

**DIGITAL LITERACY SKILLS, KNOWLEDGE MANAGEMENT
PRACTICES AND INNOVATIVE SERVICE DELIVERY IN
UNIVERSITY LIBRARIES IN NORTH - WEST, NIGERIA**

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CERTIFICATION

This Thesis titled **DIGITAL LITERACY SKILLS, KNOWLEDGE MANAGEMENT PRACTICES AND INNOVATIVE SERVICE DELIVERY IN UNIVERSITY LIBRARIES IN NORTH-WEST, NIGERIA**, prepared and submitted by **MUSA,SHITTU** in partial fulfilment of the requirement for the award of degree of **DOCTOR OF PHILOSOPHY (Information Resources Management)** is hereby accepted

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DEDICATION

This Thesis is dedicated to my late Parents (Mal. Musa Umar and Haj. Hajara Abdulhamid)

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ABSTRACT

The benefits of innovative service delivery in the libraries include enhanced user experience, increased efficiency on information retrieval and access to resources by users. Studies have established that innovative service delivery in many university libraries in North-West, Nigeria is low. Digital literacy skills (photo-visual, reproduction, branching, socio-emotional, information literacies) and knowledge management practices (knowledge creation, knowledge sharing, and knowledge application) have been established as factors that enhance innovation. However, there is scarce empirical evidence on the combined influence of digital literacy skills and knowledge management practices on innovative service delivery in libraries in North-West, Nigeria. Therefore, this study investigated the influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria.

Survey research design was adopted for the study. The population comprised 452 academic librarians in federal, state and private universities in North-West, Nigeria. Krejcie and Morgan table was used to determine the sample size of 210. A structured and validated questionnaire was used for data collection. Cronbach's alpha reliability coefficients for the constructs ranged from 0.77 to 0.85. Response rate of 93% was achieved. Data were analyzed using descriptive and inferential (simple linear and multiple regression) statistics at 5% level of significance.

Findings revealed that digital literacy skills and knowledge management practices had a joint significant influence on innovative service delivery ($\text{Adj.R}^2 = 0.64$, $F(8, 195) = 172.62$, $p < 0.05$) in university libraries in North-West, Nigeria. Digital literacy skills ($\text{Adj.R}^2 = 0.58$, $F(5, 195) = 272.42$, $p < 0.05$), and knowledge management practices ($\text{Adj.R}^2 = 0.60$, $F(3, 195) = 292.98$, $p < 0.05$) had a positive significant influence on innovative service delivery. Knowledge management indicators: knowledge creation ($\beta = 3.03$, $t = 4.87$, $p < 0.05$) and knowledge application ($\beta = 0.86$, $t = 1.99$, $p < 0.05$) had significant influence on innovative service delivery, while knowledge sharing ($\beta = 0.89$, $t = 1.60$, $p > 0.05$) had insignificant influence on innovative service. Also, digital literacy indicators: photo-visual literacy skill ($\beta = 1.22$, $t = 2.56$, $p < 0.05$), branching literacy skill ($\beta = 1.52$, $t = 2.87$, $p < 0.05$) and socio-emotional literacy skill ($\beta = 1.32$, $t = 3.77$, $p < 0.05$) had significant influence on innovative service delivery. However, Information literacy skill ($\beta = 0.04$, $t = 0.09$, $p > 0.05$) and

reproduction literacy skill ($\beta = -0.51$, $t = -1.11$, $p > 0.05$) had no significant influence on innovative service delivery.

The study concluded that digital literacy skills and knowledge management practices enhanced innovative service delivery in university libraries in North-West, Nigeria. The study recommended that knowledge sharing should be encouraged by the library managements. Also, training in emerging technology should be prioritized to enhance the relevance of librarians.

Keywords: Digital literacy skills, Innovation, Innovative service delivery, Knowledge management practices, Service delivery

Word Count: 497

TABLE OF CONTENTS

| Content | Page |
|-------------------|------|
| Title Page | i |
| Certification | ii |
| Dedication | iii |
| Acknowledgements | iv |
| Abstract | vi |
| Table of Contents | viii |
| List of Tables | xi |
| List of Figures | xii |
| Abbreviations | xiii |
| Appendices | xv |

CHAPTER ONE: INTRODUCTION

| | |
|--------------------------------------|----|
| 1.1 Background to the study | 1 |
| 1.2 Statement of the Problem | 10 |
| 1.3 Objective of the Study | 11 |
| 1.4 Research Questions | 12 |
| 1.5 Hypotheses | 12 |
| 1.6 Justification for the study | 12 |
| 1.7 Scope of the Study | 13 |
| 1.8 Significance of the Study | 14 |
| 1.9 Operational Definitions of Terms | 15 |

CHAPTER TWO: REVIEW OF LITERATURE

| | |
|---|-----------|
| 2.1 Conceptual Review | 18 |
| 2.1.1 Innovative service delivery | 18 |
| 2.1.2 Innovative service delivery in university libraries | 20 |
| 2.1.3 Digital literacy skills | 24 |
| 2.1.4 Concept of knowledge management practices | 30 |
| 2.2 Empirical Review | 34 |
| 2.2.1 Innovative service delivery in university libraries | 34 |

| Content | Page |
|---|------|
| 2.2.2 Digital literacy skills of academic librarians in University Libraries | 43 |
| 2.2.3 Knowledge management practices in university libraries | 47 |
| 2.2.4 Digital literacy skills and innovative service delivery of Academic librarians in University libraries | 53 |
| 2.2.5 Knowledge management practices and Innovative service delivery in University libraries | 54 |
| 2.2.6 Digital literacy skills, knowledge management practices and innovative service delivery in university libraries | 57 |
| 2.2.7 Summary of the empirical review | 60 |
| 2.3 Theoretical Framework | 71 |
| 2.3.1 Eshet-Alkalai Model of Digital literacy Skills | 71 |
| 2.3.2 Relevance of model to the Present Study | 72 |
| 2.3.3 Knowledge Management Practices Model | 73 |
| 2.3.4 Relevance of the Model to this Study | 74 |
| 2.4 Conceptual Framework | 75 |
| 2.4.1 Description of the Conceptual Framework | 75 |
| 2.5 Appraisal of Literature | 79 |

CHAPTER THREE: METHODOLOGY

| | |
|---|----|
| 3.1 Research Design | 82 |
| 3.2 Population | 82 |
| 3.3 Sample size and sampling Technique | 84 |
| 3.4 Instrument for Data Collection | 86 |
| 3.5 Validity and Reliability of Questionnaire | 87 |
| 3.6 Method of Data Collection | 89 |
| 3.7 Method of Data Analysis | 89 |
| 3.8 Ethical consideration | 90 |

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

| | |
|--|----|
| 4.1 Data Presentation and Descriptive Analysis | 92 |
|--|----|

| Content | Page |
|---|------|
| 4.2 Demographic Characteristics of the Respondents | 92 |
| 4.3 Analysis and Presentation of Research Questions | 95 |
| 4.4 Analysis of Hypotheses | 95 |
| 4.4 Test of Hypothesis One | 105 |
| 4.5 Test of Hypothesis Two | 105 |
| 4.6 Test of Hypothesis Three | 106 |
| 4.7 Test of Hypothesis Four | 108 |
| 4.8 Test of Hypothesis Five | 109 |
| 4.9 Discussion of Findings | 111 |

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

| | |
|------------------------------------|-----|
| 5.1 Summary | 119 |
| 5.2 Conclusion | 120 |
| 5.3 Recommendations | 121 |
| 5.4 Contribution to Knowledge | 122 |
| 5.5 Suggestion for Further Studies | 122 |
| 5.6 Limitation of the Study | 122 |

References

Appendices

LIST OF TABLES

| Table | Page |
|---|------|
| 2.1 Summary of Empirical Review | 60 |
| 3.1 List of Universalities and Librarians in Federal, State and Private University Libraries in North-West, Nigeria | 83 |
| 3.2 Sample Size in each Federal, State and Private Universalities Library | 85 |
| 3.3 Cronbach Alpha Test of Reliability | 88 |
| 3.4 Reliability of Research Instrument | 88 |
| 4.1 Copies of Questionnaire Administered and Response Rate | 92 |
| 4.2 Demographic Information of the Respondents | 92 |
| 4.3 Analysis and Presentation of Research Questions | 96 |
| 4.4 Distribution of respondents on the knowledge management practices Prevalent in university libraries in North-West, Nigeria | 99 |
| 4.5 Distribution of respondents on the level of innovative service delivery by librarians in university libraries in North-West, Nigeria | 102 |
| 4.6 Simple linear regression analysis on the Influence of digital Literacy skills On innovative service delivery in University libraries in North-West, Nigeria | 105 |
| 4.7 Simple linear regression analysis on the influence of knowledge Management practices on innovative service delivery in university Libraries in Northwest, Nigeria | 106 |
| 4.8 Simple multiple regression analysis on the influence of digital literacy Skills and knowledge management practices on innovative service Delivery in university libraries in Northwest, Nigeria | 107 |
| 4.9 Multiple linear regression analysis on the relative influence of digital literacy skills on innovative service delivery in university libraries in Northwest, Nigeria | 108 |
| 4.10 Simple linear regression analysis on the influence of knowledge management practices on innovative service delivery in university libraries in Northwest, Nigeria | 109 |

LIST OF FIGURES

| Figure | | Page |
|--|----|------|
| 2.1 Knowledge Management Practices Model | | 73 |
| 3.1 Conceptual Model | 75 | |
| 4.1 Resultant Model | | 110 |

BBREVIATIONS

| | |
|--------|---|
| ANOVA | Analysis of Variance |
| BP | Business Performance |
| BUHREC | Babcock University Health Research Ethics Committee |
| CoP | Community of Practice |
| DL | Digital Literacy |
| DLS | Digital literacy skills |
| FCC | Federal Communication Commission |
| H | High |
| HC | Human Capital |
| HR | Human Resources |
| ICT | Information and Communication Technology |
| IIS | ICTs Instructional services |
| ISD | Innovative Service Delivery |
| IT | Information Technology |
| KA | Knowledge Application |
| KC | Knowledge Capture |
| KM | Knowledge Management |
| KMC | Knowledge Management Cycle |
| KMCM | Knowledge Management Cycle Model |
| KMMTI | Knowledge Management Model for Tertiary Institution |
| KMP | Knowledge Management Practices |
| KMPs | Knowledge Management Practices |
| KS | Knowledge Sharing |
| L | Low |
| LAN | Local Area Network |
| NUC | National University Commion |
| OCS | Organisational Culture and Structure |
| OPAC | Online Public Access Catalogue |
| ORC | Online Reading Comprehension |
| RCS | Research Clinic Services |
| SADC | South African Development Council |
| SAGD | South African Government Development |

ABBREVIATIONS

| | |
|--------|--|
| SD | Service Delivery |
| SIA | Service Innovation Advantage |
| SMS | Short Message Services |
| SMUS | Social Media Use Service |
| SPSS | Statistical Packages for Social Sciences |
| UI | University of Illinois |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| VH | Very High |
| VL | Very Low |

APPENDICES

Appendix

- I. Informed Consent Form
- II. Questionnaire
- III. Letter of Introduction
- IV. Letter of Registration of Title
- V. Krejcie and Morgan Table
- VI. Reliability Test Result
BUHREC Certificate
Turn-it-in

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Innovation is a subject that has received a lot of attention in the literature from variety of industries, organisations, and academic institutions including university libraries where the need for Innovative Service Delivery (ISD) cannot be overemphasized. It has become imperative for university libraries to innovate to enhance service quality and satisfy the varying information needs of users for it to remain relevant (Wojcik, 2019). Innovation is described as the activities and processes of developing and implementing new knowledge to create unique products, services, and processes that suit the demands and preferences of users (Akram et al., 2011). According to Arumuru (2020), innovative library services are services that are directed towards addressing the information needs of users. Also, they are services that are brand new, created from existing services or services created as a result of using new technologies or inventions. This implies that innovative library services deal with the introduction of new services in the library and the application of modern technologies to address the information needs of library users.

The goal of innovative service delivery in the library is to increase user satisfaction which is essential for sustaining library patronage. Several positions have been postulated on the need to refocus attention on the concept of innovation as it is applied in the library environment. The emphasis is to ensure that libraries remain competitive, relevant and ensure user satisfaction. Arumuru (2020) argues that innovation is not a new phenomenon in the library because the present-day library system is a product of innovative accomplishments. The services and ideas such as the development of classification schemes, the creation of catalogue code, and recently the Online Public Access Catalogue (OPAC) all reflect the demonstration of innovation in the library development. Raval, et al, (2016) defined innovative service delivery as new or rebranded services that are institutionalized to maximize the use of library resources, space, and people. Innovative library services are established services that generate new ideas in university libraries, resulting in interconnectivity and collaboration among libraries, librarians, and patrons, invariably putting a library ahead of its competitors (Colaklar, 2014).

Innovative library service is described by Jantz (2012) as the introduction of a new idea, new product, new service, new technology, new administrative practice, or a significant modification to existing products, services, technology, or administrative practice. Also, Civitello (2017) argues that innovative service delivery is an accepted response to solving libraries' daily problems. In the same vein, Waghmare and Salve (2014) acknowledged that innovative service delivery include the creation of databases of library books and materials using application packages, usage of automation software (both proprietary and open source), and online public access catalogues (OPACs) for browsing library collections. Gorham and Bertot (2018), as well as Potnis et al. (2019) suggest that innovative service delivery in the libraries involves unrestricted access to content, technology, support, information literacy programs, and expert advisory services in delivering qualitative services to users. Ogunmodede and Popoola (2021) identified innovative service delivery as the use of internet connectivity, electronics devices, Local Area Networks (LAN), subscribing to scholarly e-journals and e-books, use of barcode technology, providing e-literacy programs as well as marketing of library products and services.

There are different metrics or indicators used in measuring innovative service delivery in the library. These include changes in the service concept, service interface, delivery system, and use of technology and work techniques (Islam et al., 2017). There are new additional indicators to measure innovative service delivery such as Push library services; a situation that focuses on information looking for users and not the traditional way of users looking for information in the library through onsite visits in order to consult the organized information sources. Push services can be carried out through e-mail services, providing library call centers; mobile phone services, use of social networking sites. According to Chunli and Jinmin (2011), push library services includes e-reference services and knowledge service. The scholars investigated innovative information services in the digital age and explored the channels through which push services can be provided to the users. The findings of the study revealed online reference, email reference, telephone reference as the preferred channels for library services to be provided to them within the context of push library services.

Furthermore, four classes of innovation in university libraries are categorised by Jantz (2012) as technical, administrative, product, and process innovation. Product innovation refers to innovative services that can be implemented in university libraries such as archiving research data, publishing e-journals, streaming video to classrooms, browsing in OPAC, and developing information commons as well as institutional repositories, while Process innovation deals with marketing library services, providing faculty assistance with the use of technology, joint publishing with the university press, leasing library space and provision of digital library services.

Due to the value and criticality of innovation in libraries, Brundy (2015) argued that innovation in academic libraries is inevitable. In response to this assertion, some academic libraries are trying to be innovative by responding to users information need, through integrating technology into every aspect of library service, embracing flexibility in providing places for academic engagement, and establishing a bookless library. Furthermore, innovative service delivery in the library is applied by making changes in the service, introducing new things that were not in existence to meet users needs, making changes to how the service is provided by improving the delivery, distribution methods, changing the role of staff, and making changes by improving the managerial techniques. However, according to Obeidat et al., (2016), as cited by Islam et al., (2020), innovation resides in the re-combination of new services and enhances co-operation with the users. The concept of innovative service delivery has been largely studied in other disciplines, especially in manufacturing; however, few studies have critically examined the concept in the library environment which is a major gap in the literature (Elves, 2015; Yeh & Walter, 2016; Yeh & Ramirez, 2016).

Despite the scholarly support for innovative service delivery as a driver of competitiveness and growth, many libraries seem not to be innovative, especially in the area of providing services to their users. Brundy (2015) in his work on academic libraries and innovation in Wartburg College acknowledged that libraries are not innovative even though innovation has moved from a consideration to a necessity. Vaughan (2013) investigated technological innovations in university libraries using 24 directors of the Association of Research Libraries. The result of the study revealed that web-scale discovery systems obtained the highest average score in rating the innovativeness of specific items. Maker spaces, cloud hosting, and patron-driven acquisition were among the other high-ranking items. In Nigeria, Zaid and Oyelude (2012) noted that few academic libraries in Nigeria have

innovatively improved their service delivery using a variety of ways, such as electronic reservation service, incorporating web 2.0 tools in the library, e-resources management services and instant messaging.

However, it is reported that the innovations seen in these libraries are mostly uncoordinated and fragmented leading to little innovative service delivery in the libraries. Anunobi and Onyebinama (2016) reported in their work on university library as an innovation and knowledge service center that though Federal University of Technology Owerri has gone technological yet innovative service delivery is yet to be fully accepted. Similarly, Adebayo et al., (2018) reported that despite the availability of wide opportunities offered by ICT, the application of ICT to library services in Nigeria seems to be inadequate which results in poor innovation. Another study by Agbese, et al, (2018) on harnessing innovations in Nigerian academic libraries pointed out that Nigerian libraries are not innovative. Academic libraries are facing many challenges in maintaining their services by ensuring growth and development. They are struggling with declining usage which results in a transition into digital services, and increased demands for new types of services. The situation is not different with the University libraries in North-West, Nigeria. Hence, innovative service delivery in university libraries is rather described as inadequate (Ugwu & Ekere, 2018; Arumuru, 2020)

This study employed the following measures of innovative service delivery in university libraries; Social media services, embedded library service, information and communication technology (ICT) instructional training services, and research support services as established by other scholars in literature (Almeida & Polack, 2017; Liu, 2017). Social media are online platforms that use modern-day technologies to share and discuss audio-visual information. These applications assist libraries in providing a broad range of services to library users. They cover the applications of tools and facilities that rely on individual efforts to make service effective and efficient. Librarian uses appropriate social media tools to innovate by providing services that address library patron's information requests and thereafter discharge services that are responsive to diverse users. Social media allows the use of tools in specific areas to help librarians facilitate service delivery, and support learners, and researchers' needs. Such tools include but are not limited to, WhatsApp, Facebook, Twitter (X), Telegram, blogs, and Zoom services (Faisal, 2015), these platforms enable librarians and library users to create and share information regardless of the distance (Jain, 2013). The social media platforms are also used by libraries for reference services, relating with users, providing translation services, marketing, and current awareness services (CAS).

The next indicator is ICT instructional training services. According to Chisenga (2014), the ICT-based instructional training services include the provision of web-based online public access catalogue (OPAC) interfaces, which provide both web-based locally assembled catalogues of a library holding and direct the user to positions where such resources can be located and retrieved. The ICTs in libraries have made possible the use of electronic networks to send materials during interlibrary lending and document delivery service (DDS) which constitute services for ensuring the borrowing of library resources. Corral and Jolly (2019) itemised Frequently Asked Questions (FAQ), text messaging, and Ask a Librarian as services that ICT has enabled in university libraries. FAQ is a tool that is used to answer users' hypothetical questions on problems they may face while using the library. Text messaging, often known as "SMS a Librarian," is an innovative service delivery technique

that reference librarians can use to send instant messages to single or multiple library users. Ask a Librarian is a live virtual reference service tool that provides innovative services through a platform that allows users to ask questions, make inquiries, and receive responses on specific services from librarians.

Embedded library services are defined as the process through which a librarian is taken out of the library structure and create a new operational avenue that enhances feasible collaboration among librarians, researchers, and faculty members who require the service of highly skilled and competent librarians i.e one with innovative manner (Pati & Majhi, 2019). Burress, et al, (2020) argues that embedding librarians in academic research includes providing references in high-traffic spaces across campus, providing research skills, collaborating in research projects with faculty, participating in learning and research policy development, participating in the course programme development and assessment, co-teaching and providing workshops and webinars (Adams et al., 2016; Burress et al., 2020; Hoffman et al., 2017). Furthermore, embedded library service includes identifying grant opportunities, assisting in grant writing, research data skill training, data management support (Burress et al., 2020).

Research clinic/research service is an innovative service delivery rendered by librarians in the university library. It usually provides all the necessary research support services in its entire ramification. This service involves provision of authentic, relevant and reliable articles, or sources, guides on the use of the data, analysis of the data gathered, interpretation and presentation of the research report. As demonstrated by Xiao and Zhang (2016) research clinic or research support services refer to the knowledge services delivered to scientific researchers in universities, enterprises, and other social institutions to satisfy knowledge and information needs in different research stages. Research support services are essentially intended for faculty, graduate students, and scientific researchers in universities and colleges (Xiao, 2020).

Delivering innovative service in university libraries requires skills and competencies by a librarian such as digital literacy skills which is a critical factor and enabler for academic librarians operating in university libraries. The digital literacy skills possessed by librarians enable them to be relevant, have a competitive advantage and add value to the entire university community. The changing nature of user information needs, dynamic mode of teaching, learning, and research in the university, and advancement in technologies pose a serious threat to the traditional ways that university libraries operate in providing services to their patrons. These situations make it necessary for librarians to rethink and redesign their roles by becoming innovative in service delivery.

The aforementioned use of ICTs and supporting platforms requires librarians to possess the requisite skills. These skills are described as digital literacy skills. Digital literacy skills refer to the set of skills and abilities to fully operate digital devices and manipulate both hardware and software (UNESCO, 2018). Such abilities include knowledge of how to search and navigate, create, communicate, and collaborate, as well as having rational thinking, analysing information, and addressing safety and well-being issues when using different categories of technologies. Digital literacy skills exist on a continuum with varying degrees of application in personal, community, and workplace, educational and training environment.

Eshat -Alkalai, (2012) listed basic digital literacy skills which comprises photo-visual literacy skills, reproduction literacy skills, branching literacy skills, information literacy skills, and socio-emotional literacy skills. Photo visual literacy skill entails the set of abilities and attitudes to recognise and manipulate the ICTs to access and communicate information resources effectively in different forms and formats. Reproduction literacy measures the capability to make use of different types of media to reproduce and manipulate pre-existing digital content. The reproduced and manipulated digital contents can either be in text, visuals, and audio as well as audio-visual formats supported by digital devices. The skills to apply this kind of technology have become imperative in the digital era due to the proliferation of internet users and information resources. Issues of resource authenticity, reliability, and traceability constitute some of the items that librarians are trained to provide to library and information seekers. Therefore, librarians who lack such competencies when engaged by library users shall not survive the contemporary information services business.

Branching literacy is a digital literacy skill that enables librarian to construct knowledge through the use of the internet, and seamlessly navigate through hypermedia environments to obtain new information from the knowledge domains. Presently, network information is the order of the day in the digital environment; it has been proven that the issue of owning information resources in a library is old fashion and no longer a yardstick for measuring the strength of a library. Therefore, the ability of librarians to navigate through the digital network environments to facilitate information provision to library user is essential in this digital age.

Other literacy skills include socio-emotional literacy skills which assess the ability of academic librarians to collaborate and share information using various digital support platforms. Socio-emotional digital literacy skill is the types of digital literacy skill that involves mainly sociological and emotional aspects of work in cyberspace. It is the most complex of all the types of digital literacy. Socially-literate users of cyberspace must be critical, analytical, mature, and versatile in information literacy and branching literacy skills. It is imperative to know how to avoid all sorts of tricks and deception as well as derive benefits from the advantages of digital communication. These users should be acquainted about the risky for immature and innocent users who do not understand the rules of the game involved in cyberspace use. Such risks cut across every aspect of our life, from surrendering personal information to criminals in the internet, to users who were naive to easily open e-mail entitled I Love You, only to discover that it infected their computer with a fatal virus. (Yoram Eshet-Alkalai, 2004)

Digital literacy skills can contribute to innovative service delivery in an organization. In the library these skills are an important consideration in the implementation of innovative service delivery activities. This is important because digital skills are some of the essential requirements for the adoption and utilization of new technologies (Onifade, 2015). Similarly, Atoy et al., (2020) argues that digital literacy skills are crucial for the provision of innovative service delivery in the library. Library staff are confronted with an expectation from library users to consistently improve their mode of service delivery in critical library activities and areas such as acquiring library materials, cataloguing the materials acquired, preserving the materials, diffusing them as well as providing

reference services to users. All these skills require the ability of the librarian to navigate and provide innovative services to users.

Apart from the librarians possessing digital literacy skills, another variable that may influence the provision of innovative services delivery in the library is the concept of Knowledge Management Practices (KMP). According to Inkinen et al., (2015) knowledge management is a set of management activities that enable an organization to deliver value by using its knowledge resources. Abu-Shanab and Ishehabat (2018) noted that it entails activities that ensure knowledge creation, knowledge capture, knowledge organization, knowledge storage, knowledge dissemination and knowledge application in an organization. Knowledge management has become popular due to its link with innovative service delivery (Grant, 2015). Knowledge management practices add value to the performance of university libraries that priorities digital skills for innovative service delivery. Effective management of knowledge produced in an organization is key for the innovation of new products and services.

Knowledge management practices have been measure in literature using three dimensions such as knowledge creation, knowledge sharing and knowledge application (Ugwu and Ekere, 2018). Knowledge creation is a crucial component of innovation and competitiveness (Yeh, 2008). Knowledge created from the interaction of members of an organization improves knowledge codification and reinforces organizational innovation. According to Nonaka and Takecuhi (1995), the ability of organizations to innovate lies in their capacity to generate new knowledge. Thus, knowledge creation can be regarded as one of the major assets of innovativeness in an organization. The scholars developed four knowledge creation models as socialization, externalization, combination, and internalization. According to them, the process of knowledge creation in organization is by socialization. These involves communication and interactions such as discussions, sharing experience, simulation, practice, observation and other social contacts that could exist among members of an organization. Externalization is a process that converts tacit knowledge to explicit knowledge in the shapes of concept, metaphors, hypothesis, description and models. Externalization tends to occur when an organization articulates its internal rules while combination is a process that creates a new explicit knowledge from an existing explicit knowledge whereby existing explicit knowledge is merged, categorized and synthesized to create new explicit knowledge.

The last process of knowledge creation in the model is through internalization which is achieved by changing explicit knowledge into tacit knowledge through a process in which abstract ideas change into concrete ones and they are finally absorbed as an integral value. These modes of knowledge creation exist in an organization either singularly or in combinations. Knowledge creation reinforces organizational innovation in that a reinforced organisation constantly generates new knowledge that forms the building block of all created assets of the organization. Knowledge creation in the library starts with librarians sharing their internal tacit knowledge when socializing with people. The shared knowledge is then internalized by other people who generate new knowledge. This newly created knowledge is again shared in a repetitive form continually until a new idea is formed. The new idea when implemented help improve service delivery in the libraries. Libraries can fulfill their mission through knowledge creation and can be engaging in continuous innovation of their services so as to attract more users which shows in essence how knowledge creation can help improve the services delivery in the libraries.

Another dimension of knowledge management practices is a knowledge-sharing. Knowledge sharing can be defined as the transfer of knowledge among individuals, groups, teams, departments, and organizations (Ogunsola, & Lasode, 2017). It is a process in which knowledge (expertise, skills, or information) is exchanged among individuals, workers, communities, families, or organizations. Knowledge sharing has also been viewed as the process of identifying knowledge that already exists, acquiring it, and subsequently applying this knowledge to develop new ideas or enhance the existing ideas. Knowledge-sharing plays a critical role in achieving competitive advantage such as the integration of the daily organizational processes. Furthermore, knowledge application as an indicator of knowledge management is a dimension that is critical to the library. This involves putting the acquired knowledge into use in solving the information needs of users. Knowledge application / use is refers to any activity that ensure the knowledge of user needs, barriers to innovations, innovation possibility and the overall knowledge of employees and users gathered is analysed and synthesised to bring out innovative ideas to enable innovation and to enhance library services (Islam et al,2017).

Therefore digital literacy skills which encompasses the ability of a librarian to search, navigate, create, communicate, collaborate and analyse information using different technologies and knowledge management practices which encompasses knowledge creation, knowledge capture, knowledge organization, knowledge storage, knowledge dissemination and knowledge application are of fundamental importance in the provision innovative service delivery in the library. There are limited studies on innovative service delivery in the university libraries in Africa, especially in the North-West Nigeria as it relates to determining the various innovative practices that aligns with the provision of unique services channeled towards the satisfaction of users. It is on the bases of this premise that this study intends to investigate the influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North - West, Nigeria.

1.2 Statement of the Problem

University libraries are expected to provide services to meet the various information needs of their users. The changing needs of various information users, changing modes of teaching and learning as well as the advances in information and communication technology (ICTs) have necessitated libraries to be innovative in their service delivery to users, this ensures libraries stay relevant in a rapidly evolving information landscape. Innovative service delivery (ISD) in university libraries refers to the provision of a variety of new or emerging services of information services that aim to enhance user experience, increase efficiency, and promote access to resources (Wójcik, 2018). These include ICT-instructional training service, the use of social media service, research support service, and embedded library service, delivered to users to meet their dynamic information needs.

Despite the value of ISD in university libraries, literature indicated that innovative service delivery in many university libraries in Nigeria are described as inadequate (Ugwu & Ekere, 2018; Arumuru, 2020, Adebayo, et al, 2018), uncoordinated, and fragmented. This trend is also observed in university libraries in North-West, Nigeria. A preliminary observation by the researcher shows that the level of ISD in university libraries in North-West Nigeria seems to be low. This situation would have a devastating effect on the university library as a system, library profession and librarians and library users in this digital era. This is as a result of the numerous challenges faces by the librarians in the course of discharging their duties, which if serious action is not taken may jeopardise their

information service provisions and make less relevant in the university community, especially now that there are numerous competitors in the business of information provision.

There are limited studies on innovative service delivery in the university libraries in Africa, especially in the North-West Nigeria as it relates to digital literacy skills and knowledge management practices which is the gap this study intends to fill. Therefore, this research intends to investigate the influence of digital literacy skills, and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria.

1.3 Objective of the Study

The main objective of this study is to investigate the influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West Nigeria. The specific objectives of the study are to:

1. determine the level of digital literacy skills of librarians in university libraries in North-West, Nigeria;
2. ascertain the knowledge management practices in the university libraries in North-West, Nigeria;
3. find out the level of innovative service delivery by librarians in universities in North-West, Nigeria;
4. examine the influence of digital literacy skills on innovative service delivery in university libraries in North-West, Nigeria;
5. examine the influence of knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria and
6. ascertain the combined influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria.

1.4 Research Questions

1. What is the level of digital literacy skills of librarians in university libraries in North-West, Nigeria?
2. What are the knowledge management practices in university libraries in North-West, Nigeria?
3. What is the level of innovative service delivered by librarians in university libraries in North-West, Nigeria?

1.5 Hypotheses

The following hypotheses were tested at 0.05 level of significance in this study:

Ho₁. Digital literacy skills have no significant influence on innovative service delivery in university libraries in North-West, Nigeria

Ho₂. Knowledge management practices have no significant influence on innovative service delivery in university libraries in North-West, Nigeria

Ho₃. Digital literacy skills and knowledge management practices have no combined influence on innovative service delivery in university libraries in North-West, Nigeria.

Ho₄. Digital literacy skill has no relative influence on innovative service delivery in university libraries in North-West, Nigeria.

Ho₅ Knowledge management practices have no relative influence on innovative service delivery in university Libraries in North-West, Nigeria.

1.6 Justification for the Study

The justification of this study is tied to the fact that 21st-century library services require that librarians need to make use of new technologies to provide services to users. As noted by some literature, integrating new internet technology (NIT) into service practices enhances operational efficiency and effectiveness (Lonkis, et al, 2012 cited by Chuang & Lin, (2015).) These services have to be innovative to increase user patronage by library users with varying information needs and make the library competitive ahead of other information providers. Hence, to encourage delivery of innovativeness in the provision of library services, librarians ought to engage in knowledge creation, sharing, and application and possess the digital literacy skills that will enable them to provide innovative services that are user driven not resource driven of the olden days. Furthermore, digital literacy skills and knowledge management practices are critical in any organisation as it helps to enhance performance and productivity, particularly in service delivery in the library. In addition, based on the preliminary investigation, it was discovered that no similar study was carried out that combined all the three variables, despite that some works were using one or two of the variables creating a gap in the literature, especially in the study locale. Hence, this study intends to investigate innovative service delivery in university libraries to have an insight concerning the influence of digital literacy skills, and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria.

1.7 Scope of the study

This study focused on investigating the influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria. Innovative service delivery was measured in terms of social media use service, ICT instructional training service, embedded library service, and research support service. Digital literacy skills were measured by photo-visual literacy, reproductive literacy, branching literacy, socio-emotional literacy, and Information literacy while knowledge management practice was measured using knowledge creation, knowledge sharing, and knowledge application.

The study covered libraries in Federal, State, and Private universities accredited by the National University Commission (NUC) found in the seven (7) States that make up the North-West. This comprises of Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara States. The geographical scope of the study is the entire categories of universities in the geo-political zone; Federal, State, and Private. The respondents were professional Librarians working in these universities Library. These groups of librarians possess the minimum qualification of a bachelor's degree in Library and information sciences and are qualified to hold managerial positions in the respective university libraries. The choice of the respondents was made because of the nature of the topic of research; they are the category of librarians who are strategic and possess the relevant knowledge, skills, and competencies to provide the required answers to the research questions of this study. Para-professionals and other staff working in the library were excluded from the survey due to their level of qualification and the responsibility they hold in the libraries. The concept of innovative service delivery, library service innovation and service innovation in the library were used interchangeable during discussions and conceptual explanations.

1.8 Significance of the Study

The study is significant in that the findings of the study would help to highlight the importance of innovative service delivery in the library especially now that the library user community, information and knowledge needs are evolving. The mode of learning and teaching is also changing as well as ICT technology advancements changing our way of doing things. The university community in general would also benefit from the research findings, as they engage with the librarians to obtain required information and knowledge in an appropriate format as the need arises. The finding of the study will play a significant role to librarians by having the necessary digital literacy skills and the ability to execute knowledge management practices would prepare a librarian to effectively and efficiently handle his /her work in the library which will move the university forward.

The study would serve as reference materials for students and researchers who intend to explore this area of discipline. The study would also provide a roadmap in the area of digital literacy skills and competencies required by librarians to engage in innovative service delivery in university libraries in North-West, Nigeria. The study provides empirical evidence on the interplay or influence of digital literacy skills and knowledge management practices on innovative library service delivery.

The findings would also benefit the university management in the decision-making process about integrating the librarians to fully harness the potentials of innovativeness to enhance user experiences and ensure the scholarly outcomes of the institutions. In addition, the study would reveal areas where the library through the introduction of innovative services, provision of knowledge management practices, and possessing the requisite skills can reposition the library and in the university setting and librarians among the entire university for competitiveness.

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1.8 Operational Definitions of Terms

The terminologies that are peculiar in the study are operationalized to enable the reader to grasp the actual meaning, ideas, and understanding intended to be revealed in the study. The following terms were defined:

Digital literacy skills (DLS): These are referring to ability of individuals to comprehend, evaluate, and uses electronics resources, cope and function optimally in the digital space and its implication through the use of ICTs. These skills including photo-visual literacy skills, Branching literacy skills, socio-emotional literacy skills, reproductive literacy skills, and Information literacy are possessed by librarians to enable them to deliver innovative services in the North-West, Nigeria.

Innovative Service Delivery: Innovative library services refers to instituted services that produce new ideas in university libraries that lead to the interconnectivity and collaboration among libraries and librarians as well as patrons which invariably make a library competitive and ahead of other

ICTs Instructional Services: these refer to teaching and instruction activities on information or digital literacy skills provided by the librarians to library users to enable them to explore the information resources and knowledge packages in a form required by users with little or no interference from librarians.

Knowledge Management Practices: Knowledge management Practices refer to the activities that entail the creation of knowledge, sharing of knowledge, and application or use of knowledge by librarians in the Universities in North-West, Nigeria.

Librarians:these are library and information professional staff with either a degree in library and Information Science or a degree in another field and a Master's in Library and Information Science working in the university libraries in North-West Nigeria

Research Clinic Services: This refers to research support services rendered to researchers either on, face-to-face, or virtual using technologies by professional librarians in the university libraries In North-West, Nigeria to accomplish users' research goals.

Social Media Service: This entails the use of social media applications sometimes called social networking platforms to provide innovative library service delivery by the librarians in university libraries in North-West, Nigeria.

Service delivery: Service delivery refers to the ability of librarians to provide Innovative library and information services to users in the university libraries in the North-West, Nigeria.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter reviews literature that is relevant to this study. The literature was conceptually, empirically and theoretically reviewed in line with the dependent and the independent variables of the study.

