

**INSTITUTIONAL FACTORS AND SOCIAL MEDIA USE AS CORRELATES OF  
SERVICE DELIVERY AMONG LIBRARIANS IN UNIVERSITIES IN  
SOUTHERN NIGERIA**

**BY**

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## ABSTRACT

Library service delivery is aimed at supporting teaching, learning and research in universities. However, reports have shown that service delivery among librarians in universities in Southern Nigeria is ineffective. Previous studies largely focused on availability and adequacy of library resources with little emphasis on institutional factors and social media use among librarians for service delivery. This study was, therefore, designed to investigate institutional factors (library policy, infrastructure, environment, Information and Communication Technology (ICT) skills and funding) and social media use as correlates of service delivery among librarians in universities in Southern Nigeria.

The study was anchored to Media Richness, Uses and Gratifications and Amenta and Ramsey's Institutional theories, while the correlational design was adopted. The 85 universities (federal - 17, state - 23, private - 45) across the three Southern geo-political zones in Nigeria: South-east, South-south and South-west and 754 librarians were enumerated. The instruments used were Service Delivery ( $r=0.94$ ), Institutional Factors (Library Policy - 0.97, Infrastructure - 0.89, Environment - 0.85, ICT Skills - 0.96 and Funding - 0.78) and Social Media Use ( $r=0.93$ ) scales. Data were analysed using descriptive statistics, Pearson's product moment correlation and Multiple regression at 0.05 level of significance.

Respondents' age was  $46.3\pm 11.3$  years, while their academic qualifications were Ph.D. (15.0%), MLS (66.0%), M.Inf. (4.0%), M.Phil. (2.0%) and PGD (13.0%). Respondents' work schedule were acquisition (9.3%), cataloguing (23.8%), circulation (17.8%), digital (0.9%), e-resources (4.0%), faculty (7.2%), institutional repository (2.2%), reference (6.8%), readers' services (12.1%), serials (9.3%) and systems (6.6%). Their work experience spanned 1-5 years (22.0%), 6-10 years (33.0%), 11-15 years (18.0%), 16-20 years (11.0%), 21-25 years (6.0%), 26-30 years (4.0%) and 31-35 years (6.0%). The main library services rendered were library orientation (70.7%), library education (68.7%) and reference (64.3%). Service delivery was through conventional (71.0%) and virtual (34.4%) methods. WhatsApp (62.0%) and Facebook (58.0%) were mostly used by the librarians for service delivery. There was a significant positive relationship between library policy ( $r=0.65$ ), infrastructure ( $r=0.51$ ), environment ( $r=0.71$ ), ICT skills ( $r=0.67$ ), funding, ( $r=0.82$ ), social media use ( $r=0.17$ ) and service delivery. Institutional factors and social media use ( $R=0.75$ ;  $F=115.71$ ;  $\text{Adj. } R^2=0.56$ ) jointly predicted service delivery and accounted for 56.0% of its variance. Library policy ( $\beta=0.02$ ), infrastructure ( $\beta=0.02$ ), environment ( $\beta=0.02$ ), ICT skills ( $\beta=0.02$ ), funding ( $\beta=-0.07$ ) and social media use ( $\beta=0.75$ ) relatively contributed to service delivery.

Library policy, infrastructure, environment, ICT skills, funding and social media use influenced service delivery among librarians in universities in Southern Nigeria. These factors should be improved by the university management, while the use of other social media platforms by librarians should be increased for optimal service delivery.

**Keywords:** Library infrastructure, Social media use, Library services, Librarians in Nigerian universities

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## **DEDICATION**

This thesis is dedicated to Almighty God who made it possible for me to complete this research successfully.

## CERTIFICATION

I certify that this work was carried out by TITILAYO COMFORT ILESANMI (Matric. Number 97580) in the Department of Library, Archival and Information Studies, Faculty of Education, University of Ibadan, Ibadan, Nigeria.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the study**

University libraries serve as the hub and knowledge bank for teaching, learning and research. Primarily, the essence of university libraries is to offer information services and support the vision and mission of the parent institutions. University libraries are expected to build their collections in print and digital formats in order to provide services to the community which they serve. Adequate provision of the facilities to support library activities and the maintenance is vital to basic library service delivery. In university libraries, service delivery involves document delivery, library orientation, library updates, reference service, Selective Dissemination of Information (SDI), charging and discharging, user registration and etcetera to the community of users (staff, students and researchers).

University libraries are the backbone of all programmes run by the parent institutions. University libraries are the major players to National Universities Commission's approval for running any programme in universities in Nigeria. The standard practice is that the library component must score 70 per cent and above before a programme could be accredited by the National Universities Commission (NUC), hence the university management is expected to invest in their library. In order to gain accreditation, university libraries should cater for print, digital and other formats of information resources for different programmes to promote education, learning and research for development, create a conducive environment for study, relaxation and render timely information services to staff and students. University libraries are also the manager of institutional intellectual outputs through which greater visibility, access, use and posterity are enhanced with the aid of Institutional Repositories (IRs). There can be no good university without a standardised university library that adequately caters for the information quest of the staff and students, yet physical and virtual library patronage has been low. Therefore, in order to meet the information needs of staff and students, library services should be delivered to users regardless of time and location.

Library service delivery can be referred to as the act of providing solicited and unsolicited useful information to the end users through traditional, virtual means of communication or both by librarians. Most universities in Nigeria started with conventional library service delivery. However, there has been a paradigm shift to virtual service delivery

for timely information dissemination (Ola, 2010). The role of librarians in library service delivery therefore remains active and continuous in this information age where there is heavy reliance on hybrid library system. A hybrid library system entails the combination of both conventional and modern library systems.

