment (Digital Agenda) Act 2000*, Sydney, Butterworths.

Lankes, D 2000, 'The birth cries of digital reference', *Reference and User Service Quarterly*, 39 (4), pp.352-354.

Lankes, R 2014, 'Libraries are obsolete', *Oregon Library Association*, 18 (2), pp.12-17.

Latimer, K 1996, Free to fee: the current account from an academic library, Paper presented at the 62nd International Federation of Library Associations and Institutions (IFLA) annual general conference, Beijing, China, 25-31 August.

Latimer, K 2011, 'Collections to connections: changing spaces and new challenges in academic library buildings', *Library Trends*, 60(1), pp.112-133.

Lee, J, Oh, S and Burnett, G 2016, 'Organisational socialisation of academic librarians in the United States', *The Journal of Academic Librarianship*, 42(4), pp.382-389.

Lee-Abbott M. and McKinney, J 2013, *Understanding and applying research design*, John Wiley and Sons, Inc, Hoboken, New Jersey.

Leebaw, D 2019, 'Participatory and ethical strategic planning: what academic libraries can learn from critical management studies', *Library Trends*, 68(2), pp.110-129.

Leech, NL, Onwuegbuzie, AJ and Combs, JP 2011, 'Writing publishable mixed research articles: guidelines for emerging scholars in the health sciences and beyond', *International Journal of Multiple Research Approaches*, 5(1), pp.7-24.

Leedy, P and Ormrod, J 2013, *What is research? In Practical research: Planning and design*, 10th edn, Upper Saddle River, NJ, Merrill.

Leedy, PD and Ormrod, JE 2005, *Practical research planning and design*, 9th edn, Pearson, Upper Saddle River.

Leibowicz, BD 2014, 'Evaluation of post-Fukushima Japanese electricity strategies: A stochastic simulation model', *International Journal of Energy Research*, 38(12), pp.1578-1598.

Levy, DM 2000, 'Digital libraries and the problem of purpose', *Bulletin of the American Society for Information Science and Technology*, 26 (6), pp.22-25.

Lewis, TG 2019, *Critical infrastructure protection in homeland security: defending a networked nation*, NJ, John Wiley and Sons.

Libguides, 2018, Copyright and related issues: copyright amendment bill (ver. 3 and 4, 2018), Accessed 13 March 2019, <https://libguides.wits.ac.za/Copyright_and_Related_Issues/Version3_2018>

Library of Congress. 2016. Library of Congress Collections Policy Statements Supplementary Guidelines, Accessed 29 April 2018, <<https://www.loc.gov/acq/devpol/electronicresources.pdf>>

Liebst, A and Feinmark, D 2016, Tools of academic library assessment: the user survey', *Journal of Library Administration*, 56(6), pp.748-755.

Lin, KC, Shyu, JZ and Ding, K 2017, 'A cross-strait comparison of innovation policy under Industry 4.0 and sustainability development transition', *Sustainability*, 9 (5), pp.1-17.

Littlejohn, SW and Foss, KA 2008, *Theories of human communication*, 9th edn, New York, Wadsworth.

Loach, K, Rowley, J and Griffiths, J 2017, 'Cultural sustainability as a strategy for the survival of museums and libraries', *International Journal of Cultural Policy*, 23(2), pp.186-198.

LoBiondo-Wood, G and Haber, J 2014, *Nursing research: methods and critical appraisal for evidence-based practice*, St Louis, Mosby Elsevir.

Logams, PC 2004, *The middle belt movement in Nigerian political development: a study in political identity, 1949-1967*, Abuja, Centre for Middle Belt Studies.

London Libraries 2016, *London libraries world of impossibilities*, Accessed 12 December 2018, <<http://twitter.com/ldnlibraries>>

Louw, M 2014, Ethics in research. In: Du Plooy-Cilliers F., Davis C., and Bezuidenbout R. (eds). *Research Matters*, Cape Town, Juta and Company Ltd. pp.262-273.

Lozano, R, Ceulemans, K and Seatter, CS 2015, 'Teaching organisational change management for sustainability: designing and delivering a course at the University of Leeds to better prepare future sustainability change agents', *Journal of Cleaner Production*, 106, pp.205-215.

Lozano, R, Lukman, R, Lozano, FJ, Huisinigh, D and Lambrechts, W 2013, 'Declarations for sustainability in higher education: becoming better leaders, through addressing the university system', *Journal of Cleaner Production*, 48, pp.10 -19.

Lucchi, N 2005, 'Intellectual property rights in digital media: a comparative analysis of legal protection, technological measures, and new business models under EU and US Law', *Buffalo Law Review*, 53 (4), pp.101-185.

- Luo, X, Wang, H, Raithel, S and Zheng, Q 2015, 'Corporate social performance, analyst stock recommendations, and firm future returns', *Strategic Management Journal*, 36(1), pp.123-136.
- Macicak, S and Schell, LE 2009, 'Patron-driven, librarian-approved: a pay-per-view model for e-books', *Serials: The Journal for the Serials Community*, 22(3), S31-S38.
- Maciuszko, KL 1984, *OCLC: A decade of development, 1967-1977*, Littleton, CO, Libraries Unlimited.
- MacWhinnie, LA 2003, 'The information commons: the academic library of the future Portal', *Libraries and the Academy*, 3 (2), pp.241-257.
- Maddox, A and Zhao, L 2017, University library strategy development: a conceptual model of researcher performance to inform service delivery, *New Review of Academic Librarianship*, 23(2-3), pp.125-135.
- Madhusudhan, M, 2010, 'RFID technology implementation in two libraries in New Delhi', *Program*, 44 (2), pp.149-157.
- Magoi, JS and Gani, E 2014, 'The emergence of digital libraries services in Northwest Nigerian universities: challenges and prospects'. *Library Philosophy and Practice*, <<https://www.semanticscholar.org/paper/The-Emergence-of-Digital-Libraries-Services-in-and-Gani-Magoi/6a08e7580c8d6ccb546636eeb07d98f9b6028b86>>
- Majumdar, SR 2008, Using the survey as an instrument of inquiry in research, In Yang, K and Miller, GJ (eds), *Handbook of research methods in public administration*, pp.241 – 253, Boca Raton, Taylor and Francis Group.
- Makori, EO 2015, 'Micro factors influencing use of electronic information resources among postgraduate students in institutions of higher learning in Kenya', *Library Hi Tech News*, 32 (1), pp.18-21.

- Malik, A and Mahmood, K 2013, 'Infrastructure needed for digital reference service (DRS) in university libraries: an exploratory survey in the Punjab, Pakistan', *Library Review*, 62 (6/7), pp.420-428.
- Mandeville-Gamble, S 2015, Communicating and implementing an organisation vision, In F Wilkinson and R Lubas (Eds.), *Practical strategies for academic library managers* (pp. 1-13), Santa Barbara, CA, ABC-CLIO.
- Mapulanga, P 2013, 'Digitising library resources and building digital repositories in the University of Malawi libraries', *The Electronic Library*, 31(5), 635 – 647.
- March, ST and Gerald FS 1995, 'Design and natural science research on information technology', *Decision Support Systems*, 15(4), pp.251-266.
- Maritz, R, Pretorius, M and Plant, K 2011, 'Exploring the interface between strategy-making and responsible leadership', *Journal of Business Ethics*, 98 (1), pp.101–113.
- Markey, K., Rieh, S.Y., St. Jean, B., Yakel, E. and Yao, X. 2009. *Secrets of success: identifying success factors in institutional repositories*. 4th International Conference on Open Repositories, Georgia Institute of Technology, Atlanta, GA.
- Marsick, VJ and Watkins, KE 1999, *Facilitating learning organisations: making learning count*, Aldershot, UK, Gower.
- Martey, AK 2000, 'Marketing products and services of academic libraries in Ghana', *Libri*, 50 (4), pp.261-268.
- Masango, CA 2005, 'Digital licence agreements and their effects on acquisitions and academic library users', *South African Journal of Library and Information Science*, 71 (2), pp.127-135.

Masenya, TM and Ngulube, P 2019, 'Digital preservation practices in academic libraries in South Africa in the wake of the digital revolution', *South African Journal of Information Management*, 21(1), pp.1-9.

Mawere, T and Sai, KO 2018, 'An investigation on e-resource utilisation among university students in a developing country: a case of Great Zimbabwe university', *South African Journal of Information Management*, 20(1), pp.1-7.

Maxfield MG and Babbie E 2015, *Research methods for criminal justice and criminology*, 7th edn, Stamford, Cengage Learning.

McGrath, WE 1973, *Development of a Long-Range Strategic Plan for a University Library: The Cornell Experience*, Ithaca, NY, Cornell University Libraries.

McKay, AS 2017, Planning for the future: an evaluation of academic and public library strategic plans in New Zealand, Victoria University of Wellington, Wellington, New Zealand, <<http://researcharchive.vuw.ac.nz/handle/10063/6712>>

McKnight, S 2010, Introduction: we create the future! In McKnight, S (ed.), *Envisioning future academic libraries service: initiative, idea and challenges*, London, Facet Publishing, pp. xvii-xxii.

McLelland, M 2012, 'Australia's 'child-abuse material' legislation, internet regulation and the juridification of the imagination', *International Journal of Cultural Studies*, 15(5), pp.467-483.