2.1 Conceptual Review

2.1.1 Innovative service delivery

2.1.2 Innovative Service Delivery in University Libraries

2.1.3 Digital literacy skills

2.1.4 Knowledge Management Practices

2.2 Empirical Review

2.2.1 Innovative service delivery in university libraries

2.2.2 Digital literacy skills and innovative services delivery in university libraries

2.2.3 Knowledge management practices and innovative service delivery in university libraries

2.2.4 Summary of the empirical review

2.3 Theoretical Framework

Eshet-Alkalai model of digital literacy skills (Yoram Eshet-Alkalai – 2004)

SECI Model by Nonaka and Takeuchi

Knowledge creation theory by Ikujiro and Nonaka

2.4 Conceptual Model

2.5 Appraisal of literature

2.1 Conceptual Reviews

This section focuses on the concept of the study variables by numerous scholars to help provide a clearer understanding and reasons for their use in the context of this research work and in line with the objectives of the study. The concepts that were reviewed comprised of innovative service delivery, digital literacy skills, and knowledge management practices.

2.1.1 Innovative Service Delivery

Innovation is a widely studied subject in both the manufacturing industries and service-oriented institutions like libraries. It is believed that for an organization to be productive as well as retain customers or users of its products and service there is a need for them to be innovative. The concept of innovation originated from the Latin word, 'innovare' which means "to make something new" (Lin, 2006). Innovation has been defined by several scholars beyond searching for something new to denote disruptive improvements that metamorphosed the entire knowledge space. Kong, et al, (2019) defined innovation as the search, discovery, development, improvement and adoption of new processes, new products as well as new organizational structures and procedures to achieve better goals. Lucy, (2020) defined innovation as the construction of a new and viable offering that increases the value of an institution. In a business organization, innovation is regarded as the tool that drives change in business outcome or service. According to Daugherty, Chen and Ferrin (2011), innovation is an idea, practice, or object that is perceived as new by an individual. It can also be regarded as the process of converting business and services ideas into practice. Innovation brings about a balanced new process and procedures of doing things in an organization which can be a service.

Innovative service delivery as a construct is made up of three words "innovation", "service" and "service delivery. Kotler (2001) defined service as "any activity of advantage that one party offers to another, essentially intangibles and does not result in ownership. Agarwal and Selen (2015) defined services as the application of competencies, making use of knowledge, skills, and experience of all stakeholders to achieve set objectives in an organisation. Nwachukwu, et al, (2015) are of the view that services are non-physical and intangible parts of socio-economic transactions engaged by an individual daily as opposed to goods that can be touched or handled. Magbadelo (2020) defined service delivery as the provision of services systematically and securely targeted at a clientele. According to Ukeje, et al, (2019), service delivery refers to the process of delivering service to the public. Awodoyin and Aina (2018) noted that service delivery can be defined as products delivered to people as users to satisfy their needs. Lovelock and Wright (2012) are of the view that the concept of service delivery is concerned with knowing where, when, and how a service product is delivered to the customer. Nyantakyi-Baah (2016) stated that service delivery deals with the features needed and a product or service that is without deficits.

According to Whitaker (2017), the primary intention of service delivery is to satisfy the user of the service as the principal beneficiary which by implication means that the service has to be innovative. Innovation services delivery and services delivery innovations are used interchangeably (Tsou & Chen 2020; Cyril, et al, 2019; Islam, et al, 2017). Chen, et al in Martins and Ledimo (2015) defined service delivery innovation as services that are delivered leveraging on new ideas and propensity with the intent to change, and facilitated by adoption of new technologies, resources, skills and administrative support systems. Innovative service delivery is a necessity in every organisation for that organisation to succeed and survive competitions. Service delivery innovation is critical for organisational success because it serve as the building block of new services from different viewpoints, particularly the views of patrons/clienteles and service providers to enhance effective and efficient services (Goldstein *et al.*, cited in Cyril, 2019). Innovation response to a challenge takes either (i) reactive or (ii) proactive approaches. Therefore, for services delivery to be considered reactive, the service delivery pattern must focus on addressing perceived irregularities, insufficiencies and inefficiencies that have been identified by internal or external stakeholders of an organisation. This type of service delivery innovation adopts problems solving approaches (Martin & Ledimo 2015).

Reactive innovative service delivery highlights problematic practices and routines perceived as mismatch between what the organisation intends to provide (its strategic intent) and what its customers/clients may require or expect (customer/clients' needs), while, proactive service delivery innovation aims at enhancing organisational practices, procedures and process before problems occur through facilitating and support to continuous performance improvement, creative use of delivery modes and encouraging use of new innovation (Chen et al., 2009). Proactive innovative service delivery guarantees that service package fit the needs of the customer and the organizations intent. There are numerous dimensions to service delivery innovations. The four (4) prominent dimensions used to deliver innovations as suggested by Martins and Ledimo, (2015) are (i) initiation, (ii) communication, (iii) management, (iv) impact on clients/customers, which are cyclical and continuum in nature. According to the scholars, initiation process involves creation of continuous culture that enshrines service improvement in the organisation; communication process focuses on communication process to create a clear and shared understanding of the nature of the new service to be provided; management process focuses on leadership facilitation and support of service delivery innovation and Impact process; focuses on customers and clients satisfaction

2.1.2 Innovative Service Delivery in University Libraries

User satisfaction is the core of innovative service delivery in the library. It has become imperative to state that Innovation is central to the growth of libraries especially in light of the transition of libraries' in the technological age. The on-going transition from the traditional mode of doing things such as acquiring serials in print to providing access electronically and eventual deployment of a virtual library in full has become the hallmark of libraries. For libraries to remain relevant and satisfy effectively their customers there is need to refocus attention to the concept of innovation as it is a common practice in the business environment where multi institution engage in innovative practices to stay afloat in business. There is a gradual shift in the skill set of librarians where a staff moves from been a book-centric librarian to user-centric librarian. Hence, it has become vital for libraries to redefine their role in the information technology driven work space by leveraging and becoming innovative as a direct responds to the satisfaction of users who visit the library. According to Brindley (2006), there are ways in which library need to reshape and rethink their services and skills to maintain their relevance and contribution to the society which is innovation. He further established that the librarians need to know their users and stay close to them; integrate marketing into the organization; invest more in innovation and digital activities; and develop the people and ensure the right mix of skills.

Innovative services delivery within the library context is characterized by changes in the service concept, service interface, the delivery system and technology use. It further refers to a new or improved technology, interfaces, services and methods of work that enhances uses satisfaction" (Islam et al., 2017). Innovative service delivery further refers to activities initiated and implemented with the aim of creating a healthy and focused library services and environment that facilitates users' information needs and attract these users to appreciate the library. Raval, et al (2016) conceived innovative service delivery as new or rebranded services institutionalised, irrespective of information explosion and attitude of library staff toward patron's attraction and retention, to maximize usage of library resources, space and manpower effectively. Innovative library services refers to instituted services that produce new ideas in university libraries that lead to the interconnectivity and collaboration among libraries and librarians as well as patrons which invariably make a library competitive and ahead of other libraries (Çolaklar, 2014).

There are many ways in which innovative services delivery occurs in library. Corral and Jolly (2019) stated that innovativeness can be championed by the use of technological tools in libraries to deliver services. These tools according to Omeluzor, Ugochi, and Izuakolam, (2020) comprises of Frequently Ask Question (FAQ), On-line Public Access Catalogue (OPAC), text messaging, Ask a Librarian, Blogging and Social Media. Omeluzor et al further explained that FAQ is a tool used to deliver innovative service through answering users hypothetical questions on problems encountered while utilising the library; OPAC is a web or local based innovative service delivery tool that has features of an integrated library system (ILS) that contains processed bibliographic records in a library. Text messaging is also known as “SMS a Librarian” is an innovative service delivery tool that can be used by reference librarians in place of Ask a Librarian service in sending instant messages to single or multiple recipients (Library users); Ask a Librarian, is a live virtual reference service tool that offers innovative services delivery through a platform designed for users to ask questions, make inquiries and request for answers on specific services from librarian; blogging is an online platform use by librarians to create and post information to the users, colleagues and like mind about activities and up-coming events of the library; social media is an innovative service delivery platforms use to interact and socialise by the librarians and library users concerning the satisfaction of information needs of a user.

In this study, innovative library services is defined as meeting the needs of users through new ideas or services, new delivery methods and improved user interfaces, as well as new technology applications in the library. Specifically, it will entail use of embedded services, deployment of ICT instructional training service, creating a social media services and research clinic services.

Embedded services as an innovative metrics deals with librarians focusing the services on the users, it is an initiative that brings the library and the librarian to the user regardless of their location such as home, school or on their mobile device. Embedded library services deals also with an intensive scholarly partnership and collaborations that exists between librarians and users such as staff and students in the institution. Library tend to partner with departments and faculties in the university with the realization that information can no longer remain centralized due to the massive technologically changes especially with the invention of the internet and that they would need to adapt to the new information paradigm through decentralization of services (Schumaker and Tyler 2007). Embedded librarian services provision include proactively aiding students by addressing information access and supporting student use of information materials with the aim of improving their research abilities (Kesselman & Watstein, 2009). Embedded service provision by Librarians can happen through teaching in academic departments and scholarly communication activities with faculty virtually.

ICT instructional training service is another innovative services provision that has been introduced as a redirect responds to technological inventions. Libraries are established to organize, preserve and disseminate information resources to their respective users but this act cannot be successfully carried out without Information and Communication Technology (ICT) as instructional technologies. Information and communication technologies (ICTs) have influenced the way information is being handled resulting in speed and accuracy at which information is accessed, retrieved, stored, manipulated and disseminated to users in different formats. Information and Communication Technologies (ICTs) are tools that facilitate the production, transmission and processing of information (Toyese, et al, 2018). ICT tools include computers, software resources, audio-visual media/equipment, and photocopiers; and communication media. ICTs consist of hardware, software, networks and media for

processing, transmission and presentation of information. The importance of ICT to academic libraries in particular cannot be overemphasized. Information Communication Technology have extended the services provided by the library beyond the traditional library wall system. Library services are now been provided beyond the walls of the library to online access to information with the use of the internet, social communication tools and networking technologies. ICT have expanded the role of the library in which the libraries have the mandate of providing equal resources to students who are on the open distance education of the institutions. Online learning and teaching requires a significant movement from traditional on campus modes of library delivery, support, and advice. These transition and expansion on the nature of library services challenges the traditional library work as controlled, mediated information access to a user-centred approach to meet the needs of users.

Applegate (2009) noted that students use academic library spaces by bringing their own laptops in which the library continues to be a key space for learning and scholarly activities within academic institutions. The act of students bringing their own gadgets to the library replaces traditional models of uni-directional services as both the library and the communities can be co-producers of library services (Berube, 2011). Using ICT, libraries have not only observed changes in their daily operations and services, but also identified a new and active role for librarians which involves providing instructional training to users both with ICT tools and how to access the library resources with the use of the ICT tools provided in the library. According to Enang, Et al, (2016), ICT facilities include computer, the Internet, overhead projector, fax machine, multi-media equipment. Therefore, the use of these information technology facilities requires educational instruction. Instruction users on how to use these ICT tool will enable students to work at their own pace with minimal monitoring. ICT facilities strengthen the relationship between librarians and users. The transformational impacts of ICTs in the libraries have increased the movement towards the users from the provider. Innovativeness in the libraries deals with the use of the social media in providing a broad range of services to the user.

The corporate website of the library that traditionally included static, directional information and services provided by the library has now changed into a more dynamic online space with the utilization of social media tools such as RSS feeds, social networking sites such as Facebook, audio and video podcasting and blogging. Social media is the use of modern-day technology to share and discuss audio-visual information. These platforms like Facebook, Instagram, Twitter, YouTube enable users to create and share information regardless of the distance (Jain, 2013). Heidi (2010) is of the view that social media is a platform that ensures the utilisation of interactive web which allow users to create content, engage it by commenting and sharing with one other in the social space. Libraries in the 21st century are now leveraging on the power of the web to communicate with users and attract them to library services. Libraries across the world use social media platforms for reference services, relating with users, translation services, marketing, and current awareness service. Ezeani and Igwesi (2012) stated that, social media allows people to connect in a two-way transparent communication that encourage a feedback mechanism; connecting people with shared interest.

Some of the Social media platforms used by librarians to meet the information needs of the users include Blogs. Blogs enables librarians to periodically create messages on a particular subject and allow them exchange ideas and share them online. There is the use of Facebook which allows for the interaction with users to know the information they need. Library link specialized application services to its Facebook account to drive use. Libraries also use Flickr to distribute image tools that can be utilized by Librarians. Image of new arrivals of books, journals,

periodicals can be shared to users through this platform. YouTube is a platform where audio-visual contents are uploaded to enable wider reach. Libraries use this channel to distribute library content and educate users on the functionality of the services provided in the library. Library Thing is another web tool that enriches the library OPAC. Once an account is created, a list of books with ISBNs is sent to Library Thing which sends back a piece of code which is pasted into the footer of the Library OPAC. Librarians can utilize this to send a list of current publications to users. LinkedIn, MySpace, Ning, Twitter are all social media applications that are innovatively used by users to provide information services to users.

Twitter for instance enables the library to update library users on new developments in the library. New collections of materials, current content services of library, important information regarding library services can be shared promptly on the platform. It is based on the above assertions that Ezeani and Igwesi (2012) described social media as a platform for accessing knowledge openly because the resources are available with no need for payment or authentication before viewing it. In an open access platform, users are not charged for accessing resources of any kind. Rutherford (2008) noted that participative elements of social software make it easier for users to provide feedback on all aspects of library services, thus contributing to the library innovation process. Rowley (2011) affirm that new service innovation in academic libraries is dependent on some critical success factors such as employee skills, availability of resources, IT adoption, management support, innovation processes and user knowledge. Service innovation also requires knowledge of barriers prevalent in the library that need to be overcome before innovation can happen (Islam et al., 2017).

2.1.3 Digital literacy skills

Information and communication technologies (ICT) have powered advancements and growth in banking, transportation, economics, and most of all in education. Hence, individuals need a wide range of abilities, competencies, and skills to adapt to the technological era. One of such is the emergence of digital literacy through ICT developments. Digital literacy is a highly sought competency among librarians. This is because the services delivered by librarians are now been greatly offered through a range of media, including social network sites, mobiles phones and virtual words. Library staff are expected to remain up-to-date with different approaches followed for sourcing, creating and sharing information that are not necessarily supported within the formal academic environment and should reach out to students in a more direct and meaningful ways. ICT has stimulated educational growth and provided new opportunities in developing countries, introduced digital libraries and created new dynamics in research (Sharma, et al., 2019).

Digital literacy skills (DLS) are referring to ability of individuals to comprehend, evaluates, and uses electronics resources. It is the ability of an individual to cope and function optimally in the digital space and its implication i.e achieving efficiency in every aspect of life through the use of ICTs (Phuapan, et al, 2015). Noh, (2016) define DLS as the ability to access, use and produce digital contents using Information and communication technology tools (ICTs). It is the ability to use ICTs Tools to find, locate, manage, integrate, evaluate, create, communicate and share information necessary for relevance, and success in the contemporary world of knowledge economy (Sharma, et al, 2016) Some group of intellectuals such as Laar, et al, (2017) viewed DLS as the 21st century skills that shape thinking, learning, working and fun. According to Hagerman, (2019) DLS are the skills require for creating, transforming, reasoning, and communicating meaning in a digital context Baron, (2019) Alludes that DLS is the

ability to access, navigate, understand and contribute in today's Knowledge society. Therefore, DLS is the competence, knowledge and activities required to effectively, efficiently, and ethically participate in the digital world we are in.

To buttress further, DLS is a term synonymous with other terms such as information literacy, Media literacy, Computer literacy, internet/web/online/Network/cyber literacy, critical (evaluation skills), and visual and library literacy (Cordell, 2013). Nevertheless, DLS is a more recent concept encompassing all other synonymous concepts (Cordell). The word digital literacy was first coined by Poul Gilster in 1997. Who defined it as the individuals' capacity to recognise and use information in different forms and sources through the use of ICT devices. It was birthed by media literacy, while media literacy also came into being as a result of surrounding content bias and the need for information intelligence to sieve the truth out of mixed content; misinformation and disinformation issues came up.

Therefore, people needed to be media literate in the 1930s and 1960s due to the information explosion and war propaganda as well as the evolution of advertisements. The unprecedented development of digital tools across the globe and its rapid takeover of daily life activities necessitated DLS. This development resulted in the emergence of other many terminologies such as the digital divide; disparity of DLS among people in the developed and those in the developing nations in the world, digital native; younger people that were born in the digital age, and digital immigrants; older people trying to adopt and adapt to the world of ICTs (Preasky,2001). Others were digital residents; those who are always online and digital visitors; those who used to be online once in a while, and the participation gap; and differences in DLS due to varied access to ICTs by Henry Jenkins.

Professional and practitioners has also DLS has termed DLS as a puzzled term without a universal and consensus definition. Is a term that meant different things to different people at different time in different locations in contextual manner. Several people and organizations such as UNESCO, (2017), Eshet (2012) and Henderson (2015) among others have made efforts to define DLS. Several among them have defined it as the cognition, behaviours, and competencies to use electronic tools for searching, accessing, managing, appraising and making information inferences from digital sources as well as using digital tools for creating sharing and communicating new knowledge, while defining DLS as the skills, knowledge, and behaviours required to correctly access and use electronic information. Heidi, (2018) declared that DLS is conceptually unclear and has overlapping meaning with ICT, Computer, computational, technological, information, information literacy, media, and trans-literacy literacies. According to Henderson and Romeo (2015), DLS is the ability to use search engines effectively, access and assess information sources for credibility, obtain and use information, use word processors as well as engage in online discussions and communication. This definition seems like a combination of the concepts of information and media literacy.

DLS is critical for survival as ICT has successfully permeated all human endeavour necessary for living. According to Adams et al, (2017), the evolution of ICT has permeated the majority of companies and is determining the employment and job retention landscape as assets operations and workforce are continuously being digitized. The world is fast becoming a techno-media society. Information is becoming the most important resource and ICT is an indispensable tool, lifestyle, and habits daily engagement in workplaces as well as the understanding of the world today was shaped by ICT (Gala, 2015). The United Kingdom's House of Lords Select Committee on Digital Skills

(2015) described DLS as the competencies needed for living, learning, and working in today's information society and digital economy. According to them, 35% of jobs are now at a high risk of digitization, and everyday activities both at work (work process and meetings) and personal life (shopping, banking, traveling socialising, and collaboration etc) are now controlled by ICT. Therefore, DLS is a key to bridging the digital divide, necessary to foster global sustainable development (Sharma, et al, 2016).

The digital evolution breaks geographical and time barriers as real-time information travels across the globe within the twinkle of an eye and everybody, everywhere is influenced by the revolution. DLS is a determinant of those who made and the ones that broken by this wave of digitization across the globe. These underscore the DLS education and techno-media convergence of competencies (Galan, 2015). DLS is presently needed for responsible citizenship in order to participate in the contemporary information society, for economic growth through innovative use of information and knowledge for employability as well a personal and professional development.

Despite the existing divergent and confused views of DLS based on discipline, geographical location, time and other parameters, there are common denominators to all the views. The common factors of the views on DLS rally round the ICT tools and human capacity (Laar, et al, 2017). They include ICT cognitive, operational and socio-emotional skills (Porat, et al, 2018; Cordell, 2013). This go hand in hand with the three (3) dimensions of DLS by Noh, (2016) which are virtual community literacy, (the ability to understand cyberspace, tools, behaviours rules and ethical use of ICT). Bit literacy (ability to search, appraise, edit, process, and utilize information) and technical literacy (the ability to deploy ICT for information access, use and sharing). The modified skills-based theory of digital literacy by Eshet (2012) specifies six (6) major components of DLS as photo-visual, reproduction, branching, information, socio-emotional and real time digital skills (Eshet, 2012; Osterman, 2012).

The elements of digital literacy skills include information competencies, electronic communication, photo-visual skills, reproduction skill/creating electronic contents, real time skills, socio emotional/ethical use of ICT, researching with ICT, as well as operating and managing electronic resources (Henderson & Romeo, 2015). This means that for someone to be digitally literate, he/she must possess skills including the ability to search, evaluate, share, communicate and find information and tools online as well as understanding and use of ICT, evaluation of information and sources for credibility and collaboration with others for knowledge sharing (House of Loads select committee on digital skills, 2015; Cordel, 2013; Reedy, et al, 2012). This was broadened by Noh (2016), as network, technical, computer, information, online game, technical environment and socio-cultural literacies. According to Adams, et al, (2017), the UCL model describes the factors of DLS in its simplest form. The 'U' stands for universal literacy, the knowledge and ability to use digital tools like office software, image processing, web computing, and cloud computing among others. The 'C' stands for creative literacy; the ability to produce digital contents such as text, audios, videos, animations. 'L' stands for literacy across disciplines; the ability to bring the knowledge of U and C bare in different fields of human endeavour. From all the forgoing, DLS can be categorized into five (5) competencies; understanding digital practices, finding, using, creating and sharing digital information/contents.

Digital literacy applications and skills also include mobile texting, online writings/content, creation, online games, social media, digital production and cultural diffusion, jamming and hacking (Henderson and Romeo, 2015). Zhao, et al, (2018) Further, simplify by the components of DLS by breaking them down into functional creativity, collaboration, communication, search, evaluation, and socio cultural understanding and e- safety skills. According to

them, the functional skills lie in the ability of individuals to understand and use ICT devices, and tools, the creativity skills is the ability to create digital contents such as texts, graphics, and audio-visuales. The collaboration skills refer to the competencies for navigating network hypertext, tools and participating in the digital discourse. The communication skills are the ability to send and receive information over ICT, devices. The search and evaluation skills relate to information literacy; they refer to the skills for finding, appropriating, appraising, digital contents for credibility. Meanwhile, the socio-cultural skills refer to societal and cultural factors influencing adoption and use of ICT and e-safety skills connote the ability to consider ethical consideration in the use of ICT. While, Baron (2019) analysed the elements of DLS as ability to access, navigate, read and create digital media.

Although, all the authors are right in their views, most of them did not situate the expected skills in the professional perspective. The digital skills required by a lecturer/teacher may be different from the skills required by a banker; likewise the digital skill needed by a lawyer may not be the same with that of passion designer. On the other hand, some DLS can be considered to be applicable to all, some are peculiar to professional performance. The digital literacy skills consider to be universal to all may include functional, creativity, collaboration, communication, search, evaluation, and socio-cultural understanding and e-safety skills. While those specific to professional performance may include photo-visual skills; fingerprint cross matching, remote -diagnosing skills and others. The ability of a librarian in the university library to provide innovative service delivery requires him/her to possess a universal DLS; functional, creativity, collaboration, communication, search, evaluation, and socio-cultural understanding and e-safety skills. Therefore, the rapid growth in the digital technology requires individuals to have the necessary skills and competencies to perform tasks and solve problems in digital world.

According to Coldwell-Nelson (2018) digital literacy skills is defined as the ability to identify and use technology confidently, creatively and critically to meet the demand and challenges of living, learning and working in a digital society. Digital literacy skills go beyond the finding, retrieval, and synthesis of information to the ability to use of other digital media. Cornell University (2015) conceived digital literacy skills as ability to create content using information technologies and the Internet. Reynolds (2016) defined “digital literacy skills as those skills applied to relate with technologies to enhance effectiveness and efficiency when used during a task” (p.15). According to Hall, et al, (2013) digital literacy skills are work-based skills that enhance learning and leading to professional qualifications.

Digital literacy skills are synonymously conceived in literature using terms such as; 21st-century literacy skills, internet literacy skills, multi-literacy skills, information literacy skills, information communication technologies (ICT) literacy skills, computer literacy skills, and online reading comprehension (ORC) skills (Osterman, 2012). University of Illinois defined digital literacy skills as; (a) the skills necessary to facilitate the use of digital technology, communication tools, networks, to locate, evaluate, and be able to create information; (b) the skills that enable understanding and use of information in multiple formats from a wide range of sources via computers; and (c) the skills that enable a person perform tasks effectively in a digital environment (University of Illinois, 2011, para.1). Federal Communications Commission (FCC) (2010) defined digital literacy skills as the sum of the technical skills and cognitive skills people employ to use computers to retrieve information, interpret what they find and judge the quality of that information. It also includes the ability to communicate and collaborate, using the Internet through blogs, self-published documents, presentations and collaborative social networking platforms” (p. 174). Digital literacy skills could be paradox of contemporary education because skills demand is increasingly based on

technological needs and changing work-place that may not be learnt in school, but rather outside the sphere of the school environment (Beavis, et al, 2009). Digital literacy refers to the assortment of cognitive-thinking strategies that consumers of digital information utilize (Eshet, 2004). The aforementioned concepts on digital literacy skills argued that (DLS) are necessary for effectiveness and efficiency to work in all the digital environments. As literature noted, advancement in technology and its application depends on possessing the skills to perform the duties ascribed.

2.1.4 Knowledge Management Practices

The concept of knowledge is viewed as mixed experiences, values and expert insight that provide a framework for evaluating information. Kebede (2010) views knowledge as a combination of information, personal experience, views, expertise, suppositions and logical reasoning formed in the minds of the people. According to Omotayo, (2015) knowledge is defined as the insights, understandings, and practical know-how that people possess. Bolisani and Bratianu (2018) defined knowledge as the result of knowing which is not created a priori and innate as a deterministic form. According to Dombrowski et al, (2013) gave three kinds of knowledge as; a) experiential, b) skills and c) knowledge claims. They further established that experiential knowledge is gotten from direct connection with the environment; it is personal, directly interfaces with individual sensory system and essentially based on perception and reflection. In addition, Bolusani and Bratianus, (2018) conceived that experiential knowledge is created as a result of interaction between emotional, rational knowledge. Skills represent ability and capacity to do something. Skill knowledge is well- structured and action-oriented knowledge acquired by repeatedly performing certain task and learning by doing. Skills knowledge strengthen experience base naturally and real life experience; Knowledge claims are the things known and shared and can be examine, discussed, questioned, evaluated, refuted or published and passed on. Knowledge claims enable learning and building of shared knowledge among individuals.

Furthermore, knowledge is related to one's understanding of an environment and regulates one's behaviour. Knowledge enhances a firm's value and the achievement of its objectives, mission and vision (Fong et al., 2011). Two types of knowledge tacit and explicit have been documented in the literature (Nonaka, 2007). The "explicit" or codified knowledge which refers to knowledge that is transmittable in formal, systematic language, "tacit" knowledge has a personal quality, which makes it hard to formalize and communicate' (Swart & Harvey, 2011). The explicit knowledge can be articulated and communicated between individuals and organizations; explicit knowledge is codified in corporate procedures, policies, manuals, computer programmes and dialogues scripts for call Centre operations. Explicit knowledge, this is the type of knowledge which comprises of information that are codified, documented and archived that are found in library's operations, work procedures, rules and regulations for use (decision making) (Asogwa, 2012). Tacit knowledge refers to a personal knowledge that is not documented and characterise as difficult to formalize, record, communicate and articulate because it is usually domicile in the head of a personnel. It can be shared through activities or programme such as meetings, seminars, discussion and symposium. It can be extracted by learning and practice. Tacit knowledge is embedded within individual skills and know-how and the routines and culture of organizations and so it is difficult to transfer, but critically important as the foundation for competitive advantage. Tacit knowledge (skills, know-how and contextual knowledge) is manifested only in its application and its transfer is costly and slow.

The concepts of Knowledge management were variously defined by many scholars in different field of knowledge or discipline such as; Dalkir (2017) who defined Knowledge management as the deliberate and systematic coordination

of people in an organization. Rafi, Ming, and Ahmad (2020) defined knowledge management in the library context as purely a systematic process or procedure for acquiring, organizing, archiving and disseminating knowledge to improve internal and external library operations. E-knowledge centre, cited in Ugwu & Ezema, 2010) defined knowledge management as discipline whose approaches are to manage all the knowledge processes found in a set of people and organisations with common goals. Husain and Nazim (2013) defined knowledge management as the process of creating, storing, sharing, applying and reusing organizational knowledge to enable an organization to achieve its goals and objectives.

Knowledge management has been defined as a method of management that governs the creation and utilization of both tacit and explicit knowledge in an organization. According to Jain (2013) KM is defined in the context of academic libraries in universities as “a process to create, acquire, share and apply both tacit and explicit knowledge for the benefit of the university and its entire user community, providing the right information to the right customer at the right time and in the right format to accomplish the parent institution's goals. Knowledge management is defined as the effective utilization of knowledge-based practices upon knowledge resources to improve organizational performance and attain competitive advantage (Shropshire, et al, 2019). Knowledge Management (KM) is a process that deals with the development, storage, retrieval, and dissemination of information and expertise within an organization to support and improve its business performance. (*valamis.com*, 2021) Knowledge management (KM) is a practice lauded as a 21st-century management strategy for business organizations. According to Ugwu, et al, (2014) knowledge management is conceived as collection of processes that lead to the creation and transfer of knowledge capable of being integrated systematically with the organization's internal work processes in an organization. Earlier, Nonaka and Takeuchi (1995) defined KM as the capability of an organization to create knowledge, disseminate it through the organization and embody it in products, services and systems. Alegbeleye (2010) defines KM as the creation and distribution of an organization's knowledge libraries, Onyancha and Ocholla (2009) defined KM as the management of information resources, services, systems and technologies by librarians in different libraries.

Nonaka and colleagues (Nonaka, et al, 1994; Nonaka & Konno, 1998; Nonaka & Takeuchi, 1995) linked four knowledge creation modes (i.e., socialization, externalization, combination, and internalization) to innovation. They argued that the continuous creation, transfer, combination and conversion of the different knowledge which basically involves practice, interaction and learning from one another in organizations cannot be over-emphasized. According to them, the process of knowledge creation in organization is by socialization. These involves communication and interactions such as discussions, sharing experience, simulation, practice observation and other social contacts that could exist among members of an organization. The second process of knowledge creation is externalization which is a process that converts tacit knowledge to explicit knowledge in the shapes of concept, metaphors, hypothesis, description and models. Externalization occurs when an organization articulates its internal rules of functions explicitly. The third process of creating knowledge in an organization is by combination through a process that creates a new explicit knowledge from an old existing explicit knowledge whereby existing explicit knowledge is merged, categorized, reclassified and synthesized to create new explicit knowledge. The last process of knowledge creation in the model is through internalization which is achieved by changing explicit knowledge into tacit knowledge through a process in which abstract ideas change into concrete ones and they are finally absorbed as an integral value. These modes of knowledge creation exist in an organization either singularly or in combinations.

Knowledge Management practices (KMPs) implies activities, processes and procedures used for knowledge management engaging endeavours. Inkinen, et al, (2015) defined “knowledge management practices as a set of management activities that enable an organization to deliver value from using its knowledge resources” in other word its entire intellectual capitals appropriately. Similarly, Knowledge management practices was defined by Abu-Shanab and Ishehabat (2018) as a set of activities that ensure knowledge creation, Knowledge capture, Knowledge organisation, Knowledge storage knowledge dissemination and knowledge application in an organisation, and identified four key KM practices to comprise: information technology (IT), organisational culture and structure (OCS), communities of practice (CoP), and human resource (HR) practices. According to Dalkir (2013), KMP practice can be described as a cycle which consists of processes that transform information into knowledge as a strategic valuable asset for an organization. This cycle consists of “knowledge capture/creation/contribution, knowledge filtering/selection, knowledge codification, knowledge refinement, knowledge sharing, knowledge access, knowledge learning, knowledge application, knowledge evaluation and knowledge reuse/divestment. knowledge management practices comprises the act of identifying the type of knowledge asset organization has, analysing how the knowledge can add value, by identifying actions necessary to achieve better usability, and reviewing the use of the knowledge to guarantee added value.

KM has great significance for librarians, libraries and information centres (Serenko, et al, 2016; Abukhadar, 2016). It is a key for the success and existence of academic libraries and is strategic asset to any organisation (Porumbeanu, 2010) the main goal of KM is to improve the efficacy and maintaining the existence of any organisation (Marouf, 2017) and to increase the level of outputs and functional efficiency by maximal application of the existing knowledge has also been exemplified by the knowledge management cycle.

The knowledge management cycle (KMC) encompasses all the continuous processes where information is identified, obtained, refined, used, stored, and divested (Mohajan, 2016). The KMC starts from the creation to the disposal of information for the running of an organisation. The knowledge management cycle in an organisation provides opportunities to; i. acquire and capture knowledge, ii. Organise and store knowledge, iii. Retrieve and distribute knowledge, and iv. Maintain currency, relevancy, and value of knowledge (Mahapatra *et al.*, 2016). The knowledge management cycle includes the processes that provide direction to identify existing knowledge (internal and external), facilitate plans towards the type of knowledge required and can be acquired, develop the knowledge, distribute the needed knowledge, encourage the use and control or maintain its quality and dispose of the one that is no longer needed (Evans *et al.*, 2014). The KMCs, therefore, refer to as processes that capture, create, codify, share, access, apply, and reuse of knowledge within and between organisations (Mohajan, 2016). Knowledge management cycles are a clear graphical illustration of most times complex processes of records containing human knowledge that are shared for their necessity, values that eliminate vagueness, and present precise sequential order to follow when managing organizational knowledge.

2.2 Empirical Reviews

This section presents the empirical reviews of the relevant literature on both the dependent variable and independent variables involved in the study. This is to enable the researcher to figure out the relevant research works that were carried out in the field of the study. It would also assist in depicting the research gap that underpins this research work.

2.2.1 Innovative Service Delivery in University Libraries

Numerous authors have reported their stand on innovative service delivery using diverse parameters to empirically investigate presuppositions. These, according to them have become necessary to understand and apply innovation for library survival and service improvement.

The study by Islam, et al, (2017) on the effect of knowledge management on service innovation in academic libraries which target academic librarians globally because of their roles of speeding of knowledge creation and transmission through innovative services to the stakeholders revealed from the library worldwide platform used for the survey. A total of 107 librarians from 39 countries served as the study respondent, however, only 97 (87.85%) responded. The result of the findings was based on a hypothetical test using one dependent, one independent, and two mediating variables. These variables were innovation in library services which served as the study's dependent variable while knowledge capture/creation served as the independent variable. The two mediating variables were knowledge sharing/transfer and knowledge application/use.

The result indicated that there is a strong relationship between knowledge management and services innovation in academic libraries globally. The view shared by the study implied that academic libraries with more capability of knowledge creation are likely to offer more innovative services and more new services when there is a better-developed knowledge application. The emphasis of Islam, et al, was on knowledge management and services. These two served as the dependent and independent variables; however, there are two mediating variables (Knowledge sharing and knowledge application) which constitute construct of knowledge management cycles. The two mediating variables interfered with the result which made it difficult to distinguish the position of the independent on the dependent variables. This could be the reasons why the instrument for data collection was re-modified. Therefore, the study has been able to suggest that during investigations of the relationship between KM and IS, the construct use should consider carefully the dependent, independent and mediating variable so as, to fill gaps of disparity between already existing and conceptually supported literature and not well supported empirical evidence as was the case in this study.

Another study by Tsou and Chen (2020) on dynamic capabilities, human capital and services innovation: the case of Taiwans' ICT industries in Taiwan. Survey research method was employed to elicit information using questionnaire to collect data from 1310 respondents which comprises staff from IT and Sales departments. The focus of the study was on service innovation in the ICTs industry in Taiwan, this is due to the nature and tendency of ICT industry for collaboration, interconnectivity and interdependent in building complex and global network. The relationships among such industries are multi-layered and indirect, as services innovation is characterised by reconfiguration of service system; one or more parts of a service system (people, information, organisation and technologies) can always be replaced to add value to the firm. The study found that dynamic capabilities have positive effects on services innovation with the mediating effect of human capital on the relationship between dynamic capabilities and services innovation. This implies that dynamic capabilities and services innovation are critical for development in an organisation, university library inclusive.

A study by Yusheng and Ibrahim (2019) on services innovation, services delivery and customer satisfaction and loyalty in banking sector in Ghana, investigated the relationship between services innovation, service delivery and

customer satisfaction and loyalty. Survey method was used to discover information from 450 responses. A convenient sampling technique was employed to solicit information from 600 customers. The study reported that services innovation has direct relationship on service delivery ($p=0.0663$, $t = 45.85$) which could be interpreted as positive and direct relationship existing between service innovation and service delivery.

The result also showed that there is positive and direct relationship among services innovation, customer satisfaction and customer loyalty ($p= .864$, $t = 43.44$). The overall position of the paper implied that services innovation has direct bearing in providing satisfaction and retention to customers in an organisation. To generalise the findings, it has become pertinent to mention that the focus of the study was on banking sector (profit oriented organisation), this implied that the findings can be adopted in not-for-profit organisation because the attributes investigated can be replicated to obtain effective and efficient innovative service delivery in organisations such as university library.

The analogy here shows gaps with the ways university libraries undertake the processes and implementation of innovative service delivery particularly at the extent by which library users can be brought back and retained, and provided with services that are satisfying. Worthy of note is that the variables used by Yusheng and Ibrahim (2019) did not include digital literacy and knowledge management practices as independent variables, but the operability showed that the inclusion would provide better insight on the relationship among them in most organisational sectors.