Conventional methods involve the use of display board, shelves, notice boards, flyers among others for service delivery; while modern methods involve the use of e-mail, website and emerging technologies such as social media for service delivery. Professionals in the library are, therefore, expected to attend to staff and students' information quest as well as supporting teaching, research and community service. Librarians as trained personnel render services through both conventional and modern methods to the university community in order to meet their information needs. They use different types of communication channels such as notice boards, emails, letters, and social media networks among others to communicate, collaborate and share information with clients.

The application of Information and Communication Technologies (ICTs) in library information resources and services has enhanced performance of library functions especially service delivery. University libraries have embraced the application of ICTs owing to its enhancement of provision of timely information dissemination to users. This, according to Abubakar (2011), would make university library services to experience a tremendous change towards effective service delivery. Provision of ICTs such as computers, smart phones, the Internet and software have paved the way for complementing conventional method of service delivery. The availability of facilities such as printer, computers, mobile phones, photocopy machine, and laptops could improve the library services rendered to the users in tertiary institutions (Ajayi, Shorunke and Akintola 2013). The use of different library software such as InMagic database and KOHA with the aid of computers and the Internet has also facilitated improved methods of service delivery to the users in terms of easy and timely search of the library holdings.

Libraries could make their holdings visible and searchable online in form of Online Public Access Catalogue (OPAC) without users being physically present in the library. Users could receive library notices in form of alerts at their comfort zone about library updates irrespective of their location. Users could search electronic databases, download, print and send files as attachments into their electronic mail (e-mail), export to reference managers such as Mendely, and Zonta. Reservation of library materials could be made by library users through telephone / mobile calls, text messages, and e-mail. Inter-library lending on behalf of the users could be achieved quickly and with ease through the use of ICTs.

Library services could be delivered either through conventional or modern methods. One of such services is current awareness service. Current awareness services refers to informing the library users (physical and virtual) about latest information about the contents of newly acquired books, journals and other resources in the library. Innovative, dynamic and adequate communication technologies are required to render current awareness services in the information age (Abubakar, 2011). Librarians engage in document delivery service. This involves sending fulltext file(s) and images to clients based on the fact that such document or image is for research purpose. Electronic resources service is a form of notifying the university community of the different electronic databases that could be explored for their teaching, learning and research.

Exhibition is another approach to service delivery to the university community. It involves the display of the collection of a particular writer, author, culture of a particular place, etc. for information, research and leisure purposes. Delivery of images or photos is a service that requires gathering of images on a particular subject, event and history which could be managed in a conventional way through film negatives, microfilms and photos while in the modern methods through image gallery such as Coppermine and Flickr for wider visibility, access and use. Reference service is one of the ways in which information quests are met.

Reference service entails handling of reference queries of users by librarians using the physical and electronic resources within their disposal (Ola, 2010). In a conventional mode, users usually visit the physical library on reference queries but with the presence of ICTs, such queries are attended to through online help desk. This has enhanced timely response to users' information needs. The librarian is saddled with the responsibility of rendering services such as informing the lecturers, students and researchers and other staff of their rights and obligations to the library on registration, reservation, loans, over dues, charges, and latest library development and etcetera.

Selective Dissemination of Information (SDI) service entails service delivery to selected clients. Through the lecturers' profiles which include area of subject specialisation, librarians are able to render SDI. With the lecturers' background information, related resources are delivered directly to the staff in order to keep them abreast of latest developments in their disciplines. Request for acquisition of library resources is always sought from the staff and students of the university community. The librarian sends out recommendation form to capture their information needs in the process of acquiring new information resources.



Hanson and Haridakis (2008) and Oyeniran and Olajide (2015) opined that user centered approach should be recognised as user submissions could improve library service delivery. Institutional factors such as library policy, infrastructure, environment, ICT skills and funding are indicators that could affect library service delivery. These indicators can be explored to enhance library service delivery. Amenta and Ramsey (2010), Babalola, Adeniji, and Udoudoh (2013) established that institutional factors such as policy could affect service delivery in university libraries and other organisations.

Institutional factors are indices that could impact on organisation's vision and mission positively or negatively. One of the institutional factors that could affect service delivery in university libraries is library policy. Policy could be written document or white paper that constitutes the regulations guiding particular processes, procedures or activities of a particular subject matter. Library policy is a regulation that guides the activities and services of a library. It is expected to be precise as a working guide for effective service delivery by librarians. Librarians should ensure that law and order are strictly adhered to when carrying out their duties. Thus, library policies should be established and communicated to the parties concerned in order to prevent the breach of regulations that guide service delivery and keep good customer relations (Smart, 2013). Library policy should be reviewed from time-time to reflect dynamic changes that could positively improve library service delivery. Another institutional factor is the adequacy of infrastructural facilities.

Infrastructural facilities are very important factors that could strengthen service delivery in university libraries. Infrastructural facilities such as Internet connectivity, bandwidth, computers and Information and Communication Technologies (ICTs) devices should be adequately provided to ensure excellent university libraries service delivery. Ezeani (2011) posited that adequate provision for infrastructural facilities should be given paramount importance to enhance effective library service delivery in the universities in Nigeria. Another infrastructural factor that is vital to service delivery is electricity supply. Babalola, Adeniji and Udoudoh (2013) confirmed that the role of steady electricity supply cannot be over emphasised in effective library service delivery. The need for constant electricity supply is essential to library service delivery in Nigerian universities. ICTs facilities and Internet-based tools require constant electricity supply to perform optimally; hence, its supply must be adequate as shortage of power supply could negatively affect service delivery.

The findings of Adedoyin (2005) showed that adequate infrastructure such as the Internet and computers were of necessity for effective service delivery. Ejedafiru (2010) identified poor infrastructural facilities as one of the major issues of inefficient resource sharing service among the four Nigerian universities studied. Eze and Uzoigwe (2013) further confirmed that lack of infrastructural facilities such as computers in universities in Nigeria adversely affected effective service delivery. Adequate provision of such facilities could enhance service delivery in university libraries. The environment of the library is yet another factor that could affect service delivery among university libraries.