McNicol, S 2005, 'The challenges of strategic planning in academic libraries', *New Library World*, 106, pp.496-506.

Meerwijk, EL and Sevelius, JM, 2017, 'Transgender population size in the United States: a meta-regression of population-based probability samples', *American journal of public health*, 107(2), pp.e1-e8.

Miles, MB, Huberman, AM and Saldana, J 1994, *Qualitative data analysis: A methods sourcebook*, 3rd edn, London, sage.

Miller, RH 2000. 'Electronic resources and academic libraries, 1980-2000: a historical perspective', *Library Trends*, 48 (4), pp.645-670.

Min, S, Roath, AS, Daugherty, PJ, Genchev, SE, Chen, H, Arndt, AD and Richey, RG 2005, 'Supply chain collaboration, what's happening?' *The International Journal of Logistics Management*, Accessed 4 March 2020 <https://s3.amazonaws.com/academia.edu.documents/49357229/Supplychaincollaborationwhatshappen20161004-21982-16oh51y.pdf?responsecontentdisposition=inline%3B%20filename%3DSupply_chain_collaboration_whatshappen.pdf>

Mintzberg, H 1978, 'Patterns in strategy formation', *Management Science*, 24 (9), pp.934-948.

Mogaji, E 2019, 'Types and location of Nigerian universities', *Research Agenda Working Papers*, (7), pp. 92-103.

Mohajan, HK 2018, 'Qualitative research methodology in social sciences and related subjects', *Journal of Economic Development, Environment and People*, 7(1), pp.23-48.

Mohamadali, NAK and Garibaldi, JM 2010, June, A novel evaluation model of user acceptance of software technology in healthcare sector, In *Health information* (pp. 392-397), Zainab, AM, Kiran, K, Karim, NHA and Sukmawati, M 2018, 'UTAUT'S performance consistency: empirical evidence from a library management system', *Malaysian Journal of Library & Information Science*, 23(1), pp.17-32.

Mole, AJC and Mesagan, FO 2017, 'Provision of online public access catalogs for effective utilisation of library resources in three university libraries in Nigeria', *Library Collections, Acquisitions, & Technical Services*, 40(1-2), pp.38-45.

Moodley, V 2015, Triple bottom line accounting for the chemical manufacturing sector in South Africa, Doctoral Dissertation in school of Agriculture, Earth and Environmental Sciences, University of KwaZulu-Natal.

Moorthy, AL and Ramaiah CK 2014, Copyright in open access era: dealing with plagiarism, In: Roa SY and Moorthy AL (eds), *Scholarly communication and intellectual property rights*, Conference proceeding of school of planning and Architecture, Vijayawada, Andhra, Pradesh, BS Publication, pp.103-120.

Morris, A 2014, Public libraries challenges and opportunities for the future [Keynote address], In Noorhidawati, A (ed), *Library: our story, our time, our future*, Proceedings of the Inter-national 5th Conference on Libraries, Information and Society, (ICoLIS), Kuala Lumpur, University of Malaya Library, pp.9-20.

Morse, JM 2000, 'Determining sample size', *Qualitative Health Res.* 10(1), pp.3-5.

Morse, JM 2003, Principles of mixed methods and multimethod research design, In A, Tashakkori and C, Teddlie Eds, *Handbook of mixed methods in social and behavioural research*, pp. 189-208, Thousand Oaks, California, Sage.

Moynihan, LM, Gardner, TM, Park, HJ and Wright, PM 2001, *Human resources (HR) practices and customer satisfaction: the mediating link of commitment*, Centre for Advanced Human Resource Studies (CAHRS), Cornell University ILS School.

Moyo, LM 2004, 'Electronic libraries and the emergence of new service paradigms', *The Electronic Library*, 22 (3), pp.220-230.

- Mugenda, OM and Mugenda, AG 2003, *Research methods: quantitative and qualitative approaches*, Nairobi, African Centre for Technology Studies.
- Muhammad, HH and Yafooz, WM 2018, 'Factors affecting strategic planning of information and communication technologies use by academic libraries', *International Journal of Data Science Research*, 1(1), pp.8-14.
- Munge, EM and Rotich, DC 2007, An overview of electronic information resources sharing initiatives in Kenyan universities, *South African Journal of Libraries and Information Science*, 73(1), pp.64-74.
- Musser, LR and Coopey, BM 2016, 'Impact of a discovery system on interlibrary loan', *College and Research Libraries*, 77 (5), pp.643-653.
- Mutula, SM and Mostert, J 2010, 'Challenges and opportunities of e-government in South Africa', *The electronic library*, 28(1), pp.38-53.
- Mwai, NW, Kiplang'at, J and Gichoya, D 2014, 'Application of resource dependency theory and transaction cost theory in analysing outsourcing information communication services decisions: a case of selected public university libraries in Kenya'. *The Electronic Library* 32 (6), pp.786-805. Accessed 17 August 2017, <<http://www.emeraldinsight.com/doi/pdfplus/10.1108/EL-09-2012-0112>>
- Mwaniki, PW 2018, 'Envisioning the future role of librarians: skills, services and information resources', *Library Management*, 39(1/2), pp.2-11.
- Myers, MD and Avison, D eds 2002, *Qualitative research in information systems: a reader*, London, Sage Publication.
- Myers, P 2009, *The vanishing newspaper: Saving journalism in the Information Age*, Missouri, University of Missouri Press.

Myers, SC 1984, 'The capital structure puzzle', *Journal of Finance*, 39: 575-92.

Nagy, J and Fawcett, SB 2018, *Developing successful strategies: planning to Win*, Accessed 12 May 2018, <<https://ctb.ku.edu/en/table-of-contents/structure/strategic-planning/develop-strategies/main>>

National Library of South Africa 2018, *National Library of South Africa: annual report 2017/18*, Accessed 5 February 2019, <http://www.nlsa.ac.za/wp-content/uploads/2019/03/NLSA_Annual_Report-2018_V8_Web.pdf>

Nazir, T 2017, Preservation initiatives in e-environment to protect information assets, In Ashraf, T and Kumar, N (ed.), *Interdisciplinary Digital Preservation Tools and Technologies*, pp. 193-208, Hershey, PA, IGI Global.

Neuman, WL 2014, *Basics of social research*, Boston MA, Pearson/Allyn and Bacon.

Newton, NJ, Anderson, R, Goldberg, C, LaVelle, J, Royster, JV and Singer, JW 2019, *Cohen's Handbook of Federal Indian law*, LexisNexis.

Ngo, L.V. and O'Cass A. 2009, 'Creating value offerings via operant resource-based capabilities', *Industrial Marketing Management*, 38 (1), pp.45-59.

Ngulube, P 2005, 'Research procedures used by Master of Information Studies students at the University of Natal in the period 1982–2002 with special reference to their sampling techniques and survey response rates: a methodological discourse', *The International information and library review*, 37(2), pp.127-143.

Ngulube, P 2012, 'Ghosts in our machines: preserving public digital information for the sustenance of electronic government in sub-Saharan Africa', *Mousaion*, 30(2), pp.129-136.

Ngulube, P and Ngulube, B 2015, 'Mixed methods research in the South African Journal of Economic and Management Sciences: an investigation of trends in the literature', *South African Journal of Economic and Management Sciences*, 18(1), pp.1-13.

Ngulube, P, Mathipa, ER and Gumbo, MT 2015, Theoretical and conceptual frameworks in the social and management sciences, In Mathipa, ER and Gumbo, MT (eds), *Addressing research challenges: making headway for developing researchers*, pp. 43-66, Noordzywk, Mosala-MASEDI Publishers and Booksellers.

Nicholas, D, Rowlands, I and Jamali, HR 2010a, 'E-textbook use, information-seeking behaviour and its impact: case study business and management', *Journal of Information Science*, 36 (2), pp.263-280.

Nicholas, D, Rowlands, I, Jubb, M and Jamali, HR 2010b, 'The impact of the economic downturn on libraries: with special reference to university libraries', *The Journal of Academic Librarianship*, 36 (5), pp.376-382.

Nkamnebe, EC, Udem, OK and Nkamnebe, CB 2014, 'Evaluation of the use of university library resources and services by the students of Paul University, Awka, Anambra State, Nigeria'. *Library Philosophy and Practice*, pp. 1-21.

Nkondo, M., Brown, A., Dick, A., Hart, G., Molawa, S., Nassimbeni, M., Seleti, Y. and Teffo, L.J. 2014. The library and information services (LIS) transformation charter, <http://www.nlsa.ac.za/Downloads_01/2014_Final_LIS_Transformation_Charter.pdf>

Noble, BF 2004, 'A multi-criteria analysis of Canadian electricity supply futures', *Canadian Geographer/Le Géographe Canadien*, 48(1), pp11-28.

Noh, Y 2012, 'A study measuring the performance of electronic resources in academic libraries', *Aslib Proceedings*, 64 (2), pp.134-153.