Another study by Chinwe and Chitimbo (2018) which examined the shaping of the library and information services delivery through use of innovation and technology at the University of Zambia, adopted qualitative research method to interview six informants, who were purposively sampled from a population of 55 librarians working in the University of Zambia Library. The focus of the study is to scrutinise the perception of librarians towards use of innovative services to meet the dynamic library user needs. The results revealed that innovation was a significant, its processes guarantee the library survival and can easily flourish in the digital era because of the potentials such innovation provide and open up spaces for the librarians to increase the effectiveness of the information services they deliver among their diverse users in the university library. To buttress these positions, the study enumerated some of the innovative services adopted and provided at the University of the Zambia Library. The services include providing access to online resources and use of social media tools. With 6 response which is equivalent to 100% response rate, that was closely followed by the Institutional digital Repository services with 5 (83.3%). Closely distant from these two were information packaging and Reference Services and path finders were at 4 (66.6%), respectively, followed by partnership with faculty units at 3 (50%). Other services comprised designing a dynamic Library website and provisions of technical services were both at 2 (33.3%) respectively.

The finding implies that innovation of services among university libraries to deliver on their mandate because of the present situation when physical/traditional services are blended with use of technology is mandatory and therefore must be included as issues of great concern for university library and librarians whenever the focus is to remain relevant and hold competitive positions in the university. The paper arguably justify the conduct of this study as it emphasised for the systematic re-skilling of university-based librarians to take up spaces using innovation to modify and reconstruct the ways that services are delivered within the classical library information environment. Emezie and Nkeiru (2018) study titled “stepping up the ladder to meet user needs: innovative library services and practices in

Nigerian University of Technology, Owerri” whose focus was to identify the major activities of innovative library services that were adopted by a Nigerian University of Technology Library, Owerri to satisfy the varied user needs. The researchers utilised survey research design of the quantitative method to collect data from 250 respondents, these respondents comprised 58% male, and 42% female. The study results revealed that significant growths in library patronage were noted through the following activities; library visibility, use of library resources (databases), access to online public access catalogue (OPAC) and supportive staff among others which should be prioritised when innovating new services.

The ways by which the innovation drive of the library affected services include; promoting library visibility (mean 3.58), improve library patronage (mean 3.45), improve library services (mean 3.43), and enables access to open access electronic thesis and dissertation (mean 3.01). The use of innovation services also opened up the library services in areas of research guides and support because of the recorded increase frequencies of library users depending on library for research support (mean 3.10) and librarians are willing to carry out their duties with zeal (mean 3.05). Innovation has made the library to witness more followers on social media (mean = 3.00). While noting some challenges on the course of delivering innovative services and practice which when not addressed constitute great setback. These challenges comprised 98% of the respondents unanimously affirming that lack of electricity as a major challenge, while 97% of the respondent agreed that lack of fund for the librarians bedevil the service innovation and practices in Federal University of Technology Owerri. The study have recognised the impact of innovative service delivery in present high competitive technological environment and delved into action despite identified challenges that could hinder the smooth adoption of, and the development of new services through the use of innovation because of the numerous benefits and matter of necessity for library survival.

An earlier study by Çolaklar (2014) assessed university libraries in Turkey with the objective of identifying innovative services practices and role that librarians play in Turkish University libraries to enable the enumeration of the diverse opinions of respondents on what constituted innovative service practices among University libraries in Turkey. The response revealed that 94% of the respondents were graduates from information and document management, 3% were graduates of Public relations (PR) and 3% were graduates of economics. Among them, 50% of the respondents were not subject librarians, while 44% were staff dedicated to innovative services and practices units in their various university libraries. The result on what constitute innovative service practices showed that 28% of the respondents conducted seminar as innovative activity in Turkish libraries, 18% of the respondents conducted interview and 15% conducted author event to showcase library innovative services and practices. However, 9% of the Turkish libraries accepted that competitions as well as exhibitions could improve innovative services and practices in academic libraries. Work and career planning, and supportive programs for distant learning also scored 9% each, while 17% of the surveyed libraries in Turkey do not undertake any activity to promote innovative service and practices.

The implication of the findings showed that innovative service practices are independent, in-terms of activities undertaken by a library to promote innovation. In the case of Turkey University libraries, the study showed different levels of economic development and advancement in education which library innovation was able to institute. The differences in terms of operability rest on the capacity to adopt and adapt the use of information and communication technologies (ICTs) to promote innovative service practices perhaps because ICT is the basic ingredient for

innovations. Islam, Argawal and Ikeda (2015) carry out a study that inquired from sixty-seven head of libraries how academic libraries work with their users to co-create values for service innovation adopting qualitative design to elicit information from 12 countries. The focus of the study was to identify the path followed by their libraries to co-create values that add up to service innovation. The study highlighted the significance of value co-creation for service innovation in academic libraries in UK, USA, Canada, Australia, Bangladesh, India, Singapore, Ghana, Nigeria, Egypt, Serbia and Chile. The co-creation value was prominent in activities that involved project management, maker spaces, information literacy, and design of library websites. Other activities includes research data management, data literacy, e- referencing, digital repository services SMS alert services and use of OR codes. Compute response rate of 30.30% was recorded, and the low response rate was blamed on sceptics. These sceptics were careful to provide their views on the value of co-creation particularly how it is critical to the innovation of new services and promotion of effective services in academic libraries.

The paper made valuable contribution to the body of literature on service innovation leveraging on the framework of co-creation value as an emerging research area of service science. The implication of the study points to the fact that each services that promote and support access to resources physically and virtually are necessary for co- creation values that aim at innovative service provision in academic libraries. Therefore, innovative services need to combine face to face and use of social media to achieve the objective of introduce co-created innovative services delivery using the co-creation value framework.

A study by Dim, et al, (2021) Titled Incorporating ICT- Driven Innovative Services for Improved Information Delivery in Nigerian Academic Library; Strategies and Challenges. The focus of this study is to identify some of the ICT – base innovative services and to expound their benefit by explaining strategies for implementing them for effective services delivery in academic libraries in Nigeria. Survey design was adopted as methodology and questionnaire was used as instrument for data collection. The total population of the study was 150 questionnaires were distributed and 135 among them was returned but only 112 was duly completed to be used for analysis, amounting to 83% response rate.

The result of the study revealed that innovative services such as institutional repositories, and e-reference services plays great roles in aiding understanding of information literacy skills to students,. The contribution of innovative services to improved learning relies on the positive report from faculty of improvement of student performances. The study by Prajogo and Oke (2016) on human capital, service innovation advantage and business performance adjudged the moderating roles of dynamic and comparative environments to identify the gaps in knowledge and the needs to fill concerns caused by antecedents and consequence of service innovation advantage. The study examined the contributing factors and their roles on human capital development through delivered services. Cross-sectional design was utilised to help generalised information obtained from 1,500 Australian service firms who were randomly selected from database of an Australian mailing list company. A total of 228 usable responses were retrieved and were able to provide the right information. These constituted 15.2% response rate. Of the 228, one hundred and sixty nine of the respondents (75%) occupied the positions of senior managers the remaining 59 (25%) respondent were of middle class managers positions.

The result of the study reveals that Human capital (HC) indicates positive correlations with service innovation advantage (SIA) and business performance (BP) respectively' the two elements of business environment indicate no significant correlations with human capital (HC), but they indicated significant correlations with service innovation advantage. In the end, service innovation advantage shows a positive correlation with business performance (BP). The finding implies that human capital vis a vis knowledge, skills and competencies of organisational employees determines the level of services innovation advantage of an organisation and will consistently increase the business performance output, while business environment do not have any significance relationship with knowledge and skills or competencies of the employee in the organisations. Martins and Ledimo (2015) in their study titled "the perception and nature of service delivery innovation among government employees; an exploratory study" which set out to determine the perception and service delivery innovation among employees of South African government departments, survey research design was adopted to elicited data from 289 employees of (SAGD). Questionnaire were used as instrument for data collection and five points Likert scale type with ratings of 1- as strongly disagree and 5-as strongly agree for measuring the level of the participants' perception on the variable of the study.

The result of the study reveals that services delivery innovation perspectives ranked highest with $m=4.31$, followed by communication of service delivery changes with $m= 3.42$, then initiating service delivery innovation with $m=3.22$ and finally the impact of services delivery innovation on customers/client was the lowest ranked with $m=3.01$ scores. With the mean scores above 2.5 on a five point Likert scale type, showed positive perceptions of all the four perspectives of the services delivery innovations (SDIs). And therefore could be generalised that participant of the study clearly were satisfied with the value of SDI in the organisation because opportunities were provided that promote innovation.

Another study by the Musangi, et al, (2019) Titled, "assessment of reengineered library services and spaces for improved user experience in universities in Kenya" utilised a multiple case study approach to elicit information from January, 2017 Webometric ranking reengineering in Kenya to purposively select six universities that comprised three (3) public and three (3) private university libraries as the scope of the study.

The result of the study revealed that all the six university libraries in Kenya reengineered their library services and spaces. The Institutional repository (IR) was reengineered to support records archiving and accommodate large volume of research output. Library user orientations programme was modified to information literacy programme and others reengineered are instructional programmes that enhance the use of online tutorials, do-it-yourself (DIY) videos, subject guides and webinars. The implication of the findings indicated that innovation helps to transformation of library services and spaces reengineered and points to the critical elements that provide effective and efficient service delivery platforms in university libraries in Kenya. There are numerous unclear situations that reengineering face in libraries when such advancements exclude the contribution of library users at the initiation stages. Therefore, there is need for the library management to include library users' suggestions for the overall mission of the university.

Osuigwe (2016) studied leveraging on organisational culture for innovative services: a case study of Prof. Kenneth Dike State Central E-Library, Akwa Anambra State, Nigeria". The paper examined the impact of organisational culture on innovative services. Survey research method was used to elicited data from 97 staff of the library. Only 77

staff amounted to 79.3 % response rate was recorded. Descriptive statistics was used to analyse the data collected and presented in tables containing frequency scores, percentages and their respective means. In addition, Likert scale type was also used on a five scale which was equivalent to mean score of 2.50. The score served as assessment parameter where scores equals and above the mean scores are regarded as positive, while all points below were taken as negative.

The finding of the study showed that communication /interaction among staff and embracing the art of teamwork which constitutes organisational culture have significant positive means score of 3.0 and 2.99 on innovative services, respectively. While reward/support system of the organisational culture have significant negative mean score of 2.44 on innovative services. These implied that communication/interaction and teamwork have the tendency to influence innovation among staff of Prof. Kenneth Dike State Central E-Library, Akwa Anambra State, Nigeria. Cyril, et al, (2019) in a work title “Innovative service delivery and competitive advantage of small scale hotels in Nigeria: The Moderating role of opportunity connectedness”. The study adopted cross sectional research design to elicit data from 980 managers/CEOs of small scale hotels. From these numbers, 274 respondents were purposely sampled using Yamani formula. This implied that the supposition that innovative services delivery has direct relationship with competitive advantage is affirmative, and therefore, the methodology and research outcome can be adopted in the university library settings where innovation assist in achieving competitive advantage.

In another empirical research by Igwe and Kalu, (2017) titled “Service innovativeness and customer satisfaction of four-star hotels in Rivers State” which examined the relationship between Service Innovativeness and Customer satisfaction of four Star hotels in Rivers State. The work adopt cross sectional research design to elicited data from 204 customers among 12 hotels in River state. Using multiple regression analysis to evaluate the extent at which services innovativeness (services process, services outcome) contribute to customer satisfaction in the four star hotels investigated. The finding of the study revealed that 29% variance in customer satisfaction was recorded. The combined result revealed that service process, service outcome and customer satisfaction, respectively were positively and highly significant (Beta = .539 and. 549). Implication of the study on customer satisfaction affirmed its outcome to be dependent directly on the value drive from the services received or offered by the services provider whose innovation is operationalised. This translate that libraries that do not innovate and periodically appraise their services will struggle to retain and attract customer, which would invariably lead to retardation of growth and the achievements of the set goal and objective of the library.

The above empirical underpinnings of the various studies reviewed indicated that university –based libraries are engaging in innovative services and practices to remain relevant and be able to overcome emerging challenges, address users decline and embed the right technology that can improve services offered, the visibility of the library holding, and contribute local content to the global databases. The general consensus among the empirical papers review is that innovative service delivery are discussed and investigated using diverse themes ranging from technologies support, dynamic capability, human capital development, and organisational culture. The essence is to contextualised innovative service delivery towards effectiveness, efficiency and competitiveness. In the same vein, all the above literature reviewed on innovative service delivery from different authors on various dimensions indicated that the variable was explored and shows its relevancy for the study as there is no any single research work

found that investigated or researched on the combined of all the three variables the candidate intends to research on. The combined variables interested to discover their influences are digital literacy skills, and knowledge management practices on innovative service delivery. This has clearly showed the existing gap, the work intends to fill as a result of the study.

2.2.2 Digital Literacy Skills of Academic Librarians in University Libraries

In a study by Krishnamurthy and Shettappanavar (2019), titled “Digital literacy skills among Female Postgraduate students of Karnatak University, Dharwad, Karnataka, India: A study”. Survey research design was adopted to elicited data from 80 students from whom a total of 77 responses were retrieved which is equivalent to 96.25% response rate. The results revealed that several platforms were utilised by the students for the acquisition of digital literacy skills among which includes seminar/workshop (75.32%), training programmes (61.03%), and computer assisted instruction (23.37%) and taking specific courses (16.88%). For competency levels, the study revealed that digital literacy skills varies also among students, for instance, skills on use of search engines dependent more on familiarity of the brand names; Google search engine (77), Yahoo (35), Bing search engine (13), Alta vista (3), and Hotbot (1). The implication of the study is that several platforms are available for exploration and selection of the best platform that can be utilised for dissemination/training for digital literacy skills acquisition that are admissible by librarians so that services and resources are utilised, build confidence, familiarity and knowledge of the diverse digital skills enriching platforms.

Another study by Adeoye and Adeoye (2017) on Digital literacy skills of Undergraduate Students of Federal Universities in Southwest Nigeria Surveyed method was adopted to elicit information from 595 sampled of the population. Questionnaire was used for data collection. Simple percentages, frequency distribution, mean score and standard deviation were employed in data analysis. The result revealed that majority of the students in sampled studied in Nigerian Universities have high confidence level of digital literacy skills especially in the area of information literacy, ICT literacy, and media literacy to operate in the digital environment. The implication of the finding shows that, librarians particularly academic librarians need to be braised up to acquire the necessary digital literacy skills and knowledge in order to serve their contemporary users based on their divers’ information needs

In a study by Mansour (2017) where a survey research design was adopted to elicited information from 127 respondents on digital information literacy of academic librarians and information professionals in South Valley University, Egypt. A total of 101 questionnaires were retrieved (79.5% responses rate). The result of the study revealed that digital skill proficiency of the respondents varies among the variable investigated. These variables comprise digital skills proficiency, demographic, and professional characteristics. The results showed for those using mobile devices (smartphone) (84.2%), and personal computers (pcs) (69.3%). Generally, there was high proficiency in web based task of all the respondents particularly in sending and receiving emails and instant messaging (100%), uploading/downloading e-stuff (98%), accessing electronics information services (73.3%), using search engines and subject directories (58.4%), using social networking sites (SNS) (57.4%) and internet browser (55.4%). The implication of the findings shows that demographic information of librarians have impact on their abilities to use and applied ICTs in discharging library service especially in terms of innovation. Level of education and knowledge base skills are also critical for innovative service delivery in university libraries in Egypt. Therefore, there is high need by

the university libraries management to put staff training and development in to consideration and ensure a sound organisation culture that is concern with innovative culture and team work spirit as well as interpersonal communication and collaboration among staff to reap from the incorporated innovation services in the library.

In a study by Chewe and Zulu (2020) titled” a study of digital literacy skills among library professionals in Zambia” where survey research design was employed and purposive sampling technique was used to select 81 respondents. A response rate of (74%) librarians was recorded, these respondents comprised of 34 (56.6%) public librarians, 18 (30.0%) academic librarians, 5 (8.3%) special librarian and 3(5.0%) school librarians. The result of the study reveals that 9 (15.0%) and, 25 (41.7%) of the respondents were highly proficient and proficient in the use of digital technology respectively, while 26 (43.3%) were not proficient. The types of training that has facilitate the acquisition of digital literacy skills among librarians revealed that 60.0% of the respondents indicated in-house training as the major ways of acquiring digital literacy skills and use of acquired digital technologies in the libraries, workshops and webinar that focused on digital literacy also support librarians. The provision of modern digital infrastructure (33.2%) that support digital literacy training and improving the curriculum by incorporating digital literacy course (3.2%) were prioritized by the respondents. On the challenges face by the respondent to acquire digital literacy skills, 15 (57.69%) indicated tight work schedule as the major challenge, inadequate training accounted for 11 (42.30%), 9 (34.61%) accounted for lack of funds and 7(26.92%) accounted for lack of awareness, respectively. The study findings implied that library managements in Egypt should focus on providing enough opportunities to library staff to obtain training in digital literacy skills and have awareness about its importance to enhance innovative service delivery at various stage of their work. More funds should be provided to get the necessary digital devices to enable library provide effective and efficient services delivery.

In a study by Hiremath and Bankapur (2019) titled, “Awareness and proficiency in digital literacy skills among librarians of first grade degree colleges of Bangalkot District with respect to age group”. The authors used survey research design to collect data from the respondents (librarians) of 28 colleges within the district. The study found that majority of the respondents was between the age group of 26- 45 years. Using analysis of variance, the study found that there is no statistically significant difference between all the age groups of the respondents and their digital proficiencies at probability level of $p=0.05$. On the level of awareness, it was reported that online databases, mobile operating systems, mobile website creation software, mobile application, cloud-based services, emerging tech and infographic tools were statistically not different between the awareness and the varied age groups of the respondents. This implied that demography particularly age group do not influence awareness and proficiency in digital literacy skills among librarians. Therefore, emphasis on training using software and hardware are necessary to sustain the acquisition of digital literacy and needed skills among librarians at various age groups to explore and participate in innovative service delivery.

Baro, et al, (2019) worked on assessment of digital literacy skills and knowledge-based competences among librarians working in university libraries in Africa survey research design was employed to collect data from 403 respondents. A total of 214 responses were retrieved which constitute 53.1% response rate. The result of the study revealed that majority of the respondents ’level of digital literacy skills especially in the area of database search, sending and receiving emails, uploading documents to online platform and skills of using different social media were

high (93.4%, 89.7%, 67.7% and 90.7%) It is also found that on skills such as digital library development, applying new technology in the library, creation of different file formats, and skills in using open source software were high, while on website development possessed low level DLS. Concerning library related knowledge based competencies the results showed that majority of the respondents have high competency level in indexing e- resources, building electronic collections and use of self-archiving website such as research gate (52.3%, 63.5% and 88.7%) respectively. The findings implied that the librarians in Africa are digitally literates in most of the critical areas of library operation except very few area like website design, digitization and metadata development skills that were lacking, which shows that they are expected to step up in acquiring such important skills particularly, that we are now in digital era. Possessing these types of skills will definitely help in enhancing our ability to innovate and deliver library services efficiently and effectively in university libraries in African countries like Nigeria.

In a study by Okeji, et al, (2020) titled “Assessment of digital literacy skills of 21st century librarians in private University libraries in Anambra State”. Survey research design was used to elicit information from 23 practicing librarians who were categorised according to three sampled universities. Four point Likert - scale type (strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) was adopted. The responses were weighted as follows; SA = 4, A = 3, D = 2, SD = 1 with mean scores ranging from 2.50 and above was acceptable while scores below 2.50 were rejected. The study found that digital literacy skills possessed by academic librarians in private universities in Anambra State of Nigeria were generally acceptable by the respondents who acknowledge nine out of the thirteen listed items. The remaining four items were rejected by the respondents. Item (1) “I can use digital devices such as laptops, smartphones, IPADs and desktops” was accepted with the mean score of 3.75, item (2) “I can analyze facts objectively” was accepted with the mean scores of 2.50, item (3). “I have the ability to engage in online communities” was accepted with the mean score of 2.50, item (4) “I network with other colleagues via computers” was accepted with the mean score of 2.69 and items (5) “I can find and evaluate online information” was also accepted with the mean score of 2.90. Similarly, item (6) “I possess critical thinking skills” was accepted with the mean score of 3.50, Item 7 “I have an email and I am a member of NLA online” was accepted with the mean scores of 3.65, item (9) “I can navigate databases properly” was accepted with the mean score of 2.71 and item (10) “I belong to social networks like linkedIn, facebook,” was also accepted with the mean score of 3.65.

The implication of the findings showed that participants in the study can generally be said to have high digital literacy skills in most of the area required to operate comfortably in digital environment to provide effective and efficient services in university libraries in Nigeria. The only issue that need improvement is the area of development of website, which implies that more opportunity to obtain training should be provide by the library management. The literature reviewed on the digital literacy skills from different authors on various dimension indicated that the variable was explore and shows its relevancy for the study as there is no any single work found that work or research on the combine of all the three variables intend to research on The combine variables interested to discover their influences are digital literacy skills, knowledge management practices and innovative service delivery. This has clearly shows the existing gab, the work intend to fill as a result of the study.

2.2.3 Knowledge Management Practices in University Libraries

A study by Islam,et al, (2020) titled “problems of Knowledge Management practices (KMPs) in Libraries and Information centers of Bangladash” explored what could be attributable as the shortcomings of identified knowledge

management practices in some selected academic libraries and information centers. The investigations dwelt on knowledge management activities, human resources management, knowledge innovation based activities and use of ICT as tools for knowledge management. The study adopted survey designed to elicited data from sixteen (16) university libraries that comprised five (5) public university libraries, four (4) private university libraries, six (6) special libraries and one (01) information centre.

Findings of the study revealed that 50% of the respondents does not shown any interest in encouraging staffs members in talent competition at all as a knowledge management activities. The study also shown that 25% of the respondents never tried to promote knowledge exchange and sharing among staff and users in their libraries, while 25% of the respondent does not involved in developing knowledge resources for increasing level of knowledge and competences of their staff and users. The implication of the study findings indicated that knowledge management practices among university libraries and information centres in Bangladesh operate at inconsistent levels and seemed not to be appreciated among librarians as a practice. The authors associate the decimal adoption of the practices to economic condition of the people and the country. Lack of awareness of the value of knowledge management practices among librarians was also blamed as the reasons for poor articulation of knowledge management practices as a fulcrum of critical asset acquisition for the development and making the libraries investigated to remain competitive. In conclusion, the study advocated for instituting KMPs in Bangladesh in order to harness the unprecedented values it avails. A study by Ugwu (2018) on organisational factors as a predictor of knowledge management practices (KMPs) in Federal University libraries in Nigeria, focused on selected organisational factors. The study adopted correlational research design to elicited information from twenty nine (29) head of federal university libraries. A response rate of 76% (20) of the respondents was recorded. Both descriptive (means, standard deviation) and inference statistics (ANOVA, pearson's product correlation coefficient and regression analysis) were used to analyse the data collected.

The study found that management support and collaboration were the major determinant of knowledge management practices (KMPs) in federal university libraries in Nigeria. However, human resources policy, rewards system were found to be positively correlated with knowledge management practices but the correlation were not significant. The implication of the study showed that there is presence of knowledge management practices (KMPs) in university libraries. But, the effective application of KMPs in university libraries is generally associated with organisational support. In a study by Marouf (2017) titled "are academic libraries ready for knowledge management?" The study adopted a survey research design to sampled 150 (72.4%) response rate of academic librarians in both public and private university in Kuwait. The respondent comprises of 49.3% male and 50.7% female. The study found that human resources practices do not have significant effect on libraries attitudes toward knowledge sharing, however is significantly affected the readiness to adopt knowledge management in academic libraries. The path coefficient analysis on the verified research hypothesis established that organizational trust is one of the construct of the study that has a significant effect on attitude toward knowledge sharing with ($p= 0.000$) and that top management support has a significant effect on attitude toward knowledge sharing ($p = 0.000$). The implication of the study findings indicated that organisational culture such as trust and administrative support has direct link to knowledge sharing which is invariably one of the major aspect of knowledge management in an organisation. This is showing that libraries are ready for implementing knowledge management in order to survive the new and dynamic information environment.

Chidambaranathan and Rani (2015) studied the influence of knowledge management and organisational culture in higher educational libraries in Qatar. The study was anchored on competing value frameworks using survey research design to elicit information through electronic questionnaire that was constructed through the surveymonkey.com website. A total of 195 staff of 20 University libraries in Qatar served as the respondents. The responses received were 136 from 16 university libraries, and 14 out of the received responses were not found useful and there was no response from 4 university libraries. Therefore, 122 library employees were the sample used for the study, these number constitute the 62% response rate. SPSS statistical package was used to analyse data collected, using 5-point Likert scale-type (5- strongly agree and 1- strongly disagree).

The study found that there was no significant difference between knowledge management and gender of the respondent, as the mean score of knowledge management and male respondent were 81.29 and that of female respondent is 82.67. Where p value is 0.63 which is higher than the recommended value of 0.05 (p is greater than 0.05). Therefore, knowledge management did not vary based on gender. The inter-correlation between organizational culture and the dimensions of knowledge management were significant in the relationship between all the dimensions of knowledge management and all culture types except hierarchy culture, knowledge creation (adhocracy

The implication of the findings showed that, despite knowledge management activities there is no link between gender and KMA, whereas, organisational culture types influence knowledge management activities. This indicated that for university libraries to reap the benefit of knowledge managements there is the need to operate a peculiar culture that could help the organisation to effectively operate and succeed in achieving the set objective.

A study by Nyalwa, (2018) title Implementing Knowledge management practices in university libraries in Kenya. The focus of the study is to discover the categories of the KMPs: knowledge acquisition, knowledge management and project implemented the university and identifying roles play by librarians in the use of KMPs for innovation and transformation of quality education in university community. The study employed mixed method research methodology. Where Questionnaire was used in which it sent through emails and interview was conducted through telephone to illicit data for the study. The total population of the study was 38 Kenyan universities library, in which 7 were public university libraries, 13 were public college libraries and 18 private universities library. Only six (6) Universities was dully completed and returned the questionnaires. Amounted to, 15.7 % response rate

The result of the study revealed that perception and understanding of KMPs among librarians in Kenya varies. There is no cut and clear comprehension of the roles plays by librarians in using KMPs for innovation and enhancement of education in the universities. The implication of the study is that librarians should put more effort in understanding the value of KMPs and be well grounded in order to be active participant in implementing KM for Innovation and improvement of education for development in the university community.

The study by Nazim and Mukherjee (2013) titled “Knowledge management competencies required among library and information science professionals: An Indian perspective “examine the application of KM for the purpose of use in Indian academic libraries. A survey research design was adopted to obtain from 95 respondents a list of 25 perceived KM competencies obtained from the review of several literature of KM competencies. The result obtained validated all the twenty five 25 compiled list of competencies with a minor differences in the mean scores that suggested the essential of teaching KM in the field of LIS for effective application of KM in Indian academic libraries. The implication of the study clearly indicated that skills and competencies required by library and

information professionals vary but the most essential comprised communication skills, project management skills, human resources management (HRM) and developing social networks or communities of practice (CoP). These competencies were categorised as fundamental to implement knowledge management application in libraries in India.

Ugwu and Ekere (2017), in a study titled “knowledge management for improving services in Federal University Libraries in Nigeria” focused on determining the knowledge management activities engaged by librarians and the extent to which their involvement can be expounded in terms of their personal characteristics, and for proposing a model for library service innovation. Survey research design was adopted to elicit information from 250 professional librarians employed in Nigeria. Total enumeration was adopted for data collection, however, only 200 were found to be analysable. Data were analysed descriptively using mean, standard deviation, percentages and Pearson’s Product Moment Correlation Coefficient was used for the inferential statistics using statistical packages for social sciences (SPSS) version 27.0.

The results indicated that librarians working in federal university libraries in Nigeria were significantly engaged in knowledge management practices particularly, identification, acquisition, creation and dissemination. The results on correlation among the variables tested were significant which showed positive relationships with the KM activities. Among the variables, educational qualification and librarians working experience indicated significant relationships ($r = 0.54, p < 0.05$), and working experience ($r = 0.51, p < 0.05$). These two variables were found to account for 52% of the variations in the opinions of librarians working in federal university libraries in Nigeria. The issues of the variation were associated with knowledge management implementation when compared with personal characteristics that accounted for the remaining 48%. The study implied that knowledge management practices is required at all levels (strategic, tactical and operation) in federal university libraries that prioritised innovative services delivery.

A study by Jain (2013) titled “Knowledge management in academic libraries and information centres: A case of university libraries” investigated KM practices among Southern African Development Community (SADC) university libraries. Mixed method research design was adopted to elicit data from the 15 member countries of the SADC. Both structured questionnaire and open-ended qualitative questions were used as instrument for data collection. A total of 50 instruments were served to the head of participating university libraries, however, only 25 of the served instruments were returned which accounted for 50% response rate.

The result on KM practice among the respondents revealed that 15 (60%) reported they practice KM in their respective libraries. The participants’ view of the concept of KM varied with some defining KM as systematic ways of gathering, organising, managing, disseminating and use of information and knowledge. Others see KM as the sharing and retaining of knowledge and expertise in the organisation. It was also recorded that some defined KM as systematic retrieval, storage and dissemination of relevant information to the strategic advantage of an organisation. The reasons for engaging in KM practice in libraries also varied. The answers given by the participating head of libraries includes; to strengthening of partnership with other libraries (60%), adoption of Web 2.0 & Social Media (60%), digitization of library collection (60) and Use of virtual/online reference services (60%). These showed that significant percentage of the respondent acknowledging KM to contribute to improving library services and productivity (96%), and producing more with less due to financial constraints (88%), and to leverage on the existing

knowledge (88%), respectively. It was also revealed that, constant budget decline (88%), inadequate staff training (76%), lack of KM strategy (72%) and insufficient technology were identified as the major challenges bedevilling the smooth implementation of knowledge management in university libraries in South African development community.

The implication of the study findings indicated that majority of libraries studied practice KM which showed the significance of KM even though they viewed it differently. Majority of libraries indicated km assist in enhancing library service and productivity with little resources available. The head of participating libraries suggested that a well-planned and visionary KM project can promote decent library practices in a digital environment. Despite the numerous advantage attribute to the application of knowledge management in libraries, yet some challenges were identified to be a huddle to the successful implementation of KM in the participating libraries, such as lack of sufficient technology, inadequate qualified staff. A work by Ogunbanwo, et al, (2021) Title “Knowledge management conceptual framework in Nigeria tertiary institutions” focused on developing knowledge management model for managing knowledge in tertiary institution in Nigeria to improve academic performance. Qualitative research design approach was adopted through content analysis to extract data for the study. The findings indicated that a model for knowledge management in tertiary institution was developed, tag KMMTI. The model was resulted from the integration of four different knowledge management models: Nunoka, Guacerra & Fernandez, Ogunbanwo and Lee and Choifomer. The KMMTI has seven components which are institutional knowledge, knowledge conversion, process capability, KM system, enabler capability, strategy capability, KM intermediate outcome, and academic performance. The components were summarised and have three stages indicators such as i. first layer- Input, ii. Second layer- Process iii, Third layer- Output

The numerous literature reviewed in all the three variables of the study indicated that various researches were conducted in different level and stages covering range of discipline of human endeavour. Some of the works were in business organisations while other at not-for profit organisation and institution of learning such as university libraries. Yet no single study found that investigated the influence of digital literacy skills, knowledge management practice on innovative services delivery in university libraries in northwest of Nigeria. Therefore, it is glaringly indicate there is gab to fill, by the study.

2.2.4 Digital Literacy Skills and Innovative Service Delivery of Academic Librarians in University Libraries

Stressing on the role of innovative service delivery, Husin and Noor (2018) showed that for the solution to any problems emerging in organisation, digital literacy skills are pertinent to be able to administer services that are dependent on technology, with appropriate digital literacy skills. These skills are expected to enhance and sustain new service concept, new customer interaction, new and value system or technological service delivery system to be able to remain competitive. This implied that there is a strong relationship between digital literacy skills acquired and capacity to innovate and enhance service delivery in organisation. This premised has been established by Morrar (2014) who reported that majority of services providing organisation should factor innovation in to service delivery to attain their optimum objectives. However, to achieve the important of innovation service delivery, skills are needed at varied proportions and conditions of innovation. Services innovation remains an engine for development

and growth in service oriented fields (Morrar, 2014). Beyond the adoption and use of technology where skills are paramount, innovation service delivery has help to assimilate services within consolidated frameworks of the adoption and use of technologies (Gallonji & Savona 2009).

Similarly, Christy and Yusuf (2021) in their work on investigation of the level of digital literacy skills possessed by academic librarian in Nigerian university reported that digital literacy skills are essentials for the delivery of library services in the 21st century. The assertion has directly substantiates that application of acquired digital literacy skills is a factor that drives innovation for effectiveness and efficiency. Furthermore, Olijo, (2018) on the importance of skills in the utilization of new technologies, stressed that even though meaningful progress were recorded in the area of hardware and software competences, the challenge of low utilization is a setback in harnessing the potentials of new technologies utilised for service delivery.

Sichel (1997) cited in Olijo (2018) lamented that poor knowledge and low usage of installed systems had been recognized as substantial determinants predicting the "productivity paradox" regarding poor return on investments from organisation that focus tilted on innovations and effective service delivery. Stressing that the poor return on investments from organisation whose focus is on innovative digital technology use could be truncated. Therefore, the two focuses of digital literacy skills and innovation service delivery must relates and factor to complement the capacity building of library staff and stakeholders in-house instructional trainings. Emiri (2015) is of the view that library professional requires digital literacy skills to be able to functions effectively in the 21st century society where innovation cannot be compromised, particularly to meet up with work demand and to satisfy patron's information needs. The implication is to prioritise digital skills development according to desired innovation that can attract and retain library's patrons.

In a study by Oyedokun, et al, (2018) which emphasise the contributory roles of digital technologies and tools, stressed that digital technologies have changed the world of library in terms of adjudging tasks, effectiveness, efficiency and developing new innovative service delivery. The changes are most dramatic in tasks carried out manually are now automated as well as works of library staff are characterized by utilisation of digital technologies. Irrespective of the type of library the study affirmed that competency in the use of digital tools is paramount to address unused or under-utilization of acquired digital tools which subsequently affect digital literacy skills and hamper dynamic information service delivery (innovations). This implied that digital literacy skills which facilitate, support and sustain skills are paramount for innovative service delivery in university libraries in Nigeria.

Anyim, (2018) asserted that in the modern societies, Information and communications technologies (ICTs) have been universally developed as inevitable tools for enhancing the quality of education as it facilitates access to information and knowledge contents which lead to improvements and innovation in teaching, learning and research. Therefore, digital literacy skills are necessary to bridge the gaps of innovativeness in libraries particularly enhancing the roles of creation of new products and services.

2.2.5 Knowledge Management Practices and Innovative Service Delivery in University Libraries

In recognition of the inter dependent of knowledge management and service innovation in university libraries. Islam, et al, (2017) asserted that innovation enables organizations to produce new and/or enhance already existing services for the satisfaction of their users. This implied that, knowledge management is pertinent to service innovation

delivery in every sector. Earlier, Islam, et al, (2015) reported that effective management of all knowledge produced within an organization is regularly recognized as building blocks for innovation of new products and services. In particular, for academic libraries to realize the significance of knowledge management (KM) they must have applied innovative services to create, modify or out-rightly change services delivery. The application of responsive innovation services requires that librarians take cognisance of the changing demands of patrons in the digital environment as it affects connectivity, mobile usage, huge digital data, and an increasing mix of digital and physical worlds. For the establishment of relationship between knowledge management and services innovation delivery in libraries, libraries need to embrace, manage and leverage on employee knowledge to rapidly evolve innovation with the support of technology (Islam et al., 2015).

In justifying the complementarity of KM and service innovation delivery, the position of knowledge management cycle and its application ensure understanding of processes of transforming information (innovation) into strategic valuable asset of an organization. Because the cycle consists of series of knowledge-processing steps such as knowledge capture/creation/contribution, knowledge filtering/selection, knowledge codification, knowledge refinement, knowledge sharing, knowledge access, knowledge learning, knowledge application, knowledge evaluation and knowledge reuse/divestment (Dalkir, 2013: 32, 51–53) that can serve as building blocks for services innovation delivery.

Several empirical and conceptual studies have interchanged Knowledge Management with Knowledge activities, Knowledge types, transformation of knowledge and technologies to be able to buttress significance and positivity of KM in facilitating innovation as it procedurally transform tacit and explicit knowledge into knowledge assets (Akram, et al, 2011). This implied that there is strong relationship between knowledge management practices and service innovation delivery which university libraries can leverage on.