The environment refers to the nature of the library settings in form of space and facilities that are in place where services are rendered. They include office facilities such as comfortable furniture, good lighting, and functional air-conditioner. Eze and Uzoigwe (2013) argued that conducive environment should be established for librarians to carry out their activities in Nigerian universities which in turn would promote effective service delivery.

Funding is another factor that could affect service delivery. Adequate and timely funding should be given priority to enhance the delivering of effective services in university libraries. Literature showed that funding of university libraries is dwindling globally and should be increased to meet the present age users' needs for innovative service delivery (Ubogu and Okiy, 2011; Anasi and Ali, 2012; Eze and Uzoigwe, 2013; and Ishola, 2014). Funding could affect quality of service delivery. Inadequate funding has been reported to pose negative effect on university libraries service delivery in Nigeria (Okiy, 2005). It has become difficult to maintain and improve upon service delivery in many university libraries because of inadequate funding especially in public universities due to government's subvention which has not been adequate to cater for their needs.

In the case of private universities, funding of the library depends on the amount approved by the founder and board of trustees which is usually inadequate to cater for the needs of the library (Okiy, 2005; Zaid, 2008; Ola, 2011; Abubakar, 2011). Library funds are inadequate especially in the developing countries (Ishola, 2014; Ahenkorah-Marfo, and Osei-Boadu, 2013). That is why libraries solicit for funds and facilities from organisations and individuals. Therefore, librarians should not be incapacitated as a result of inadequate funding on the part of universities management for optimal library service delivery in this information age. Funding as one of the institutional factors could jeopardise librarians' service delivery in university libraries if adequate fund is not allocated. Another considered

institutional factor is the Information and Communication Technology (ICT) skills of librarians in the university system.

Librarians in the universities should be skillful in the use of modern day information sharing platforms such as social media for library image building and effective service delivery. Over the years, training received by information professionals tends to be outdated compared to present age library users and their expectations from the library in terms of services offered and mode of communication (Alabi, Nduka and Olatise, 2012). Thus, librarians' skills should be updated regularly to reflect innovative initiatives towards service delivery in the university libraries.

Upcoming educated professionals are also expected to have acquired relevant skills in this information age to deliver various library services. Anyaoku, Orakpor and Ezejiolor (2012) and Aina (2014) stated that librarians must update themselves to avoid being irrelevant as technologies change how librarians perform their duties. Hence, there should be regular training for librarians in order to keep pace with the rapid changes experienced in technological advancement for library service delivery. This development, therefore, facilitated the adoption of social media in fostering effective service delivery.

Social media are channels of communication that allow real time communication among group of people. Tench and Jones (2015) referred to social media as real-time channels of communication such as Facebook which aids audio, visual and video information contents and sharing. They are computer and mobile phones mediated tools that make people interact and share information in text, visual, audio, and video forms in an online networking environment via the Internet (Tench and Jones, 2015).

Social media are means of communicating, interacting and contributing to the contents of issues on any of the social media platforms. Bolton, Parasuraman, Hoefnagels, Migchels, Kabadayi, Gruber, Loureiro and Solnet (2013) defined social media as any online service through which users can create and share a variety of content. Social media have provided a new paradigm through which people could experience real time communication on multiple platforms simultaneously as well as access to platform contents for onward distribution. (Hanson, Haridakis, Cunningham, Sharma, and Ponder, 2010; Levy, 2008; Papacharissi, 2000; Spigel, 2009).

Social media are ICTs compliant because their use involves the application of ICTs devices and connections such as computers, mobile devices and the internet. They require the use of computers, smart phones, software, the Internet and electricity to communicate and interact with librarians and library users. Social media operate on platforms/tools such

as Facebook, WhatsApp, Twitter, 2go, Blogs, Delicious, Flickr and Wikis. The favourite Social Networking Sites (SNS) such as Facebook, YouTube and MySpace came to being over a decade (Hanson, Haridakis, Cunningham, Sharma, and Ponder, 2010). Social media have become worldwide channel of communication in all spheres of life (Chawner and Oliver, 2013; Baro, Idiodi and Godfrey, 2013). The application of social technologies for the delivery of different services in any organisation, especially in institutions of higher learning has been embraced globally (Guy, 2012; Moise and Cruceru, 2014). There is need for librarians to use social media for library service delivery especially in tertiary institutions in Nigeria.

In the universities, librarians develop themselves and embrace the use of Facebook, MySpace, Ning, Blogs, Wikis, LinkedIn, YouTube, Flickr, and Library Thing for delivering library services to the users. They are used for new acquisitions, library updates, and selective information dissemination, among others. The application of social media tools by librarians for service delivery would depend largely on the librarians' knowledge level of the tools (Ezeani and Igwesi, 2012). Librarians' use of social media to deliver library services would depend on types of social media known to them. There are different purposes for which social media could be used which include informal, formal or both. Informal use of social media platforms entails interaction, communication, sharing of information among family members, friends, groups and individuals. Social media use by librarians for formal purposes involves presence of corporate entities on social media platforms for information sharing, updating, collaborating, and marketing services, among others, to the immediate community as well as larger society.

Social media application could make for prompt library services between the library and the users which in turn would strengthen the library and the users' relationship. Social media creates dynamic environment whereby anytime anywhere, users can get in touch with the library as well as the librarians. The use of social media could enhance quick delivery of library services to the users (Akporhonor and Olise, 2015). It also encourages feedback and real time online engagement (Mishra, 2008). Social media use saves library users time, money, and travels especially when users are far away from the physical library (Stephens and Collins, 2007; Aras and Colaklar, 2015).

With the use of social media on the part of the library, the influx of library users into the library could reduce as majority of the users may want their enquiries responded to virtually. Social media use could also reduce the cost and quantity of stationery being used in the process of handling service delivery by librarians in the conventional method. Staff

and students could receive timely dissemination of information, real time communication with the librarians and receipt of quality library services through different platforms and formats.