- Nolan, A 1998, 'On the path toward proactive library', *Marketing Library Services*, 12(6), <<http://www.infotoday.com/mls/sep98/story.htm>>
- Norman, W and MacDonald, C 2003, 'Getting to the bottom of Triple Bottom Line', *Business Ethics Quarterly*, 14 (2), pp.243-262.
- Ntui, AI, Robert, BE and Usang, EI 2017, 'Economic challenges and prospects associated with the utilisation of Information and Communication Technology (ICT) for library services in universities in cross river state Nigeria', *Computing & Information Systems*, 21(1), pp.29-39.
- Ntukabumwe, T 2009, Rwandan corporate reporting and international requirements, A Masters dissertation in Accounting Faculty of Management, University of KwaZulu-Natal, Accessed 12 October 2019, <https://researchspace.ukzn.ac.za/bitstream/handle/10413/8193/NtukabumweTheobard_2009.pdf?sequence=1&isAllowed=y>
- Nurse, K 2006, 'Culture as the fourth pillar of sustainable development', *Small States: Economic Review and Basic Statistics*, 11, pp.28-40.
- Nwabueze, E 2009, *Research methods an integrated approach*, Enugu, ABIC Books and Equipment Ltd.
- Oakleaf, M 2010, *The value of academic libraries: a comprehensive research review and report*, Chicago, American Library Association.
- Oakley, M and Spallek, H 2012, 'Social media in dental education: a call for research and action', *Journal of Dental Education*, 76 (3), pp.279-287.
- Obahiagbon, K and Otabor, JO 2012, 'Automation of library system: a study of John Harris library, University of Benin, Nigeria', *Information Technologist (The)*, 9(2), pp.82-90.

Ochoa, P and Pinto, LG 2014, *Sustainability metrics in library and information services: a quality management framework*, Accessed 26 December 2017, <<https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=2030&context=iatul>>

Oduwole, AA and Akpati, CB 2003, 'Accessibility and retrieval of electronic information at the University of Agriculture Library, Abeokuta, Nigeria', *Library Review*, 52 (5), pp.228-233.

Okafor, VN 2011, 'Access to research information in cybercafés: the challenge to academic libraries', *Library Philosophy and Practice*, p.1-11.

Okello-Obura, C and Magara, E 2008, 'Electronic information access and utilisation by Makerere University students in Uganda', *Evidence-Based Library and Information Practice*, 3 (3), pp.39-56.

Okello-Obura, C 2010, 'Assessment of the problems LIS postgraduate students face in accessing e-resources in Makerere University, Uganda', *Collection Building*, 29(3), pp. 98-105.

Okite-Amughero, F 2017, The use of social media to facilitate reference services in academic libraries in Nigerian universities, PhD thesis from Department of Information Studies, School of Social Sciences, University of KwaZulu-Natal: Pietermaritzburg, South Africa.

Okite-Amughero, F, Bopape, S and Makgahlela, L 2015, 'Challenges of using electronic information resources for academic research by postgraduate students at Delta State University, Abraka, Nigeria', *Mousaion*, 33 (4), pp.23-37.

Okiy, RB 2005, 'Funding Nigerian libraries in the 21st century: will funding from alternative sources suffice?' *The Bottom Line*, 18 (2), pp.71-77.

Okojie, V and Omotoso, O 2013, Education and training of information professionals: the collaborative role of the Librarians' Registration Council of Nigeria (LRCN), Paper presented at the conference of IFLA World Library and Information Congress, 15-23 August, Singapore.

Okunu, HO, Akalumhe, KO and Monu, JO 2011, 'An evaluative study of academic library services to users in Nigerian universities: a case study of FatiuAdemolaAkesode Library, Lagos State University, Ojo, Lagos', *International Journal of Research in Education*, 8(1), pp.74-80.

Oladokun, OS 2002, 'The practice of distance librarianship in Africa', *Library Review*, 51(6), pp.293-300.

Olden, A 1985, 'Constraints on the development of public library service in Nigeria', *The Library Quarterly*, 55 (4), pp.398-423.

Olden, A 1995, *Northern Nigeria Regional Library: Libraries in Africa*, Lanham, Maryland, Scarecrow Press,

Olle, C and Borrego, A 2010, 'Librarians' perceptions on the use of electronic resources at Catalan academic libraries: results of a focus group', *New Library World*, 111(1-2), pp.46-54.

Ongus, RW, Kemparaju, TD, Nyamboga, CM and Veerabasavaiah, M 2007, *Management of digital libraries: challenges and opportunities: redefining the contemporary information professional's role*. Accessed 22 December 2018, <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.98.5228&rep=rep1&type=pdf>>

Onwuegbuzie, AJ and Leech, NL, 2007, Validity and qualitative research: an oxymoron? *Quality & Quantity*, 41(2), pp.233-249.

Onwuegbuzie, AJ, Leech, NL and Collins, KM 2012, 'Qualitative analysis techniques for the review of the literature', *The qualitative report*, 17(28), pp.1-28.

Onyancha, OB 2007, 'LIS research in Africa: how much is it worth? a citation analysis of the literature, 1986-2006', *South African Journal of Libraries and Information Science*, 73 (2), pp.95-108.

Ostien, P 2012, A survey of the Muslims of Nigeria's North Central geo-political zone, Nigeria Research Network (NRN), Oxford Department of International Development, NRN Working Paper, (1).

Otonko, J 2012, 'University education in Nigeria: history, successes, failures and the way forward', *International Journal of Technology and Inclusive Education*, 1 (2), pp.44-48.

Ou, S and Zhou, Y 2016, 'Current status of scientific data curation research and practices in mainland China', *LIBRES: Library and Information Science Research Electronic Journal*, 26 (1), pp.73-88.

Oyewusi, FO and Oyeboade, SA 2009, An empirical study of accessibility and use of library resources by undergraduates in a Nigerian state university of technology, *Library Philosophy and Practice* (e-journal): Accessed 15 February 2018, <<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1270&context=libphilprac>>

Pacios, AR and Ortiz-Repiso, V 2010, 'Libraries in the Strategic Plans of Spanish Universities', *Libri: International Journal of Libraries and Information Services*, 60 (4), pp.352-359.

Parirokh, M, Daneshga, F and Fattahi R 2008, 'Identifying knowledge sharing requirements in academic libraries', *Library Review*, 57 (2), pp.107-122.

Parry, T 1967, *Report of the Committee on Libraries / University Grants Committee*, London, Her Majesty's Stationary Office.

Patton, MQ 2015, *Qualitative research and evaluation methods: integrating theory and practice: the definitive text of qualitative inquiry frameworks and options*, Thousand Oaks, California, SAGE Publications, Inc.

Patton, MQ 2003, *Qualitative evaluation checklist*, Evaluation checklists project, 21, pp.1-13, Accessed 6 July 2017, <http://dme4peace.org/sites/default/files/Patton_Qualitative%20Evaluation%20Checklist.pdf >

Pedersen, KW 2017, 'Supporting collaborative and continuing professional development in education for sustainability through a communities of practice approach', *International Journal of Sustainability in Higher Education*, 18 (5), pp.681-696.

Perry, KA 2009, 'Where are Library Consortia Going', *Results of a 2009 Survey*, 22 (2), pp.124-25.

Petit, RJ, El Mousadik, A and Pons, O 1998, 'Identifying populations for conservation on the basis of genetic markers', *Conservation biology*, 12(4), pp.844-855.

Phellas, CN, Bloch, A and Seale, C 2011, 'Structured methods: interviews, questionnaires and observation', *Researching society and culture*, 3, pp.181-205.

Piwowarczyk, A, Ottl, P, Lauer, HC and Kuretzky, T 2005, 'A clinical report and overview of scientific studies and clinical procedures conducted on the 3M ESPE Lava™ all-ceramic system', *Journal of Prosthodontics: Implant, Esthetic and Reconstructive Dentistry*, 14(1), pp.39-45.

Plum, T, Franklin, B, Kyrillidou, M, Roebuck, G and Davis, M 2010. 'Measuring the impact of networked electronic resources: developing an assessment infrastructure for libraries, state, and other types of consortia', *Performance Measurement and Metrics*, 11(2), pp.184-198.

Polit, DF and Beck, CT 2004, *Nursing research: principles and methods*, 7th edn, Philadelphia, Lippincott Williams and Wilkins.

Pollard, M and Tucker, C 2011, 'Library collaboration: exploring new business models: an interview with Marvin Pollard', *Collaborative Librarian*, 3 (4), pp.217–20.

Ponsford, BC and Vanduinkerken, W 2007, 'User expectations in the time of Google: usability testing of federated searching', *Internet Reference Services Quarterly*, 12(1/2), pp.159–178.,

Providenti, M and Zai, R 2007, 'Web accessibility at academic libraries: standards, legislation, and enforcement', *Library Hi Tech*, 25 (4), pp.494-508.

Rabiu, N, Ojukwu, NN and Popoola, BO 2016, 'Availability and accessibility of e-books in Nigerian libraries: a survey', *Information Impact: Journal of Information and Knowledge Management*, 7(1), pp.163-175.

Rahimi, GR and Noruzi, MR 2011, 'A brief look on policy, typology of policy, and its related affairs', *International Journal of Business and Social Science*, 2(11), pp.173 - 176.

Rapp, A, Kevin, JT and Raj, A 2010. 'Performance implications of customer-linking capabilities: examining the complementary role of customer orientation and CRM technology', *Journal of Business Research*, 63 (11), pp.1229-1236.