Components of innovation, according to Lasneski (2015), include critical thinking, communication, and collaboration and creativity (4Cs) that actively support the harnessing of knowledge. Corroborating the symbiotic (beneficial support), Islam et al (2017) argued that applying these elements within the library operational system setting aid facilitating innovation drives. Ugwu and Ekere (2018a) critiquing the interdependence of customer or user relationships with libraries were able to point the role of KM in service innovation in order to enhance the patron's relative capability and predicate stronger relationship among knowledge management practices and service innovation delivery in libraries

In the academic libraries setting, knowledge for customer means to ensure patron's satisfaction and requirement for knowledge about services and other relevant items were provided. Likewise knowledge from customers refers to ideas and suggestions that would be useful for the library to implement and improve innovation service delivery for customer satisfaction. Similarly, knowledge about customers is refers to understanding the nature of patron information needs which include those that have been met through library services and those that are yet to be provided. For instance, Kim and Abbas (2016) have found that RSS and blogs are broadly adopted by academic libraries through a KM viewpoint to aggregate knowledge from users. This shows that an effective and holistic knowledge management is a prerequisite to innovation services delivery in academic library setting.

Rowley (2011) stated that new service development (innovation) in academic libraries would depends on employee skills, availability of tangible and intangible resources, IT adoption, management support, innovation processes and

user knowledge. The success of service delivery innovation is not independent, which implied that the ability of the librarian to effectively carry out knowledge management practices could start with putting the principles of KM and transforming them into tangible deliverable services. In the same vein, Islam et al, (2017) highlighted the barriers that become bottle neck to expended efforts in the libraries for innovation to happen such as the gathering of user needs and innovation possibilities. Ugwu and Ekere (2018b) observed that KM affected service innovation positively in Nigeria, using three measures of KM cycle, to be precise, knowledge capture/creation, and knowledge sharing/transfer and knowledge application/use. These were found to be more likely to provide innovative services delivery to library users. Earlier, Wang and Noe, (2010) found that when knowledge sharing activity is effective, employees ability to collaborate and exchange ideas is assured and innovation is ensured in the organization. The implication of the above statements is that, the library service delivery innovation cannot be realised without effective knowledge management practices.

Previous studies have shown that knowledge management (KM) plays a great role in service innovation an indication that there is a positive relationship between them (Ugwu & Ekere, 2018). In the library scenario, where KM relates well with innovation is in competitive information environment with the internet revolution or information explosion. Libraries are now compelled to engage in innovative services to survive in the business of information provision despite the challenge of increasing expectations of library users is connected. An organisation's capacity to generate new ideas is consistently associated with knowledge and technology (Martín, 2017), although the latter, depends on the organisation's economic and social environment (Parra-García, 2013). Therefore, the search for innovative services delivery begins with the adoption of business-oriented approaches, retooling and possessing requisite technological-based skills. In this direction, total quality management have also shifted towards harnessing knowledge using knowledge management principles developing survival strategy to cope with limited funding and increase user expectations of academic libraries services (Ugwu & Ekere 2018).

2.2.6 Digital literacy skills, Knowledge Management Practices and Innovative Service Delivery in University Libraries

The position of other researchers on digital literacy skills, knowledge management practices and service innovation delivery are interwoven. To overcome the challenges preventing effective service delivery in academic libraries, it has become important to underscore the contribution of digital literacy skills and knowledge management practices on the libraries drive to be efficient and responsive. Digital literacy skills in literature were categorised in to two; soft skills and hard skills. Each of these skills are influence innovation service delivery. Husin and Noor (2018) were optimistic that the contribution of digital literacy skills to the application of innovation service delivery enhancement is the actualization of utilization of technology. For the understanding and inclusion of stakeholders, particularly academic librarians, the utilization of knowledge management practices could enhance the process of services delivery innovation through the sharing, creation, transformation and support system required to actualize the objective of the academic libraries. The position of appropriate skills acquisition to service innovation delivery was emphasise by Morrai,(2014) as a necessity for attainment of optimum objectives which was categorised by Gallonji and Savona, (2009) as going beyond assimilation of services within a consolidated framework. These shows that the mediation of knowledge management practices is key to bridge the gaps caused by poor synergy among digital literacy skills and service innovation delivery and its application within a framework of service delivery.

Christy and Yusuf (2021) substantiated the assertion that digital literacy skills are paramount for the delivery of library service in the 21st century and believed that innovation drives the application and implementation of acquired digital literacy skills for service effectiveness and efficiency. However to determine the mediating relationship among knowledge management practices, digital literacy skills and services innovation delivery in libraries, Islam et al., (2015a) emphasised the role specifications of librarians as mandatory to evolve with the new changes whenever they are to imbibe any new idea that is to enhance the overall culture of management practices. Libraries were encouraged to leverage on employee knowledge to harness and be able to utilise the acquired digital literacy skills that rapidly transform traditional services into desired and evolved innovation that is supported by technology. Buttressing the relations of digital literacy skills, service innovation delivery and knowledge management practices not verbatim, Ohijo (2018) demonstrated that the challenge of low utilization of technologies remains a bottle neck that militates against organisations reaping the optimal benefits of applying new technologies in academic libraries.

Previous studies which did not utilise the same constructs but however related them portrayed the significance of the roles of knowledge management practices (KMP) as it relates to service innovation. For instance, Ugwu & Ekere, (2018) focused on prevalence causes of positive relationship that exist between the two and was able to show that there was a gap that cannot be bridge when discourses are limited to the application of appropriate digital literacy skills without factoring the resultant effect on rendered services in competitive information environment. The position of Martín (2017) clearly shows that it is not a matter of choice any more for libraries not to factor digital literacy skills (DLS), Knowledge management practices (KM) and service innovation delivery (ISD) because they help libraries and librarians to survive in the business of information provision, and help libraries in particular to overcome the challenges of increasing expectations of library users, to be able to generate new ideas that is consistent with knowledge management and technological support.

Oyedokun, et al, (2018) reiterated the contributory role of information and communication technology (ICT) to include standard for adjudging tasks, effectiveness, efficiency and help developed new innovative service delivery, as well as a catalyst for change. Therein, they revealed that for the desire changes to be accomplished they were able to itemise variables and their respective constructs that should be operationalized. These variables comprised acquisition of skills, knowledge management practices and service innovation delivery.

Lasneski (2015) itemised the constructs or components of innovation to include critical thinking, communication, collaboration and creativity (4Cs). These constructs support the harnessing of knowledge and provide a frame for symbiotic relationship when corroborated with other variables. Islam et al (2017) applied innovation elements within the library operational system to drive innovation service delivery. Ugwu and Ekere (2018) critiquing the interdependence of customer or user relationships with libraries were able to point the role of KM in service innovation as an enhancer, pointer to patron's relative capability and predicate on which to establish stronger relationship between knowledge management practices and service innovation delivery in libraries.

2.2.7 Summary of the Empirical Review

| Author, (year) Title of the Article | Study area | Methodology | Findings | Research Gap |
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| Musangi, P. S. (2019). Assessment of Reengineered Library Services and Spaces for Improved User Experience in Universities in Kenya. | Kenya | Qualitative research method | The study established that several university libraries in Kenya have re-engineered their services to respond to the changes and nurture a competitive environment. However, users of these libraries are more familiar with the traditional services. Thus, the authors concluded that the efforts expended have not improved user experience. | The study focused on assessing the restructuring of library services to improve user experience in Kenya, while this study focuses on investigating the influences of DLS and KMPs on ISD in Nigeria. This would help in filling the variable and geographical gaps that existed in the study. |
| Emezue, N. (2018). Stepping up the ladder to meet user needs on innovative library services and Practices in a Nigerian University of Technology. | Nigeria (Owerri) | Survey | Findings revealed that extent of innovative services and practices in the library was high through library visibility, increase in patronage and depending on library for research by patrons, and gaining more followers on social media. | The study focused on assessing the extent of benefits of innovative service delivery to users in university library in southwest, but this study focusses on influence of digital literacy skills and knowledge management practices on innovative service delivery in North-West university libraries |
| Osuigwe, N. E. (2016). Leveraging on organizational culture for innovative services: a case study of Prof. Kenneth Dike State Central e-Library, Awka. | Nigeria (Awka) | Survey | The findings of the study indicated that adjusting the bureaucratic structure in Prof. Kenneth Dike State Central e-Library promoted teamwork positively and encouraged innovations more than the reward/support. | The variables of the study focused was on assessing the relationship between organizational culture and innovative services, while this study variables was based on the influence of digital literacy skills and knowledge management practices on innovative service delivery. |
| Scupola, A., & Nicolajsen, H. W. (2010). Service innovation in academic libraries: is there a place for customers? | Denmark | Case study | Results from the case study showed the attempts by academic libraries to include customers in service innovations and not only rely on management and employees decisions. | The focused of the study, was to discover the value of users' views in providing service innovation, while this study interest is to discover the influence of DLS and KMPs on providing ISD university libraries in |

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| Tsou, H. T., & Chen, J. S. (2020). Dynamic capabilities, human capital and service innovation: the case of Taiwan ICT industry. | Taiwan | Survey | The study empirically examined the mediating effects of fostering and deploying generic and specific human capital on services innovation. The results showed that dynamic capabilities have a positive effect on service innovation. | Nigeria. The study focused on the influence of personnel on service innovation, but issues of DLS, KMPs on ISD was not treated hence the gap to be study. |
| YuSheng, K., & Ibrahim, M. (2019). Service innovation, service delivery and customer satisfaction and loyalty in the banking sector of Ghana. | Ghana | Survey | The findings indicated that SI has direct influence on Service delivery and Customer satisfaction by showing a positive relationship between SERVD, CSAT and bank customer loyalty. | The study was carried out in the banking sector in Ghana. By implication, the banks like the libraries are concerned about effective, innovative and efficient service deliveries to users. Therefore there is need to replicate the study in the library context. |
| Chewe, P., & Chitumbo, E. (2018). Shaping library and information services delivery through innovation and technology at the University of Zambia. | Zambia | Qualitative research design | The study found that innovation was significant factor for library survival in the 21 st century. It has the potential to increase the effectiveness of the information services delivery. | There is no theoretical frame work to support the findings Hence the need to carry out research on the innovation in the library using theory, |
| Çolaklar, H. (2014). University students and researchers to role model as a university librarian: innovative library services. | Turkey | survey | The result on what constitute innovative service practices showed that conducting seminar, interview and author event as innovative activities in Turkish libraries. | The gap of the study is the study is geographical gap. That is Turkey. Therefore, there is need to carry out such research in Nigerians' libraries |
| Prajogo, D. I. & Oke, A. (2016) Human capital, service innovation advantage, and business performance: The moderating roles of dynamic and competitive environments. | Australia | Cross section design. | The study found that Human Capital (HC) indicates positive correlations with service innovation advantage (SIA) and business performance (BP) respectively. | The gap of the study is that the study focus was the staff of the firms industries not library and it took place in Australia not Nigeria, therefore, there is need to carry out similar study in the library context as well as in Africa-Nigeria to be specific in order to ascertain it is replication and generalisation of the result. |
| Dim, C. L., Chigbu, E. D. and Ukwuoma, S. C (2021) Incorporating ICT- | Nigeria | Survey | The result of the study revealed that innovative services such as institutional repositories, and e-reference services plays great | The focus of the even though is somehow confusing is on relationship of Digital |

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| Driven Innovative Services for Improved Information Delivery in Nigerian Academic Library; Strategies and Challenges. Adeoye, A. A. & Adeoye, B. J. (2017). Digital Literacy Skills of Undergraduate Students in Federal Universities in Southwest, Nigeria. | Lead City University, Ibadan, Nigeria | Survey | roles in aiding understanding of information literacy skills to students,. The study revealed that digital literacy skills level of undergraduate students in Federal Universities in Southwest, Nigeria is high, especially in areas of media literacy, ICT literacy and information literacy. | literacy tools to innovative services delivery in university libraries, but the influence of KMPs DLS and ISD was not studied. The study adopted questionnaire in data collection. It only focused on the relationship of undergraduate student's level of digital literacy skills in relation to their academic activities in the digital era. While, the influence of DLS, KMPs on ISD of professional librarians was not studied. |
| Chew, P., & Zulu, Z. (2020). A survey of digital literacy skills among library professionals in Zambia | Zambia | Survey | The study found that the prevalent digital literacy skills among library professionals in Zambia comprises of basic (40.0%), intermediate (31.7%), and advanced (28.3%). The categorizations were below 50% which indicated that digital literacy level in Zambia is low. | The study was limited only to investigating the level of DL of professional librarians. The relationship among DLS, KMPs and ISD by professional librarians in University libraries was not studied. |
| Emmanuel, A. (2019). An Assessment of digital literacy skills and knowledge-based competencies among librarians working in university libraries in Africa | Anglophone countries in Africa South Africa, Angola etc | Survey | The study Revealed that Librarians of Anglophone Africa possessed several digital literacy skills and knowledge base skills. The results were categorised in to very high, moderate and low and also reported variations among the countries, where eventually, Nigeria and South Africa were almost at par for the two variables. | The study focus was limited to the assessment of librarian's digital literacy skills and knowledge-based Competencies working in university libraries in Anglophone Africa. But the relationship among the DLS, KMPs and ISD by professional librarians in University libraries was not investigated. |
| Hiremath, M. S. S., & Bankapur, V. M. (2019). Awareness and Proficiency in Digital Literacy Skills among Librarians of First Grade Degree Colleges of Bagalkot District with respect | Bagalkot Distric India | Survey | The study found that age groups have influence on librarians level of awareness and proficiency in digital literacy skills of First Grade Degree Colleges of Bagalkot District | The study focused on investigating the influence of age groups on the level of awareness and proficiency of first grade degree college students in Bagalkot district in India. Where by influence of |

to Age Group.

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| Krishnamurthy, C. & Shettappanavar, L., (2019). Digital literacy among Female Postgraduate students of Karnatak University, Dharwad, Karnataka, India: A study | Karnataka India | Case Study | The study found that female postgraduate students of Karnatak University categorised digital literacy into six. The result revealed that used of search engine was the most preferred skills, but they were deficient in search strategies skills for information retrievals. | DLS, KMPs and ISD of Professional Librarians was not studied. The title is ambiguous. Therefore need to include an operational definition of terms. |
| Mansour, E. (2017). A survey of digital information literacy (DIL) among academic library and information professionals | South Valley University Egypt | Survey | The study found that in South Valley University, Egypt. The availability of personal computers, portable media player/ digital audio player, and server/clients by the academic library influenced the digital information literacy of information professional | The study focused on determining the relationship between the availability of ICTs facility and the level of digital information literacy and among academic librarians in the university in Egypt. The influence of DLS, KMPs and ISD was not studied |
| Ocran, T. K. (2017). Perception of students on mobile technology - based library services. | Ghana | Qualitative research method | The study reported that almost every responded of the study had at least one mobile device (smartphone) and can use it to access subscribed library service. They showed positive perception for mobile phone-based library services. | The study focused on students' perceptions or views on mobile technology-based library services. But influence of DLS, KMPs on ISD were not studied. |
| Odu, A. O., & Omosigho, N. A. (2017). Digital Literacy and the Implications of Nigerian Digital Library. | Nigeria | Documentary design | The study found that Digital literacy is critical and important for the effective use of digital libraries in Nigeria. | The study used documentary research methodology, and focused on the relationship between DLS and the use of digital libraries in Nigeria. The influence of DLS, KMPs and ISD was not studied |
| Ogochukwu, T. E. (2015). Digital Literacy Skills Among Librarians In University Libraries in the 21st Century In Edo and Delta States, Nigeria | Nigeria | Survey | The study found that the digital literacy skills leverage on web 1.0 and web 2.0 tools among librarians in Edo and Delta states. | The study focused on the types of digital literacy tools used in exploring their DLS in delivering library services. But the influence of DLS and KMPs on the ISD was not studied. |
| Press, N., Arumugam, P. P., & Ashford-Rowe, K. (2019). Defining | Australia | Exploratory study | The study found that there are inconsistent definitions of digital literacy in 42 Australian Universities Studied. These | The study focused on determining the core and literal meaning of the concept of digital |

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| digital literacy: A case study of Australian universities | | | were due to variations of the term in context and content. | literacy in Australian Universities, but the influence of DLS, KMPs and ISD was not studied. |
| Rafi, M., JianMing, Z., & Ahmad, K. (2019). Technology integration for students' information and digital literacy education in academic libraries | Pakistan | Survey | The study found that student technological integration for information and digital literacy education in academic libraries were based on using support platforms such as digital tools, internet, modified curriculum and student motivation. | The study is limited to inferential interpretation of results where induction cannot substantiate other deduction which should improve the findings. And influence of DLS, KMPs, on ISD were not studied. |
| McGuinness, C. Fulton, C. (2019) Digital literacy in higher education: A case study of student engagement with e-tutorials using blended learning | Ireland | Case study | The study out -come revealed that digital literacy were highly valued in higher education in Ireland, e-tutorials were perceived as valuable in reinforcing classroom learning and blended learning environment were preferred by students even though the respondent show satisfaction with e-tutorials program. | Research methodology of the study was case study which focused on e-tutorials values by exploring ways in which student's acquire learning in the digital environment. A wider, collaborative exploration is needed to provide comparative studies which move beyond case studies |
| Okeji, C. C., Nwankwo, N., D, Anene, I. A and Emmanuel, O. A (2020) Assessment of digital literacy skills of 21st century librarians in private University libraries in Anambra State | Anambra, Nigeria | survey | The study found that academic librarians in private universities in Anambra State possess some digital literacy skills, such as ability to use digital devices such as laptop, mobile smart phones and have the ability to engage in online community and critical thinking skills with the mean score of 2.50, 2.90 and 3.50 respectively. But they lack sufficient skills in the knowledge sharing. | The study has no theory to back the findings. The study also focused on the assessment of DLS of librarians in the 21 st century, but Influence of DLS, KMPs and ISD of Librarians was not studied. |
| Shivaleela S. Hiremath and Dr. V.M. Bankapur (2019) Awareness and Proficiency in Digital Literacy Skills among Librarians of First Grade Degree Colleges of Bagalkot District with respect to Age Group | survey | India | The study found that Librarians of all age groups were aware of and proficient in digital literacy skills. They were trained and had no constraints in acquiring digital literacy skills. Therefore age group had no significant effect on the librarians' proficiency or awareness about digital literacy skills. | The study focused on the awareness and proficiency of digital literacy of students, while the influence of DLS, KMPs and ISD were not studied. |

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| Emiri, O. T. (2017) Digital Literacy Skills Among Librarians In University Libraries In The 21st Century In Edo And Delta States, Nigeria | Nigeria. | survey | The findings show that electronic mailing, social networking, use of PDAs, mobile phones and internet surfing are the major DLS possessed by librarians. It was also discovered that librarians acquired DLS through colleague's assistance, trial and error, IT programmes and formal education while librarian's level of use of DLS is low amongst other findings. | The study focussed only on the kind of DLS possessed by librarians in state universities while influence on DLS, KMPs and ISD were not studied. |
| Ameen, K. and Gorman, G.E. (2009) Information and digital literacy: a stumbling block to development? A Pakistan perspective | Pakistan | survey | The study found that IL/IDL practice and training were not the norm of libraries or in education in Pakistan. There is low level of IL/IDL among the educated class. There is a strong association between students' technological skill and use of digital tools, database resources, and access to networked resources on the Web. | The study area was Pakistan, (Asians region) therefore, there is need to replicate similar study in other part of the world such as Nigeria to ascertain the veracity of the findings |
| Abdullahi, A (2016), The Impact of Knowledge Management on business Advancement in Umaru MusaYar'adua University Library, Katsina-Nigeria | Umar Musa 'Yar'aduw a University , Katsina Nigeria | Survey | The study found that library and information professionals considered skill as relevant to the knowledge management practice which should be valued and shared. | The study focussed on the impact of KM on business progression in universities, but the influences of DLS, KMPs, and ISD was not studied. |
| Agarwal, R., Brown, P. J., Green, R., Randhawa, K., & Tan, H. (2014). Management practices of Australian manufacturing firms: why are some firms more innovative? | Australia | Survey | Firms which adopt clusters of better management practices have greater performance, and several firm characteristics explain the adoption of better management practices, such as education level of employees and managers, firm size, ownership by a multinational firm, and diffused ownership structure. | The study focused on management practices of manufacturing firms, and the impact of innovations only, but DLS, KMPs and ISD on services organisation was not studied. |
| Ahmad, K. (2017). The perspective of library and information science (LIS) professionals toward knowledge management in university libraries. | Pakistan | Survey | The study reported that the population of LIS community in Pakistan are familiar with knowledge management and apply its principles to improve library services and for productive purposes. | The study focused on views of professional librarians on KM in university libraries and was limited by geographical scope and type of library in Pakistan. Influence of DLS, KMPs and ISD was not studied. |
| Ahmad, K., & Rafiq, M. (2018). Methods of Knowledge Management | Pakistan | Survey | The study showed that KMPs were carried out through conferences, workshop and cooperation with other | The study focused on the process of implementing KMPs in University libraries |

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| Practices in Pakistani Universities' Libraries. | | | organizations, in Pakistani University Libraries, which indicate that KMPs can be implemented in either formal or informal training of professionals. | in Pakistan but, Influence of DLS, KMPs and ISD was not studied. |
| Ahmed, S., Sheikh, A, & Akram, M. (2018). Implementing Knowledge Management in University Libraries of Punjab, Pakistan | Punjab, Pakistan | Survey | The study found that KM is implemented in university libraries of Punjab in areas not limited to reference services, digital & online services, resource sharing & networking, information literacy program, resources management, decision making, and planning and policy making. | The study fail to propose cut and clear explanations of the thrust of the papers in terms operational definitions of terms and the actual concepts of KM in the context of LIS. |
| Chidambaranathan, K., & Rani, S.B.S., (2015). Knowledge management and organizational culture in higher education libraries in Qatar: An empirical study. | Qatar | Survey | The findings reveal that, knowledge management is affected by clan, adhocracy, and market culture. Whereas it was not affected by hierarchical culture. The study also indicated that clan and market culture types are conducive to the success of knowledge management in higher education libraries in Qatar. | The study focused on relationship between KM and Organisational culture in higher education libraries in Qatar, but influence of DLS, KMPs on ISD were not studied. |
| Daneshgar, F., & Bosanquet, L. (2010). Organizing customer knowledge in academic libraries. | Australia | Case study | This article found that two-dimensional Customer Knowledge Taxonomy (CKT) provides formal and explicit specification to deliver a shared conceptualization of customer knowledge. | The study focused on organising customer or user knowledge in academic libraries but influence of DLS, KMPs and ISD was not studied. |
| Islam, M. A., Agarwal, N. K. K., & Ikeda, M. (2015). Knowledge management for service innovation in academic libraries: A qualitative study. | Ten(10)countries in the world. (UK, USA, Canada, Australia, Bangladesh, Denmark, India, Italy, Malaysia & Norway) | Exploratory Survey research | The study found that most librarians reported that knowledge management (KM) helps libraries efforts to accomplish service innovation and service innovation is critical to the continuing success in academic libraries. | The study focused on the relationship of knowledge management and innovative service in academic libraries. The influence of DLS, KMPs and ISD was not studied |
| Islam, M. N, Islam, M. S & Razzak, A. (2020). Problems of knowledge management practices in libraries and information centers of Bangladesh | Bangladesh | Survey | The study revealed that the problems of KMPs includes lack of knowledge sharing culture, lack of interest in engaging staff in talent competition and developing resources for staff development and capacity building in university libraries in Bangladesh. | The study focused on the problems associated with KMPs in University libraries in Bangladesh, therefore influence of DLS, KMPs, and ISD should be studied in other geographical locations. |

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| Malkawi, M. S & Abu Rumman, A.H, (2016). Knowledge Management Capabilities and Its Impact on Product Innovation in SME's | Jordan | Survey | The study found that knowledge management capabilities have six dimensions and four among them (acquisition, sharing, application, protection) have impact on product innovation in SMEs, whereas knowledge creation and storing were not. And that company size has no impact on product innovations. | This study focused on the relationship of KMCs and Its on product innovations in small and medium size enterprises in Jordan, and therefore, the influence of DLS KMPs and ISD in university libraries should be studied. |
| Marouf, L.(2017). Are academic libraries ready for Knowledge management? | Kuwait | Survey | The study showed culture of trust and top management support influence academic libraries readiness for KM in Kuwait. | The study focused on the readiness of the academic libraries in embracing KM, but the influence of DLS, KMPS and ISD was not studied. |
| Nazim, M., & Mukherjee, B. (2013). Knowledge management competencies required among library and information science professionals. | India | survey | The study found that the KM competencies required among LIS professionals in India were five types, and that management competencies among LIS professionals is the essential requirement, interpersonal competencies cultural competencies, leadership and strategic competencies, the least required competency was use of information technology among them. | Despite focusing on the KMCs which are highly dynamic and dependent on technology use, the findings cast doubts and could be affected by the availability and use of ICT facilities in the study areas. Influence of DLS, KMPs, and ISD were not studied. |
| Odili, N. (2019). Leadership roles within the ranks in Nigerian academic libraries. | Nigeria | Case Study | Findings showed that supervisory staff are more likely to suggest new ideas than non-supervisory staff to facilitate improve services delivery to users in libraries in Nigeria. It was noted, however, that librarians in non-supervisory roles demonstrate leadership attributes. | The study focuses on two leadership styles and services improvement or innovation in the library. There is need to explore the Influence of DLS, KMPs, and ISD. |
| Ohioyenoye O. J. & Eboreime O.F (2014). Knowledge Management Practices and Performance in Nigerian Universities | Nigeria | Survey | The study showed that relationships between KMPs and performance in Nigerian universities exist. It reported that K MPs led to variations in organizational performance, innovation, growth and competitive advantage. | The study focused on the relationship between KMPs and Performance, while the influence on DLS, KMPs and ISD was not studied. |
| Oyedokun, T. T., Oyewumi, F. A., & Laaro, D. M. (2018). Perception and attitude of library and information science professionals towards knowledge management: A Survey of certified | Nigeria | Survey | The study found that knowledge management is perceived as an allied field of study by LIS professionals in Nigeria. | The study has a gap of population of respondents which made the generalization of the findings suspicious. And influence of DLS, KMPs and ISD should be studied. |

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| librarians in Nigeria. Ugwu, C. I. & Ekere, J. N, (2017). Knowledge management for improving services in federal university libraries in Nigeria | Nigeria | Survey | The study found that KMPs improve service innovations in university libraries in Nigeria. It revealed that, there were correlation between education and work experience with KMAs in the libraries. | The study focus was limited to ascertaining the relationship of KM and ISD in libraries. There is need to expand the variable and explore relationship such as digital literacy skills to enrich future work. |
| Ugwu, C. I. & Ekere, J. N, (2018). The role of knowledge management in providing innovative services in university libraries in Nigeria: A structural equation modelling approach | Nigeria | Quantitative approach | The study found that there are high activities as roles in knowledge capture, knowledge sharing and knowledge use which made them most likely to provide innovative services to their users. | The study dwelt more on KM and service innovation. While influence of DLS, KMPs and ISD were not studied. |
| Ugwu, C. I. (2018). Organizational factors as predictors of knowledge management practices in Federal University Libraries in Nigeria | Nigeria | Correlational research design | The study found that management support and collaboration were the most significant predictors of knowledge management practices in federal university libraries in Nigeria. | The study focussed on the relationship between organisational factors and KMPs but the influence of DLS, KMPs and ISD were not studied. |
| Ugwu, C. I., & Ezema, I. J. (2018). Planning for Knowledge Management Implementation in Academic Libraries: Empirical Evidence From Federal University Libraries in Nigeria. | Nigeria | Survey | The study revealed that KM process, skills and tools are keys to planning for KM implementation in academic libraries. | The study focused on selected components of what constitute planning. The influence of DLS, KMPS and ISD should be studied |
| Nyalwa, G. E. G, (2018) Implementing Knowledge management practices in university libraries in Kenya. | Kenya | Survey | The result of the study revealed that perception and understanding of KMPs among librarians in Kenya varies. There is no cut and clear comprehension of the roles plays by librarians in using KMPs for innovation and enhancement of education in the universities. | The focus of the study is find out the level of understanding librarians has about KMPs, and the role they play in implementing it for innovation and development of education in the entire university community. But the study of the influence of DLS, KMps and ISD was not studied. |

2.3 Theoretical Framework.

To explain, underscore and understand the variables (dependent and independents) within the discourse, model would be used. Models are leveraged on to probe and extend existing knowledge within the boundaries of assumptions and critically explore and explain factors responsible for the research problem. Single or multiple models would be used to analyse identified gaps. Therefore, related models of digital literacy skills, knowledge management practices as they affected innovative services delivery in university libraries are discussed.

2.3.1 Eshet-Alkalai model of digital literacy skills (Yoram Eshet-Alkalai – 2004)

The Eshet-Alkalai model will be adopted to provide the framework on which this study will leverage to examine digital literacy skills and measure their effect on innovative service delivery in university libraries in northwest region, Nigeria. The model was propounded by Yoram Eshet-Alkalai in the year 2004; and called Eshet-Alkalai model of digital literacy skills (Eshet-Alkalai, 2004). Eshet-Alkalai, came up with a 5-skills comprehensive conceptual model for digital literacy in the year 2004. Arguing that it includes most of the cognitive skills that users and scholars work with in digital environments, providing a powerful framework and design guidelines for scholars, researchers and designers. Akers (2005) avers that presently, this model is regarded as one of the most complete and coherent models for digital literacy assessment.

Eshet-Alkalai (2005) also stated that it was listed among the fundamental models for digital learning in the encyclopedia of distance learning. The model consists of five (5) components that could be used to measure digital literacy skills. These components are: (1) Photo visual literacy (2) Reproduction literacy (3) Branching literacy (4) Information literacy and (5) Socio-emotional literacy. The objectives of the model were to investigate the aggregated aspects of digital literacy skills and provide a befitting benchmark for assessments. The model contextualises the constructs as follows;

1. **Photo visual literacy:** Provided approaches through which efficiency and effectiveness can be measured using available digital support platforms in specific digital environments. These environments are not limited to user interfaces, and graphical communication.
2. **Reproduction literacy:** Measures the capability to utilise diverse media to reproduce and manipulate pre-existing digital contents. The reproduced and manipulated digital contents can be text, visuals, audio and audio-visual formats supported by digital devices.
3. **Branching literacy:** This evaluates the skill possessed to construct knowledge through internet, hypermedia environments and nonlinear navigation into the knowledge domains.
4. **Information literacy:** This provides testable opportunities and the talent to apply and consume information observing ethics and ability to critically sort out untrue and biased information.
5. **Socio-emotional literacy:** Measures the ability to communicate effectively in online communication platforms.

2.3.2 Relevance of model to the present study

The model has been found relevant to the study because it provides direct link to measure the relationship between the dependent variable and independent variables It would aid further empirical investigations of the position of

digital literacy skills on innovative service delivery in university libraries thereby bridging gaps that earlier studies did not reported.

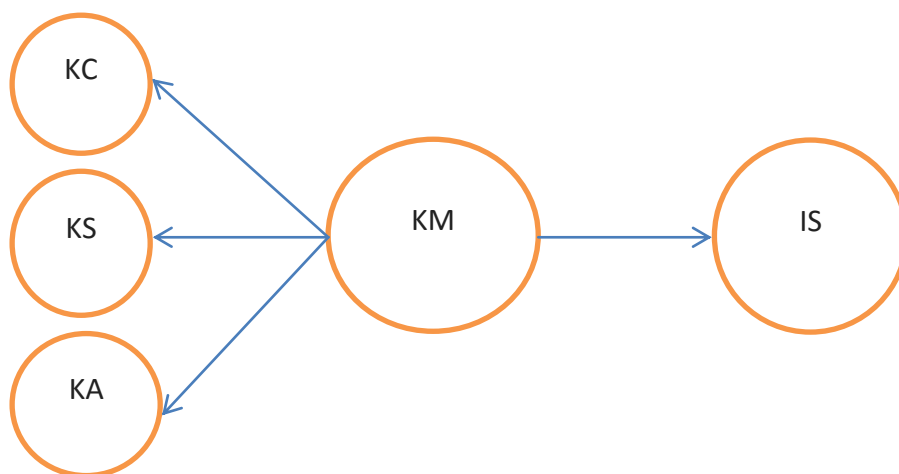
In specific terms, these five components would provide understanding of the influence of age, educational status and socio-economic status on digital literacy skills and in what ways professional librarians are affected when innovating. The model has been used in numerous studies to investigate influence of digital literacy skills on innovative service delivery in university library (Morrar, 2014; Husin & Noor, 2018, Christy & Yusuf, 2021)

Krishnamurthy and Shettappanavar, (2019) leveraged on the model to investigate the digital literacy skills among postgraduate students of Karnaka University, Dharwad, Karnataka India, Chewe and Zulu (2020) focused on digital literacy skills among library professional in Zambia using the model. Whereas, Hiremath and Bankapur (2019) utilised the model to ascertain the degrees of awareness and proficiency of digital literacy among librarians of first grade degree Colleges of Bangalkot District, India.

Figure 2.1

Knowledge Management Practices Model

2.3.3 Knowledge Management Practices Model



Key: KC: knowledge Capture; KS: Knowledge Sharing; KA: Knowledge Application;
KM: knowledge Management and IS: Innovative services

Source: Ugwu and Ekere, (2018)

The Knowledge management Cycle Model (KMCM)

The knowledge management circle model adopted for the purpose of this study comprised of the integrated knowledge management theories and models by Dalkir (2011), Davis (1989) and Rogers (1995). The assumption of the knowledge management circle model is that knowledge management practices (KMPs) can be measured using three steps. These steps consists of knowledge capture/creation, knowledge sharing/transfer and knowledge application/use. The operationalization of the constructs as domesticated for the purpose of this study is given as;

Knowledge Capturing/Creation (KC); This comprised of all knowledge management practices undertaken by professional librarians in the university libraries to deliberately capture tacit knowledge from individuals in the library because of their working experience, areas of specialisation and capability to add value to the library service effectiveness, and response using befitting innovations.

Knowledge sharing/transfer (KS); comprised all practices that take into account what must be done to interface the library services to function smoothly through communication among the library personnel, the library as a university organ, and other libraries. Knowledge sharing involves disseminating an already captured or created knowledge.

Knowledge application/Use (KA); comprised of all practices through which shared knowledge is put to use. Knowledge application is contextualized in various segments of the library such as customer services, reference services, and, information and communication technology service innovative platforms. Scholars such as Dalkir, (2011), Agarwal and Islam, (2014) support the assumptions of this model by adding that KMCs has the capacity to drive innovative services in university-based libraries.

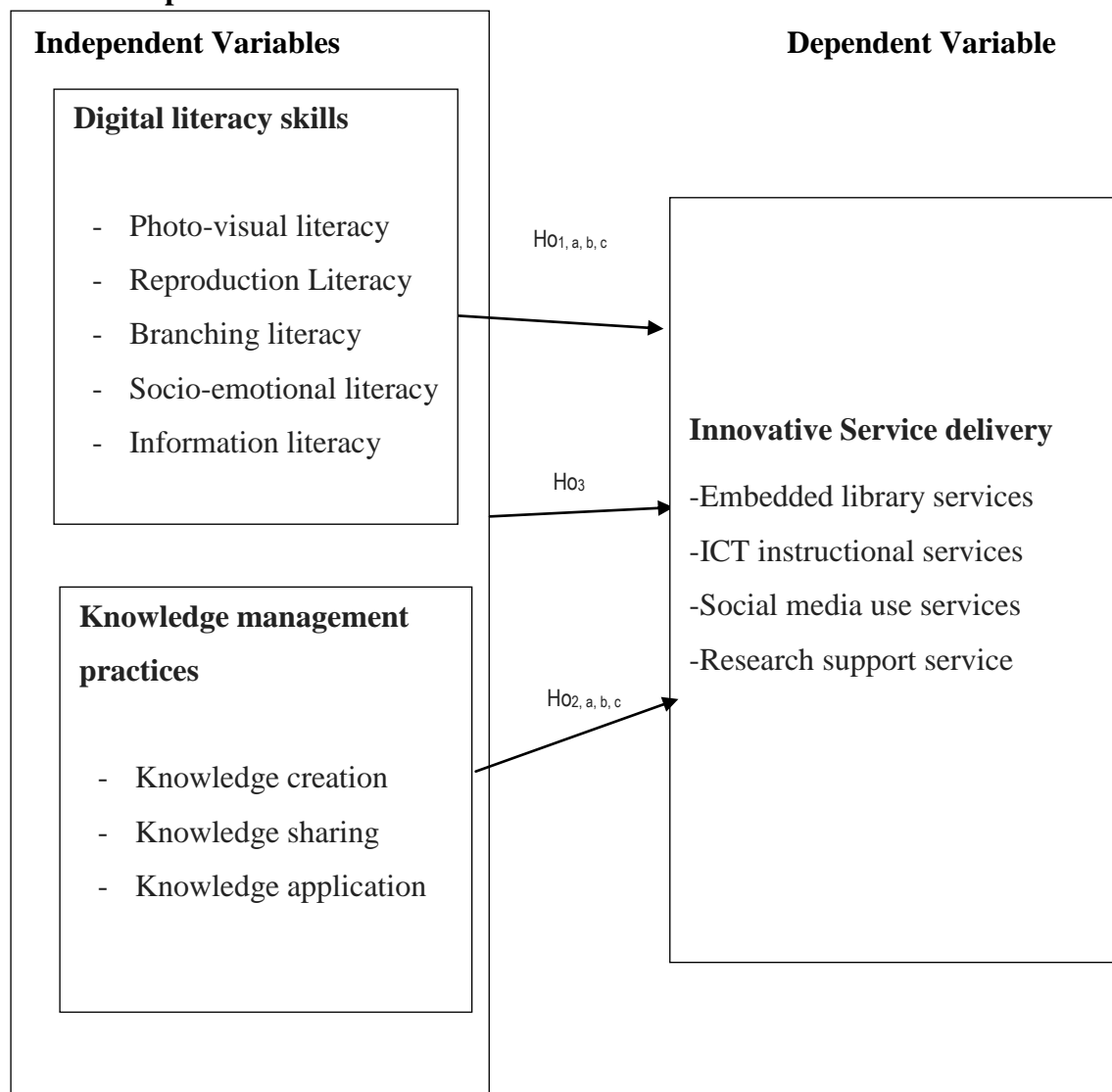
2.3.4Relevance of the model to this study

This model is relevant to this study because it addresses the link between knowledge management practices and service innovation especially within the library. In this study, the processes through which the independent variable will be measured are, by knowledge creation /capture of either library user by library employee or staff for innovating and improving services delivery process. This captured knowledge can be either in tacit or explicit form. The next step is knowledge sharing /transfer, that is the knowledge capture and store in media devices should be transfer among employees and users or between libraries to enable innovation and creation of other new knowledge for the satisfaction of library user needs. Library employees could have the ability to exchange ideas and contribute to the process of innovation in their libraries through knowledge sharing activities (Wang and Noe, 2010). Islam et al., (2017) Postulate further that a library that can encourage knowledge sharing practices among staff or between staff and users is likely to generate new knowledge for innovation

The next step is knowledge application or use by library staff in order to improve and enhances innovative services delivery to the users for satisfying their various information needs for teaching, learning and research purposes. Lundvall and Nielsen (2007) opined that organizational innovation hinge on employees' tacit and explicit knowledge. When knowledge has been captured and shared, the next step is applying or using this knowledge to generate new ideas or knowledge. Islam et al. (2017) uphold that KM flourishes when knowledge is used. As the focused of this study is to ascertain the influences of digital literacy skills of librarians, knowledge management practices prevail in the university libraries on innovative services delivery.