Librarians used blogs to disseminate both professional and personal information to their users within and outside the community they are serving (Aharony, 2009). There was a notable level of awareness and understanding of weblogs among librarians in academic, school, special, public and private libraries in Nigeria (Adeleke and Habila, 2012). The high level of awareness and knowledge of social media by librarians would lead to its use for library service delivery.

Low level of use of social media and inadequate institutional factors could affect effective service delivery by the librarians. The presence of institutional policy, good infrastructural facilities such as the Internet services, computers, mobile phones and other devices could enhance service delivery. Further, constant electricity supply and environmental facilities such as good lighting, ventilation, and furniture could engender effective service delivery in any university library setting. Some studies have examined institutional factors (policy, infrastructural facilities and funding) and social media use globally (Linh, 2008; Maness, 2006; Bosque, Leif and Skarl, 2012; Saleem, Aly, and Genoni, 2015) but they have not addressed them as correlates of service delivery among librarians in the universities. This study has investigated the situation in Southern Nigeria.

The present paradigm shift of information services indicates that social media is relatively being embraced by librarians in many African university libraries (Makori, 2012). Social media application in advanced countries like Australia, United Kingdom and United States of America for service delivery have shown the need for university libraries in the developing countries to embrace the use of social media to improve service delivery (Makori, 2012). There is a gap to be filled in literature on service delivery as related to institutional factors and social media use especially in the university libraries in Southern Nigeria.

The dearth of literature on service delivery with the use of conventional and modern methods among librarians in Nigerian universities is a clear indication of the need for research to enlarge the understanding of university libraries service delivery to fill the knowledge gap. With these claims, this study has investigated institutional factors and social media use as correlates of service delivery among librarians in universities in Southern Nigeria.

## **1.2 Statement of the problem**

Public and private libraries in tertiary institutions are established to render relevant and current information services to support teaching, research and learning in the institutions. The primary aim of contemporary library service is to deliver timely, relevant and quality library and information products and services to users. Efficient service delivery with the use of ICTs in university libraries has also been recognised to have effect on teaching, learning and research. It is however observed that despite the huge investment made by the university stakeholders in Nigerian university libraries, conventional and virtual libraries patronage in recent time was not encouraging. The low patronage of the library resources could be as a result of a number of factors which include some of the institutional factors and advancement of ICT which have contributed to the use of social media. Literature and observation have also revealed that some institutional factors such as library policy (rules and regulations guiding library services), infrastructure (availability of ICTs), conducive working environment, ICT skills and funding (finance) could affect effective library service delivery.

Another factor that could affect information service delivery is the use of social media. Social media are expected to provide the stakeholders with the opportunity of participating and relating online information creation and use. Social media tools such as Facebook, Twitter, Blogs, RSS Feed, Whatsapp, YouTube, Flickr and Pinterest provide means of creating and sharing images, documents and real time communication between librarians and library users. Despite this assertion, the preliminary investigation of the researcher indicated that most university libraries in Nigeria are yet to optimally harness the use of social media in facilitating effective library service delivery. Furthermore, not much attention has been paid by researchers' to the inadequacy of institutional factors in enhancing effective information service delivery. To this end, the essence of the existence of libraries and returns on investment made by university stakeholders could be jeopardised. Therefore, this study examined the relationship between institutional factors and social media use and their influence on service delivery among librarians in universities in Southern Nigeria.

### **1.3 Objectives of the study**

The main objective of the study is to investigate institutional factors and social media use as correlates of service delivery among librarians in universities in Southern Nigeria.

The specific objectives are to:

- i. identify the types of library services delivered to users among librarians in universities in Southern Nigeria;
- ii. determine the mode of library service delivery among librarians in universities in Southern Nigeria;
- iii. ascertain the frequency of library service delivery among librarians in universities in Southern Nigeria;
- iv. ascertain the institutional factors (policy, infrastructure, environment, ICT skills and funding) affecting service delivery among librarians in universities in Southern Nigeria;
- v. examine the types of social media used for service delivery by librarians in universities in Southern Nigeria;
- vi. ascertain the frequency of social media use among librarians in universities in Southern Nigeria;
- vii. determine the relationship between institutional factors (policy, infrastructure, environment, ICT skills and funding) and service delivery among librarians in universities in Southern Nigeria;
- viii. determine the relative contributions of institutional factors and social media use to service delivery among librarians in universities in Southern Nigeria;
- ix. determine the relationship between institutional factors and social media use among librarians in universities in Southern Nigeria;
- x. determine the relationship between social media use and service delivery among librarians in universities in Southern Nigeria;
- xi. determine the correlates of institutional factors and social media use on the service delivery among librarians in universities in Southern Nigeria; and
- xii. identify the challenges to effective service delivery among librarians in universities in Southern Nigeria.

#### **1.4 Research questions**

The following research questions were answered in the study:

1. What are the types of library service rendered to users by librarians in universities in Southern Nigeria?
2. What are the modes of library service delivery used by librarians in universities in Southern Nigeria?
3. What is the frequency of service delivery by librarians in universities in Southern Nigeria?
4. What are the institutional factors (policy, infrastructure, environment, ICT skills and funding) that affect library service delivery in universities in Southern Nigeria?
5. What are the types of social media used for service delivery in universities in Southern Nigeria?
6. What is the frequency of social media use for service delivery in universities in Southern Nigeria?
7. What is the relative contribution of institutional factors and social media use to service delivery among librarians in universities in Southern Nigeria?
8. What are the challenges to effective service delivery in universities in Southern Nigeria?

#### **1.5 Hypotheses**

The following null-hypotheses were tested in the study at 0.05 level of significance:

- H<sub>1</sub>: There is no significant relationship between institutional factors (policy, infrastructure, environment, ICT skills and funding) and service delivered by librarians in universities in Southern Nigeria.
- H<sub>2</sub>: There is no significant relationship between social media use and service delivery among librarians in universities in Southern Nigeria.
- H<sub>3</sub>: There is no significant multiple relationship between institutional factors (policy, infrastructure, environment, ICT skills and funding) and social media use by librarians for service delivery in universities in Southern Nigeria.