Raza, M 2018, 'How to measure the immeasurable degree to which an organisation is sustainable', *Management of Sustainable Development*, 10(1), p.49.

Reitz, JM 2004, *Dictionary for library and information science*, Westport, Libraries Unlimited. Accessed 12 March 2018, <https://www.abc-clio.com/ODLIS/odlis_A.aspx>

Research Councils UK 2018, *Terms and conditions of research council training grants*, Accessed 29 December 2018, <<https://www.ukri.org/files/legacy/news/training-grants-january-2018-pdf/>>

Richter, BD 2010, 'Re-thinking environmental flows: from allocations and reserves to sustainability boundaries', *River Research and Applications*, 26 (8), pp.1052-1063.

Riege, AM 2003, 'Validity and reliability tests in case study research: a literature review with 'hands-on' applications for each research phase', *Qualitative Market Research: An International Journal*, 6 (2), pp.75-86.

Rivard, S, Louis, R and David, V 2006, 'Resource-based view and competitive strategy: an integrated model of the contribution of information technology to firm performance', *The Journal of Strategic Information Systems*, 15 (1), pp.29-50.

Rogers, EM 1995, *Diffusion of Innovations*, New York: Free Press.

Ruth, LB and Collins, M 2008, 'License mapping for ERM systems: existing practices and initiatives for support', *Serials Review*, 34 (2), pp.137-143.

Ryan, F, Coughlan, M and Cronin, P 2007, 'Step-by-step guide to critiquing research. Part 2: Qualitative research', *British Journal of Nursing*, 16(12), pp.738-744.

Ryan, SM 2003, 'Library Web site administration: A strategic planning model for the smaller academic library', *The Journal of Academic Librarianship*, 29(4), pp.207-218.

Salman, AA, Mostert, J and Mugwisi, T 2018, 'The governance and management of public library services in Nigeria', *Library Management*, 39 (6-7), pp.389-401.

Salmon, F, Kerr-Campbell, M and Kerr, PA 2017, 'Managing a digital archiving project at the University of the West Indies Library: a case study', *Libellarium: Journal for the Research of Writing, Books, and Cultural Heritage Institutions*, 9 (2), pp.95-107.

Saltman, RB 2019, 'Structural effects of the information revolution on tax-funded European health systems and some potential policy responses', *Israel Journal of Health Policy Research*, 8(1), pp.1-14.

Sammonds, LI 2012. 'Sustainable collections: the pay-per-view model', *The Serial Librarian*, 63(2), pp.173-177.

Sandler, M 2014, 'How super-consortia saved our libraries from the forces of evil... and themselves', *Collaborative Librarianship*, 6(1), pp.1-4.

Saunders, L 2015, 'Academic libraries' strategic plans: top trends and under-recognised areas', *The Journal of Academic Librarianship*, 41(3), pp.285-291.

Saunders, L 2016, 'Room for improvement: priorities in academic libraries' strategic plans', *Journal of Library Administration*, 56(1), pp.1-16.

Saunders, M, Lewis, P and Thornhill, A 2009, 'Understanding research philosophies and approaches', *Research methods for business students*, 4, pp.106-135.

Saunders, M, Lewis, P and Thornhill, A 2012, *Research methods for business students*, 6th edn, Harlow, Pearson.

Save Bath Library 2017, *Save Bath Libraries*, (Tweets and replies). Accessed 12 December 2018, <<https://twitter.com/savebathlibrary>>

Save Lewisham Libraries 2015, *Save Lewisham Libraries*, (Tweets and replies). Accessed 12 December 2018, <<https://twitter.com/savelewlibs>>

Save Swindon Library 2016, *Campaign to save Swindon's libraries*, (Tweets and replies). Accessed 12 December 2018, <<https://twitter.com/saveswinlibrary>>

Savitz, A 2006, *The Triple Bottom Line*, San Francisco, Jossey-Bass.

Saxton, ML, Naumer, CM and Fisher, KE 2007, '2-1-1 Information services: Outcomes assessment, benefit-cost analysis, and policy issues', *Government Information Quarterly*, 24(1), pp.186-215.

Scan, A 2010, 'E-resources: A taster of possibilities and issues', *Scan* 29(4), pp.30-43.

Schaffner, BL 2001, 'Electronic resources: a wolf in sheep's clothing', *College and Research Libraries*, 62 (3), pp.239-249.

Schell, LE, Ginanni, K and Heet, B 2010, 'Playing the field: pay-per-view e-journals and e-books', *The Serials Librarian*, 58(1-4), pp.87-96.

Schostak, J and Schostak, J 2008, *Radical research: designing, developing and writing research to make a difference*, London, Routledge.

Sejane, L 2017, Access to and use of electronic information resources in the academic libraries of the Lesotho Library Consortium (Doctoral dissertation), PhD thesis at Department of Information Studies, University of KwaZulu-Natal- South Africa.

Sheik, Y 2017, *Digital rights management in South Africa*, (blog), Accessed 25 December 2018, <<https://www.stbb.co.za/blog/blogblogdigital-rights-management-south-africa-buyer-beware/>>

Sheppard, JM and Young, WB 2006, 'Agility literature review classifications, training and testing', *Journal of Sports Sciences*, 24, pp.919-932.

Shija, H., 2009. E-Resources use via internet improvement is a must: A case of special libraries in Tanzania. Research paper on Poverty Allevation (REPOA) 4, pp.04-18.

Accessed 26th December 2019

<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.504.6273&rep=rep1&type=pdf>

Sinha, MK, Bhattacharjee, S and Bhattacharjee, S 2013, 'ICT and internet literacy skills for accessing to e-resources available under N-LIST Programme: a case study of college library users of Barak Valley, South Assam'. *Library Philosophy and Practice* (e-journal), Accessed 12 March 2019 <<http://digitalcommons.unl.edu/libphilprac/948>>

Skyscraper City 2011, *The Guide to the State and Regions of Nigeria*. Accessed 27 April 2018, <<http://www.skyscrapercity.com/showthread.php?t=1364869>>

Slaper, TF and Hall, TJ 2011, 'The triple bottom line: What is it and how does it work', *Indiana business review*, 86 (1), pp.4-8.

Smith, RD 2005, *Strategic planning for public relations*, 2nd edn, Mahwah, NJ, Lawrence Erlbaum Associates.

Sobh, R and Perry, C 2006, 'Research design and data analysis in realism research', *European Journal of Marketing*, 40 (11/12), pp.1194-1209.

Soriola, E 2018, *North central states in Nigeria*, Accessed 29 May 2018, <<https://www.naija.ng/1096662-north-central-states-nigeria.html#1096662>>

Souca, ML 2011, 'SERVQUAL–Thirty years of research on service quality with implications for customer satisfaction', *Marketing from Information to Decision*, (4), pp.420-429.

- Sparbel, KJH and Anderson, MA 2000, 'A continuity of care integrated literature review part 2: methodological issues', *Journal of Nursing Scholarship*, 32 (2), pp.131-135.
- Sreekumar, MG 2012, 'Strategies on e-resources management for smart information systems', *Annals of Library and Information Studies*, 59(3), pp.155-169.
- Sroufe, R 2017, 'Integration and organisational change towards sustainability', *Journal of Cleaner Production*, 162, pp.315-329.
- Stacks, DW and Salwen, MB 2009, Integrating theory and research: starting with questions, In; Stacks, MB and Salwen, DW eds. *An integrated approach to communication theory and research*, 2nd edn, pp. 3-14, New York, Routledge Publication.
- Staines, G 2009, 'Towards an assessment of strategic credibility in academic libraries', *Library Management*, 30, pp.148-162.
- Stevenson, M 2018, Fundraising in higher education, Case study: the University of Bristol, United Kingdom (UK), Accessed 12 May 2018, <<http://www.fm-kp.si/zalozba/ISBN/961-6268-67-8/277-294.pdf>>
- Sung, NS, Crowley, WF, Genel, M, Salber, P et al. 2003, 'Central challenges facing the national clinical research enterprise', *Jama*, 289 (10), pp.1278-1287.
- Swain, DK and Panda, K 2009, 'Use of e-services by faculty members of business schools in a state of India: A study', *Collection Building*, 28(3), pp.108-116.
- Talja, S and Maula, H 2003, 'Reasons for the use and non-use of electronic journals and databases: a domain analytic study in four scholarly disciplines', *Journal of Documentation*, 59 (6), pp.673-691.

Taole, N 2008, Evaluation of the Innopac library system in selected consortia and libraries in the southern African region: Implications for the Lesotho Library Consortium (Unpublished doctoral dissertation), University of Pretoria, South Africa.

Tashakkori, A and Teddlie, C 2003, *Handbook of Mixed Methods in Social and Behavioural Research* (pp. 189-208), Thousand Oaks, California, Sage.

Tashakkori, A and Teddlie, C eds. 2010, *Sage handbook of mixed methods in social and behavioural research*, Thousand Oaks, California, Sage.

Tashakkori, A and Teddlie, CB 1998, Mixed methodology: combining qualitative and quantitative approaches (Vol. 46), Sage.