Fig. 2.2

2.4 Conceptual Framework



Source: Researcher, 2022

Key: H_0 (1, 2 & 3) = Null hypotheses; $H_{0, a, b, c}$ = sub-null hypotheses to test construct validity

2.4.1 Description of Conceptual Framework

The conceptual Framework of this study is built around the understanding that digital literacy skills and knowledge management practices influence innovative service delivery. The model's dependent and independent variables and their respective constructs were cautiously selected and adapted from existing literature. The innovative service delivery is the dependent variable. The indicators used to measure innovative service delivery are library services delivered by librarians with high skills and experiences using information and communication technology and social media platforms to ensure users satisfaction. The services includes but not limited to embedded library services, ICT instructional training service, social media services, and research clinic services. Embedded library services delivery is a concept that deals with the pro-activeness of the librarian on assisting users by addressing their information needs. Embedded library services bring the user and the librarian closer to each other regardless of the location. This implies that the user is able to access library resources anytime and anywhere and the library is able to provide the services requested for by the user without any limitation.

Research clinic services are run on “Information Creation as a Process” as a way to tackle continually changing information resources and to avoid repetition of instructional content. Through concentrating on information formats, students learn to evaluate information in context, a foundational skill. Seeber (2015) discussed this frame in terms of format, arguing: The reality is that students no longer need help getting to the sources, but rather critically evaluating the sources that they find. Format, as a process, indicates that this evaluation of information should not be based on “inconsistent characteristics,” which are unique to each database, but instead grounded in analysis of the underlying processes which led to the creation of that information (Koelling, & Townsend, 2019).

ICT instructional training service describes the type of services provided by librarian in form of teaching instructing the library user on how to use ICTs facilities provided in the library which allows information to be obtained, analysed, processed, and disseminated to the user with the use of technology. The term describes a variety of technologies, such as telephones and e-mail and the internet that enables the librarian to provide information in a variety of formats such as text, images, sound, and video.

ICT instructional training services are provided by the library to enable the user in the university to make good use of the enormous information resources available in the library by themselves without any challenges. The library provides ICT instructional services by providing educational instructional services to the user. This education instruction process strengthens the relationship between librarians and their various users. Further, the use of social media tools to render services is another innovative service delivery in the library. Social media is the use of modern day technology to share and discuss audio-visual information, the assist the library in providing a broad range of services to library users. These platforms like Facebook, Instagram, Twitter, and YouTube enable users to create and share information regardless of the distance. Social media helps the librarians to provide broad range of innovative services to users with little effort.

From the conceptual model, the first independent variable is digital literacy skill. The Eshet-Alkalai model possesses six (6) constructs, which comprised; (i) Photo-visual literacy, (ii) Reproduction literacy, (iii) Information literacy, (iv) Branching literacy, (v) Socio-emotional literacy, and (vi) Real-time thinking skill. From these five constructs will be adapted. The adapted constructs include photo-visual literacy skills, reproduction literacy skills, branching literacy Skills, information literacy skills and socio-emotional literacy skills. The selection of these constructs were as a results of the complexities of cognitive, motor, sociological, and emotional skills sets requirements by academic librarians in university libraries. Photo-visual literacy skills of librarians will be assessed from the perspective of their abilities to read, visualises, and represents information in different formats supported by digital environment. These skills will distinguish the capacities of librarians to take advantage of text-based, command-guided, syntactical interfaces to intuitive graphic user interfaces when communicating innovative services for the benefit of library users. Photo-visual literacy skills advocate for using vision to think in digital support user interface and create an effective photo-visual communication that speaks the user’s language.

Branching literacy Skills: This construct will test the ability of academic librarians to utilize hypermedia- based environment for associative, branching and non-linear navigation to disseminate different knowledge and on numerous domains. This ability promotes multidimensional thinking, and characterized by a good sense devoid of losing concentration when surfing the hyperspace. **Socio-emotional literacy skills:** will be assessing the ability of academic librarians to collaborate and shared information using various digital support platforms. Socio-emotional

digital literacy skill is referred as the new type of digital literacy, that involves mainly sociological and emotional aspects of work in cyberspace. It is the most complex of all the types of digital literacy. In order to obtain this skill, users of cyberspaces must be very critical, analytical, and mature, and must be very versatile in information literacy and branching literacy skills. Socially-literate users of the cyberspace know how to avoid sort of tricks and deception as well as derive benefits from the advantages of digital communication. These users have to be fully aware about the activity in cyberspace may be risky for immature, innocent users who do not understand the rules of the game. For examples of such risks cut across every aspect of our life, from surrendering personal information to criminals in the Internet, to users who were naive to eagerly open e-mail entitled "I Love You," only to discover that it infected their computer with a fatal virus. (Yoram Eshet-Alkalai, 2004)

The second independent variable is knowledge management practice. KMPs based on the conceptual model comprises of knowledge capture/creation, knowledge sharing/transfer and knowledge application/use. Knowledge Capturing/Creation deals with the process of capturing knowledge in the library using IT tools. The process of capturing knowledge involves the coming together of individuals in a formal setting either by collaborative arrangement or through networking, attending events such as workshop, seminar, and conferences and connecting with online communities. This networking creates opportunities for knowledge to be captured or created which can be used to enhance work productivity such as the library. Knowledge sharing on the other hand deals with disseminating the created or capture knowledge among individuals or across departments in an organization. In the case of the library, knowledge sharing implies that when knowledge is created or captured in a formal setting by means of collaboration or through seminars and workshops, it is then shared by librarians to advance their knowledge. Knowledge application is the process through which the shared Knowledge will be assessed and used in the organization such as the library. In this context it deals with the application of new or existing knowledge in the library operational activities. The conceptual model provides the blue print for this study. It shows the relationship that exists between digital literacy skill, knowledge management practices and innovative service delivery. This model projects that the application of digital literacy skill and knowledge management practices of librarians have the tendency of influencing innovative service delivery in the study locale.

The first Arrow in the model begins from the dependent variable (digital literacy skills) pointing to the independent variable (innovative services delivery) is indicating that digital literacy skills have direct relationship with innovative service delivery in the university libraries. Where the hypothesis can only be ascertain when the result of the research conducted will prove either positive or otherwise as the case may be. The second arrow in the model starting from the independent variable (Knowledge Management Practices) pointing to the independent variable (innovative service delivery) is indicating that there is relationship between the knowledge management practices and innovative services delivery in university libraries in North-West, Nigeria. Where the hypothesis can only be prove when the research is conducted and result was out. The third arrow in the model starting from the combine two independent variables (digital literacy skill and Knowledge management practices) pointing to the dependent variable (innovative service delivery) which hypothesised that there is combined relationship among the independent variables and dependent variable, such can only be proved after the result of the research was out.

2.5 Appraisal of literature

Appraisal of literature help studies to evaluate critically the gaps and break through previous and current literature have on state of knowledge and juxtaposed with research under investigation from the literature accessed, retrieved and used pertaining to the study variables. The numerous literature that were reviewed includes those that focused on concepts of innovative service delivery, concepts of digital literacy skills and concepts of knowledge management practices. Beyond concepts, empirical studies as well as different methodological approaches that shed more light on the gaps, contributions, positions and findings were reviewed. The aim of the appraisal will be to provide a position from which this study will relate the scope, variables and constructs of the study to provide resolutions that solve identified challenges affecting university library's in terms of digital literacy skills, knowledge management practices and innovative service delivery.

Several studies have been conducted and examined on innovative services delivery in service organisation mostly in advanced countries and African continent but with few discovered that are related to university libraries in Nigeria. However, there is little or no such studies conducted in North-West, Nigeria, which serve as one of the gaps in literature this study, intend to fill. The literature is reviewed under the heading of innovative service delivery digital literacy skills, knowledge management practices in university libraries in North-West, Nigeria shows that there is low levels of innovative services delivery which is a serious set-back to the business of information access and retrieval in the university libraries. In addition, it was examined that innovative services delivery possibility was created when the librarians have possess digital literacy skills with suitable digital devices provided by the libraries. Several scholars have postulate the values of innovative services in relation to university libraries, in which the concept was define as the introduction of new or rebranded services in the library through the application of information technologies devices in order to satisfy the varied information needs of library users.

Literature also indicated that despite the critical needs of innovative service delivery at the present situation that information user needs changed, mode of learning and teaching also change and advances witness in ICTs facilities, yet some libraries are not innovative, or with innovation that is inadequate and consisted to provide the required innovative service delivery in university libraries in North-West, Nigeria. Therefore, the researcher intended to conduct this study in order to fill the gap. The researcher used following indicators to measure innovative service delivery as library services that are delivers by librarians with high skills and experiences using information and communication technology and social media platforms to ensure users satisfaction. The services includes but not limited to embedded library services, ICT instructional training service, social media services, and research clinic services. Embedded library services delivery is a concept that deals with the pro-activeness of the librarian on assisting users' users by addressing their information needs. Embedded library services bring the user and the librarian closer to each other regardless of the location. Research clinic services are run on "Information Creation as a Process" as a way to tackle continually changing information resources and to avoid repetition of instructional content. Through concentrating on information formats, students learn to evaluate information in context, a foundational skill.

ICT instructional training service describes the type of services provided by librarian in form of teaching instructing the library user on how to use ICTs facilities provided in the library which allows information to be obtained, analysed, processed, and disseminated to the user with the use of technology. Social media is the use of modern day

technology to share and discuss audio-visual information they assist the library in providing a broad range of services to library users. These platforms like Facebook, Instagram, Twitter, and YouTube enable users to create and share information regardless of the distance innovatively.

The research measured digital literacy skills variable with the five constructs emanated from the literature; photo-visual literacy skill, reproductive literacy skill, information literacy skills, branching, information, socio-emotional and real time digital skills (Eshet, 2012). The selection of these constructs were as a result of the complexities of cognitive, motor, sociological, and emotional skills sets requirements by academic librarians in university libraries. Photo-visual literacy skills of librarians will be assessed from the perspective of their abilities to read, visualise, and represent information in different formats supported by digital environment. Photo-visual literacy skills advocate for using vision to think in digital support user interface and create an effective photo-visual communication that speaks the user's language. Branching literacy Skills: This construct will test the ability of academic librarians to utilize hypermedia-based environment for associative, branching and non-linear navigation to disseminate different knowledge and on numerous domains. This ability promotes multidimensional thinking, and characterized by a good sense devoid of losing concentration when surfing the hyperspace. Socio-emotional literacy skills: will be assessing the ability of academic librarians to collaborate and shared information using various digital support platforms. Socio-emotional digital literacy skill is refers as the new type of digital literacy, that involves mainly sociological and emotional aspects of work in cyberspace.

The researcher also discovered that knowledge Management practices is a key to innovation in libraries particularly, that library main business is information handlings. So, literature has also identified the value of knowledge management process in university libraries such as knowledge creation, knowledge sharing and knowledge applications as factors for innovative services delivery. The metrics used by the researcher to measure the knowledge management practices were knowledge creation, knowledge sharing and knowledge application/use. Knowledge Capturing/Creation deals with the process of capturing knowledge in the library using IT tools. The process of capturing knowledge involves the coming together of individuals in a formal setting either by collaborative arrangement or through networking, attending events such as workshop, seminar, and conferences and connecting with online communities. Knowledge sharing on the other hand deals with disseminating the created or capture knowledge among individuals or across departments in an organization. In the case of the library, knowledge sharing implies that when knowledge is created or captured in a formal setting by means of collaboration or through seminars and workshops, it is then shared by librarians to advance their knowledge. Knowledge application is the process through which the shared Knowledge will be assessed and used in the organization such as the library. In this context it deals with the application of new or existing knowledge in the library operational activities.

CHAPTER THREE

METHODOLOGY

This chapter covers the methodology that was utilised for the study. It specifically covered research design, population of the study, sample size and sampling technique, research instrument, validity and reliability of the instrument, method of data collection, method of data analysis and ethical consideration that guide the study within the stipulated policy of Babcock University.

3.1 Research Design

This study adopted a survey research design. This research design is considered adequate for the study because the main purpose of the study is to identify and understand the influence of digital literacy skills, knowledge management practices and innovative service delivery in university libraries in North-West, Nigeria. Scholars such as Abdulah, et al, (2018) affirm that survey research design facilitates the collection of information from respondents based on their perception of the variables or phenomenon being investigated. The survey research design was adopted to obtain information on the current status of the phenomena from the focus population.

3.2 Population

The population of this study comprises of 452 academic librarians in Federal, State and Private universities in the North-West, Nigeria. The distribution of the population of the study is given in Table 3.1

Table 3.1: *List of Universalities and Librarians in Federal, State and Private University Libraries in North-west, Nigeria*

| Federal Universities/Degree awarding institutions in Northwest, Nigeria | | | | |
|--|--|-----------------|-----------------|--------------------------|
| S/N | Name of University | Acronyms | Location | No. of Librarians |
| 1 | Ahmadu Bello University, Zaria | ABU | Zaria | 125 |
| 2 | Air Force Insti. of Technology, Kaduna | AFIT | Kaduna | 18 |
| 3 | Bayero University, Kano | BUK | Kano | 35 |
| 4 | Federal University, Birnin Kebbi | FUBK | B/kebbi | 15 |

| | | | | |
|------------------|---|--------|-----------|------------|
| 5 | Federal University, Dutse, Jigawa | FUD | Dutse | 17 |
| 6 | Federal University, Dutsin-Ma, Katsina | FUDMA | Dutsin-ma | 37 |
| 7 | Federal University, Gusau Zamfara | FUGUS | Gusau | 19 |
| 8 | Nigeria Police Academy Wudil | NPA | Wudil | 13 |
| 9 | Nigerian Defence Academy Kaduna | NDA | Kaduna | 15 |
| 10 | Usumanu Danfodiyo University | UDUSOK | Sokoto | 32 |
| 11 | Federal University of Agriculture, Zuru | FUAZ | Zuru | 05 |
| Sub-total | | | | 331 |

| List of States Universities In Northwest, Nigeria, | | | | |
|---|--|-------|----------|------------|
| 1 | Sule Lamido Uni., Kafin Hausa, Jigawa | SLU | K/Hausa, | 04 |
| 2 | Kaduna State University, Kaduna | KASU | Kaduna | 43 |
| 3 | Kano Uni.of Science & Tech., Wudil | KUST | Wudil | 08 |
| 4 | Kebbi State Uni. of Sci. & Tech., Aliero | KSUST | Aliero | 13 |
| 5 | Umar Musa Yar' Adua Uni. Katsina | UMYU | Katsina | 12 |
| 6 | Sokoto State University | SSU | Sokoto | 08 |
| 7 | Northwest University Kano | NWU | Kano | 09 |
| 8 | Zamfara State University, Gusau | ZASU | T/Mafara | 05 |
| Sub-total | | | | 102 |

| List of Private universities in Northwest, Nigeria. | | | | |
|--|-------------------------------|--|---------|------------|
| 1 | Al-Qalam University, Katsina | | Katsina | 09 |
| 2 | Skyline University, Kano | | Kano | 04 |
| 3 | Greenfield University, Kaduna | | Kaduna | 05 |
| 4 | Nok University, Kachia | | Kachia | 01 |
| Sub-total | | | | 19 |
| Grand Total | | | | 452 |

Source: Offices of the University Librarians, 2021(As at 2023, the total number universities in the North-West, Nigeria was 23)

3.3 Sample size and sampling Technique

The sampling technique employed for this study was a proportionate random sampling technique. In order to obtain the total number of sampled librarians from the study's population, Krejcie and Morgan table for determining sample size was used. As suggested by Krejcie and Morgan, the population of this study which is 452 librarians, have a sample size of 210 librarians. Thereafter, Proportionate stratified random sampling technique was used to determine the actual samples for each university library university libraries.

The formula used to drive the individual university library sample size is:

X/Total Population x sample size

Where **X** stand for Total population of professional Librarians in a particular university library.

Total Population: this refers to the entire population of the study, i.e **452**

Sample size: this refers to the entire sample size of the study. i.e **210**.

Therefore, see Table 3.2 in the next page

Table 3.2: *Sample Size in each Federal, State and Private Universality Library*

| Federal Universities/Degree awarding institutions in North-West, Nigeria | | | | | |
|---|---|-----------------|-----------------|---------------|----------------|
| S/N | Name of University | Acronyms | Location | No.Lib | S. size |
| 1 | Ahmadu Bello University, Zaria | ABU | Zaria | 125 | 58 |
| 2 | Air Force Insti. of Technology, Kaduna | AFIT | Kaduna | 18 | 8 |
| 3 | Bayero University, Kano | BUK | Kano | 35 | 16 |
| 4 | Federal University, Birnin Kebbi | FUBK | B/kebbi | 15 | 7 |
| 5 | Federal University, Dutse, Jigawa | FUD | Dutse | 17 | 8 |
| 6 | Federal University, Dutsin-Ma, Katsina | FUDMA | Dutsin-ma | 37 | 17 |
| 7 | Federal University, Gusau Zamfara | FUGUS | Gusau | 19 | 9 |
| 8 | Nigeria Police Academy Wudil | NPA | Wudil | 13 | 6 |
| 9 | Nigerian Defence Academy Kaduna | NDA | Kaduna | 15 | 7 |
| 10 | Usumanu Danfodiyo University | UDUSOK | Sokoto | 32 | 15 |
| 11 | Federal University of Agric., Zuru | FUAZ | Zuru | 05 | 02 |
| Sub-total | | | | 331 | 153 |
| List of State Universities In North-West, Nigeria, | | | | | |
| 1 | Sule Lamido Uni., Kafin Hausa, Jigawa | SLU | K/Hausa, | 04 | 02 |
| 2 | Kaduna State University, Kaduna | KASU | Kaduna | 43 | 20 |
| 3 | Kano Uni.of Science & Tech., Wudil | KUST | Wudil | 08 | 04 |
| 4 | Kebbi State Uni. of Sci. & Tech., Aliero | KSUST | Aliero | 13 | 06 |
| 5 | Umar Musa Yar' Adua Uni. Katsina | UMYU | Katsina | 12 | 06 |
| 6 | Sokoto State University | SSU | Sokoto | 08 | 04 |
| 7 | Northwest University Kano | NWU | Kano | 09 | 04 |

| | | | | | |
|------------------|---------------------------------|------|----------|------------|-----------|
| 8 | Zamfara State University, Gusau | ZASU | T/Mafara | 05 | 02 |
| Sub-total | | | | 102 | 48 |

List of Private universities in North-West, Nigeria.

| | | | | | |
|--------------------|-------------------------------|--|---------|------------|------------|
| 1 | Al-Qalam University, Katsina | | Katsina | 09 | 04 |
| 2 | Skyline University, Kano | | Kano | 04 | 02 |
| 3 | Greenfield University, Kaduna | | Kaduna | 05 | 02 |
| 4 | Nok University, Kachia | | Kachia | 01 | 01 |
| Sub-total | | | | 19 | 09 |
| Grand Total | | | | 452 | 210 |

Source: Offices of the University Librarians, 2021

Krejcie and Morgan table 1970, see appendix V

3.4 Instrument for Data Collection

The research instrument that was used for data collection is a self- designed structured questionnaire .The questionnaire is titled ‘Digital Literacy Skills, Knowledge Management Practices and Innovative Service Delivery Questionnaire’ (DKMISDQ), and divided into four sections:

Section A of the questionnaire is aimed at collecting demographic information of the respondents such as name of university, designation of librarians, gender, Age, highest academic qualification and years of working experience.

Section B: This section measured thelevel of digital literacy skills of librarians in university libraries in North-West, Nigeria. It comprises 34 items subdivided into five subdivisions each. The rating scale is a five-point Likert-type scale of: 5=Very High Level 4= High Level, 3=Moderate Level, 2=Low Level, 1= very Low Level.

Section C: This section measured knowledge management practices that are prevalent in university libraries in North-West, Nigeria It comprises 20 items. The rating scale is a five-point Likert-type scale of: 5=Strongly Agree, 4=Agree, 3= undecided 2=Disagree, 1= Strongly Disagree.

Section D: This section measured the level of innovative service delivery by librarians in university libraries in North-West, Nigeria. It comprises 28 items. The rating scale is a five-point Likert-type scale of: 5= Very High, 4=High, 3=Moderate, 2=Low, 1= very Low.

3.5 Validity and Reliability of the Instrument

Validity means the degree at which the research instrument measures what it intends to measure. Face and content validity were used to validate the research instrument by two lecturers from the Department of Information Resources Management in Babcock University and one from Ahmadu Bello University Library complex. Popoola (2007) states that face validity rest on the researcher’s subjective evaluation of the validity of a research instrument.

To ascertain the validity, the questionnaire was subjected to both face and construct validity test. The face validity was done by giving out copies of the questionnaire to the researcher’s supervisor, experts as well as other academic staff from Department Information Resources Management of which their suggestions and comments were used to improve the content of the questionnaire.

Also, content validity is the degree to which the statements, questions, or indicators constituting the instrument adequately represent the qualities measured. The report instrument was tested among librarians in Babcock University. This university was not included in the study. The reliability of the research instrument was subjected to Cronbach’s Alpha test using (SPSS) version 25.0.

Constructing Validity of Research Instrument

For the establishment of content validity, the returned questionnaires were subjected to a factor analysis test using the Principal Component Analysis (PCA) method of extraction. The factor loadings of these items were used to establish the average variance extracted AVE based on the formula below:

$$AVE = \frac{SSFL}{NOI}$$

Where AVE = Average variance extracted

SSFL = Sum of Squared Factor Loadings

NOI = Number of variable indicators

Table 3.3

Cronbach alpha Test of Reliability

| S/N | Factor | Number of items | Reliability value |
|------------|--|------------------------|--------------------------|
| 1. | Level of digital literacy skills of librarians | 35 | 0.9 |
| 2. | knowledge management practices prevalent in university libraries | 21 | 0.8 |
| 3 | Innovative service delivery | 17 | 0.9 |

Source: Researcher’s field Pretest, 2022

From the result of the reliability test as indicated in the table 3.3 the result shows Cronbach alpha values greater than 60% for all the factors examined. Hence, the items are reliable. The results showed that Bartlett's sphericity tests were all significant at 0.000 for all variables. Furthermore, the KMO values are higher than the 0.5 benchmarks. This means that the study's sample adequacy was achieved. As a result, the questionnaire for collecting more data for the main study is valid. The coefficients are above 0.5, according to the average variance extracted (AVE. This adds to the evidence that the data gathering questionnaire is valid. The average variance extracted (AVE) was greater than 0.5. As a result of the findings, it can be inferred that the factors were genuine and appropriate because the variables in the study had a highly significant association.

Table 3.4*Reliability of Research Instruments*

| S/N | Variables | No of Items | Cronbach's Alpha Coefficient | Composite Reliability | Remark |
|--------------------------------|------------------------------------|-------------|------------------------------|-----------------------|----------|
| Digital Literacy Skills | | | | | |
| 1 | Photo-visual Literacy Skills | 5 | 0.756 | 0.882 | Reliable |
| 2 | Reproduction Literacy Skills | 5 | 0.843 | 0.897 | Reliable |
| 3 | Branching Literacy Skills | 5 | 0.869 | 0.941 | Reliable |
| 4 | Information Literacy Skills | 5 | 0.884 | 0.927 | Reliable |
| 5 | Socio-emotional Literacy Skills | 5 | 0.947 | 0.976 | Reliable |
| Knowledge Management | | | | | |
| 6 | Knowledge Creation | 5 | 0.865 | 0.955 | Reliable |
| 7 | Knowledge Sharing | 5 | 0.897 | 0.920 | Reliable |
| 8 | Knowledge Application/Use Process | 5 | 0.929 | 0.866 | Reliable |
| Innovative Services | | | | | |
| 9 | Embedded Library Services | 5 | 0.725 | 0.968 | Reliable |
| 10 | ICT Instructional Training Service | 5 | 0.769 | 0.732 | Reliable |
| 11 | Social Media use Services | 5 | 0.787 | 0.974 | Reliable |
| 12 | Research Clinic Services | 5 | 0.712 | 0.926 | Reliable |

Source: Researcher's Pilot Study (2022)

Table 3.4 shows reliability of the questionnaire. The coefficient was used to test this internal consistency as well as the reliability. The values obtained were higher than 0.70 alpha benchmark which confirms that the questionnaire and its variables passed the internal consistency test.

3.6 Method of Data Collection

Data for the study was gathered through a questionnaire. The questionnaire have a cover letter see appendix III, that was briefly explain the research topic and assure the respondents that the information elicited will be confidential and used for research purposes only. The copies of the questionnaire were distributed to the academic librarians in the universities by the researcher and three (3) research assistants. The researcher used three (3) research assistants to distribute and retrieve the questionnaire from the responded for analysis. The research from the time of distribution of the research instrument to the time of collection tooka total of 30 days ie. Four weeks and two days. The researcher used the way bill system of sending and receiving mails to the research all the three research assistants involved in the study. A phone number was stated in the instrument if any respondent need more clarifications on the instrument from the researcher.

3.7 Method of Data Analysis

Data collected was analysed using the statistical techniques like frequencies, mean, standard deviation, simple linear regression and multiple regression analysis. The statistical package for the Social Science (SPSS 21.0 version) was used for data analysis. SPSS was chosen to be used for this study because of its popularity as being used for both academic and business research data analyses (Arkkelin, 2014). Hypotheses (1-2) were analyzed using simple linear regression to show the influence of the independent variables on the dependent variable while Hypothesis three (3) were analyzed using multiple regression analysis to show the combined influence of the independent variables on the dependent.

3.8 Ethical Consideration

The research obtained Ethical approval from the Ethical Committee of the university that is Babcock University Health Research and Ethics Committee (BUHREC), for the approval certificate see appendix III. BUHREC is a subunit in the institution saddle with the responsibility of ensuring that any research work from Babcock university meet all the ethical standard and rules governing academic research, making sure that researches meet up with the university mission and core values. Letter of introduction was obtained from the Head of Department of Information Resources Management (IRM) in Babcock University and submitted to all the above 23 stated university librarians in the North-West, Nigeria for their perusal and assure them that respondents' responses to be collected would be used for research purpose only. See appendix II. For confidentiality of the respondents, the questionnaire was not request for the names of the respondents. The data was used only for academic purposes. The materials used for this study was be duly acknowledged. Furthermore, participation in this study was strictly voluntary and there was no payment to respondents for participating in this study. Also, to ensure this research work does not break any rules like plagiarism, the document was subjected to plagiarism test with the use of Turn-It-in check software and the result was 9%. see appendix IV

CHAPTER FOUR

DATA ANALYSIS, RESULTS, AND DISCUSSION OF FINDINGS

This chapter presents the data analysis, interpretation, and discussion of findings from this study, which was conducted to investigate the influence of digital literacy skills, and knowledge management practices on innovative

service delivery of librarians in university libraries in North-West Nigeria. In all, three research questions were posed and five hypotheses were formulated and tested. The statistical tools used for the testing of the research questions were: descriptive statistics such as frequency distribution, percentages, mean and standard deviation, particularly for the research questions. Inferential statistics were used for the hypotheses. The hypotheses 1 to 3 were tested using simple linear regression. While, multiple regression analysis was employed to test the combined influence of digital literacy skills, and knowledge management practices (independent variables) on innovative service delivery (dependent variable) of librarians in university libraries in North-West, Nigeria. The results associated with the testing of the hypotheses are reported according to each hypothesis tested. The results are presented in tables followed by the interpretation. The data were analysed using the statistical Package for Social Sciences (SPSS) software, version 27. The five hypotheses were tested at 0.05, level of significance.

The reports are presented in four parts: first, the demographic variables of the respondents are presented, and the second part deals with the research questions. The third part is concerned with testing the hypotheses and the fourth part discussed the findings. The researcher distributed 210 copies of the questionnaire to respondents of which 196 copies of the distributed questionnaire were duly filled and returned and was used for the analysis. This represents a response rate of approximately 93.3% of the population in the study, which was considered adequate for analysis..

The chapter focuses on the following subheadings:

- 4.1 Data presentation and descriptive analysis
- 4.2 Demographic characteristics of the respondents
- 4.3 Analysis and presentation of research questions
- 4.4 Discussion of findings

4.1 Data Presentation and Descriptive Analysis

The researcher distributed 210 copies of the questionnaire to respondents of which 196 copies of the distributed questionnaire were duly filled and returned and were used for the analysis. This represents a response rate of approximately 93.3% of the population in the study, which was considered adequate for analysis. Table 4.1 presents results of the response rate.

Table 4.1

Copies of Questionnaire Administered and Response Rate

| Category | Frequency N | Percentage % |
|--|----------------|-----------------|
| Distributed | | |
| Completed usable copies of questionnaire | 196 | 93.3 |
| Unreturned/incomplete copies | 14 | 6.7 |
| Total | 210 | 100 |

Source: Field Survey, 2023

4.2 Demographic Characteristics of the Respondents

This section presents the demographic information of the respondents in terms of their age, marital status, work experience, gender, highest education qualification, designation and name of their institutions.

Table 4.2*Demographic Characteristics of the Respondents*

| | | Frequency | % |
|---|-----------------------------|--------------------------------------|-------|
| Age | 21-30 years | 21 | 10.7% |
| | 31-40 years | 79 | 40.3% |
| | 41-50 years | 62 | 31.6% |
| | 51-60 years | 21 | 10.7% |
| | 61-70 years | 4 | 2.0% |
| | Missing nos. | 9 | 4.6% |
| Marital status | Single | 23 | 11.7% |
| | Married | 159 | 81.1% |
| | Divorced | 1 | 0.5% |
| | Missing | 13 | 6.6% |
| Work experience | 1-5 years | 47 | 24.0% |
| | 5-10 years | 59 | 30.1% |
| | More than 10 -15 years | 48 | 24.5% |
| | More Than 15 Years | 23 | 11.7% |
| | Missing | 19 | 9.7% |
| Gender | Male | 122 | 62.2% |
| | Female | 52 | 26.5% |
| | Missing | 22 | 11.2% |
| Highest education qualification | Bsc/ HND | 62 | 31.6% |
| | M.sc | 86 | 43.9% |
| | PhD | 24 | 12.2% |
| | Any other specify | 2 | 1.0% |
| Designation | Missing | 22 | 11.2% |
| | Assistant Librarian (AL) | 36 | 18.4% |
| | Librarian II | 36 | 18.4% |
| | Librarian I | 33 | 16.8% |
| | Senior Librarian | 37 | 18.9% |
| | Principal Librarian | 11 | 5.6% |
| | Deputy University Librarian | 1 | 0.5% |
| | University librarian | 4 | 2.0% |
| | Missing | 38 | 19.4% |
| | Name of University | Nigeria Defense Academy (NDA) Kaduna | 6 |
| Airforce Institute Of Tech Kaduna | | 9 | 4.6% |
| Zamfara State University , Gusau | | 2 | 1.0% |
| Sule Lamido University Kafin Hausa | | 3 | 1.5% |
| Kebbi State University of Sci. and Tech. Aleiro | | 3 | 1.5% |
| Sokoto State University, Sokoto | | 4 | 2.0% |
| Federal University , Birnin Kebbi | | 5 | 2.6% |
| Umaru Musa Yaradua University, Katsina | | 7 | 3.6% |
| Federal University Dutse, Jigawa | | 8 | 4.1% |
| Usmanu Danfodiyo University, Sokoto | | 14 | 7.1% |
| Skyline University, Kano | | 2 | 1.0% |
| Federal University Gusau, | | 9 | 4.6% |
| Police Academic Wudil, Kano | | 4 | 2.0% |

| | | |
|--|-----|--------|
| Al-Qalam University, Katsina | 5 | 2.6% |
| Yusif Maitama Sule University, Kano | 4 | 2.0% |
| Kano State University of Science and Technology, Wudil | 4 | 2.0% |
| Bayero University, Kano | 12 | 6.1% |
| Federal University Dutsema, Katsina | 19 | 9.7% |
| Kaduna State University, Kaduna | 20 | 10.2% |
| Ahmadu Bello University, Zaria | 56 | 28.6% |
| Missing | 0 | 0.0% |
| Total | 196 | 100.0% |

Source: Field Survey, 2023

Table 4.2 presents the demographic information of the respondents. It is organized into different segments, and each includes the count of respondents and their respective percentages. The first segment is Age distribution, tabulated above and it shows that majority of the respondents fall within the 31-40 years age group, comprising 79 (40.3%) of the total sample. This is followed by the 41-50 years age group 62 (31.6%), while the 21-30 years and 51-60 years age groups each make up 21 respondents amounting to (10.7%). The older age groups (61-70 years) represent a smaller percentage, of the respondents at 2 (2.0%), and there are 9 (4.6%) missing data for age. This implies that majority of the respondents are within the young and adult age group, and are expected to have the ability, capability and capacity to provide innovative services delivery in university libraries and be relevant to uphold the standard of the library in the university setting.

The respondents' marital status, shows that most of the respondents, totalling up 159 (81.1%) of the total respondents are married, while, 21 respondents (11.7%) are Single and there is a very small representation of divorced at 1 (0.5%). This implies that most of the librarians working in university libraries in the study areas are responsible, being family men or women. This may be associated with the cultural and religious background of the predominant people in the area, which demand that marriage is one of the symbols of a full responsible person that attain the adulthood age group in the society.

The respondents work experience, shows a fairly even distribution among the different work experience levels. The tables indicated that 59 (30.1%) respondents have 5-10 years' work experience and 48 (24.5%) respondents have more than 10-15 years' work experience. 47 (24.0%) respondents have 1-5 years and 23(11.7%) have more than 15 Years respectively. The result of the analysis shows that majority of the respondents are within the range of active services years, this implies that there is tendency to proactively engage in providing innovative services delivery in the university libraries to the user with their enormous experiences, especially that this 21st century witness a total changes of the information landscape.

Furthermore, the gender distribution reveals that there are 122 (62.2%) male respondents and 52(26.5%) female respondents with a notable number 22 (11.2%) of respondents that lack gender information. The analysis indicated that majority of the librarians working in the university libraries in University libraries in North-West, Nigeria are

male. This implies that the library and information sciences profession is becoming male dominated in the North-West, Nigeria. On the educational qualification of librarians the tables shows that master's degree is the predominant qualification obtained by librarians 86 (43.9%) of respondents holding master's degree. Bsc/ HND follows with 62 (31.6%), and PhD is held by 24 (12.2%) respondents. A small number 2 amounting to (1.0%) holds qualifications labelled as any other specify. The result implies that the respondent's educational qualifications could be a yard stick to know whether they have the capacity and possessed the ability to provide innovative library services in their various university libraries in the North-West, Nigeria.