H<sub>4</sub>: Institutional factors and social media use will not significantly predict service delivery by librarians in universities in Southern Nigeria.

## **1.6 Scope of the study**

This study assessed institutional factors (policy, infrastructure, environment, ICT skills and funding) and social media use as correlates of service delivery among librarians in universities in Southern Nigeria. Southern Nigeria is located in the west-niger area of Nigeria where oil and natural mineral resources are predominantly located. There are more Christian who are scholars, artisans, business men and farmers in the zone. All the public (federal and state) and private universities in Southern Nigeria was covered in this study. As at the year 2018, there were 85 universities in Southern Nigeria (Federal – 17, State – 23, and private – 45). It focused on Southern Nigeria because a study of this nature is yet to be conducted holistically among all universities in this geographical zone. This geographical area was also studied because more universities especially private universities were concentrated in the Southern than the Northern Nigeria. The study focused on librarians as core staff that render services to university library users.

The types of social media tools such as Facebook, WhatsApp, Twitter, Blogs, RSS feed, Google+, Skype, LinkedIn YouTube, Flickr, Wikis etcetera used for service delivery were investigated. The study also covers institutional factors such as library policy, infrastructure, as well as Information and Communication Technology facilities (computers: laptop, desktop, smart phone, i-pad; internet; and bandwidth), electricity supply, environmental factors such as furniture, lighting, and ventilation, ICT skills and funding as they relate to delivering of library services in the 85 Southern Nigeria universities. Types, mode and frequency of service delivered to the users were assessed. The library services included: library materials recommendation, library registration, interlibrary loan, selective dissemination of information, document delivery, reference service, outreach service, prompt notification of library development, notification of institutional repository (IR) update, notification of new library resources arrivals, notification of online public access catalogue (OPAC) additions, images/photos service, library orientation, library education, translation, charging and discharging of library materials.

## 1.7 Significance of the study

Service delivery in the university libraries in Nigeria is gradually involving the use of innovative technologies such as social media tools to communicate and update library users. It has been observed that university library infrastructural facilities have not been adequately catered for and this has denied librarians effective service delivery through optimally application of institutional factors (policy, infrastructure, environment, ICT skills and funding) and communication channels to their users. However, university libraries are striving to improve upon their service delivery. The findings of this study would assist the university administrators and university policy makers to formulate and update policies that will support and improve service delivery by librarians to staff and students. Further, the study outcome would encourage the university administrators to improve on institutional factors that would support the use of social media by librarians for effective service delivery.

The outcome of this study would assist library administrators in giving support towards the monitoring and implementation of library policy in support of effective service delivery. The findings of this study would encourage the library management to regularly review the library policy to reflect necessary changes that would improve service delivery. It could also help on timely improvement of the library facilities whenever the need arises. Librarians' could be trained on the application of ICT skills in order to enhance their competencies for delivering services efficiently and effectively. The outcome of this study would also encourage better relationship among librarians, university staff and students for optimal use of the library resources and services. Finally the outcome of this study will contribute empirically to the body of knowledge in form of publications in learned journals.

## 1.8 Operational definition of terms

The following terms are explained in the context in which they have been used in the study:

**Institutional factors:** These are the library policy, infrastructure, environmental factors, ICT skills and funding that affect librarians' service delivery in universities.

**Environment:** They are library working facilities such as furniture, lighting and ventilation that facilitate conducive reading, learning and work spaces.

**Funding:** This is the process of allocating fund to execute library responsibilities.

**Information and Communication Technology skills:** Knowledge and use capacities of ICT related devices and software by librarians for service delivery.

**Infrastructure:** These are Information and Communication Technologies that enhance access to and use of technology based devices for service delivery.

**Library policy:** This is a written or unwritten document that states the rules and regulations guiding the activities of a library

**Librarians:** They are holders of, at least, a master degree in library and information science who work in university libraries.

**Service delivery:** Rendering of library and information services by librarians to the library users using conventional and modern methods.

**Social media:** These are online platforms of communication for sharing information, building contents and receiving feedback such as Facebook, Twitter, WhatsApp, Youtube, Flickr, Blog and Skype.

**Social media use:** This is the application of social media, Web 2.0, emerging technologies or social technologies to perform library and information services.

**University libraries:** These are academic libraries established to support teaching, learning and research in the universities.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents the review of literature under the following sub-headings:

- 2.2 Service delivery among librarians in universities
- 2.3 Social media use for service delivery among librarians in universities
- 2.4 Institutional factors affecting service delivery among librarians in universities
- 2.5 Institutional factors and service delivery in university libraries
- 2.6 Institutional factors and social media use by librarians
- 2.7 Social media use and service delivery in university libraries
- 2.8 Challenges of service delivery in university libraries
- 2.9 Theoretical framework
- 2.10 Conceptual model
- 2.11 Appraisal of the literature reviewed

#### **2.2 Service delivery among librarians in universities**

Universities are known for producing the manpower for the economy of the nation. For a successful completion of any university academic programme, the university libraries support both the students and staff to achieve their purposes by providing information resources and services. University libraries fundamental obligation is towards the university education system. Through the core functions of the library which include collection development, cataloguing, dissemination and preservation of information resources. Hanson and Haridakis (2008) opined that user centered approach should be recognised as users submissions could enhance library service delivery. There is need for librarians to know the background information of their users which could contribute immensely to effective communication and efficient service delivery to their users (staff, students, and researchers) Oyeniran and Olajide (2015).