Tatiana S 2018, 'Shrink to fit or prune to strengthen: adapting the strategic plan in an academic library as a response to environmental change', *New Review of Academic Librarianship*, 24 (3-4), pp.310-325.

Taylor-Powell, E and Steele, S 1996, *Collecting Evaluation Data: Direct Observation*, University of Wisconsin Cooperative Extension.

Teddlie, C and Tashakkori, A 2009, *Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioural sciences*, Thousand Oaks, California, Sage Publications, Inc.

Tella, A and Olabooye, AA 2014, 'Bibliometric analysis of African Journal of Library, Archives and Information Science from 2000-2012', *Library Review*, 63(4/5), pp.305-323.

The Association of Commonwealth Universities 2017, Member profile: Stephen Akintunde, librarian at University of Jos. *The Association of Commonwealth Universities*, Accessed 12 January 2018, <<https://www.acu.ac.uk/about-us/blog/member-profile-stephen-akintunde-university-jos>>

Thompson, RL, Higgins, CA and Howell, JM 1991, 'Personal computing: toward a conceptual model of utilisation', *MIS Quarterly*, 15(1), pp.125-143.

Tiessen, R 2012, 'How copyright affects interlibrary loan and electronic resources in Canada', *Interlending and Document Supply*, 40(1), pp.49-54.

Torma, S and Vakkari, P 2004, 'Discipline, availability of electronic resources and the use of Finnish national electronic library (FinELib)', *Information Research and International Electronic Journal*, 10 (1), pp.1-18.

Torraco, R 2005, 'Writing an integrated literature review: guidelines and examples', *Human Resources Development Review*, 4 (3), pp.356-367.

Trott, B 2012, 'Reference, readers' advisory, and relevance', *The Reference Librarian*, 53(1), pp.60-66.

Tsai, WM, MacMillan, IC and Low, MB 1991, 'Effects of strategy and environment on corporate venture success in industrial markets', *Journal of Business Venturing*, 6 (1), 9-28.

Tseng, SH 2008, 'Green library design and evaluation: the Taipei public library, Taiwan', *New Library World*, 100 (7/8), pp.321-336.

Tshuma, T and Chigada, J 2018, 'Analysing information literacy practices at selected academic libraries in Zimbabwe', *South African Journal of Information Management*, 20(1), pp.1-7.

Turner, CN 2014, 'E-resource acquisitions in academic library consortia', *Library Resources & Technical Services*, 58(1), pp.33-48.

Turner, JD 2014, Financial history and financial economics, QUCEH Working Paper Series, No. 14-03, Queen's University Centre for Economic History (QUCEH), Belfast.

Tyoden, SG 1993, *The Middle Belt in Nigerian Politics*, Jos, AHA Publishing House Ltd.

Ubogu, JO and Okiy, O 2011, Sources of funds in academic libraries in Delta State, Nigeria, *Library Philosophy and Practices* (e-journal), Accessed 19 May 2018, <<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1750&context=libphilprac>>

Udo-Anyanwu, AJ 2018, 'A bibliometric analysis of research productivity of librarians published in library and information science journals available in academic libraries in Imo State, Nigeria, 2004', *Research Journal of Library and Information Science*, 2(1), pp.15-21.

Ugwu, C and Onyegiri, DC 2013, 'Management problem of electronic information resources: a case study of University of Nigeria Nsukka (UNN) Library', *International Journal of Library and Information Science*, 5 (5), pp.126-133.

University Funding Explained 2016, *University funding*, Accessed 1 July 2018, <<https://www.universitiesuk.ac.uk/policyandanalysis/reports/Documents/2016/university-funding-explained.pdf>>

University of Abuja 2017, *University of Abuja website*, Accessed 12 December 2017, <<https://web.uniabuja.edu.ng/about-us/>>

University of Ilorin 2017, *University of Ilorin website*, Accessed 12 December 2017, <<http://www.unilorin.edu.ng/index.php>>

University of Jos 2017, *University of Jos website*, Accessed 12 December 2017, <<http://www.unijos.edu.ng/about-us>>

University of KwaZulu-Natal research ethics policy 2018, *Ethical Policy*. Accessed 5 June 2018, <<http://research.ukzn.ac.za/EthicsPolicy12111.aspx>>

Uzuegbu, CP 2011, Management of Nigerian copyright law and the open access initiative: a bridge to attaining information for all in Nigeria, Paper presented at Nigeria Library Association conference, Awka, Anambra, 10-15 July.

Vallance, S, Perkins, HC and Dixon, JE 2011, 'What is social sustainability? A clarification of concepts', *Geoforum*, 42(3), pp.342–348.

Venkatesh, V, Brown, SA and Bala, H 2013a, 'Bridging the qualitative-quantitative divide: guidelines for conducting mixed methods research in information systems', *MIS Quarterly*, 37 (1), pp.21–54.

Venkatesh, V, Morris, M, Davis, GB and Davis, FD 2003, 'User acceptance of information technology: toward a unified view', *MIS Quarterly*, 27(3), pp.425-78.

Venkatesh, V, Morris, MG, Davis, GB and Davis, FD 2003, 'User acceptance of information technology: toward a unified view', *MIS Quarterly*, 27(3), pp. 425–478.

Venkatesh, V, Thong, J and Xu, X 2013b, 'Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology', *MISQ*, 36 (1), pp. 157–178.

Viederman, S 1994, The economics of sustainability: Challenges, Paper presented at the workshop, The economics of sustainability, Fundacao Joaquim Nabuco, Recife, Brazil.

Viederman, S 1994, *The economics of sustainability: challenges*, New York, Jessie Smith Noyes Foundation.

Vukanović, N, Danić, M, Rosić, M and Stojanović, S 2013, National Library of Serbia, *UNESCO Chair in Cultural Policy and Management*, Accessed 18 April 2018 <<https://s3.amazonaws.com/academia.edu.documents/36260396/StrategicAnalysisTheNationalLibrary.pdf>>

- Wadas, LR 2017, 'Mission statements in academic libraries: a discourse analysis', *Library Management*, 38 (2-3), pp.108-116.
- Walliman, N 2017, *Research methods: the basics*, 2nd edn, New York, Routledge.
- Ward, S, 1997, *Starting and managing fee-based information services in academic libraries*, Greenwich, CT, JAI Press.
- Watts, LA 2015, 'The paradox of preservation', *Law and Policy*, 18(4), pp.289-308.
- Webometrics 2019, *Ranking Web of Research Centers*. Accessed 12 October 2019
<<https://research.webometrics.info/en/Africa/Nigeria>>
- Weible, CL and Janke, KL 2011, *Interlibrary Loan Practices Handbook*, American Library Association, Chicago, IL.
- Weicher, M and Zhang, TX 2012, 'Unbundling the "big deal" with pay-per-view of e-journal articles', *The Serial Librarian*, 63(1), pp.28–37.
- Westmoreland, T and Shirley, B 2004, 'The state of consortia: promises to keep', *Texas Library Journal*, 80(2), pp.52-58.
- Wharton, KN 2016, 'From assessment to implementation: using qualitative interview to inform distance library services', *Journal of Library and Information Services in Distance Learning*, pp.1-10.
- Wiid, J and Diggines, C 2013, *Marketing research*, 2nd ed, Cape Town, Juta and Company.
- Wiley, L, Chrzastowski, T 2005, 'The impact of electronic journals on interlibrary lending: a longitudinal study of statewide interlibrary loan article sharing in Illinois', *Library Collections, Acquisitions, and Technical Services*, 29 (4) 364–381.

Willemse, J 2002, *Library funding: adequate financial support for African university funding*, Oxford, INASP.

Wilson, N and McLean, S 1994, *Questionnaire design: a practical introduction*, pp. 94–120, Co Antrim, University of Ulster Press, Newton Abbey,

Wolpert, A 1999, 'Services to remote users: marketing the library's role', *Library Trends*, 47 (1), pp.34-35.

Wordofa, KH, 2014, 'Adoption of Web 2.0 in academic libraries of top African universities', *The Electronic Library*, 32(2), pp. 262-277.

World Commission on Environment and Development (WCED). 1987, *Our common future*, Oxford, Oxford University Press.

World Intellectual Property Organisation (WIPO). 2014, *International protection of copyright and related rights*, Accessed 23 December 2018 from <<https://www.wipo.int/export/sites/www/copyright/en/activities/pdf/internationalprotection.pdf>>

Wu, CG and Wu, PY 2018, 'Investigating user continuance intention toward library self-service technology: the case of self-issue and return systems in the public context', *Library Hi-Tech*, 37 (3), pp. 401-417. Accessed <<https://doi.org/10.1108/LHT-02-2018-0025>>

Wyndham Library. 2017, *Library action plan 2018-2022*, Accessed 18 August 2018 <<https://www.wyndham.vic.gov.au/sites/default/files/201710/Library%20Action%20Plan%202018-2022.pdf>>

Wynne, B, Dixon, S, Donohue, N and Rowlands, I 2016, 'Changing the library brand: a case study', *New Review of Academic Librarianship*, 22(2-3), pp.337-349.

Xu, H 2016, Using libraries and information and resources to support sustainability projects, Paper presented at IFLA World Library and Information Congress 82nd IFLA General Conference and Assembly, Columbus, Ohio, USA 13–19 August.