The respondents' designation results, indicates that assistant librarians and librarian II each represent 36(18.4%) of respondents, making them the majority designations. Librarian I accounts for 33(16.8%), and senior librarian accounts for 37(18.9%) respondents respectively. While, principal librarian account for 11(5.6%) respondents and deputy university librarians account for 1(0.5%), and university librarians account for 4(2.0%) respondents. The last demographic information of the respondents is the name of university of each respondent that participated in the study. The lists of various universities and the data are quite diverse. Ahmadu Bello University, Zaria is the most prevalent, with 56 (28.6%) of respondents. Other universities have smaller percentages, Skyline university Kano scored the lowest 2(1.0%). In summary, the table provides a comprehensive snapshot of the demographics, education, and professional attributes of the sampled respondents. It showcases the age distribution, marital status, work experience, gender distribution, educational qualifications, professional designations, and the variety of universities from which the respondents come from.

Table4.3 Analysis and Presentation of Research Questions

Three research questions were generated for this study to find out the level of digital literacy skills, knowledge management practices prevalent and innovative services delivery in university libraries in North-West, Nigeria.

Research question one: What is the level of digital literacy skills of librarians working in university libraries in North-West, Nigeria?

Table 4.3

| <i>Distribution of the Level of Digital Literacy Skills of Librarians in University</i> | | <i>Libraries in North-West, Nigeria</i> | | | | | | |
|--|-------------|---|-------------|------------------|------------|-----------------|-----------------|----------------|
| Photo-visual Literacy Skill. | | Very High | High | Modera te | Low | Very Low | Missin g | Mean SD |
| Rank your level of effective and efficient use of the under listed photo-visual literacy platforms in your library. Tick as many as possible | | | | | | | | |
| My ability to intuitively and freely use text base and command guide interface to stimulate uses of graphical user interface is | 33 16.8% | 78 39.8% | 49 25.0% | 12 6.1% | 1 0.5% | 23 11.7% | 3.31 1.46 | |
| My ability to clearly understand and interpret visual images using social media platforms is | 64 32.7% | 79 40.3% | 32 16.3% | 7 3.6% | 1 0.5% | 13 6.6% | 3.81 1.31 | |
| My ability to interpret digitally altered images is | 28 14.3% | 84 42.9% | 54 27.6% | 9 4.6% | 2 1.0% | 19 9.7% | 3.36 1.36 | |
| My ability to use laptop computer to create digital images is | 46 23.5% | 59 30.1% | 56 28.6% | 14 7.1% | 3 1.5% | 18 9.2% | 3.39 1.43 | |

| | | | | | | | |
|---|-------------|-------------|-------------|------------|-----------|------------|----------------------------|
| My ability to use computer in generating digital contents is | 41 20.9% | 73 37.2% | 54 27.6% | 11 5.6% | 1 0.5% | 16 8.2% | 3.48 1.34 |
| My ability to communicate effectively in a digital platforms is | 56 28.6% | 77 39.3% | 34 17.3% | 9 4.6% | 1 0.5% | 19 9.7% | 3.62 1.45 |
| Average Mean | | | | | | | 3.50 1.39 |

Reproduction Literacy Skills.

Rate your ability to use diverse media to reproduce and manipulate pre-existing digital contents

| | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
|---|------------------|-------------|-----------------|------------|-----------------|----------------|----------------------------|
| My ability to use word processor applications (e.g. Microsoft Word) is | 84 42.9% | 66 33.7% | 29 14.8% | 3 1.5% | 1 0.5% | 13 6.6% | 3.97 1.32 |
| My ability to operate spreadsheet applications (e.g. Microsoft excel) is | 41 20.9% | 70 35.7% | 52 26.5% | 15 7.7% | 1 0.5% | 17 8.7% | 3.43 1.38 |
| My ability to digitize a document using a digital devices is | 39 19.9% | 78 39.8% | 48 24.5% | 17 8.7% | 1 0.5% | 13 6.6% | 3.50 1.29 |
| My ability to use digital media tools to scan a document is | 40 20.4% | 82 41.8% | 43 21.9% | 12 6.1% | 2 1.0% | 17 8.7% | 3.48 1.38 |
| My ability use photocopying machine to reproduce documents is | 63 32.1% | 68 34.7% | 32 16.3% | 12 6.1% | 1 0.5% | 20 10.2% | 3.61 1.51 |
| My ability use printer to reproduce information document is | 54 27.6% | 73 37.2% | 27 13.8% | 14 7.1% | 3 1.5% | 25 12.8% | 3.44 1.60 |
| My ability use digital camera to take photos, reproduce & disseminates is | 41 20.9% | 86 43.9% | 45 23.0% | 8 4.1% | 0 0.0% | 16 8.2% | 3.57 1.32 |
| Average Mean | | | | | | | 3.49 1.31 |

Branching Literacy Skills.

Rate the extent of your skills to construct knowledge using digital literacy skills.

| | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
|--|------------------|-------------|-----------------|------------|-----------------|----------------|----------------------------|
| My ability to apply new technologies into library services is | 41 20.9% | 73 37.2% | 54 27.6% | 11 5.6% | 1 0.5% | 16 8.2% | 3.48 1.34 |
| My ability to use of different storage devices to preserve digital contents is | 49 25.0% | 86 43.9% | 36 18.4% | 9 4.6% | 0 0.0% | 16 8.2% | 3.65 1.34 |
| My ability to adopt/adapt information retrievals techniques is | 38 19.4% | 89 45.4% | 46 23.5% | 6 3.1% | 0 0.0% | 17 8.7% | 3.55 1.32 |
| My ability to Databases is | 39 19.9% | 78 39.8% | 49 25.0% | 12 6.1% | 2 1.0% | 16 8.2% | 3.47 1.35 |
| My ability to upload document to online platform is navigate | 57 29.1% | 80 40.8% | 31 15.8% | 9 4.6% | 3 1.5% | 16 8.2% | 3.67 1.41 |
| My ability to send and receive emails is | 81 41.3% | 74 37.8% | 18 9.2% | 4 2.0% | 2 1.0% | 17 8.7% | 3.90 1.44 |
| My ability to create different file formats eg PDF, gif, etc. is | 56 28.6% | 74 37.8% | 35 17.9% | 10 5.1% | 3 1.5% | 18 9.2% | 3.59 1.46 |
| Average Mean | | | | | | | 3.62 1.38 |

Information Literacy Skills.

Rate the level of your information literacy skills using the under listed items

| | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
|---|------------------|-------------|-----------------|------------|-----------------|----------------|----------------|
| My ability to assess the authenticity of information is | 57 29.1% | 83 42.3% | 35 17.9% | 5 2.6% | 0 0.0% | 16 8.2% | 3.73 1.35 |
| My ability to determine the reliability of the sources | 44 22.4% | 87 44.4% | 36 18.4% | 11 5.6% | 1 0.5% | 17 8.7% | 3.57 1.37 |
| My ability to evaluate the information resources | 48 24.5% | 93 47.4% | 35 17.9% | 5 2.6% | 2 1.0% | 13 6.6% | 3.72 1.27 |
| My ability to synthesize the | 38 20.0% | 80 40.0% | 52 26.0% | 9 4.5% | 2 1.0% | 15 7.5% | 3.50 1.30 |

| | | | | | | | |
|--|------------------|-------------|-----------------|------------|-----------------|----------------|----------------|
| information resources | 19.4% | 40.8% | 26.5% | 4.6% | 1.0% | 7.7% | 1.31 |
| My ability to determine the currency of the resources | 59 | 86 | 27 | 6 | 2 | 16 | 3.74 |
| My ability to determine relevancy of the resources | 30.1% | 43.9% | 13.8% | 3.1% | 1.0% | 8.2% | 1.38 |
| My ability to determine the credibility of the sources | 53 | 89 | 31 | 5 | 2 | 16 | 3.70 |
| | 27.0% | 45.4% | 15.8% | 2.6% | 1.0% | 8.2% | 1.36 |
| | 49 | 85 | 31 | 8 | 1 | 22 | 3.55 |
| | 25.0% | 43.4% | 15.8% | 4.1% | 0.5% | 11.2% | 1.49 |
| Average Mean | | | | | | | 3.57 |
| | | | | | | | 1.36 |
| Socio-emotional literacy Skills. | | | | | | | |
| Kindly rate the level of your socio emotional skill using under listed items | | | | | | | |
| | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
| My ability to communicate effectively to the user even under stress is | 61 | 67 | 35 | 6 | 0 | 27 | 3.52 |
| | 31.1% | 34.2% | 17.9% | 3.1% | 0.0% | 13.8% | 1.61 |
| My ability to handle many user request come at a time is | 52 | 92 | 32 | 4 | 2 | 14 | 3.74 |
| | 26.5% | 46.9% | 16.3% | 2.0% | 1.0% | 7.1% | 1.30 |
| My ability to multi-task in discharging my duty is | 55 | 79 | 39 | 8 | 0 | 15 | 3.69 |
| | 28.1% | 40.3% | 19.9% | 4.1% | 0.0% | 7.7% | 1.34 |
| My ability to cheerfully attend to users that are under critical need is | 63 | 79 | 34 | 5 | 0 | 15 | 3.79 |
| | 32.1% | 40.3% | 17.3% | 2.6% | 0.0% | 7.7% | 1.34 |
| My ability to understand the cultural diversity of users is | 54 | 81 | 43 | 4 | 0 | 14 | 3.73 |
| | 27.6% | 41.3% | 21.9% | 2.0% | 0.0% | 7.1% | 1.29 |
| My ability to address in appropriate and polite manner to unsatisfied users is | 63 | 80 | 35 | 2 | 2 | 14 | 3.81 |
| | 32.1% | 40.8% | 17.9% | 1.0% | 1.0% | 7.1% | 1.32 |
| My ability to manage several users without stress is | 54 | 91 | 27 | 7 | 2 | 15 | 3.73 |
| | 27.6% | 46.4% | 13.8% | 3.6% | 1.0% | 7.7% | 1.34 |
| Average Mean | | | | | | | 3.80 |
| | | | | | | | 1.39 |
| Grand Mean | | | | | | | 3.59 |

Source: Field Survey, 2023

The Decision rule: 1.1 – 1.79 = Very Low level, 1.80 – 2.59 = Low level, 2.60 – 3.39 = Moderate level, 3.40 – 4.19 = High level, 4.20 – 5.0 = very High Level

The Table 4.3 presents the result on the level of digital literacy skills of librarians in university libraries in North-West, Nigeria. The result reveals that the digital literacy skills of librarians in the North -West, Nigeria is high with the grand mean score (\bar{x} =3.59). From the indicators, the findings reveals that socio-emotional literacy skill was rated to be high with an average mean score (\bar{x} = 3.80). This result indicated that respondents have the ability to cheerfully attend to users that are under critical needs (\bar{x} =3.79), have the ability to address in an appropriate and polite manner unsatisfied users (\bar{x} = 3.81) and also have the ability to attend to many users at time (\bar{x} =3.74).

This is followed by branching literacy skills with average mean score of (\bar{x} =3.62). The result shows that the respondent have the ability to send and receive emails (\bar{x} = 3.90) and the ability to use different storage devices to preserve digital contents in the libraries (\bar{x} = 3.65)and have the ability to create different file formats e .g, PDF, gif, (\bar{x} = 3.59). Information literacy skills with average mean score of (\bar{x} =3.57). This result indicates that the respondents have the ability to determine the currency of the information resources (\bar{x} = 3.74), ability to assess the authenticity of information sources and resources (\bar{x} =3.73) and also possess ability to determine the relevancy of the information resources of users that tally to their varied needs .The indicators that score least are photo -visual literacy skill with

average mean score (\bar{x} =3.50) and reproduction literacy skills with average mean score (\bar{x} =3.49) respectively. The result reveals that the respondents have the ability to clearly understand and interpret visual images using social media platforms (\bar{x} =3.81), ability to communicate effectively in a digital platforms (\bar{x} =3.62) and ability to use computer in generating digital contents (\bar{x} =3.48).

The high level of digital literacy skills of librarian in university libraries in North-West, Nigeria could be associated with the current advancement of Information and communication technologies (ICTs) that have generally altered the information landscape across the globe especially with profession of library and information sciences. The phenomenon that makes librarians to increase effort to obtain digital literacy skills training for them to be able to provide innovative library services this digital era.

Research question two: What is the knowledge management practice prevalent in university libraries in Northwest, Nigeria?

Table 4.4

Distribution of Respondents on the Knowledge Management Practices prevalent in University Libraries in North-West, Nigeria

| | Very High | High | Moderate | Low | Very Low | Mean SD |
|---|-------------|-------------|-------------|------------|-------------|----------------------|
| Knowledge creation | | | | | | |
| Knowledge creation in my library happens during formal discussions | 56 28.6% | 92 46.9% | 24 12.2% | 5 2.6% | 19 9.7% | 2.82 1.17 |
| I share my work experience with others in the workplace during seminar presentations in my library we share experiences | 87 44.4% | 82 41.8% | 10 5.1% | 3 1.5% | 14 7.1% | 3.15 1.09 |
| Our library encourages us to learn about the service delivery system that we can have | 76 38.8% | 82 41.8% | 18 9.2% | 3 1.5% | 17 8.7% | 3.01 1.15 |
| We understand the needs of library users by learning about the information from them | 86 43.9% | 84 42.9% | 10 5.1% | 3 1.5% | 13 6.6% | 3.16 1.06 |
| Our library encourages learning about barriers to innovation that we face | 78 39.8% | 83 42.3% | 16 8.2% | 2 1.0% | 17 8.7% | 3.04 1.15 |
| We understand the information needs of library users by learning from them | 55 28.0% | 92 46.9% | 25 12.8% | 3 1.5% | 21 10.7% | 2.81 1.20 |
| Average Mean | | | | | | 3.02 1.13 |
| Knowledge sharing | | | | | | |
| I try my best to introduce new concepts to my colleagues | 79 40.3% | 84 42.9% | 13 6.6% | 1 0.5% | 19 9.7% | 3.04 1.17 |
| new knowledge are simplified in my library for easy understanding | 69 35.2% | 95 48.5% | 19 9.7% | 1 0.5% | 12 6.1% | 3.06 1.01 |
| I usually share new knowledge to help solve library problems | 74 37.8% | 92 46.9% | 15 7.7% | 1 0.5% | 14 7.1% | 3.08 1.06 |
| I often share my work experience with my colleagues in the library | 76 38.8% | 89 45.4% | 13 6.6% | 2 1.0% | 16 8.2% | 3.06 1.11 |
| my library encourage librarians to share new knowledge in different work units | 77 39.3% | 86 43.9% | 16 8.2% | 2 1.0% | 15 7.7% | 3.06 1.10 |
| sharing of new knowledge in my | 52 28.1% | 75 39.8% | 37 25.0% | 12 6.1% | 20 10.7% | 2.65 1.06 |

| | | | | | | |
|---|------------------|-------------|-----------------|------------|-----------------|----------------|
| library have a policy backing | 26.5% | 38.3% | 18.9% | 6.1% | 10.2% | 1.23 |
| My library encourages librarians to share knowledge | 74 | 74 | 19 | 3 | 26 | 2.85 |
| | 37.8% | 37.8% | 9.7% | 1.5% | 13.3% | 1.31 |
| Average Mean | | | | | | 3.11 |
| | | | | | | 1.28 |
| Knowledge Application/Use | Very High | High | Moderate | Low | Very Low | Mean SD |
| New knowledge is used for decision making in my library | 74 | 78 | 28 | 2 | 14 | 3.00 |
| | 37.8% | 39.8% | 14.3% | 1.0% | 7.1% | 1.10 |
| My library used new knowledge for improving library services | 67 | 95 | 17 | 2 | 15 | 3.01 |
| | 34.2% | 48.5% | 8.7% | 1.0% | 7.7% | 1.08 |
| My library encourages the application of new knowledge to improve the individual work process | 67 | 92 | 17 | 2 | 18 | 2.96 |
| | 34.2% | 46.9% | 8.7% | 1.0% | 9.2% | 1.14 |
| My library encourage the application of new knowledge for the policy provision | 54 | 83 | 33 | 6 | 20 | 2.74 |
| | 27.6% | 42.3% | 16.8% | 3.1% | 10.2% | 1.19 |
| There is incentive for the use of new knowledge in my library | 38 | 70 | 44 | 23 | 21 | 2.41 |
| | 19.4% | 35.7% | 22.4% | 11.7% | 10.7% | 1.23 |
| New knowledge created in my library is used to deliver services to users | 51 | 96 | 32 | 3 | 14 | 2.85 |
| | 26.0% | 49.0% | 16.3% | 1.5% | 7.1% | 1.05 |
| New knowledge is used to solved difficult management problem in my library | 63 | 80 | 36 | 1 | 16 | 2.88 |
| | 32.1% | 40.8% | 18.4% | 0.5% | 8.2% | 1.12 |
| Average Mean | | | | | | 2.84 |
| | | | | | | 1.12 |
| Grand Mean | | | | | | 2.99 |

Source: Field Survey, 2023

The Decision rule: 1.1 – 1.79 = Very Low level, 1.80 – 2.59 = Low level, 2.60 – 3.39 = Moderate level, 3.40 – 4.19 = High level, 4.20 – 5.0 = very High Level

The Table 4.4 presents the result of knowledge management practices prevalent in university libraries in North-West, Nigeria. The result reveals that the knowledge management practices prevalent in the North -West, Nigeria is knowledge sharing with the average mean score of (\bar{x} = 3.11). This result indicate that respondents usually share new knowledge to help solve library problems (\bar{x} =3.08), respondents simplified new knowledge in the library for easy understanding (\bar{x} = 3.06) and librarians are encouraged to share new knowledge in different work units (\bar{x} =3.06). This is followed by knowledge creation with average mean score (\bar{x} = 3.11). This result shows that respondents are encouraged to learn about new service delivery system they come across (\bar{x} = 3.16), provide opportunity to share work experience with others in the workplace , (\bar{x} =3.15) and understand the information needs of library users by learning from them (\bar{x} =3.14). The indicator that score least is knowledge application /use with average mean score (\bar{x} =2.84). This results indicate that the respondents ‘library used new knowledge created for improving library services (\bar{x} =3.01), new knowledge is used for decision making in my library (\bar{x} =3.00), my library encourages the application of new knowledge to improve the individual work process (\bar{x} =2.96).

Cumulatively, knowledge management practices was rated to be at a moderate level (\bar{x} =2.99) in the university libraries in North-West, Nigeria which could be due to the challenges faced by university libraries such as dwindling budget cut, changes in the nature of learning and teaching and the roles of librarian from collection-centered to user-centered mode of operation i.e libraries are no longer focusing on collecting and stocking information resources organized in a four wall of library to focusing on providing access to collection in different formats. A situation that

made it possible due to presence of network information sources and resources, it became difficult for library management to send staff to obtain the necessary training and be abreast with new modes of users need that change from having the just the sources of information but the prepared and package knowledge to integrate in their needs and accomplished the academic or research work. Knowledge management that entails providing required knowledge, in required formats at required time to solved the needs of the users,

Research Question three: What is the level of Innovative Service Delivery by Librarians in University Libraries in North-West, Nigeria?

Table 4.5

Distribution of respondents on the level of Innovative Service Delivery by Librarians in University Libraries in North-West, Nigeria

| Innovative service delivery. (Embedded Library Service.) | | | | | | | |
|---|------------------|-------------|------------------|-------------|-----------------|-----------------|----------------------------|
| Kindly tick the level at which you provide the following Embedded Library Services (Innovative services) | | | | | | | |
| | Very High | High | Modera te | Low | Very Low | Missin g | Mean SD |
| I provided information sources for students conducting research in my library | 45 23.0% | 58 29.6% | 45 23.0% | 20 10.2% | 10 5.1% | 18 9.2% | 3.28 1.51 |
| I provide digital tutorials for students conducting research | 58 29.6% | 63 32.1% | 38 19.4% | 16 8.2% | 9 4.6% | 12 6.1% | 3.56 1.42 |
| I assist to narrow students research topics in the library | 38 19.4% | 47 24.0% | 40 20.4% | 31 15.8% | 17 8.7% | 23 11.7% | 2.94 1.61 |
| I participate in research collaboration in the university | 81 41.3% | 63 32.1% | 21 10.7% | 12 6.1% | 4 2.0% | 15 7.7% | 3.82 1.47 |
| I help library users to cite sources correctly | 57 29.1% | 57 29.1% | 33 16.8% | 29 14.8% | 4 2.0% | 16 8.2% | 3.44 1.50 |
| I provide research assistant to library users by specifically helping them to understand the research process | 71 36.2% | 48 24.5% | 36 18.4% | 17 8.7% | 3 1.5% | 21 10.7% | 3.53 1.59 |
| I participate in co-teaching in the department | 42 21.4% | 31 15.8% | 17 8.7% | 7 3.6% | 1 0.5% | 98 50.0% | 2.04 2.16 |
| Average Mean | | | | | | | 2.94 1.68 |
| Social media use services | | | | | | | |
| | Very High | High | Modera te | Low | Very Low | Missin g | Mean SD |
| I provide information about new arrivals in the library using social media platforms | 44 22.4% | 48 24.5% | 34 17.3% | 16 8.2% | 7 3.6% | 47 24.0% | 2.82 1.87 |
| I communicate to users on upcoming programs in the library using social media platforms | 48 24.5% | 65 33.2% | 31 15.8% | 21 10.7% | 12 6.1% | 19 9.7% | 3.30 1.57 |
| Library news are provided online through the use of social media | 59 30.1% | 54 27.6% | 30 15.3% | 22 11.2% | 14 7.1% | 17 8.7% | 3.36 1.59 |

| | | | | | | | |
|---|------------------|-------------|-----------------|-------------|-----------------|----------------|----------------------------|
| I stimulate clients' passion for the library by chatting with them on library issues using social media | 50 25.5% | 75 38.3% | 30 15.3% | 4 2.0% | 10 5.1% | 27 13.8% | 3.36 1.66 |
| I provide real time reference service to the patron using social media | 48 24.5% | 60 30.6% | 27 13.8% | 16 8.2% | 15 7.7% | 30 15.3% | 3.10 1.75 |
| I collect instant feedback from the users using social media platform | 68 34.7% | 57 29.1% | 27 13.8% | 13 6.6% | 6 3.1% | 25 12.8% | 3.48 1.68 |
| I provide links to library resources on social media applications | 79 40.3% | 54 27.6% | 21 10.7% | 10 5.1% | 4 2.0% | 28 14.3% | 3.56 1.73 |
| Average Mean | | | | | | | 3.20 1.69 |
| Research Support Services | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
| I Provide bibliographic services to scholars | 36 18.4% | 67 34.2% | 35 17.9% | 18 9.2% | 11 5.6% | 29 14.8% | 3.06 1.65 |
| I provide open access publishing opportunities to users | 45 23.0% | 71 36.2% | 33 16.8% | 13 6.6% | 5 2.6% | 29 14.8% | 3.26 1.65 |
| I help to assist users to avoid publishing in predatory journals | 38 19.4% | 73 37.2% | 36 18.4% | 14 7.1% | 9 4.6% | 26 13.3% | 3.20 1.60 |
| I help to provide funding information sources to scholars who use the library | 47 24.0% | 77 39.3% | 27 13.8% | 15 7.7% | 4 2.0% | 26 13.3% | 3.36 1.61 |
| I provide research information training to students | 27 13.8% | 56 28.6% | 42 21.4% | 24 12.2% | 14 7.1% | 33 16.8% | 2.79 1.65 |
| I provide digital common information services to users | 37 18.9% | 67 34.2% | 43 21.9% | 17 8.7% | 5 2.6% | 27 13.8% | 3.17 1.58 |
| I provide information literacy training to library users | 45 22.9% | 69 35.2% | 32 16.3% | 15 7.7% | 6 3.1% | 29 14.8% | 3.24 1.68 |
| Average Mean | | | | | | | 3.01 1.69 |
| ICT Instructional Training Services | Very High | High | Moderate | Low | Very Low | Missing | Mean SD |
| I provide ask a librarian services training to users in the library | 59 30.1% | 51 26.0% | 29 14.8% | 22 11.2% | 16 8.2% | 19 9.7% | 3.30 1.64 |
| I provide training to users on how to use document scanning opportunities provided the library | 48 24.5% | 70 35.7% | 29 14.8% | 23 11.7% | 7 3.6% | 19 9.7% | 3.37 1.53 |
| I provide webinar to users on how to access the library resources | 55 28.1% | 55 28.1% | 38 19.4% | 25 12.8% | 7 3.6% | 16 8.2% | 3.40 1.50 |
| I provide training on internet based library services to users | 38 19.4% | 61 31.1% | 39 19.9% | 21 10.7% | 5 2.6% | 32 16.3% | 3.05 1.67 |
| I provide digital instructional program to users | 30 15.3% | 57 29.1% | 32 16.3% | 28 14.3% | 16 8.2% | 33 16.8% | 2.79 1.69 |
| Audio visual training is provide to users in the library | 67 34.2% | 47 24.0% | 31 15.8% | 16 8.2% | 4 2.0% | 31 15.8% | 3.33 1.76 |
| Online user education is provided by me to users in the library | 29 14.8% | 39 19.9% | 46 23.5% | 32 16.3% | 19 9.7% | 31 15.8% | 2.66 1.63 |
| Average Mean | | | | | | | 3.27 1.69 |
| Grand Mean | | | | | | | 3.11 |

Source: Field Survey, 2023

The Decision rule: 1.1 – 1.79 = Very Low level, 1.80 – 2.59 = Low level, 2.60 – 3.39 = Moderate level, 3.40 – 4.19 = High level, 4.20 – 5.0 = very High Level

The Table 4.5 presents the result of innovative services delivery by librarians in university libraries in North-West Nigeria. The result reveals that innovative service delivery in university libraries in North -West Nigeria is rated moderate as the grand mean score is ($\bar{x}= 3.11$). From the indicators the results shows that ICTs Instructional training services were rated moderate with average mean score ($\bar{x} =3.27$) the results shows that respondents provide webinar to users on how to access the library resources ($\bar{x} =3.40$), provide training to users on how to use document scanning opportunities provided by the library ($\bar{x}=3.37$) and provide audio visual training services to users in the library ($\bar{x}= 3.33$). Social media use services were rated moderate with average score mean ($\bar{x} =3.20$) that indicate respondents in university libraries in North-West, Nigeria do provide links to library resources on social media applications ($\bar{x}=3.56$), library news are provided online through the use of social media ($X=3.36$) and also inspire clients' passion for the library by chatting with them on library issues using social media ($\bar{x}=3.36$). Findings of the study indicates that even though, both ICTs instructional training services and social media use services levels were rated moderate with their average mean score ($\bar{x}=3.27$) and ($\bar{x}=3.20$) respectively. This implies that the provision of ICTs instructional training service is more prevalent than social media use services to provide innovative services delivery in university libraries in North-West Nigeria.

Research support services were rated moderate with average mean score of ($\bar{x}=3.01$). The result indicates that respondents engage in providing help to discover funding information sources to scholars who use the library ($\bar{x}=3.36$), they provide open access publishing opportunities to library users ($\bar{x}=3.26$), and provide information literacy training to library users ($\bar{x}=3.24$). Embedded library services rated moderate with average mean score of ($\bar{x}=2.94$). The result indicate that the respondents participate in research collaboration in the university ($\bar{x}=3.82$), provide digital tutorials for students conducting research ($\bar{x}=3.56$) and provide research assistant to library users by specifically helping them to understand the research process ($\bar{x}=3.53$).

The general implication of the findings that shows moderate level of innovative service delivery in university library in North-West, Nigeria might be linked to librarians' attitude towards changes in the profession and poor attendance to training programs to acquaint themselves with the current trend in the profession. Librarians could be left behind in the area of providing innovative library services without proper training.

4.4 Test of Hypothesis One

H₀₁: Digital literacy skills have no significant influence on innovative service delivery in university libraries in Northwest, Nigeria

Table 4.6

Simple Linear Regression Analysis on the Influence of Digital Literacy Skills on Innovative Service Delivery in University Libraries in North-West, Nigeria

| Model | | Coefficients ^a | | Standardized Coefficients | T | Sig. |
|-------|-------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | Unstandardized Coefficients | Std. Error | | | |
| 1 | (Constant) | 3.433 | 5.454 | | .629 | .001 |
| | Digital Literacy Skills | .700 | .042 | .764 | 16.505 | .000 |

a. Dependent Variable: Innovative Service Delivery
 $R = .764^a$ $R^2 = .584$ Adjusted $R^2 = .582$ $F(5, 195) = 272.417$

Source: Researcher's Field Survey (2023)

Table 4.5 shows the simple linear regression analysis result for the influence of digital literacy skills on innovative service delivery in university libraries in North-West, Nigeria. The independent variable (digital literacy skills) was regressed against dependent variable (innovative service delivery) using simple linear regression analysis. The result revealed that digital literacy skills ($\beta = 0.700$, $t = 16.505$, $p < 0.05$) have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. The F-test is 272.417. This shows that there is sufficient evidence to substantiate the model's usefulness in predicting innovative service delivery. The R^2 is the coefficient of determination which explains the variation in the dependent variable due to changes in the independent variable. The R^2 value also indicates the size of the effect. The R^2 (0.584) of the regression model indicates that 58.4% of the variation in innovative service delivery in university libraries in Northwest, Nigeria is accounted for by digital literacy skills. Therefore, the null hypothesis one which states that digital literacy skills have no significant influence on innovative service delivery in university libraries in North-West, Nigeria was rejected.

4.5 Test of Hypothesis Two

H₀₂: Knowledge management practices have no significant influence on innovative service delivery in university libraries in North-West, Nigeria.

Table 4.7

Simple Linear Regression Analysis on the influence of Knowledge Management Practices on Innovative Service Delivery in University Libraries in North-West, Nigeria

| | | Coefficients ^a | | | | |
|-------|--------------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | .670 | 5.420 | | .124 | .002 |
| | Knowledge Management Practices | 1.516 | .089 | .776 | 17.117 | .000 |

a. Dependent Variable: Innovative Service Delivery

$R = .776^a$ $R^2 = .602$ Adjusted $R^2 = .600$ $F(3, 195) = 292.982$

Source: Researcher's Field Survey (2023)

Table 4.6 shows the simple regression analysis result for the influence of knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria. The independent variable (knowledge management practices) was regressed against dependent variable (innovative service delivery) using simple linear regression analysis. The result revealed that knowledge management practices ($\beta = 1.516$, $t = 17.117$, $p < 0.05$) have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. The F-test is 292.98. This shows that there is sufficient evidence to substantiate the model's usefulness in predicting innovative service delivery. The R^2 is the coefficient of determination which explains the variation in the dependent variable due to changes in the independent variable. The R^2 value also indicates the size of the effect. The R^2 (0.602) of the regression model indicates that 60.2% of the variation in innovative service delivery in university libraries in North-West, Nigeria is accounted for by knowledge management practices, while the remaining 39.8% is accounted for by other variables not captured in the model. Therefore, the null hypothesis two which states that knowledge

management practices have no significant influence on innovative service delivery in university libraries in North-West, Nigeria was rejected.

4.6 Test of Hypothesis Three

H₀₃:Digital literacy skills and knowledge management practices have no combined significant influence on innovative service delivery in university libraries in Northwest, Nigeria.

Table 4.8

Simple Multiple Regression Analysis on the influence of Digital Literacy Skills and Knowledge Management Practices on Innovative Service Delivery in University Libraries in North-West, Nigeria

| Model | | Coefficients ^a | | Beta | t | Sig. |
|-------|--------------------------------|-----------------------------|------------|------|-------|------|
| | | Unstandardized Coefficients | Std. Error | | | |
| 1 | (Constant) | 5.125 | 5.306 | | .966 | .005 |
| | Digital Literacy Skills | .347 | .075 | .378 | 4.628 | .000 |
| | Knowledge Management Practices | .888 | .160 | .454 | 5.556 | .000 |

a. Dependent Variable: Innovative Service Delivery

R = .801^a R² = .641 Adjusted R² = .638 F(8, 195) = 172.616 , P < 0.05

Source: Researcher's Field Survey (2023)

Table 4.7 shows the multiple regression analysis result for the effect of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria. The independent variables (digital literacy skills and knowledge management practices) were regressed against dependent variable (innovative service delivery) using multiple regression analysis. The result revealed that digital literacy skills ($\beta = 0.347$, $t = 4.63$, $p < 0.05$) and knowledge management practices ($\beta = 0.888$, $t = 5.56$, $p < 0.05$) all have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. The F-test is 172.62. This shows that there is sufficient evidence to substantiate the model's usefulness in predicting innovative service delivery. The Adjusted R² is the coefficient of determination which explains the variation in the dependent variable due to changes in the independent variable. The Adjusted R² value also indicates the size of the effect. The Adjusted R² (0.638) of the regression model indicates that 63.8% of the variation in innovative service delivery in university libraries in North-West, Nigeria is accounted for by digital literacy skills and knowledge management practices, while the remaining 36.2% is accounted for by other variables not captured in the model. Therefore, the null hypothesis three which states that digital literacy skills and knowledge management practices have no combined significant influence on innovative service delivery in university libraries in North-West, Nigeria was rejected.

4.7 Test of Hypothesis Four

H₀₄:Digital literacy skills have no relative significant influence on innovative service delivery in university libraries in North-West, Nigeria

Table 4.9:

Multiple Linear Regression Analysis on the relative influence of Digital Literacy Skills on Innovative Service Delivery in University Libraries, in North-West, Nigeria

| | | Coefficients ^a | | | | |
|-------|---------------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | Unstandardized Coefficients | | Standardized Coefficients | | |
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 2.601 | 5.416 | | .480 | .032 |
| | Photo-visual literacy skill | 1.217 | .476 | .251 | 2.560 | .011 |
| | Reproduction literacy skill | -.507 | .459 | -.121 | -1.105 | .271 |
| | Branching literacy skill | 1.518 | .528 | .368 | 2.874 | .005 |
| | Information literacy skill | .044 | .479 | .011 | .092 | .927 |
| | Socio-emotional literacy skills | 1.324 | .352 | .318 | 3.766 | .000 |

a. Dependent Variable: Innovative Service Delivery

R = .780^a R² = .608 Adjusted R² = .598 F(5, 190) = 59.022

Source: Researcher's Field Survey (2023)

Table 4.8 shows the multiple linear regression analysis result for the relative influence of digital literacy skills on innovative service delivery in university libraries in North-West, Nigeria. The independent variable (digital literacy skills) was regressed against dependent variable (innovative service delivery) using multiple linear regression analysis. The result revealed that photo-visual literacy skill ($\beta = 1.217$, $t = 2.560$, $p < 0.05$), branching literacy skill ($\beta = 1.518$, $t = 2.874$, $p < 0.05$) and socio-emotional literacy skills ($\beta = 1.324$, $t = 3.766$, $p < 0.05$) all have positive and significant relative influence on innovative service delivery in university libraries in North-West, Nigeria. While information literacy skill ($\beta = 0.044$, $t = 0.092$, $p > 0.05$) have positive and insignificant influence on innovative service delivery while reproduction literacy skill has negative and insignificant influence on innovative services delivery ($\beta = -0.507$, $t = -1.105$, $p > 0.05$) in North-West, Nigeria. The F-test is 59.02. This shows that there is sufficient evidence to substantiate the model's usefulness in predicting innovative service delivery. The Adjusted R² is the coefficient of determination which explains the variation in the dependent variable due to changes in the independent variable. The Adjusted R² value also indicates the size of the effect. The Adjusted R² (0.598) of the regression model indicates that 59.8% of the variation in innovative service delivery in university libraries in North-West, Nigeria is accounted for by digital literacy skills particularly photo-visual literacy skill, branching literacy skill and socio-emotional literacy skills, while the remaining 40.2% is accounted for by other variables not captured in the model. The result implies that university libraries in North-West, Nigeria should improve on photo-visual literacy skill, branching literacy skill and socio-emotional literacy skills to enhance innovative service delivery in the university libraries.