According to Aina, (2014) library services include: library notices, Online Public Access Catalogue (OPAC), loans, reservation, registration, dissemination of information,

current awareness and reference service. Other library services are library orientation, information literacy programme, electronic resources, and outreach service etc. Outreach service involves rendering of services to the lecturers, students and researchers of the university that are outside the university community. Poynton (2009) submitted that outreach service is any library service that takes place outside the main library building to meet the needs of non-physical and non-traditional library users of the library. Users patronise libraries in order to get their information needs satisfied.

Husain and Nazim (2015), in a study on availability of facilities in Indian libraries asserted that librarians indicated that they used ICT to render services such as public access catalog, electronic resources, physical and web based reference service, online tutorials, web portal, automatic mailing alert and frequently asked questions. Eze's and Uzoigwe's (2013) study on library service provision by librarians in Nigeria revealed that services such as user education, user orientation, reference, the Internet, bibliographic, electronic databases, reprographic, interlibrary loan and exhibition and displays services were rendered to library users. In the same vein, Ishola (2014) asserted that the university libraries studied rendered translation, registration, interlibrary loan, bibliography, abstract and indexing, documentation, selective dissemination of information, current awareness, online reference, publishing, the Internet, television, CD ROM, reprographic, consultancy, email, printing, binding and renting facility services to users. Service delivered to the users could be through conventional, virtual or hybrid methods. Abubakar (2011) stated that library services are delivered to users conventionally or electronically.

Alabi, Nduka and Olatise (2011) investigated the types and mode of service rendered by professional librarians in tertiary libraries in Nigeria. The study employed a survey research design. The study's participants included 24 library professionals from 13 public and private higher institution libraries in the South-west Nigeria. Data were collected with the use of questionnaire. Data analysed were presented in frequency count, percentage and mean. Of the 24 questionnaires distributed, 20 were returned and found useful for the study. Findings of their study revealed that 6 were female while 14 were male. The vast majority of those who responded had eleven to fifteen years of work experience while the least had one to five years of work experience.

Alabi *et al.* (2011) study examined four library programmes. Their findings further showed that majority of the participants, 38 per cent indicated that they rendered library orientation, followed by 31 per cent who rendered library education programme; 23 attested to training on electronic resources while six per cent rendered library outreach programme.

Their study also listed thirteen mode of service delivery in which the participants indicated the mode being used for service delivery. It was found that Library Guides with highest percentage was the most regular method of service delivery among the university libraries studied. It was followed by 60 per cent; each of the respondents agreed to hands on practice with library users and face-to-face mode of service delivery. Furthermore, the authors revealed that 55 per cent of the participants never used Facebook and Twitter to deliver library services.

Adetimirin and Agboluaje (2011) conducted a study in Nigeria on kinds of services rendered to users and mode of service delivery. A survey method was adopted for the study. The population of the study was distance learning students and staff of National Open University of Nigeria (NOUN). Questionnaire and interview schedule were used for data collection. Data collected were analysed and presented using frequency counts and percentage. The authors' findings revealed that services such as print and electronic information resources and the Internet were provided. Their result further showed that the library disseminated information to their users on daily basis (41 per cent), weekly basis (21 per cent), monthly basis (12 per cent), rarely basis (19 per cent) and never basis (seven per cent).

Librarians deliver these services to their users by conventional means of communication such as noticeboards, fliers, paper adverts, bookshops, etc. Mbofung and Popoola (2014) opined that copies of journals contents pages and current awareness bulletins, among others are methods of information service delivery to the users by the information professionals. In Kavulya's (2004) study of two private and public universities in Kenya, it was found that among the means of communicating with university staff and students were library manuals and guides, brochures, notice boards, newsletters and Internet home pages. The results of their study also showed that brochures, newsletters and noticeboard were mainly utilised for service delivery.

Mbofung (2014) conducted a study on professional librarians' services in federal universities in Nigeria. Survey research method was used for the study. The population of the study was 429 professional librarians. Questionnaire was used for data collection. Data gathered was analysed and presented in mean and standard deviation. Twenty information service delivery, self-observation skills and development needs and strategies were examined. The author's findings revealed that most of the respondents rendered six-teen out of twenty services listed while fax, translation, microfilming and service delivered by post office were never rendered. Among the services rendered were selective dissemination of

information, reference and referral services, library education, online public access catalogue (OPAC), current awareness, information delivery by phone and email and electronic document delivery. According to Salt (2004), Griffith University delivers library services such as reference services, information literacy and computer support to their users through face-to-face, phone calls and web based channels.

Aharony and Bronstein (2014) conducted a study on Israeli librarians and found that they rendered information literacy programme service to their students and lecturers. They also found that social media use was relevant to information literacy programme delivery to the university community members, hence the need to redefine information literacy to include social media use for accomplishing the service delivery. Luo (2010) cited in Aharony and Bronstein (2014) reported librarians' use of social media to teach information literacy. Baro's and Zuokemefa's (2011) study of 36 university libraries in Nigeria revealed that libraries studied were involved in information literacy programmes ranging from library tours, orientation sessions, introduction to information resources and skills to optimally utilise them. Selective dissemination of information is a way of keeping the users informed of the latest updates on a particular subject.

In a study conducted by Rao (1993), it was found that selective dissemination of information service was rendered by the library to the Central Power and Research Station's staff in Khadakwasla, India. Ajala and Ojo (2011) confirmed document service delivery to the lecturers and students of the university studied in Nigeria for research purpose. The findings of their study further revealed that documents were delivered to the users as file attachment through their e-mail. In a study conducted by Das and Maharana (2015), the findings revealed that the three universities studied (Berhampur, Utkal, and Sambalpur) rendered current awareness services to their users. Their result showed that display of latest books and periodicals acquired, and publishers' alert through email were services rendered to the researchers. A high number of the researchers indicated awareness and the fact that they used the services.