Xu, J, Kang, Q, Song, Z and Clarke, CP 2015, 'Applications of mobile social media: WeChat among academic libraries in China', *The Journal of Academic Librarianship*, 41(1), pp.21-30.

Xuan, W and Hongyan, L 2011, August, Energy-saving and green building design of libraries: The case study of Zhengzhou library, Paper presented in *World Library and Information Congress: 77th IFLA general conference and assembly*, 12-18 August: San Juan, Puerto Rico.

Yan, W, Hu, Y and Hu, C 2015, 'Using SEM and TCM to improve services to libraries: a comparative study on Chinese academic libraries', *The Journal of Academic Librarianship*, 41, pp.558-566.

Yaya, JA 2015, 'Prospects and challenges of e-books in school media services in Nigeria: the way forward', *International Journal of Education and Information Technology*, 1(3), pp.92-98.

Yin, RK 1989, *Case study research – design and methods*, 1st ed., Sage, Thousand Oaks, CA.

Zafar, M, Zahee, A, Saleem-ur, R and Rehman, K 2011, 'Impact of online services quality on customer satisfaction in the banking sector of Pakistan', *African Journal of Business Management*, 5 (30), pp.11786-11793.

Zainab, AM, Kiran, K, Karim, NHA and Sukmawati, M 2018, 'UTAUT'S performance consistency: empirical evidence from a library management system', *Malaysian Journal of Library & Information Science*, 23(1), pp.17-32.

Zalta, EN 2005, A new model for open access to scholarly and educational content, Paper presented at Open Education Conference, Logan, Utah, 24 -28 September.

Zanin-Yost, A 2004, Digital reference: what the past has taught us and what the future will hold, *Library Philosophy and Practice* 5, Accessed 12 May 2018 <<http://digitalcommons.unl.edu/libphilprac/59/>>

Zhang, J and Seidmann, A 2010, January, Selling or subscribing software under quality uncertainty and network externality effect, In *2010 43rd Hawaii International Conference on System Sciences* (pp. 1-10). IEEE.

Zhang, L, Ye, P and Liu, Q 2011, 'A survey of the use of electronic resources at seven universities in Wuhan, China', *Program*, 45(1), pp.67-77.

Zulu, P, Ngoepe, M and Saurombe, N 2017, 'The importance of legislation in the provision of national and public library services in Zambia', *Journal of Librarianship and Information Science*, 49(2), pp.152-164.

APPENDICES

Appendix 1: Interview schedule for management teams

Interview schedule for management teams

Introduction: I am a PhD student from the University of KwaZulu-Natal, South Africa School of Social Sciences, and Information Studies. I am conducting research as part of the requirements for the award of a PhD degree in information studies. The topic of the research is **“Strategies for sustaining provision of electronic information resource services in university libraries of North Central Nigeria”**.

The study will focus on strategic initiatives adopted in sustaining EIRs in the University Libraries of North Central Nigeria, with the view to suggesting interventions to improve EIRs management, sustainability approach and enhance availability of resources and services. The research will gather data on status of available EIRs, sources of funding EIRs, strategic planning and policy implementation, strategic initiative applied in sustaining EIRs services, challenges with sustainability of EIRs and possible solution in the selected ULs of North Central Nigeria.

I kindly request your participation in this interview to enable me collect data that will address the research problem under investigation. Your responses will be treated with strict confidentiality, and will only be used for the stated academic purpose. Your contribution is highly appreciated. Please do not hesitate to contact me or my supervisor for clarification on any aspect of this interview. I appreciate it if your consent form is duly sign as your approval to this interview.

Thank you in advance for your time and cooperation.

Ojukwu Njideka Charlotte PhD student (University of KwaZulu-Natal, South Africa)
E-mail: 216076724@stu.ukzn.ac.za Mobile No.: +234 8023341208 .

INTERVIEW

Interview schedule for Library Management team of university libraries under study.

Main Questions

a. How effective are the provision of EIRs in University libraries in NCN?

1. Are the available EIR and services in your library satisfactory?
2. If not, what is the cause of this dissatisfaction?

b. How efficient are sources of funding for sustainable EIRs?

3. What sources of government funding are available to your library for EIR services?
4. How efficient is this Government funding?
5. Does your library have other alternative sources of funding for EIR?
6. What efforts do you consider necessary to be in place for sourcing alternative funding for EIR?

c. What strategies and policies are implemented to impact the sustainable provision of EIRs?

7. How do you measure the performance of librarians under you?
8. What do you prioritize in your library strategic plan? (Need to view).
9. Do you have an EIRs services policy?
10. If yes, is the content of the policy fully implemented in the provision of EIR services?
11. What strategic initiative has been designed, adopted or implemented for enhancing EIR services in your library?
12. How do you view the extent of EIR sustainability initiatives to service provision in your UL?
13. How does your library comply with the following statements for performance expectancy: accept or disagree to any mentioned points
 - a. A clearly defined working policy for EIR is in place.

- b. A clearly articulated EIR strategic plan with commensurate implementation timeframe is in place.
- c. The e-librarians serve adequately within the strategic plan timeframe.
- d. Librarians' job expectancy are measured with the strategic plan framework.
- e. The library's strategic planning is monitored and evaluated at regular intervals.
- f. EIR services are prioritized in the main strategic planning framework of the library.

d. What challenges are encountered in the provision of EIRs, and how are these ameliorated?

- 14. What are the possible options that can enhance sustainability of EIR for impactful services?
- 15. What are the key challenges that hinder the goal of sustaining EIR services in your library?
- 16. Do you think that with an EIR sustainability team, the consistency of EIR services in your library will be enhanced?
- 17. From your point of view, what are the key solutions to sustainability of EIR services in your library?

Thank you for accepting to be part of this study and for participating in this interview on possible means to salvage the services of EIR in Nigeria University libraries. All information provided will be used only for this research purposes and will not be disclosed to a third party.

Thank you for your cooperation.

Appendix 2: Document evaluation schedule

Document evaluation

Evaluation of relevant documents with the University Librarians: University of Abuja, University of Ilorin, Federal University of Technology Minna and University of Jos, for evaluation of the respective library funding documents, strategic planning and policy documents.

- On second research question documents to analyse is the Funding document of the selected libraries (e.g TETFund Allocation Document, Institution Budget Allocation document or Library Annual Report document).
- For research question three document to analyze is the strategic planning document of the selected ULs under study.
- The research question three document to analyze is the Policy document of the selected ULs under study
- The sub research question three documents to analyze is the Library Legal framework evaluation for EIRs
- The sub research question three to analyse the Librarian's Registration Council Nigeria (LRCN) legal framework governing professional services
- The sub research questions three to analyse the National University Commission (NUC) legal framework

Appendix 3: Observation checklist schedule

Observation checklist for availability/effectiveness of EIRs in UL under study

Observation of the survey Libraries website to ascertain the availability and effectiveness of observed listed items below.

S/N	Item	Available	Adequate	Inadequate	Not available
1	Virtual library				
2	Subject databases				
3	Institutional repository				
4	Open access database				
5	Licensed database				
6	Library web page				
7	OPAC				
8	KOHA				
9	CD-DVD				
10	E-journal				
11	Online theses				
12	E-book				
13	Internet Bandwidth				
14	Computers				
15	Printers				
16	Others				

Appendix 4: Questionnaire for professional librarians

QUESTIONNAIRE

Strategies for sustaining provision of electronic information resource services in university libraries of North Central Nigeria

Dear Respondent,

I am Charlotte Ojukwu, a Ph.D student in Information Studies at the University of KwaZulu-Natal, South Africa. In this research, I seek to investigate the sustainability strategies for electronic information resources services (EIR) in university libraries. Four (4) university libraries have been selected in North Central Nigeria for this study. Your university library is among the selected ones for data collection.

I would greatly appreciate if you can spare 15 minutes of your time to complete the questionnaire. Please answer every question as honestly as you can. Your response will be strictly kept confidential. Any information provided would be used for academic purposes only.

Thank you for your time and valued efforts.

Ojukwu, N. Charlotte

QUESTIONNAIRE FOR UNIVERSITY LIBRARIANS AND TECHNICAL SUPPORT STAFF

SECTION A: DEMOGRAPHIC INFORMATION

1. Tick your Institutions Library: UniAbuja (), UniIlorin (), UniJos (), UniMina ().

2. Which is your Gender? Male () Female ()

3. Which is your age group? 20-25 (), 26-30 (), 31-35 (), 36-40 (), 41-45 (), 46-50 (), 51 and above ()

4. Which is your highest academic qualification? BSc/BA/BLS (), MSc/MLS (), PhD ()

Other.....

5. How long have you been working in the library? 1-5years (), 6-10years (), 11-15years (), 16-20years (), 21-25years (), 25years and above ()

6. Work category: management team (), e-librarian (), MIS support (), digital/archival

librarian (), catalogue and class (), serial (), circulation () others (please specify).....

7. How long has your university library used Electronic Information Resources (EIRs)?

Less than 3 year (), 4-6 years (), 7-9 years (), 10-12 year (), 13 and above ()

SECTION B: effectiveness of Available electronic information resources in ULs?