4.8 Test of Hypotheses Five

H₀₅: Knowledge Management practices have no relative significant influence on innovative service delivery in university libraries in North-West, Nigeria

Table 4.10

Simple Linear Regression Analysis on the influence of Knowledge Management Practices on Innovative Service Delivery in University Libraries in North-West, Nigeria

| | | Coefficients ^a | | | | |
|--|--|---------------------------|--|--|--|--|
|--|--|---------------------------|--|--|--|--|

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|---------------------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 4.645 | 5.383 | | .120 | .005 |
| | Knowledge creation | 3.026 | .621 | .487 | 4.877 | .000 |
| | Knowledge sharing | .896 | .559 | .169 | 1.603 | .111 |
| | Knowledge application/use | .862 | .434 | .166 | 1.989 | .048 |

a. Dependent Variable: Innovative Service Delivery

R = .784^a R² = .615 Adjusted R² = .609 F(3, 192) = 102.24

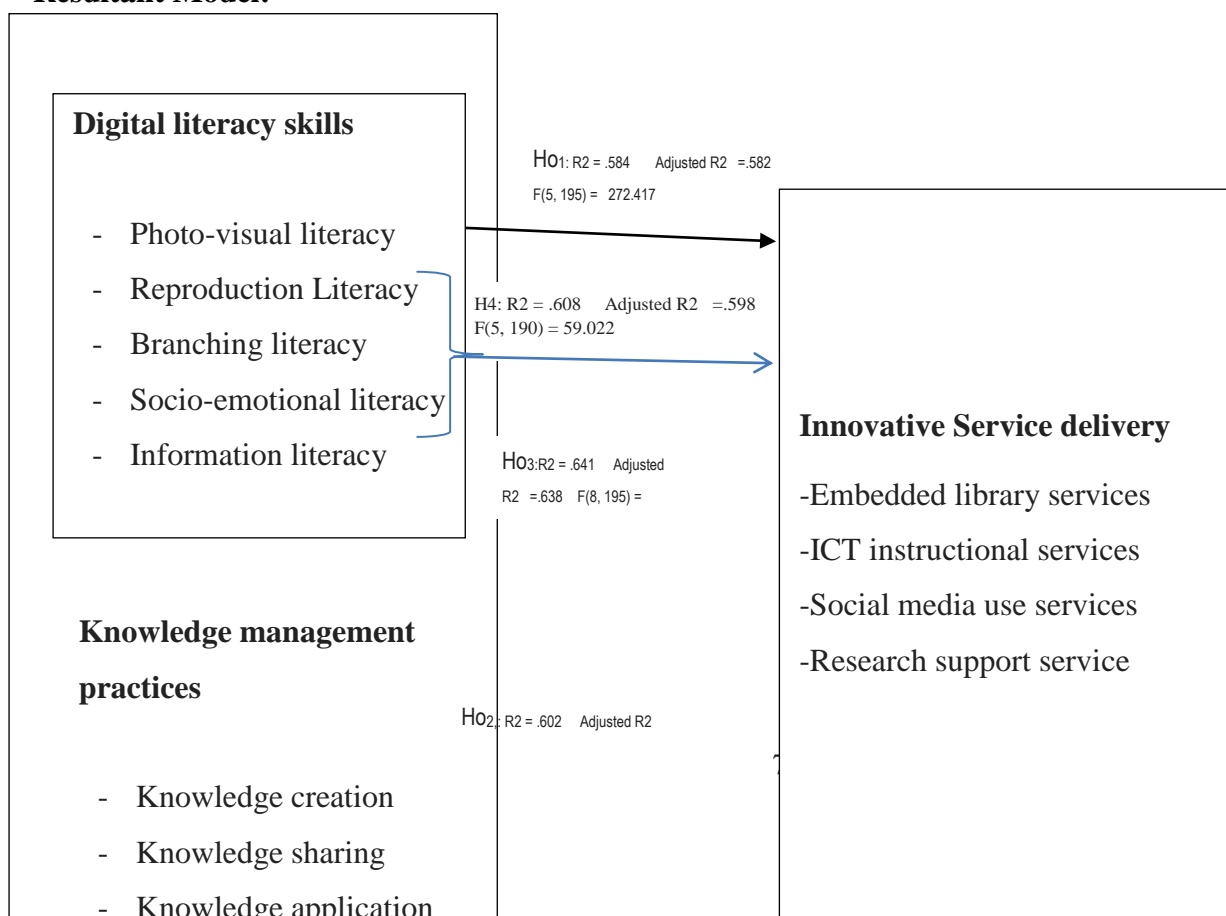
Source: Researcher's Field Survey (2023)

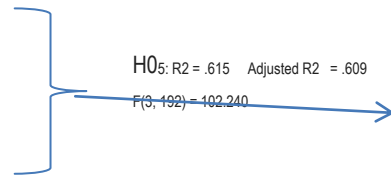
Table 4.9 shows the multiple linear regression analysis result for the relative influence of knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria. The independent variable (knowledge management practices) was regressed against dependent variable (innovative service delivery) using multiple linear regression analysis. The result revealed that knowledge creation ($\beta = 3.026$, $t = 4.877$, $p < 0.05$) and knowledge application/use ($\beta = 0.862$, $t = 1.989$, $p < 0.05$) all have positive and significant relative influence on innovative service delivery in university libraries in North-West, Nigeria. Knowledge sharing ($\beta = 0.896$, $t = 1.603$, $p > 0.05$) have positive and insignificant influence on innovative service delivery in university libraries in North-West, Nigeria. The F-test is 102.240. $P < 0.05$ This shows that there is sufficient evidence to substantiate the model's usefulness in predicting innovative service delivery. The Adjusted R² is the coefficient of determination which explains the variation in the dependent variable due to changes in the independent variable. The Adjusted R² value also indicates the size of the effect. The Adjusted R² (0.609) of the regression model indicates that 60.9% of the variation in innovative service delivery in university libraries in North-West, Nigeria is accounted for by knowledge management practices particularly knowledge creation and knowledge application/use, while the remaining 39.1% is accounted for by other variables not captured in the model. This implies that university libraries in North-West, Nigeria should improve on knowledge sharing practices among librarians to enhance innovative service delivery.

Fig. 4.1

Resultant Model

Resultant Model:





4.9 Discussion of Findings:

This section presents the summary of findings in line with past related reviewed studies. The discussion is structured according to the findings on the demographic characteristics of the respondent, the three research questions and five hypotheses generated in order to determine the influence of digital literacy skills, knowledge management practices on innovative services delivery of librarians in university libraries in North-West, Nigeria.

Descriptive Statistics of the Demographic Characteristics of the Respondents

Descriptive statistics was used to analyse the demographic characteristics of the students. The findings showed that majority of the respondents fall within the 31-40 years age group, comprising 79 (40.3%) of the total sample. The respondents marital status, shows that most of the respondents, totalling up 159 (81.1%) of the total respondents are married. The respondents work experience, shows a fairly even distribution among the different work experience levels. The tables indicated that 59 (30.1%) respondents have 5-10 years' work experience and 48 (24.5%) respondents have more than 10-15 years' work experience. 47 and 23(11.7%) have more Than 15 Years respectively. Furthermore, the gender distribution reveals that there are 122 (62.2%) male respondents and 52(26.5%) female respondents. The analysis indicated that majority of the librarians working in the university libraries in University libraries in Northwest, Nigeria are male. On the educational qualification of librarians the tables shows that master's degree is the predominant qualification obtained by librarians 86 (43.9%) of respondents holding master's degree. Bsc/ HND follows with 62 (31.6%), and PhD is held by 24 (12.2%) respondents.

The respondents designation information, indicates that assistant librarians and librarian II each represent 36(18.4%) of respondents, making them the majority designations. Librarian I accounts for 33(16.8%), and senior librarian accounts for 37(18.9%) respondents respectively. While, principal librarian account for 11(5.6%) respondents and deputy university librarians account for 1(0.5%), and university librarians account for 4(2.0%) respondents. The lists of various universities and the data are quite diverse. Ahmadu Bello University, Zaria is the most prevalent, with 56 (28.6%) of respondents.

The overall implications of the findings are that majority of the respondent are within the young and adult age group, obtained master degree certificates, have reasonable years of work experiences, married and male dominated work force. The characteristics that could translate to be agile and energetic people in terms of ability, responsibility, capability and capacity to provide innovative services delivery in university libraries and be relevant to uphold the

standard of the library in the university setting. This assertion corroborates with the work by Hiremath and Bankapur (2019) which reveals that majority of those working in the library are between the age group of 26- 45 years.

Level of Digital Literacy Skills of Librarians in University Libraries in North-West, Nigeria

Research question one sought to determine the level of digital literacy skills of librarians in university libraries in North-West, Nigeria. An analysis of descriptive statistics was utilised to assess the grand mean score of 3.59 and standard deviation of 1.34 which indicated that level of digital literacy skills of librarians in university libraries in North-West, Nigeria is high. The level of digital literacy skills of librarians as indicated in the research finding can be attributed to the current advancement of Information and communication technologies (ICTs) that have altered the information landscape across the globe especially with the profession of library and information science. This is the phenomenon that makes librarians to increase their effort to obtain digital literacy skills in order to be able to carry out their work in the library. This finding is in agreement by the work of Baro, et al, (2019) which revealed that majority of the respondents' level of digital literacy skills especially in the area of database search, sending and receiving emails, uploading documents to online platform and skills of using different social media were high. In addition, the study also asserts that skills such as digital library development, applying new technology in the library, creation of different file formats, and skills in using open source software were rated high.

The high level of digital literacy skills observed in this study is in tandem with that of Okeji, et al, (2020) which found that digital literacy skills possessed by academic librarians in private universities in Anambra State of Nigeria were high which enables provision of efficient service in university libraries in Nigeria. A study by Chewe and Zulu (2020) reinforces the result of this study which reveals that librarians were highly proficient and proficient in the use of digital technology respectively in the discharge of their duties in Zambia. The authors further stated types of training that has facilitated the acquisition of digital literacy skills among librarians such as in-house training, use of acquired digital technologies in the libraries, workshops and webinar that focused on digital literacy as well as the provision of modern digital infrastructure that support digital literacy training. Although, this current study took place in Nigeria, it aligns with the experience of some African countries on the level of digital literacy skills of librarians.

In another study, Mansour (2017) reported that digital skill proficiency of librarians varies among variables such as demographic informations and professional characteristics. The results showed that for those using mobile devices (smartphone) (84.2%), and personal computers (pcs) (69.3%). Generally, there was high proficiency in web based task of all the librarians particularly, in sending and receiving emails and instant messaging (100%), uploading/downloading e-stuff (98%), accessing electronics information services (73.3%), using search engines and subject directories (58.4%), using social networking sites (SNS) (57.4%) and internet browser (55.4%). Another study by Adeoye and Adeoye (2017) The result revealed that majority of the students in sampled studied in Nigerian Universities have high confidence level of digital literacy skills especially in the area of information literacy, ICT literacy, and media literacy to operate in the digital environment. The implication of the finding shows that, librarians particularly academic librarians need to be raised up to acquire the necessary digital literacy skills and knowledge in order to serve their contemporary users based on their divers' information needs. In other studies which investigated stakeholder such as patrons in the high level have shown that digital literacy proficiency is paramount in library. This a assertion corroborates the study carried out by Krishnamurthy and Shettappanavar (2019) on digital literacy skills

among Female Postgraduate students of Karnatak University, Dharwad, Karnataka, India. The results revealed that several platforms were utilised by the students for the acquisition of digital literacy skills among includes seminar/workshop (75.32%), training programmes (61.03%), and computer assisted instruction (23.37%) and taking specific courses (16.88%). For competency levels, the study revealed that digital literacy skills varies also among students, for instance, skills on use of search engines dependent more on familiarity of the brand names; Google search engine (77), Yahoo (35), Bing search engine (13), Alta vista (3), and Hotbot (1).

Knowledge Management Practice Prevalent in University Libraries in North-West, Nigeria

The research question two sought to measure the knowledge management practices prevalent in university libraries in Northwest, Nigeria. The findings revealed that knowledge management practices prevalent in university libraries was knowledge sharing. This finding supports the study conducted by Ogunsola and Lasode, (2017) who established that knowledge sharing is critical to innovative services delivery in the library. The researcher further noted that Knowledge sharing is the transfer of knowledge among individuals, groups, teams in an organization. Knowledge sharing has also been attributed to be a process of identifying knowledge that already exists as reported by Szulanski, (2015) in which this present study agrees with. The findings of the study further reveal that, the knowledge management practices in the library is on the average, raising a concern on the knowledge management activities in the libraries. The finding was supported by a study of Islam, Islam and Razzak (2020) on problems of Knowledge Management practices (KMPs) in Libraries and Information centers of Bangladash that explored what could be attributable as the shortcomings of identified knowledge management practices in some selected academic libraries and information centres.

It was revealed that 50% of the respondents do not show any interest in encouraging staffs members in talent competition at all as knowledge management activities. The study also shown that 25% of the respondents never tried to promote knowledge exchange and sharing among staff and users in their libraries, while 25% of the respondent do not getinvolved in developing knowledge resources for increasing level of knowledge and competences of their staff and users. This implies that knowledge management practices among university libraries and information centres in Bangladesh operate at inconsistent levels and seemed not to be appreciated among librarians as a practice. The authors associate the decimal adoption of the practices to economic condition of the people and the country. Lack of awareness of the value of knowledge management practices among librarians was also blamed as the reasons for poor articulation of knowledge management practices as a fulcrum of critical asset acquisition for the development and making the libraries investigated to remain competitive.

The findings of this study corroborate with the work of Ugwu (2018) who found that management support and collaboration were the major determinants of knowledge management practices (KMPs) in federal university libraries in Nigeria. However, human resources policy, rewards system were found to be positively correlated with knowledge management practices but the correlation were not significant. Even though, there is presence of knowledge management practices (KMPs) in university libraries, but, the effective application of KMPs in university libraries is generally associated with organisational support. Similarly, Marouf (2017) reported that human resources practices do not have significant effect on libraries attitudes toward knowledge sharing, however is significantly affected the readiness to adopt knowledge management in academic libraries.

Level of Innovative Services Delivery in University Libraries in North-West, Nigeria

Research question three is sought to ascertain the level of innovative service delivery by librarians in university libraries in North-West, Nigeria. The result reveals that innovative service delivery in university libraries in North-West Nigeria is rated moderate as the grand mean score ($\bar{x} = 3.11$) this is evident as the indicators, ICTs Instructional training services, social media use services, embedded library services, research support services were rated moderate with average mean score ($\bar{x} = 3.27$), ($\bar{x} = 3.20$), ($\bar{x} = 3.01$) and ($\bar{x} = 2.94$) respectively. The findings corroborates the study carried out by Yusheng and Ibrahim (2019) on service innovation, services delivery, customer satisfaction and loyalty in banking sector in Ghana The study reported that services innovation has direct relationship on service delivery ($p=0.0663$, $t = 45.85$) which could be interpreted as positive and direct relationship existing between service innovation and service delivery.

Another study by Chinwe and Chitimbo (2018) which examined the shaping of the library and information services delivery through use of innovation and technology at the University of Zambia, adopted qualitative research method to interview six informants, who were purposively sampled from a population of 55 librarians working in the University of Zambia Library. The focus of the study is to scrutinise the perception of librarians towards use of innovative services to meet the dynamic library user needs. The results revealed that innovation was a significant, its processes guarantee the library survival and can easily flourish in the digital era because of the potentials such innovation provide and open up spaces for the librarians to increase the effectiveness of the information services they deliver among their diverse users in the university library.

Hypothesis one of this study stated that digital literacy skills have no significant influence on innovative service delivery in university libraries in North-West, Nigeria. The study found that digital literacy skills ($\beta = 0.700$, $t = 16.505$, $p < 0.05$) have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. This finding concurs with the outcome of previous study conducted by Oyedokun, et al, (2018) which emphasise the contributory roles of digital technologies and tools, stressed that digital technologies have changed the world of library in terms of adjudging tasks, effectiveness, efficiency and developing new innovative service delivery. The changes are most dramatic in tasks carried out manually that are now automated and characterized by the utilisation of digital technologies. Irrespective of the type of library the study affirmed that competency in the use of digital tools is paramount to address unused or under-utilization of acquired digital tools which subsequently affect digital literacy skills and hamper dynamic information service delivery (innovations). This implied that digital literacy skills which facilitate, support and sustain skills are paramount for innovative service delivery in university libraries in Nigeria.

Hypothesis two of this study stated that Knowledge management practices have no significant influence on innovative service delivery in university libraries in North-West, Nigeria. The result of the study showed that knowledge management practices ($\beta = 1.516$, $t = 17.117$, $p < 0.05$) have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. This finding is in line with the study by Ugwu and Ekere (2018) Knowledge management (KM) plays a great role in service innovation an indication that there is a positive relationship between them. Ugwu and Ekere (2018) observed that KM affected service innovation positively in Nigeria, using three measures of KM cycle, to be precise, knowledge capture/creation, and knowledge

sharing/transfer and knowledge application/use. These were found to be more likely to provide innovative services delivery to library users. Earlier, Wang and Noe, (2010) found that when knowledge sharing activity is effective, employee's ability to collaborate and exchange ideas is assured and innovation is ensured in the organization.

Hypothesis Three stated that digital literacy skills and knowledge management practices have no combined significant influence on innovative service delivery in university libraries in North-West, Nigeria. The result revealed that digital literacy skills ($\beta = 0.347, t = 4.628, p < 0.05$) and knowledge management practices ($\beta = 0.888, t = 5.556, p < 0.05$) all have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria. The implication of the above statements is that, the library service delivery innovation cannot be realised without effective knowledge management practices. This finding corresponded to the findings of the previous researches such as the one conducted by Husin and Noor (2018) who were optimistic that the contribution of digital literacy skills to the application of innovation service delivery enhancement is the actualization of utilization of technology. For the understanding and inclusion of stakeholders, particularly academic librarians, the utilization of knowledge management practices could enhance the process of services delivery innovation through the sharing, creation, transformation and support system required to actualize the objective of the academic libraries. Christy and Yusuf (2021) substantiated the assertion that digital literacy skills are paramount for the delivery of library service in the 21st century and believed that innovation drives the application and implementation of acquired digital literacy skills for service effectiveness and efficiency. However to determine the mediating relationship among knowledge management practices, digital literacy skills and services innovation delivery in libraries, Islam et al., (2015) emphasised the role specifications of librarians as mandatory to evolve with the new changes whenever they are to imbibe any new idea that is to enhance the overall culture of knowledge management practices.

The position of appropriate skills acquisition to drive the provision of innovative service delivery was emphasise by Morrai (2014), as a necessity for the attainment of optimum objective and was also categorised by Gallonji and Savona, (2009) as going beyond assimilation of services within a consolidated framework. These shows that the mediation of knowledge management practices is key to bridge the gaps caused by poor synergy among digital literacy skills and innovative service delivery and its application within a framework of service delivery in the library environment.

Hypothesis four stated that digital literacy skills have no relative significant influence on innovative service delivery in university libraries in Northwest, Nigeria. The result revealed that photo-visual literacy skill ($\beta = 1.217, t = 2.560, p < 0.05$), branching literacy skill ($\beta = 1.518, t = 2.874, p < 0.05$) and socio-emotional literacy skills ($\beta = 1.324, t = 3.766, p < 0.05$) all have positive and significant relative influence on innovative service delivery in university libraries in North-West, Nigeria. While information literacy skill ($\beta = 0.044, t = 0.092, p > 0.05$) have positive and insignificant influence, and reproduction literacy skill ($\beta = -0.507, t = -1.105, p > 0.05$) have negative and insignificant influence on innovative service delivery in university libraries in North-West, Nigeria. The finding maintained the result of previous studies such as the ones conducted by Oyedokun, et al, (2018) referencing the contributory role of information and communication technology (ICT) to include standard for adjudging tasks, effectiveness, efficiency and help developed new innovative service delivery, as well as a catalyst for change. Therein, they revealed that for the desire changes to be accomplished they were able to itemise variables and their respective constructs that should be operationalized. These variables comprised acquisition of skills, knowledge management practices and service innovation delivery.

Hypothesis five stated that Knowledge Management practices have no relative significant influence on innovative service delivery in university libraries in North-West, Nigeria. The result revealed that knowledge creation ($\beta = 3.026, t = 4.877, p < 0.05$) and knowledge application/use ($\beta = 0.862, t = 1.989, p < 0.05$) all have positive and significant relative influence on innovative service delivery in university libraries in North-West, Nigeria. While knowledge sharing ($\beta = 0.896, t = 1.603, p > 0.05$) have positive and insignificant influence on innovative service delivery in university libraries in North-West, Nigeria. This finding agrees with the outcomes of the studied conducted by Ugwu and Ekere (2017) titled “knowledge management for improving services in Federal University Libraries in Nigeria” focused on determining the knowledge management activities engaged by librarians and the extent to which their involvement can be expounded in terms of their personal characteristics, and for proposing a model for library service innovation. The result indicated that librarians working in federal university libraries in Nigeria were significantly engaged in knowledge management practices particularly, identification, acquisition, creation and dissemination of knowledge. The results on correlation among the variables tested were significant which showed positive relationships with the KM activities. Among the variables, educational qualification and librarians working experience indicated significant relationships ($r = 0.54, p < 0.05$), and working experience ($r = 0.51, p < 0.05$). These two variables were found to account for 52% of the variations in the opinions of librarians working in federal university libraries in Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of major findings, conclusion and recommendations of the study. The chapter also gives the contributions of the study to the existing knowledge and suggestion made for further studies.

5.1 Summary

The study investigated the influence of digital literacy skills, knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria. The study employed the survey research design. The population of the study comprises 452 academic librarians in Federal, State and Private Universities in the North-West, Nigeria. Krejcie and Morgan table for determining sample size was used to determine a sample size of 210 while a proportionate random sampling technique was employed to distribute the instrument to librarians.

The instrument for data collection was the questionnaire that were adapted and self-constructed by the researcher. All the research instruments were validated by experts in Information Resource management, and Library and Information Science, departments respectively. KMO, Batlet test of sphericity and Cronbach's alpha Coefficient were used to determine the reliability of the instrument. The reliability of each component ranged between .75 and .85

The Data analysis involved, descriptive statistics, such as percentages distribution, mean, standard deviation, and linear and multiple regression analysis, using statistical product and service solution SPSS version 25.

The result of the study showed the following findings:

1. The level of digital literacy skills of librarians in university libraries in North-West, Nigeria is high.
2. The knowledge management practices prevalent in university libraries in North-West, Nigeria is knowledge sharing
3. Knowledge management practices in the university libraries in North-West, Nigeria is moderate
4. The level of innovative service delivery in North-West Nigeria is moderate
5. Librarian's digital literacy skills have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
6. Knowledge management practices have positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
7. Librarians' digital literacy skills and knowledge management practices have combined positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
8. Photo-visual literacy skill has positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
9. Branching literacy skill has positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
10. Socio-emotional literacy skill has positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
11. Information literacy skill has positive and insignificant influence, on innovative service delivery in university libraries in North-West, Nigeria.

12. Reproduction literacy skill has negative and insignificant influence on innovative service delivery in university libraries in North-West, Nigeria.
13. Knowledge creation has positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria
14. Knowledge application/use has positive and significant influence on innovative service delivery in university libraries in North-West, Nigeria.
15. Knowledge sharing has positive and insignificant influence on innovative service delivery in university libraries in North-West, Nigeria.

5.2. Conclusion

The study provided empirical evidence on how digital literacy skills of librarians, knowledge management practices relate to the provision of innovative services delivery in university libraries in North-West, Nigeria. The finding also indicated that digital literacy skills, knowledge management practices have jointly affect innovative services delivery in university libraries in North-West, Nigeria.

Furthermore, the study confirmed the submission that digital literacy skills, knowledge management practices are of relevance to innovative service delivery in university libraries in North-West, Nigeria.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. Though, the study indicated that the level of librarian's digital literacy skills is high. More effort should be given by the library management to increase the digital literacy skills of librarians particularly with the rate at which ICT technologies are changing so that they can be abreast with current trends in order to be relevant and innovative in the discharge of their library services
2. The managements of each university libraries should focus more on engaging in knowledge management practices; this is as a result of changing user needs and pressure for libraries to account for its value in the university settings
3. Providing innovative service delivery should be a priority by both librarians and library management in university libraries in North-West, Nigeria. This is to enable them improve and enhance library services as well as increase library patronage.
4. Knowledge sharing mechanism should be provided by the library managements to encourage sharing of ideas, understanding skills to enable staff to create new knowledge in in library.
5. Library management should provide favourable environment and serene atmosphere for staff to think out of the box and explore their talents in order to be innovative in discharging their service.
6. Librarians should be applying their acquired knowledge to enable them provide innovative service delivery.

7. Knowledge creation conditions should be provided by university library managements to enable librarians create more relevant knowledge for innovative service delivery.

5.4 Contributions to Knowledge

Innovative services delivery is still an evolving concept, especially as related to university libraries which large number of scholars intends to study. This study can contribute to the ocean of knowledge in the following ways:

The study provides empirical evidence that established the relationship between digital literacy skills, knowledge management practices and innovative service delivery

The conceptual model developed has contributed to the body of knowledge conceptually and empirically and can be adapted or adopted for other studies.

The study provides insight on the level of digital literacy skills of librarians in university libraries in North-West Nigeria.

The study contributed to knowledge by expanding the horizon of the concept of digital literacy skills, knowledge management practices and innovation services delivery in relation to university libraries particularly in the study locale.

5.5 Suggestion for Further Studies

The study is centred on the influence of digital literacy skills, knowledge management practices on innovative service delivery by librarians in university libraries in North-West, Nigeria. The study adopted survey research design using questionnaire for data collection. Therefore, this researcher suggests the following areas for further studies:

1. A survey research can be conducted on digital literacy skills of library users to ascertain their level of satisfaction with the quality of service delivery in the university libraries.
2. Studies on similar variables can be carried out but with mixed method design to elicit data and compare the results.

5.6 Limitation of the Study

The study was limited by the following;

The study was conducted in the North-West, Nigeria and the some universities selected for this study were in State that has security challenges, a situation that made data collections a little bit challenging.

The population of the study involved university libraries it doesn't includes other higher institutions such as colleges and polytechnics.

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Appendix I

Informed Consent Form

Please read this document properly before you decide to participate in the study. This research is sponsored by Tetfund -Tertiary Education Trust Fund through Ahmadu Bello University, Zaria.

The name of the researcher is Shittu MUSA (08065663144, mshittu21@gmail.com) A PhD student of the School of management Sciences Babcock University, Ilisan Remon, Ogun State.

The title of this research is **“DIGITAL LITERACY SKILLS, KNOWLEDGE MANAGEMENT PRACTICES AND INNOVATIVE SERVICE DELIVERY IN UNIVERSITY LIBRARIES IN NORTH-WEST NIGERIA”**

The purpose of this study is to determine the influence of digital literacy skills and knowledge management practices on innovative service delivery in university libraries in North-West, Nigeria.

The researcher used questionnaire to obtain data on a “Digital literacy Skills, Knowledge Management Practices and Innovative Service Delivery in University libraries in North-West Nigeria”. Please note that all information gotten remains confidential and responses will be used for research purpose only. Your participation is absolutely voluntary; you are free to opt out at any time during the study.

Be informed that the time you will spend for participating in this study will be only about, 10 minutes. There is no risk in participating in the study.

Please bear with me as there is no incentive or compensation for participating in the study. Should you decide to discontinue participating in the study after you have started, there will be no penalty, loss of benefit, for choosing not to continue to participate.

Please note that your identity will be kept confidential. Any information you give will be assigned a code number which will be kept confidential. When the study is completed and the data have been analyzed, your response sheet will later be destroyed. Your name will not be used in any report or publication. Your participation in the study is completely voluntary.

Note that there is no conflict of interest in this study. If you have any question about the study, please feel free to contact:

Name: Shittu Musa, (08065663144) mshittu21@gmail.com

Department/Address: Information Resources Management, School of Management Sciences, Babcock University, Ilisan Remon, Ogun State, Nigeria.

If you wish to participate in this study, Please Sign in the space provided below. Your signature will indicate willingness to participate.

Participant’s name, (in capital): ----- Signature-----Date:

Witness name (in capital): -----Signature-----Date:

April 23, 2024

MUSA Shittu,
Dept. of Info. Res. Management,
Babcock University,
Ilishan-Remo,
Ogun State.

Dear Musa,

**REGISTRATION OF TITLE [DIGITAL LITERACY SKILLS, KNOWLEDGE
MANAGEMENT PRACTICES AND INNOVATIVE SERVICE DELIVERY IN
UNIVERSITY LIBRARIES IN NORTH-WEST, NIGERIA]**

In line with the regulation of the university, after careful consideration by the Department of Information Resources Management, School of Management Science and the College of Postgraduate Studies Executive Abstract Committee, I am pleased to notify you that your thesis titled: *'Digital literacy skills, knowledge management practices and innovative service delivery in university libraries in North-West, Nigeria'* is hereby registered.

Please ensure that this thesis title remains the same on all your documents.

Accept my warm congratulations.

COLLEGE OF POSTGRADUATE STUDIES
Sign: 

Titilayo J. Owolabi, PhD
Deputy Registrar/Secretary, CPGS

Cc: HOD, Information Resources Management
File



BABCOCK UNIVERSITY HEALTH RESEARCH ETHICS COMMITTEE

Our Ref. NHREC/24/01/2020 Your Ref. BUHREC 277/22 Date: October 10, 2023

NAME OF PRINCIPAL INVESTIGATOR: SHITTU MUSA

TITLE OF STUDY: DIGITAL LITERACY SKILLS, KNOWLEDGE MANAGEMENT PRACTICES AND INNOVATIVE SERVICES DELIVERY IN UNIVERSITY LIBRARIES IN NORTHWEST, NIGERIA.

RESEARCH LOCATION: NORTHWEST, NIGERIA.

NOTIFICATION FOR ETHICAL APPROVAL

Babcock University Health Research Ethics Committee has approved your research proposal and other related materials after the necessary reviews and corrections.

The National code for Health Research Ethics requires that you comply with all institutional guidelines, rules and regulations. All forms and questionnaire must carry the assigned BUHREC number. No changes are permitted in the research without prior approval by the Committee.

Please, note that the Committee will monitor the research study. All data collection must be completed within twelve calendar months (One year), from the date stated on this approval.

You are expected to give a progress report of the investigation and submit a final copy of the research to the Committee.

This approval is with effect from March 30, 2022.

Thank you.

Professor K. O. Ogunwenmo
Chairman, Babcock University Health Research Ethics Committee
09133507122

Babcock University Health Research Ethics Committee (BUHREC)

A Seventh-day Adventist Institution of Higher Learning
Ilishan Remo, Ogun State, Nigeria. buhrec@babcock.edu.ng



**BABCOCK
UNIVERSITY**

Information Resources Management

October 25, 2023.

TO WHOM IT MAY CONCERN

Dear Sir/Ma,

LETTER OF INTRODUCTION: MUSA SHITTU (MATRIC NO: PG/18/0441)

This is to introduce the above-named, who is a postgraduate student of Information Resources Management Department, Babcock University. He is carrying out a research titled "Digital Literacy Skill, Knowledge Management Practices and Innovative Service Delivery in University Libraries in North-West, Nigeria" for his PhD in Library and Information Sciences

Musa's study involves distributing questionnaire to collect the required data. He has chosen your libraries as a case study and is soliciting your assistance in providing the requisite information as objectively as possible.

Please be assured that any information supplied will be treated with strict confidentiality and used for academic purposes only.

Thank you.

Yours sincerely,


Dr. E. Madukoma
Head of Department, IRM
madukomae@babcock.edu.ng
08136232950

Appendix II Questionnaire

Dear Respondent,

I am a student from the School of Management Sciences, Department of Information Resources Management, Babcock University, Ilesha Remo Ogun State, Nigeria. Currently, working on a PhD thesis Titled; **Digital Literacy Skills, Knowledge Management Practices and Innovation Service Delivery in University libraries in North-West, Nigeria**. I kindly need your assistance to respond to the following set of questions. These set of questions are designed for the purpose of research only, your responses will be treated with maximum confidentiality, and your privacy will be respected.

Please do not hesitate to contact the undersigned if need be.

Thank you

Shittu Musa,

Babcock University, Ilesha Remo Ogun State-Nigeria

Emails; mshittu21@gmail.com

Phone no.; 08065663144

SECTION A: DEMOGRAPHIC INFORMATION

1. **Age:** 21-30 yrs. (), 31-40 yrs. (), 41-50 yrs. (), 51-60 yrs. (), 61-70 yrs. ()
2. **Marital Status:** Single (), Married (), Divorced ()
3. **Work experience:** 1-5 years (), 5-10 years (), More than 10 -15 years (), more than 15 years ()
4. **Gender:** Male (), Female ()
5. **Highest educational qualification:** Bsc/HND (), M.sc (), PhD (), Any other specify
6. **Designation:** Assistant Librarian -AL (), Librarian II Libn II (), Librarian I Libn I (), Senior Librarian S Libn (), Principal Librarian PL (), Deputy University Librarian DUL (), University Librarian UL ()
7. **Name of University** _____

Section B: What is the level of digital literacy skills of librarians in university libraries in North-West, Nigeria? Tick as many as possible

KEY: 5= Very High 4= High, 3=Moderate, 2=Low, 1= very Low.

| Digital Literacy Skills | | 5 | 4 | 3 | 2 | 1 |
|--|---|--------------|------------|------------|------------|-------------|
| 1. Photo-visual Literacy Skill | | (V.H) | (H) | (M) | (L) | (VL) |
| Rank your level of effective and efficient use of the under listed photo-visual literacy platforms in your library. Tick as many as possible | | | | | | |
| 1 | My ability to intuitively and freely use text base and command guide interface to stimulate uses of graphical user interface is | | | | | |
| 2 | My ability to clearly understand and interpret visual images using social media platforms is | | | | | |
| 3 | My ability to interpret digitally altered images is | | | | | |
| 4 | My ability to use laptop computer to create digital images is | | | | | |
| 5 | My ability to use computer in generating digital contents is | | | | | |
| 6 | My ability to communicate effectively in a digital platforms is | | | | | |
| 2. Reproduction Literacy Skills | | 5 | 4 | 3 | 2 | 1 |
| Rate your ability to use diverse media to reproduce and manipulate pre-existing digital contents | | | | | | |
| 1 | My ability to use word processor applications (e.g. Microsoft Word) | | | | | |
| 2 | My ability operate spreadsheet applications (e.g. Microsoft excel) | | | | | |
| 3 | My ability digitize a document using a digital devices | | | | | |
| 4 | My ability use digital media tools to scan a document | | | | | |
| 5 | My ability use photocopying machine to reproduce document | | | | | |
| 6 | My ability use printer to reproduce information document | | | | | |
| 7 | My ability use digital camera to take photos, reproduce & disseminates | | | | | |
| 3. Branching Literacy Skills | | 5 | 4 | 3 | 2 | 1 |
| Rate the extent of your skills to construct knowledge using digital literacy skills. | | | | | | |
| 1 | My ability to apply new technologies in to library services | | | | | |
| 2 | My ability to use of different storage devices to preserve digital contents | | | | | |
| 3 | My ability to adopt/adapt information retrievals techniques | | | | | |
| 4 | My ability to navigate Databases | | | | | |
| 5 | My ability to upload document to online platform | | | | | |
| 6 | My ability to send and receive emails | | | | | |
| 7 | My ability to create different file formats eg PDF, gif, etc. | | | | | |
| 4. Information Literacy Skills | | 5 | 4 | 3 | 2 | 1 |
| 1 | My ability to assess the authenticity of information | | | | | |
| 2 | My ability to determine the reliability of the sources | | | | | |
| 3 | My ability to evaluate the information resources | | | | | |
| 4 | My ability to synthese the information resources | | | | | |
| 5 | My ability to determine the currency of the resources | | | | | |
| 6 | My ability to determine relevancy of the resources | | | | | |
| 7 | My ability to determine the credibility of the sources | | | | | |

| 5. Socio-emotional literacy Skills | | 5 | 4 | 3 | 2 | 1 |
|---|---|----------|----------|----------|----------|----------|
| 1 | My ability to communicate effectively to the user even under stress | | | | | |
| 2 | My ability to handle many user request come at a time | | | | | |
| 3 | My ability to multi-task in discharging my duty | | | | | |
| 4 | My ability to cheerfully attend to users that are under critical need | | | | | |
| 5 | My ability to understand the cultural diversity of users | | | | | |
| 6 | My ability to address in appropriate and polite manner to unsatisfied users | | | | | |
| 7 | My ability to manage several users without stress | | | | | |

Section C: what is the knowledge management practice prevalent in university libraries in North-west, Nigeria? Rating scale will be a four-point Likert-type scale of: 4=Strongly Agree, 3=Agree, 2=Disagree, 1= Strongly Disagree.

| Kindly rate the knowledge management practices prevalent in your university by ticking the appropriate responds | | 4 | 3 | 2 | 1 |
|--|---|----------|----------|----------|----------|
| 1. Knowledge Creation | | | | | |
| 1 | Knowledge creation in my library happens during formal discussions | | | | |
| 2 | I share my work experience with others in the workplace | | | | |
| 3 | during seminar presentations in my library we share experiences | | | | |
| 4 | Our library encourages us to learn about the service delivery system that we can have | | | | |
| 5 | We understand the needs of library users by learning about them | | | | |
| 6 | Our library encourages learning about barriers to innovation that we face | | | | |
| 2. Knowledge sharing | | 4 | 3 | 2 | 1 |
| 1 | I try my best to introduce new concepts to my colleagues | | | | |
| 2 | new knowledge are simplified in my library for easy understanding | | | | |
| 3 | I usually share new knowledge to help solve library problems | | | | |
| 4 | I often share my work experience with my colleagues in the library | | | | |
| 5 | my library encourage librarians to share new knowledge in different work units | | | | |
| 6 | sharing of new knowledge in my library have a policy backing | | | | |
| 7 | my library encourages librarians to share knowledge | | | | |
| Knowledge Application/Use Process | | 4 | 3 | 2 | 1 |
| 1 | new knowledge is used for decision making in my library | | | | |
| 2 | my library knowledge is used for improving library services | | | | |
| 3 | my library encourages the application of new knowledge to improve the individual work process | | | | |
| 4 | my library encourage the application for the policy provision | | | | |
| 5 | there is incentive for the use of new knowledge in My library | | | | |
| 6 | new knowledge created in my library is used to deliver services to users | | | | |
| 7 | new knowledge is used to solved difficult management problem in my library | | | | |