Luo (2015) conducted a study on reference service to users at a Ghanaian university library. The study employed a survey research design, with a questionnaire serving as the data gathering tool. Findings revealed that reference service was being rendered in the university studied. The findings also showed that librarians exhibited the good quality of reference service delivery personality. However, it was submitted that librarians should intensify more effort at identifying and fulfilling users' information needs. Nnadozie (2016) carried out a study on information services provision to lecturers of some

tertiary institutions in Nigeria. The findings of the author's research established that librarians rendered services such as document delivery, document printing, data processing and retrieval, electronic resources downloads, email service, internet call service and institutional repository service to their users.

Madhusudhan and Nagabhushanam (2012a) conducted a study on web based library services in university libraries in India: an analysis of librarians' perspective. Twenty university libraries and librarians were studied. Structured questionnaire was used to collect data. Findings of the study revealed that numerous library services especially web based services were rendered by librarians in the twenty university libraries studied. Their findings also revealed that majority of the libraries in tertiary institutions are yet to fully optimise the use of their library website including the incorporation of social media to render library services. 90 per cent of the respondents agreed to receipt of document delivery services from the librarians, 65 per cent attested to electronic current awareness service, 45 per cent online reference service, and 40 per cent rendered electronic selective dissemination of information.

Bwalya (2014) investigated Internet based service provision in two public university libraries in Zambia. The study was conducted using survey research design. Librarians constituted the population of the study. Document analysis and interview were used for data collection. Data gathered was analysed and the results were presented in tables. Results showed that Copperbelt University had web based online public access catalogue (OPAC) for providing and updating the library users of their collections while University of Zambia did not have web based OPAC but had local area network (LAN) access which is accessible to their users. The two universities studied provided access to full text electronic resources on the Internet. The author also reported that the two university libraries did not render self-circulation service to users.

Anyaku, Orakpor and Ezejiolor (2012) posited that modern technologies should be applied to library services in order to remain relevant. He further stressed that capacity building of the librarians and motivation would bring the development. Adigun, Adegboro, and Amuda (2015), commenting on integrating social media into library service development, acknowledged that library services, especially reference service has changed paradigm from traditional method to web based method in higher education libraries. Reference service could be rendered by librarians through the traditional and virtual methods.

Cassidy, British, Griffin, Manolovitz, Shen and Turney (2011) conducted a study on application of emerging technologies for library service delivery. Their findings submitted



that librarians were among the early users of many information technologies with their presence on almost all information technologies such as social networks. They further opined that librarians must tailor their library service delivery towards their users' needs and population served. Therefore, users' information needs are timely attended to by librarians regardless of location. One of the means by which services can be delivered to the users is through social media (Rutherford, 2008). Mabawonku (2017) posited that library service delivery to the users is technology-driven and that many libraries have inclined toward the use of different technologies including computers, mobile applications and social media platforms to disseminate information regardless of the location of their users.

There is need for upgrading the skills and knowledge of librarians to meet the information needs of their clientele in the present information age. Uwaifor's (2008) study on the application of computers among library staff in some Nigerian public universities libraries revealed that majority of Nigerian academic libraries were yet to be fully automated, thus, many services were still being performed in the conventional method. The result of the study also reported that computer systems were used mainly to perform cataloguing activities. The findings revealed the need for periodic seminars and workshops on Information Technologies (ITs) use for the university library staff to enhance innovative service delivery.

Information needs of staff and students are being attended to online without being in the library physically. Eke and Ekwelem (2014) conducted a research on online reference service among information professionals in Nigeria and discovered that out of 500, some 311 respondents (62 per cent) were returned and contents analysed. The highest percentage, 59, of the respondents came from university libraries. They found that majority of the librarians 266 (86 per cent) were much aware of e-mail reference service and found it useful. They further found that many of the respondents had no knowledge of other online reference services mentioned.

Biranvand and Moghaddam (2013) reported that the practice of document delivery service to the university community members was low. The reasons adduced were lack of computers, scanners, copiers, faxes, and skills in network technologies among others inhibited the practice. In a study conducted by Ajala and Ojo (2011) in Nigeria on electronic document delivery, it was revealed that service was gradually developing at University of Ibadan. They further submitted that librarians should embrace the use of new technologies to create awareness for their effective use. However, recent studies have established a link between the use of social media and effective library service delivery.

Guy (2000) discussed means of developing a hybrid library system with reference to National Library of Scotland and found that emphasis must be laid on influence of adequate acquisition, retention, preservation and provision of access to print and electronic materials in order to facilitate efficient library services to users. Eze and Uzoigwe (2013) studied the place of academic libraries in Nigerian university education with a view of enhancing tertiary education for all initiative. The study specifically beamed its searchlight on different services offered by the university library in support of university education, factors posing challenges to higher institution libraries and approaches to enhancing adequate library and information services. Descriptive survey design was adopted to accommodate one hundred and thirty-two library professionals in seven university libraries (three federal and four state universities in the South-east Nigeria). Frequencies and percentages were used to analyse data collected through the questionnaire. Results revealed that majority of the university libraries rendered a variety of services to library users. Such services include reference, the Internet, interlibrary loans, library education, and information resources like textbooks, newspapers and magazines. Factors such as poor funding, inadequate facilities and low level of computer knowledge were reported to be some of the hindrances to achieving education for all initiative by the librarians.

Knepp, White and McCormack (2011) conducted a study on enhancing library services in United States Agency for International Development, Washington. Survey research design was adopted for the study. Online questionnaire was adopted for data collection. Over 300 respondents attended to the online questionnaire. Results showed that 81 per cent of the respondents indicated that the most popular service provided by the librarians was face-to-face and virtual reference. Closely followed service delivered by librarians was the update on their library collections as 80 per cent of the respondents indicated that they received update notification on latest additions to the library collection.