8. Availability of EIRs in the university library.

Key: Strongly Agree (SA) Agree (A) Disagree (DA) and Strongly Disagree (SD)

S/N		SA	A	D	SD
1	The university has electronic information resources				
2	The EIRs are working effectively				
3	There is a good strategic initiative for sustaining the EIRs				

4	There is effective archival unit for updating EIRs				
5	Good strategies implemented have enhanced effective EIR services Provision within the university				
6	The available e-resources can only be accessed within the library environment				
7	Users access the e-resources from outside the campus				
8	The subscription databases are adequate for provision of EIR services				

9. Please kindly confirm the status of available electronic information resources in your library

	Electronic information resources	Available and effective	available not effective	not available
a	Virtual library			
b	Subject databases			
c	Institutional repository			
d	Open access database			
e	Licensed database			
f	Library web page			
g	OPAC			
h	KOHA			
i	CD-DVD			
j	E-journal			
k	Online theses			
l	E-book			
m	Internet			
n	Computers			
o	Printers			

SECTION C

10. Please kindly rate the extent to which your library has adopted the following strategies to enhance sustainable EIR services provision?

Key: Very Great Extent(VGE) Great Extent(GE) Low Extent (LE) and Not Applied (NA)

Please tick (✓) as appropriate? (Provide any not in the list)

i	Economics Strategy	VGE	GE	LE	NA
a	Subscription to licensed databases				
b	Annual and timely renewal of database subscription licence				
c	Regular updating of institutional repository				
d	Direct purchase of e-resources to populate library database				
e	Vendor negotiation of licensed e-resources				
f	Constant upgrading of internet bandwidth				
g	Seeking and accessing grants for e-resources				
h	Collaborating and advocating for e-resources funding from parent institution				
i	Government direct funding efficient for e-resources				
j	Alternative source of funding for e-resources				
k	There is a conscious decision to invest in EIRs				
l	Library provide current and relevant EIRs				
m	Access to national virtual library provided by NUC				
n	Digitising print resources				
o	There is a conscious drive to collaborate in acquisition of EIRs				
ii	Social Strategies				
a	Design and implementation of strategic planning for EIRs				
b	Design and implementation of a policy on EIRs				
c	Staff continuous development on EIR trends				
d	Integration of social media services				
e	Online selection and dissemination of services				
f	Online inter-library networking				
g	Institutional collaboration				
h	Users training				
i	Preservation/archiving of e-resources				
j	Marketing EIR services and resources				
k	Establishment of management information system				
l	Customer support on resources discovery				
m	Online organisation and description of resources				
n	Management emphasis on EIR services skills for staff				
o	E-reference services				
iii	Environmental Strategy				

a	Constant power supply				
b	Provision for alternative electricity supply				
c	Adequate green learning space				
d	Air-conditioned space for e-resources				
e	Information literacy space				
f	Adequate and up-to-date computer systems				
g	System networking connections				
h	Constant systems' maintenance				
i	Information common (e.g., LAN)				

SECTION D

11. Factors hindering the adoption of strategies for sustainable EIRs services in selected university libraries.

Kindly indicate the challenges hindering the adoption of strategic initiatives for sustaining EIRs in your library. Strongly Agree(SA) Agree(A) Disagree(DA) and Strongly Disagree(SD)

Please tick (√) as appropriate?

S/N	Hindrances	SA	A	D	SD
a	Lack of required EIRs sustainability skills				
b	Lack of EIRs sustainability policy in the library				
c	Lack of strategic planning for EIRs				
d	Poor management support for sustainability program				
e	Librarians' nonchalant attitude to EIRs sustainability				
f	Poor advocacy on sustainability of EIRs services				
g	Lack of sustainability program and team				
h	Poor knowledge of sustainability initiatives				
i	Poor funding for EIRs				
j	Poor internet access and electricity supply				

12. The best approaches to enhance sustainability for EIRs services as a social system in ULs in Nigeria.

Key: SA-strongly Agree, A- Agree, D-disagree, SD-Strongly Disagree and N- Neutral.

S/n	Approaches	SA	A	D	SD	N
a	Integrating EIR sustainability as a separate department in the UL					
b	Advocating for EIR sustainability committee in the University					
c	Prioritising sustainability of EIR services in the Library Strategic Plan.					
d	Integrating EIR sustainability program in the library policy					
e	Employing EIR sustainability skilled staff in the UL					
f	Allocating special funds for the EIR sustainability program					
g	Promoting and marketing EIR sustainability programs for the UL to the University management					
h	Monitoring and evaluation of strategic plans for EIR and presenting reports of outcome					
g	Strong commitment by the library management team					
h	Government direct intervention through a national policy initiative					

SECTION E: Strategic planning and policy impact on EIRs in selected ULs.

13. Strategic planning and policy for EIR services.

Key: Strongly Agree (SA) Agree (A) Disagree (DA) and Strongly Disagree (SD)

S/n	Strategies	SA	A	D	SD
a	The library has adequately designed policy to impact EIR services				
b	Policy framework is adequately implemented in provision of EIR services				
c	Provision of EIRs services are guided by the strategic planning				
d	The strategic planning implementation is adequately monitored & evaluated				

e	Staff performance expectancy is dependent on strategic planning by the UL				
f	Strategic planning & policy are impactful for sustaining EIR services in the UL				

Thank you for your time and valued efforts.

Charlotte Ojukwu

Appendix 5: Permission to conduct research letter I



April 11, 2017

The University Librarian
University Illorin (Uniillorin)
Nigeria

Dear Sir/Madam,

**LETTER OF INTRODUCING: MRS OJUKWU NJIDEKA CHARLOTTE,
PHD STUDENT AT UNIVERSITY OF KWAZULU-NATAL**

This letter serves to introduce and confirm that I, Mrs. Ojukwu N.C. a duly registered PhD (Information Studies) candidate at the University of Kwazulu-Natal, seek your permission to undertake a study on your University Library. The title of my PhD research is “Sustainability Strategies on Electronic Information Resource Services in the University Libraries of North- Central Nigeria” while its outcome is expected to improve practices, inform policy and extend theory in Information studies. As part of the requirements for the award of PhD degree I am expected to undertake original research in an environment and place of my choice. The UKZN ethical compliance regulations require me to provide proof that the relevant authority where the research is to be undertaken has given approval.

I appreciate your support and understanding to grant me a formal permission to carry out research in your organisation.

Thank you
Ojukwu Njideka Charlotte
PhD student UKZN
Department of Information study
Faculty of Humanities
University of Kwazulu-Natal
Pietermaritzburg campus
South Africa

Appendix 6: Permission to conduct research letter II



April

11, 2017

The University Librarian

Federal University of Technology Mina (FUTMina)

Nigeria

Dear Sir/Madam,

LETTER OF INTRODUCING: MRS OJUKWU NJIDEKA CHARLOTTE, PHD STUDENT AT UNIVERSITY OF KWAZULU-NATAL

This letter serves to introduce and confirm that I, Mrs. Ojukwu N.C. a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal, seek your permission to undertake a study on your University Library. The title of my PhD research is "Sustainability Strategies on Electronic Information Resource Services in the University Libraries of North-Central Nigeria" while its outcome is expected to improve practices, inform policy and extend theory in Information studies. As part of the requirements for the award of PhD degree I am expected to undertake original research in an environment and place of my choice. The UKZN ethical compliance regulations require me to provide proof that the relevant authority where the research is to be undertaken has given approval.

I appreciate your support and understanding to grant me a formal permission to carry out research in your organisation.

Thank you

Ojukwu Njideka Charlotte

PhD student UKZN

Department of Information study

Faculty of Humanities

University of Kwazulu-Natal

Pietermaritzburg campus

South Africa

Appendix 7: Permission to conduct research letter III



April 11, 2017

The University Librarian

University of Abuja (UniAbuja)

Nigeria

Dear Madam,

**LETTER OF INTRODUCING: MRS OJUKWU NJIDEKA CHARLOTTE, PHD
STUDENT AT UNIVERSITY OF KWAZULU-NATAL**

This letter serves to introduce and confirm that I, Mrs. Ojukwu N.C. a duly registered PhD (Information Studies) candidate at the University of Kwazulu-Natal, seek your permission to undertake a study on your University Library. The title of my PhD research is “Sustainability Strategies on Electronic Information Resource Services in the University Libraries of North-Central Nigeria” while its outcome is expected to improve practices, inform policy and extend theory in Information studies. As part of the requirements for the award of PhD degree I am expected to undertake original research in an environment and place of my choice. The UKZN ethical compliance regulations require me to provide proof that the relevant authority where the research is to be undertaken has given approval.

I appreciate your support and understanding to grant me a formal permission to carry out research in your organisation.

Thank you

Ojukwu Njideka Charlotte

PhD student UKZN

Department of Information study

Faculty of Humanities

University of Kwazulu-Natal

Pietermaritzburg campus South Africa

Appendix 8: Permission to conduct research letter IV



April 11, 2017
The University Librarian
University Jos (UniJos)
Nigeria

Dear Sir/Madam,

**LETTER OF INTRODUCING: MRS OJUKWU NJIDEKA CHARLOTTE,
PHD STUDENT AT UNIVERSITY OF KWAZULU-NATAL**

This letter serves to introduce and confirm that I, Mrs. Ojukwu N.C. a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal, seek your permission to undertake a study on your University Library. The title of my PhD research is “Sustainability Strategies on Electronic Information Resource Services in the University Libraries of North- Central Nigeria” while its outcome is expected to improve practices, inform policy and extend theory in Information studies. As part of the requirements for the award of PhD degree I am expected to undertake original research in an environment and place of my choice. The UKZN ethical compliance regulations require me to provide proof that the relevant authority where the research is to be undertaken has given approval.