Section D: What is the level of innovative service delivery by librarians in university libraries in North-West, Nigeria? It will comprise of 28 items. The rating scale will be a five-point Likert-type scale of: 5= Very High, 4 High, 3=Moderate, 2=Low, 1= Very Low

| S/N | Innovative service delivery Kindly tick the level at which you provide the following Embedded Library Services (Innovative services) | V. H (5) | H. (4) | M (3) | N H (2) | NV H (1) |
|----------|---|----------|--------|-------|---------|----------|
| A | Kindly tick the level at which you provide the following Embedded Library Services (Innovative services) | | | | | |
| 1. | I provided information sources for students conducting research in my library | | | | | |
| 2. | I provide digital tutorials for students conducting research | | | | | |
| 3. | I assist to narrow students research topics in the library | | | | | |
| 4. | I participate in research collaboration in the university | | | | | |
| 5. | I help library users to cite sources correctly | | | | | |
| 6. | I provide research assistant to library users by specifically helping them to understand the research process | | | | | |
| 7. | I participate in co-teaching in the department | | | | | |
| B | Social media services | 5 | 4 | 3 | 2 | 1 |
| 8. | I provide information about new arrivals in the library using social media platforms | | | | | |
| 9. | I communicate to users on upcoming programmes in the library using social media platforms | | | | | |
| 10. | Library news are provided online through the use of social media | | | | | |
| 11. | I stimulate clients' passion for the library by chatting with them on library issues using social media | | | | | |
| 12. | I provide real time reference service to the patron using social media | | | | | |
| 13. | I collect instant feedback from the users using social media platform | | | | | |
| 14. | I provide links to library resources on social media applications | | | | | |
| C | Research Support Services | 5 | 4 | 3 | 2 | 1 |
| 15. | I Provide bibliographic services to scholars/users | | | | | |
| 16. | I provide open access publish opportunities to users | | | | | |
| 17. | I help to assist users avoid publishing in predatory journals | | | | | |
| 18. | I help to provide funding information sources to scholars who use the library | | | | | |
| 19. | I provide research information training to students/users | | | | | |
| 20. | I provide digital common information services to users | | | | | |
| 21. | I provide information literacy training to library users | | | | | |
| D | ICT Instructional Training Services | 5 | 4 | 3 | 2 | 1 |
| 22. | I provide ask a librarian services training to users in the library | | | | | |
| 23. | I provide training to users on how to use document scanning opportunities provided the library | | | | | |
| 24. | I provide webinar to users on how to access the library resources | | | | | |
| 25. | I provide internet based library services to users | | | | | |
| 26. | I provide digital instructional program to users | | | | | |
| 27. | Audio visual training is provide to users in the library | | | | | |

| | | | | | | |
|-----|--|--|--|--|--|--|
| 28. | Online user education is provided by me in the library | | | | | |
|-----|--|--|--|--|--|--|

Appendix V

Krejcie and Morgan Table Guide for determining Sample Size

| <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> |
|----------|----------|----------|----------|----------|----------|
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 1500 | 306 |
| 30 | 28 | 260 | 155 | 1600 | 310 |
| 35 | 32 | 270 | 159 | 1700 | 313 |
| 40 | 36 | 280 | 162 | 1800 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2200 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2600 | 335 |
| 70 | 59 | 380 | 191 | 2800 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 3500 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4500 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |
| 130 | 97 | 650 | 242 | 9000 | 368 |
| 140 | 103 | 700 | 248 | 10000 | 370 |
| 150 | 108 | 750 | 254 | 15000 | 375 |
| 160 | 113 | 800 | 260 | 20000 | 377 |
| 170 | 118 | 850 | 265 | 30000 | 379 |
| 180 | 123 | 900 | 269 | 40000 | 380 |
| 190 | 127 | 950 | 274 | 50000 | 381 |
| 200 | 132 | 1000 | 278 | 75000 | 382 |
| 210 | 136 | 1100 | 285 | 100000 | 384 |

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Appendix VI

Reliability Test Result

| | | very high | high | moderate | low | very low | missing | Total |
|---|--------------------|-----------|-------|----------|------|----------|---------|-------|
| I am able to intuitively and freely use text base and command guide interface to stimulate uses of graphical user interface | Count | 33 | 78 | 49 | 12 | 1 | 23 | |
| | Table N % | 16.8% | 39.8% | 25.0% | 6.1% | 0.5% | 11.7% | |
| | Mean | | | | | | | 3.31 |
| | Standard Deviation | | | | | | | 1.46 |
| My ability to clearly understand and interpret visual images using social media platforms | Count | 64 | 79 | 32 | 7 | 1 | 13 | |
| | Table N % | 32.7% | 40.3% | 16.3% | 3.6% | 0.5% | 6.6% | |
| | Mean | | | | | | | 3.81 |
| | Standard Deviation | | | | | | | 1.31 |
| My ability to interpret digitally altered images | Count | 28 | 84 | 54 | 9 | 2 | 19 | |
| | Table N % | 14.3% | 42.9% | 27.6% | 4.6% | 1.0% | 9.7% | |
| | Mean | | | | | | | 3.36 |
| | Standard Deviation | | | | | | | 1.36 |
| My ability to use laptop computer to create digital images | Count | 46 | 59 | 56 | 14 | 3 | 18 | |
| | Table N % | 23.5% | 30.1% | 28.6% | 7.1% | 1.5% | 9.2% | |
| | Mean | | | | | | | 3.39 |
| | Standard Deviation | | | | | | | 1.43 |
| My ability to use computer in generating digital contents | Count | 41 | 73 | 54 | 11 | 1 | 16 | |
| | Table N % | 20.9% | 37.2% | 27.6% | 5.6% | 0.5% | 8.2% | |
| | Mean | | | | | | | 3.48 |
| | Standard Deviation | | | | | | | 1.34 |
| My ability to communicate effectively in a digital platforms | Count | 56 | 77 | 34 | 9 | 1 | 19 | |
| | Table N % | 28.6% | 39.3% | 17.3% | 4.6% | 0.5% | 9.7% | |
| | Mean | | | | | | | 3.62 |
| | Standard Deviation | | | | | | | 1.45 |
| My ability operate Microsoft Word processing | Count | 84 | 66 | 29 | 3 | 1 | 13 | |
| | Table N % | 42.9% | 33.7% | 14.8% | 1.5% | 0.5% | 6.6% | |
| | Mean | | | | | | | 3.97 |
| | Standard Deviation | | | | | | | 1.32 |
| My ability to operate Microsoft excel | Count | 41 | 70 | 52 | 15 | 1 | 17 | |
| | Table N % | 20.9% | 35.7% | 26.5% | 7.7% | 0.5% | 8.7% | |
| | Mean | | | | | | | 3.43 |
| | Standard Deviation | | | | | | | 1.38 |
| My ability to digitize a document using a digital devices | Count | 39 | 78 | 48 | 17 | 1 | 13 | |
| | Table N % | 19.9% | 39.8% | 24.5% | 8.7% | 0.5% | 6.6% | |
| | Mean | | | | | | | 3.50 |
| | Standard Deviation | | | | | | | 1.29 |
| My ability to use digital media tools to scan a document | Count | 40 | 82 | 43 | 12 | 2 | 17 | |
| | Table N % | 20.4% | 41.8% | 21.9% | 6.1% | 1.0% | 8.7% | |
| | Mean | | | | | | | 3.48 |
| | Standard Deviation | | | | | | | 1.38 |

| | | | | | | | | |
|---|--------------------|-------|-------|-------|------|------|-------|------|
| My ability to use photocopying machine to reproduce document | Count | 65 | 66 | 36 | 9 | 1 | 19 | |
| | Table N % | 33.2% | 33.7% | 18.4% | 4.6% | 0.5% | 9.7% | |
| | Mean | | | | | | | 3.65 |
| | Standard Deviation | | | | | | | 1.48 |
| My ability to use printer to reproduce information document | Count | 63 | 68 | 32 | 12 | 1 | 20 | |
| | Table N % | 32.1% | 34.7% | 16.3% | 6.1% | 0.5% | 10.2% | |
| | Mean | | | | | | | 3.61 |
| | Standard Deviation | | | | | | | 1.51 |
| My ability to use digital camera to take photos, reproduce & disseminates | Count | 54 | 73 | 27 | 14 | 3 | 25 | |
| | Table N % | 27.6% | 37.2% | 13.8% | 7.1% | 1.5% | 12.8% | |
| | Mean | | | | | | | 3.44 |
| | Standard Deviation | | | | | | | 1.60 |
| My ability to apply new technologies in to library services | Count | 41 | 86 | 45 | 8 | 0 | 16 | |
| | Table N % | 20.9% | 43.9% | 23.0% | 4.1% | 0.0% | 8.2% | |
| | Mean | | | | | | | 3.57 |
| | Standard Deviation | | | | | | | 1.32 |
| My ability to use of different storage devices to preserve digital contents | Count | 49 | 86 | 36 | 9 | 0 | 16 | |
| | Table N % | 25.0% | 43.9% | 18.4% | 4.6% | 0.0% | 8.2% | |
| | Mean | | | | | | | 3.65 |
| | Standard Deviation | | | | | | | 1.34 |
| My ability to adopt/adapt information retrievals techniques | Count | 38 | 89 | 46 | 6 | 0 | 17 | |
| | Table N % | 19.4% | 45.4% | 23.5% | 3.1% | 0.0% | 8.7% | |
| | Mean | | | | | | | 3.55 |
| | Standard Deviation | | | | | | | 1.32 |
| My ability to navigate Databases | Count | 39 | 78 | 49 | 12 | 2 | 16 | |
| | Table N % | 19.9% | 39.8% | 25.0% | 6.1% | 1.0% | 8.2% | |
| | Mean | | | | | | | 3.47 |
| | Standard Deviation | | | | | | | 1.35 |
| My ability to upload document to online platform | Count | 57 | 80 | 31 | 9 | 3 | 16 | |
| | Table N % | 29.1% | 40.8% | 15.8% | 4.6% | 1.5% | 8.2% | |
| | Mean | | | | | | | 3.67 |
| | Standard Deviation | | | | | | | 1.41 |
| My ability to send and receive emails | Count | 81 | 74 | 18 | 4 | 2 | 17 | |
| | Table N % | 41.3% | 37.8% | 9.2% | 2.0% | 1.0% | 8.7% | |
| | Mean | | | | | | | 3.90 |
| | Standard Deviation | | | | | | | 1.44 |
| My ability to create different file formats eg PDF, gif, etc. | Count | 56 | 74 | 35 | 10 | 3 | 18 | |
| | Table N % | 28.6% | 37.8% | 17.9% | 5.1% | 1.5% | 9.2% | |
| | Mean | | | | | | | 3.59 |
| | Standard Deviation | | | | | | | 1.46 |
| My ability to assess the authenticity of information | Count | 57 | 83 | 35 | 5 | 0 | 16 | |
| | Table N % | 29.1% | 42.3% | 17.9% | 2.6% | 0.0% | 8.2% | |
| | Mean | | | | | | | 3.73 |
| | Standard Deviation | | | | | | | 1.35 |
| My ability to determine | Count | 44 | 87 | 36 | 11 | 1 | 17 | |

| | | | | | | | | |
|---|--------------------|-------|-------|-------|------|------|-------|------|
| the reliability of the sources | Table N % | 22.4% | 44.4% | 18.4% | 5.6% | 0.5% | 8.7% | |
| | Mean | | | | | | | 3.57 |
| | Standard Deviation | | | | | | | 1.37 |
| My ability to evaluate the information resources | Count | 48 | 93 | 35 | 5 | 2 | 13 | |
| | Table N % | 24.5% | 47.4% | 17.9% | 2.6% | 1.0% | 6.6% | |
| | Mean | | | | | | | 3.72 |
| My ability to synthesise the information resources | Count | 38 | 80 | 52 | 9 | 2 | 15 | |
| | Table N % | 19.4% | 40.8% | 26.5% | 4.6% | 1.0% | 7.7% | |
| | Mean | | | | | | | 3.50 |
| My ability to determine the currency of the resources | Count | 59 | 86 | 27 | 6 | 2 | 16 | |
| | Table N % | 30.1% | 43.9% | 13.8% | 3.1% | 1.0% | 8.2% | |
| | Mean | | | | | | | 3.74 |
| My ability to determine relevancy of the resources | Count | 53 | 89 | 31 | 5 | 2 | 16 | |
| | Table N % | 27.0% | 45.4% | 15.8% | 2.6% | 1.0% | 8.2% | |
| | Mean | | | | | | | 3.70 |
| My ability to determine the credibility of the sources | Count | 49 | 85 | 31 | 8 | 1 | 22 | |
| | Table N % | 25.0% | 43.4% | 15.8% | 4.1% | 0.5% | 11.2% | |
| | Mean | | | | | | | 3.55 |
| My ability to communicate effectively to the user even under stress | Count | 61 | 67 | 35 | 6 | 0 | 27 | |
| | Table N % | 31.1% | 34.2% | 17.9% | 3.1% | 0.0% | 13.8% | |
| | Mean | | | | | | | 3.52 |
| My ability to handle many user request come at a time | Count | 52 | 92 | 32 | 4 | 2 | 14 | |
| | Table N % | 26.5% | 46.9% | 16.3% | 2.0% | 1.0% | 7.1% | |
| | Mean | | | | | | | 3.74 |
| My ability to multi-task in discharging my duty | Count | 55 | 79 | 39 | 8 | 0 | 15 | |
| | Table N % | 28.1% | 40.3% | 19.9% | 4.1% | 0.0% | 7.7% | |
| | Mean | | | | | | | 3.69 |
| My ability to cheerfully attend to users that are under critical need | Count | 63 | 79 | 34 | 5 | 0 | 15 | |
| | Table N % | 32.1% | 40.3% | 17.3% | 2.6% | 0.0% | 7.7% | |
| | Mean | | | | | | | 3.79 |
| My ability to understand the cultural diversity of users | Count | 54 | 81 | 43 | 4 | 0 | 14 | |
| | Table N % | 27.6% | 41.3% | 21.9% | 2.0% | 0.0% | 7.1% | |
| | Mean | | | | | | | 3.73 |
| My ability to address in appropriate and polite | Count | 63 | 80 | 35 | 2 | 2 | 14 | |
| | Table N % | 32.1% | 40.8% | 17.9% | 1.0% | 1.0% | 7.1% | |
| | Standard Deviation | | | | | | | 1.29 |

| | | | | | | | | |
|---|--------------------|-------|-------|-------|------|------|------|------|
| manner to unsatisfied users | Mean | | | | | | | 3.81 |
| | Standard Deviation | | | | | | | 1.32 |
| My ability to manage several users without stress | Count | 54 | 91 | 27 | 7 | 2 | 15 | |
| | Table N % | 27.6% | 46.4% | 13.8% | 3.6% | 1.0% | 7.7% | |
| | Mean | | | | | | | 3.73 |
| | Standard Deviation | | | | | | | 1.34 |

| | | strongly agree | agree | disagree | strongly disagree | missing | Total |
|---|--------------------|----------------|-------|----------|-------------------|---------|-------|
| Knowledge creation in my library happens during formal discussions | Count | 56 | 92 | 24 | 5 | 19 | |
| | Table N % | 28.6% | 46.9% | 12.2% | 2.6% | 9.7% | |
| | Mean | | | | | | 2.82 |
| | Standard Deviation | | | | | | 1.17 |
| I share my work experience with others in the workplace | Count | 86 | 82 | 10 | 3 | 14 | |
| | Table N % | 43.9% | 41.8% | 5.1% | 1.5% | 7.1% | |
| | Mean | | | | | | 3.15 |
| | Standard Deviation | | | | | | 1.09 |
| during seminar presentations in my library we share experiences | Count | 76 | 82 | 18 | 3 | 17 | |
| | Table N % | 38.8% | 41.8% | 9.2% | 1.5% | 8.7% | |
| | Mean | | | | | | 3.01 |
| | Standard Deviation | | | | | | 1.15 |
| Our library encourages us to learn about the service delivery system that we can have | Count | 86 | 84 | 10 | 3 | 13 | |
| | Table N % | 43.9% | 42.9% | 5.1% | 1.5% | 6.6% | |
| | Mean | | | | | | 3.16 |
| | Standard Deviation | | | | | | 1.06 |
| We understand the needs of library users by learning about the information from them | Count | 77 | 83 | 16 | 2 | 17 | |
| | Table N % | 39.3% | 42.3% | 8.2% | 1.0% | 8.7% | |
| | Mean | | | | | | 3.04 |
| | Standard Deviation | | | | | | 1.15 |
| Our library encourages learning about barriers to innovation that we face | Count | 53 | 92 | 25 | 3 | 21 | |
| | Table N % | 27.0% | 46.9% | 12.8% | 1.5% | 10.7% | |
| | Mean | | | | | | 2.81 |
| | Standard Deviation | | | | | | 1.20 |
| We understand the information needs of library users by learning from them | Count | 0 | 0 | 0 | 0 | 196 | |
| | Table N % | 0.0% | 0.0% | 0.0% | 0.0% | 100.0% | |
| | Mean | | | | | | .00 |
| | Standard Deviation | | | | | | .00 |
| I try my best to introduce new concepts to my colleagues | Count | 3.04 | 3.04 | 3.04 | 3.04 | 3.04 | |
| | Table N % | 1.17 | 1.17 | 1.17 | 1.17 | 1.17 | |
| | Mean | | | | | | 3.04 |
| | Standard Deviation | | | | | | 1.17 |
| new knowledge are simplified in my library for easy understanding | Count | 69 | 95 | 19 | 1 | 12 | |
| | Table N % | 35.2% | 48.5% | 9.7% | 0.5% | 6.1% | |
| | Mean | | | | | | 3.06 |
| | Standard Deviation | | | | | | 1.01 |
| I usually share new | Count | 74 | 92 | 15 | 1 | 14 | |

| | | | | | | | | |
|---|--------------------|--|-------|-------|-------|-------|-------|------|
| knowledge to help solve library problems | Table N % | | 37.8% | 46.9% | 7.7% | 0.5% | 7.1% | |
| | Mean | | | | | | | 3.08 |
| | Standard Deviation | | | | | | | 1.06 |
| I often share my work experience with my colleagues in the library | Count | | 76 | 89 | 13 | 2 | 16 | |
| | Table N % | | 38.8% | 45.4% | 6.6% | 1.0% | 8.2% | |
| | Mean | | | | | | | 3.06 |
| my library encourage librarians to share new knowledge in different work units | Standard Deviation | | | | | | | 1.11 |
| | Count | | 77 | 86 | 16 | 2 | 15 | |
| | Table N % | | 39.3% | 43.9% | 8.2% | 1.0% | 7.7% | |
| sharing of new knowledge in my library have a policy backing | Mean | | | | | | | 3.06 |
| | Standard Deviation | | | | | | | 1.10 |
| | Count | | 52 | 75 | 37 | 12 | 20 | |
| my library encourages librarians to share knowledge | Table N % | | 26.5% | 38.3% | 18.9% | 6.1% | 10.2% | |
| | Mean | | | | | | | 2.65 |
| | Standard Deviation | | | | | | | 1.23 |
| new knowledge is used for decision making in my library | Count | | 74 | 74 | 19 | 3 | 26 | |
| | Table N % | | 37.8% | 37.8% | 9.7% | 1.5% | 13.3% | |
| | Mean | | | | | | | 2.85 |
| my library used new knowledge for improving library services | Standard Deviation | | | | | | | 1.31 |
| | Count | | 74 | 78 | 28 | 2 | 14 | |
| | Table N % | | 37.8% | 39.8% | 14.3% | 1.0% | 7.1% | |
| my library encourages the application of new knowledge to improve the individual work process | Mean | | | | | | | 3.00 |
| | Standard Deviation | | | | | | | 1.10 |
| | Count | | 67 | 95 | 17 | 2 | 15 | |
| my library encourage the application of new knowledge for the policy provision | Table N % | | 34.2% | 48.5% | 8.7% | 1.0% | 7.7% | |
| | Mean | | | | | | | 3.01 |
| | Standard Deviation | | | | | | | 1.08 |
| there is incentive for the use of new knowledge in my library | Count | | 67 | 92 | 17 | 2 | 18 | |
| | Table N % | | 34.2% | 46.9% | 8.7% | 1.0% | 9.2% | |
| | Mean | | | | | | | 2.96 |
| new knowledge created in my library is used to deliver services to users | Standard Deviation | | | | | | | 1.14 |
| | Count | | 54 | 83 | 33 | 6 | 20 | |
| | Table N % | | 27.6% | 42.3% | 16.8% | 3.1% | 10.2% | |
| new knowledge is used to solved difficult management problem | Mean | | | | | | | 2.74 |
| | Standard Deviation | | | | | | | 1.19 |
| | Count | | 38 | 70 | 44 | 23 | 21 | |
| new knowledge is used to solved difficult management problem | Table N % | | 19.4% | 35.7% | 22.4% | 11.7% | 10.7% | |
| | Mean | | | | | | | 2.41 |
| | Standard Deviation | | | | | | | 1.23 |
| new knowledge is used to solve library problems | Count | | 51 | 96 | 32 | 3 | 14 | |
| | Table N % | | 26.0% | 49.0% | 16.3% | 1.5% | 7.1% | |
| | Mean | | | | | | | 2.85 |
| I often share my work experience with my colleagues in the library | Standard Deviation | | | | | | | 1.05 |
| | Count | | 63 | 80 | 36 | 1 | 16 | |
| | Table N % | | 32.1% | 40.8% | 18.4% | 0.5% | 8.2% | |
| knowledge to help solve library problems | Mean | | | | | | | 2.88 |

| | | | | | | | | | |
|---------------|--------------------|--|--|--|--|--|--|--|------|
| in my library | Standard Deviation | | | | | | | | 1.12 |
|---------------|--------------------|--|--|--|--|--|--|--|------|

| | | very high | high | moderate | low | very low | missing | Total |
|---|--------------------|-----------|-------|----------|-------|----------|---------|-------|
| I provided information sources for students conducting research in my library | Count | 45 | 58 | 45 | 20 | 10 | 18 | |
| | Table N % | 23.0% | 29.6% | 23.0% | 10.2% | 5.1% | 9.2% | |
| | Mean | | | | | | | 3.28 |
| | Standard Deviation | | | | | | | 1.51 |
| I provide digital tutorials for students conducting research | Count | 58 | 63 | 38 | 16 | 9 | 12 | |
| | Table N % | 29.6% | 32.1% | 19.4% | 8.2% | 4.6% | 6.1% | |
| | Mean | | | | | | | 3.56 |
| | Standard Deviation | | | | | | | 1.42 |
| I assist to narrow students research topics in the library | Count | 38 | 47 | 40 | 31 | 17 | 23 | |
| | Table N % | 19.4% | 24.0% | 20.4% | 15.8% | 8.7% | 11.7% | |
| | Mean | | | | | | | 2.94 |
| | Standard Deviation | | | | | | | 1.61 |
| I participate in research collaboration in the university | Count | 81 | 63 | 21 | 12 | 4 | 15 | |
| | Table N % | 41.3% | 32.1% | 10.7% | 6.1% | 2.0% | 7.7% | |
| | Mean | | | | | | | 3.82 |
| | Standard Deviation | | | | | | | 1.47 |
| I help library users to cite sources correctly | Count | 57 | 57 | 33 | 29 | 4 | 16 | |
| | Table N % | 29.1% | 29.1% | 16.8% | 14.8% | 2.0% | 8.2% | |
| | Mean | | | | | | | 3.44 |
| | Standard Deviation | | | | | | | 1.50 |
| I provide research assistant to library users by specifically helping them to understand the research process | Count | 71 | 48 | 36 | 17 | 3 | 21 | |
| | Table N % | 36.2% | 24.5% | 18.4% | 8.7% | 1.5% | 10.7% | |
| | Mean | | | | | | | 3.53 |
| | Standard Deviation | | | | | | | 1.59 |
| I participate in co-teaching in the department | Count | 42 | 31 | 17 | 7 | 1 | 98 | |
| | Table N % | 21.4% | 15.8% | 8.7% | 3.6% | 0.5% | 50.0% | |
| | Mean | | | | | | | 2.04 |
| | Standard Deviation | | | | | | | 2.16 |
| I provide information about new arrivals in the library using social media platforms | Count | 44 | 48 | 34 | 16 | 7 | 47 | |
| | Table N % | 22.4% | 24.5% | 17.3% | 8.2% | 3.6% | 24.0% | |
| | Mean | | | | | | | 2.82 |
| | Standard Deviation | | | | | | | 1.87 |
| I communicate to users on upcoming programs in the library using social media platforms | Count | 48 | 65 | 31 | 21 | 12 | 19 | |
| | Table N % | 24.5% | 33.2% | 15.8% | 10.7% | 6.1% | 9.7% | |
| | Mean | | | | | | | 3.30 |
| | Standard Deviation | | | | | | | 1.57 |
| Library news are provided online through the use of social media | Count | 59 | 54 | 30 | 22 | 14 | 17 | |
| | Table N % | 30.1% | 27.6% | 15.3% | 11.2% | 7.1% | 8.7% | |
| | Mean | | | | | | | 3.36 |
| | Standard Deviation | | | | | | | 1.59 |

| | | | | | | | | | |
|---|--------------------|--|-------|-------|-------|-------|------|-------|------|
| I stimulate clients' passion for the library by chatting with them on library issues using social media | Count | | 50 | 75 | 30 | 4 | 10 | 27 | |
| | Table N % | | 25.5% | 38.3% | 15.3% | 2.0% | 5.1% | 13.8% | |
| | Mean | | | | | | | | 3.36 |
| | Standard Deviation | | | | | | | | 1.66 |
| I provide real time reference service to the patron using social media | Count | | 48 | 60 | 27 | 16 | 15 | 30 | |
| | Table N % | | 24.5% | 30.6% | 13.8% | 8.2% | 7.7% | 15.3% | |
| | Mean | | | | | | | | 3.10 |
| | Standard Deviation | | | | | | | | 1.75 |
| I collect instant feedback from the users using social media platform | Count | | 67 | 57 | 27 | 13 | 6 | 25 | |
| | Table N % | | 34.2% | 29.1% | 13.8% | 6.6% | 3.1% | 12.8% | |
| | Mean | | | | | | | | 3.48 |
| | Standard Deviation | | | | | | | | 1.68 |
| I provide links to library resources on social media applications | Count | | 79 | 54 | 21 | 10 | 4 | 28 | |
| | Table N % | | 40.3% | 27.6% | 10.7% | 5.1% | 2.0% | 14.3% | |
| | Mean | | | | | | | | 3.56 |
| | Standard Deviation | | | | | | | | 1.73 |
| I Provide bibliographic services to scholars | Count | | 36 | 67 | 35 | 18 | 11 | 29 | |
| | Table N % | | 18.4% | 34.2% | 17.9% | 9.2% | 5.6% | 14.8% | |
| | Mean | | | | | | | | 3.06 |
| | Standard Deviation | | | | | | | | 1.65 |
| I provide open access publishing opportunities to users | Count | | 45 | 71 | 33 | 13 | 5 | 29 | |
| | Table N % | | 23.0% | 36.2% | 16.8% | 6.6% | 2.6% | 14.8% | |
| | Mean | | | | | | | | 3.26 |
| | Standard Deviation | | | | | | | | 1.65 |
| I help to assist users to avoid publishing in predatory journals | Count | | 38 | 73 | 36 | 14 | 9 | 26 | |
| | Table N % | | 19.4% | 37.2% | 18.4% | 7.1% | 4.6% | 13.3% | |
| | Mean | | | | | | | | 3.20 |
| | Standard Deviation | | | | | | | | 1.60 |
| I help to provide funding information sources to scholars who use the library | Count | | 47 | 77 | 27 | 15 | 4 | 26 | |
| | Table N % | | 24.0% | 39.3% | 13.8% | 7.7% | 2.0% | 13.3% | |
| | Mean | | | | | | | | 3.36 |
| | Standard Deviation | | | | | | | | 1.61 |
| I provide research information training to students | Count | | 27 | 56 | 42 | 24 | 14 | 33 | |
| | Table N % | | 13.8% | 28.6% | 21.4% | 12.2% | 7.1% | 16.8% | |
| | Mean | | | | | | | | 2.79 |
| | Standard Deviation | | | | | | | | 1.65 |
| I provide digital common information services to users | Count | | 37 | 67 | 43 | 17 | 5 | 27 | |
| | Table N % | | 18.9% | 34.2% | 21.9% | 8.7% | 2.6% | 13.8% | |
| | Mean | | | | | | | | 3.17 |
| | Standard Deviation | | | | | | | | 1.58 |
| I provide information literacy training to library users | Count | | 44 | 69 | 32 | 15 | 6 | 29 | |
| | Table N % | | 22.4% | 35.2% | 16.3% | 7.7% | 3.1% | 14.8% | |
| | Mean | | | | | | | | 3.24 |
| | Standard Deviation | | | | | | | | 1.68 |
| I provide ask a | Count | | 59 | 51 | 29 | 22 | 16 | 19 | |

| | | | | | | | | | |
|--|--------------------|--|-------|-------|-------|-------|------|-------|------|
| librarian services training to users in the library | Table N % | | 30.1% | 26.0% | 14.8% | 11.2% | 8.2% | 9.7% | |
| | Mean | | | | | | | | 3.30 |
| | Standard Deviation | | | | | | | | 1.64 |
| I provide training to users on how to use document scanning opportunities provided the library | Count | | 48 | 70 | 29 | 23 | 7 | 19 | |
| | Table N % | | 24.5% | 35.7% | 14.8% | 11.7% | 3.6% | 9.7% | |
| | Mean | | | | | | | | 3.37 |
| I provide webinar to users on how to access the library resources | Count | | 55 | 55 | 38 | 25 | 7 | 16 | |
| | Table N % | | 28.1% | 28.1% | 19.4% | 12.8% | 3.6% | 8.2% | |
| | Mean | | | | | | | | 3.40 |
| I provide training on internet based library services to users | Count | | 38 | 61 | 39 | 21 | 5 | 32 | |
| | Table N % | | 19.4% | 31.1% | 19.9% | 10.7% | 2.6% | 16.3% | |
| | Mean | | | | | | | | 3.05 |
| I provide digital instructional program to users | Count | | 30 | 57 | 32 | 28 | 16 | 33 | |
| | Table N % | | 15.3% | 29.1% | 16.3% | 14.3% | 8.2% | 16.8% | |
| | Mean | | | | | | | | 2.79 |
| Audio visual training is provide to users in the library | Count | | 67 | 47 | 31 | 16 | 4 | 31 | |
| | Table N % | | 34.2% | 24.0% | 15.8% | 8.2% | 2.0% | 15.8% | |
| | Mean | | | | | | | | 3.33 |
| Online user education is provided by me to users in the library | Count | | 29 | 39 | 46 | 32 | 19 | 31 | |
| | Table N % | | 14.8% | 19.9% | 23.5% | 16.3% | 9.7% | 15.8% | |
| | Mean | | | | | | | | 2.66 |
| | Standard Deviation | | | | | | | | 1.63 |

Regression

Variables Entered/Removed^a

| Model | Variables Entered | Variables Removed | Method |
|-------|--------------------------------------|-------------------|--------|
| 1 | Digital Literacy Skills ^b | . | Enter |

a. Dependent Variable: Innovative Service Delivery

b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .764 ^a | .584 | .582 | 22.24224 |

a. Predictors: (Constant), Digital Literacy Skills

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1 | Regression | 134769.344 | 1 | 134769.344 | 272.417 | .000 ^b |
| | Residual | 95975.145 | 194 | 494.717 | | |
| | Total | 230744.490 | 195 | | | |

a. Dependent Variable: Innovative Service Delivery

b. Predictors: (Constant), Digital Literacy Skills

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|-------------------------|-----------------------------|------------|----------------------|--------|------|
| | | B | Std. Error | Coefficients Beta | | |
| 1 | (Constant) | 3.433 | 5.454 | | .629 | .001 |
| | Digital Literacy Skills | .700 | .042 | .764 | 16.505 | .000 |

a. Dependent Variable: Innovative Service Delivery

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .776 ^a | .602 | .600 | 21.76754 |

a. Predictors: (Constant), Knowledge Management Practices

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1 | Regression | 138822.297 | 1 | 138822.297 | 292.982 | .000 ^b |
| | Residual | 91922.193 | 194 | 473.826 | | |
| | Total | 230744.490 | 195 | | | |

a. Dependent Variable: Innovative Service Delivery

b. Predictors: (Constant), Knowledge Management Practices

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|--------------------------------|-----------------------------|------------|----------------------|--------|------|
| | | B | Std. Error | Coefficients Beta | | |
| 1 | (Constant) | .670 | 5.420 | | .124 | .002 |
| | Knowledge Management Practices | 1.516 | .089 | .776 | 17.117 | .000 |

a. Dependent Variable: Innovative Service Delivery

Regression

| Model | Variables Entered | Variables Removed | Method |
|-------|--|-------------------|--------|
| 1 | Knowledge Management Practices, Digital Literacy Skills ^b | | Enter |

a. Dependent Variable: Innovative Service Delivery

b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .801 ^a | .641 | .638 | 20.70527 |

a. Predictors: (Constant), Knowledge Management Practices, Digital Literacy Skills

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1 | Regression | 148003.770 | 2 | 74001.885 | 172.616 | .000 ^b |
| | Residual | 82740.720 | 193 | 428.708 | | |
| | Total | 230744.490 | 195 | | | |

a. Dependent Variable: Innovative Service Delivery

b. Predictors: (Constant), Knowledge Management Practices, Digital Literacy Skills

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|--|-----------------------------|------------|----------------------|---|------|
| | | B | Std. Error | Coefficients Beta | | |

| | | | | | | |
|---|--------------------------------|-------|-------|------|-------|------|
| 1 | (Constant) | 5.125 | 5.306 | | .966 | .005 |
| | Digital Literacy Skills | .347 | .075 | .378 | 4.628 | .000 |
| | Knowledge Management Practices | .888 | .160 | .454 | 5.556 | .000 |

a. Dependent Variable: Innovative Service Delivery

Regression

| Model Summary | | | | |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .780 ^a | .608 | .598 | 21.80952 |

a. Predictors: (Constant), Socio-emotional literacy skills, photo-visual literacy skill, reproduction literacy skill, information literacy skill, branching literacy skill

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 140370.033 | 5 | 28074.007 | 59.022 | .000 ^b |
| | Residual | 90374.457 | 190 | 475.655 | | |
| | Total | 230744.490 | 195 | | | |

a. Dependent Variable: Innovative Service Delivery

b. Predictors: (Constant), Socio-emotional literacy skills, photo-visual literacy skill, reproduction literacy skill, information literacy skill, branching literacy skill

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. |
|-------|---------------------------------|-----------------------------|------------|-----------------------------------|--------|------|
| | | B | Std. Error | | | |
| 1 | (Constant) | 2.601 | 5.416 | | .480 | .032 |
| | photo-visual literacy skill | 1.217 | .476 | .251 | 2.560 | .011 |
| | reproduction literacy skill | -.507 | .459 | -.121 | -1.105 | .271 |
| | branching literacy skill | 1.518 | .528 | .368 | 2.874 | .005 |
| | information literacy skill | .044 | .479 | .011 | .092 | .927 |
| | Socio-emotional literacy skills | 1.324 | .352 | .318 | 3.766 | .000 |

a. Dependent Variable: Innovative Service Delivery

Regression

| Model Summary | | | | |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .784 ^a | .615 | .609 | 21.50983 |

a. Predictors: (Constant), Knowledge application/use process, Knowledge creation, Knowledge sharing

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|-----|-------------|---------|-------------------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 141911.339 | 3 | 47303.780 | 102.240 | .000 ^b |
| | Residual | 88833.151 | 192 | 462.673 | | |
| | Total | 230744.490 | 195 | | | |

a. Dependent Variable: Innovative Service Delivery

b. Predictors: (Constant), Knowledge application/use process, Knowledge creation, Knowledge sharing

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. |
|-------|-----------------------------------|-----------------------------|------------|-----------------------------------|-------|------|
| | | B | Std. Error | | | |
| 1 | (Constant) | 4.645 | 5.383 | | .120 | .005 |
| | Knowledge creation | 3.026 | .621 | .487 | 4.877 | .000 |
| | Knowledge sharing | .896 | .559 | .169 | 1.603 | .111 |
| | Knowledge application/use process | .862 | .434 | .166 | 1.989 | .048 |

a. Dependent Variable: Innovative Service Delivery

DIGITAL LITERACY SKILLS, KNOWLEDGE MANAGEMENT PRACTICES AND INNOVATIVE SERVICE DELIVERY IN UNIVERSITY LIBRARIES IN NORTH - WEST, NIGERIA

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