I appreciate your support and understanding to grant me a formal permission to carry out research in your organisation.


Thank you

*Ojukwu Njideka Charlotte
PhD student UKZN
Department of Information study
Faculty of Humanities
University of Kwazulu-Natal
Pietermaritzburg campus
South Africa*

Appendix 9: Gatekeeper's approval letter I

UNIVERSITY OF ABUJA
P.M.B. 117
ABUJA, NIGERIA

Vice Chancellor
Professor Michael U. Adikwu, FAS, FPOS, FETAN (Hon.), MFRAN
B.Pharm, M.Pharm, Ph.D (UNN)



University Library

Librarian
Dr. (Mrs.) R. I. Echezona CLN
B.Sc Lib Sc/Bio, MLS, Ph.D (UNN)
Email: ifeoma.echezona@unlabuja.edu.ng
ifeoma.echezona@unn.edu.ng
ifeomaechzona@yahoo.com
Tel: +234(0)803 548 3000

Ref: UA/UL/AL/34

12th May, 2017

Ojukwu Njideka Charlotte
PhD Student and Researcher
Department of Information Studies
Faculty of Humanities
University of KwaZulu-Natal
Pietermaritzburg Campus
South Africa.


APPROVAL TO USE UNIVERSITY OF ABUJA LIBRARY FOR RESEARCH INVESTIGATION

Sequel to your letter requesting for permission to use University of Abuja Library for research investigation.

I am pleased to inform you that you have been given approval to use the Library for your PhD research investigation.


Accept my highest assurances.

Thank you.



Dr. (Mrs.) R.I. Echezona
University Librarian.

Appendix 10: Gatekeeper's approval letter II

UNIVERSITY OF ILORIN, ILORIN, NIGERIA THE UNIVERSITY LIBRARY		
<p>The University Librarian Dr. Joseph Olusegun Omoniyi B. A. (Hons), PGDE, M.A., M.Ed., M.P.A. (Ilorin), M.L.S. (Ibadan), Ph.D. (Ilorin) <small>Please address all correspondence to the University Librarian</small></p>		<p>P. M. B. 1515, ILORIN Cables & Telegrams: UNILORIN Telex: 33144 UNILON NG PABX: 221590, 221687, 221691-4 Ext 419 e-mail: jsomoniyl@yahoo.com</p>
<p>Our Ref:</p> <p>Your Ref:</p>	<p>12th May, 2017 Date:</p>	

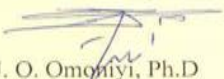
Ojukwu, Njideka-Nwanwih Chariotte,
Doctoral Student,
College of Humanities,
School of Social Sciences,
Department of Information Studies,
University of Kwazulu-Natal,
Pietarmaritzburg Campus,
South Africa.

Dear Ojukwu,

REQUEST FOR APPROVAL TO CARRY OUT RESEARCH

You have requested for approval to carry out your Ph.D. Research in our Library. I am pleased to inform you that your request is granted. This is in the understanding of the benefits that the outcome of the study will accrue to the Library, Staff and Clientele.

Accept the best assurance of respondents' willingness to cooperative with you in your research activities.


J. O. Omoniyi, Ph.D

Appendix 11: Gatekeeper's approval letter III

UNIVERSITY OF JOS OFFICE OF THE UNIVERSITY LIBRARIAN

Vice-Chancellor
Professor Sebastian Seddi Maimako
B.Sc., MBA, PhD, FCA
University Librarian
Stephen A. Akintunde
(Dip Lib; B.Sc. (Hons.), M.Sc., PhD, PG Cert. (IM))



P.M.B. 2084, Jos, Nigeria
073-453734
Fax: 073-611928
E-mail: librarian@unijos.edu.ng

May 24, 2017

Ojukwu Njideka Charlotte
PhD student UKZN
Department of Information Studies
Faculty of Humanities
University of Kwazulu-Natal
Pietermaritzburg Campus
South Africa.

Dear Charlotte,

We are in receipt of your letter dated May 5th, 2017 introducing yourself and requesting for permission to "undertake a study on your University Library". It is my pleasure to grant you approval to do this, on behalf of the Vice Chancellor. The stated title of your thesis is "Sustainability Strategies on Electronic Information Resource Services in the University Libraries of North-Central Nigeria". You are to ensure that data gathered during the research will be used solely for this research and that permission would be obtained from the University for further use of the data.

Best wishes.

A handwritten signature in black ink, appearing to read 'Stephen A. Akintunde'.

Stephen A. Akintunde, PhD
University Librarian
Chairman, Nigerian University Libraries Consortium (NULIB)
Tel.: +234 803 703 1004


Discipline and Dedication

Appendix 12: Acceptance letter from FUTMinna

Federal University of Technology, Minna
P.M.B 65, Minna, Niger State, Nigeria.

VICE CHANCELLOR:
Prof. Musbau A. AKANJI, B.Sc. (Nigeria); M.Sc.; Ph.D. (UK); FNSMB

UNIVERSITY LIBRARIAN
Dr. Jibril A. Alhassan, BLS (ABU) M.Sc. (DELSU) Ph.D. (UNN) CLW



Tel: +234(0)66223275
Fax: +234(0)66220766
Telegram: FUTECH, Minna
E-mail: info@futminna.net

OFFICE OF THE UNIVERSITY LIBRARIAN

Our Ref:
Your Ref:

5th May, 2017

Ojukwu Njideka Charlotte
PhD Student UKZN
Department of Information Studies
Faculty of Humanities
University of Kwazulu Natal, Pietermaritzburg Campus
Private Bag X01, scotsville, 3209,
South Africa

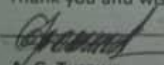
RE-LETTER OF INTRODUCTION: MRS Ojukwu charlotte, PhD STUDENT AT UNIVERSITY OF KWAZULU-NATAL

The aforementioned subject-matter refers, please.

I write under instruction to convey the University Librarian's approval for you to carry out your PhD research in our esteem institution.

We wish that the opportunity granted you will expose your research to a greater expectation.

Thank you and wishing you successful and fruitful research findings.


A. G. Turawa
P.E.O. II (Admin)
For: University Librarian

Appendix 13: University of Kwazulu-Natal ethical clearance



04 May 2018

Mrs Njideka Charlotte Ojukwu (216076724)
School of Social Sciences
Pietermaritzburg Campus

Dear Mrs Ojukwu,

Protocol reference number: HSS/0341/018D

Project Title: Sustainability strategies for Electronic Information Resource (EIR) services in University Libraries (UL) in North Central Nigeria

Approval Notification – Expedited Application

In response to your application received 16 April 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shamila Naidoo (Deputy Chair)

/ms

Cc Supervisor: Dr Francis Garaba
Cc Academic Leader Research: Professor Maheshvari Naidu
Cc School Administrator: Ms Nancy Mudau

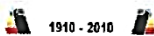
Humanities & Social Sciences Research Ethics Committee
Professor Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: ximbap@ukzn.ac.za / snymam@ukzn.ac.za / mohunp@ukzn.ac.za

Website: www.ukzn.ac.za



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Appendix 14: Informed consent document

DECLARATION

I..... *(full names of participant)* hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at anytime, should I so desire. I understand the intention of the research. I hereby agree to participate.

I consent/do not consent to have this interview recorded (if applicable)

SIGNATURE OF PARTICIPANT

DATE

.....

Appendix 15: Editor's report



Barbara Mutula
Associate member

Membership number: MUT001
Membership year: March 2020 to February 2021

0786439029
kabangebarbara@gmail.com

www.editors.org.za

20 September 2020

TO WHOM IT MAY CONCERN

This is to confirm that the thesis written by Ojukwu, Njideka N. Charlotte, titled 'Strategies for Sustaining the Provision of Electronic Information Resources Services in University Libraries of North Central Nigeria' was copy edited for layout (including numbering, pagination, heading format, justification of figures and tables), grammar, spelling, punctuation and references by the undersigned. The document was subsequently proofread, and a number of additional corrections were advised.

The undersigned takes no responsibility for corrections/amendments not carried out by the student in the final copy submitted for examination purposes.

A handwritten signature in blue ink, appearing to read "Barbara L. Mutula-Kabange", written over a horizontal line.

Mrs. Barbara L. Mutula-Kabange

Copy Editor, Proof reader
*BEd (UBotswana), BSc Hons Psychology (UKZN),
MEd Educational Psychology (UKZN)*

Appendix 16: Turnitin Report

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below

Submission:	Njideka Charlotte Ojukwu
Author:	Thesis
Assignment:	Charlotte Thesis
title:	Charlotte_Thesis.txt
Submission:	457.53k
title: File name:	281
File size:	67,986
Page count:	396,986
Word count:	16-Sep-2020 12:27PM (UTC+0200)
Character	1388441231
count:	
Submission date:	
Submission ID:	