Tenopir, Sandusky, Allard and Birch (2013) analysed academic librarians and research data services (RDS) in United States of America and Canada. Survey research design was adopted to collect data for the study. Their findings indicated that 28 per cent of the respondents subscribed to provision of research data services as an integral part of their job responsibilities, 40.5 per cent indicated that they provided the services occasionally, while 31.5 per cent claimed that they never provided services to faculty, staff and students at all. The findings further revealed that 78 per cent of those whose research data services was an integral part of their job responsibilities, strongly agreed that they had the necessary skills, knowledge and training to provide RDS. Sixty-nine per cent of the librarians with

occasional responsibilities for RDS indicated that they had no skill, knowledge and training necessary to provide RDS services.

Musangi (2015) discussed emerging technologies adoption in libraries and the changing landscape of information services in academic libraries in Kenya. The author noted that libraries should incorporate emerging technology tools such as flickr, youtube, facebook and RSS feeds among others into the provision of services to their users. The author further opined that investment should be made into these emerging technologies so as to complement the conventional ways of service provision in academic libraries.

Cmor (2016) conducted a study on strategies for sustainable services in academic libraries in Singapore. Survey research design was adopted for the study. The findings revealed that unique strategies such as structured communication templates, daily programming and staff development training to support library service delivery could be implemented at Nanyang Technological University Libraries to enhance sustainable strategies. The findings also submitted that sustainability of these strategies is connected to good planning that would enhance day-to-day activities of the academic libraries as well as clarity of goals and actions.

### **2.3 Social media use for service delivery among librarians in universities**

Social media use has been embraced by people in all spheres of life including the professions. Social media tools are being used to communicate, share information among two or more people simultaneously on real-time basis. Monagle and Finnegan (2018) studied the use of social media by new library professionals in the United Kingdom and Ireland. The study also examined the relationship between professional capacity training and social media use by new professionals. Descriptive research design was adopted for the study. Online survey was used to collect data for the study. One hundred librarians were involved in the study. Different scales varying from three to seven point scale were used to measure research questions responses of the study. Findings of their study indicated that new library professionals used social media for continuous professional development. They also reported that 85% of the respondents indicated that they used social media for other purposes which included promotion of services provided by libraries. The authors' findings also revealed that all the respondents used Twitter, followed by Facebook as indicated by 50% of the respondents, Google+ 25% and LinkedIn 25% respondents indicated their usage. All the respondents indicated that they use social media based on the following reasons: cost

effectiveness, real-time communication regardless of location and communicating large number of people at same time within a short time.

Weerasinghe and Hindagolla (2018) adopted descriptive design to examine the use of social networks by academic librarians in Sri Lanka. Fifteen state universities and 124 librarians were involved in the study. Total enumeration was adopted for the study. Questionnaire (print and online) was used for data collection of the study. One hundred and sixteen (93%) response rate was recorded and found useful for the analysis. The findings revealed that 60% were female while 40% were male. Majority of the participants' age ranged were 31-40 years (36%) and 41-50 years (38%). Respondents with Master degree qualification were higher than doctoral degree holders (74% and 12%) respectively.

Furthermore, the results of the research showed that most participants (78.4%) indicated use of personal account social media in the workplace. It also revealed that larger per cent of participants (45%) had used social media for five years while 24% of the participants had applied social media for over six years. In terms of frequency of use, majority of the respondents (19.8%) indicated that they used social media tools only a few times in a week, 15% of the respondents used social media several times a day, 12% or the respondents used social media once a day, same percentage (10%) used social media a few times in a month and once a week, four per cent of the respondents used social media once a month while two per cent used social media according to their institutions guidelines. The respondents (65%) indicated that they had moderate experience of social media use, 19% of the respondents indicated low and 16% of the respondents had high experience of social media use. Their reports also showed that 53% of the respondents indicated that they had possessed adequate skills to use social media, 41% of the respondents indicated that they possessed low skills while six per cent claimed that they lacked the skill on the application of social media tools.

The findings by Weerasinghe and Hindagolla (2018) also submitted that the librarians used Facebook (90%), LinkIn (55%), Twitter (17%) and ResearchGate (eight per cent) in their workplace while five per cent do not use any social media. In terms of frequency of use, Facebook was found to be prominently used by the respondents (65%) among the social media tools identified. This was followed by LinkedIn used by 12% of the respondents. The authors' results also revealed that over 60% of the respondents claimed the use social media for professional and personal functions, only few librarians (nine per cent) used social media tools for professional purpose only whereas five per cent of the respondents used social media for personal purposes. Further majority of the respondents

(90%) used their university Internet to access social media, 23% of the respondents used personal data while 22% of the respondents had never accessed social media. Seventy-two per cent of the participants indicated that they applied social media without restrictions whereas 28% of the respondents indicated that there was placement of restrictions to social media utilisation in their workplace.

Zohoorian-Fooladi and Abrizah (2014) conducted a study on librarians' social media presence in Malaysian academic libraries. Their specific objectives were to identify types, purposes and problems of social media application by library professionals in three tertiary institutions in Malaysia. Descriptive research design was adopted for the study. Data was collected through focus group discussion which involved 22 librarians. Findings of the study revealed that Facebook was used by librarians in the three academic libraries studied. However, the results also revealed that the social media tools such as Blog, YouTube and Twitter were used at low level. Purposes identified for their usage were to improve library service and strengthen library users' relationships.

In a similar investigation conducted by Chu and Du (2012), librarians from 140 university libraries in Asia, North America and Europe (Japan, Germany, Korea, Taiwan, Singapore, Canada, China, Hong Kong, United States of America and the United Kingdom) were involved. Online survey method was used to collect data for the study. Response rate was 38 (27.1%). Findings of their study revealed that Facebook and Twitter (63%) each was found to be highly used by librarians among the eleven social media tools listed (Facebook, Instant messaging, Twitter, LinkedIn, Blogs, Wikis, Flickr, YouTube, Slideshare, Delicious and Issuu). Closely followed social media tools being used by the librarians in the study were Instant messaging (44.4%) and Blogs (26%). Other social media tools were used at less than 19% (Wiki – 18.5%, YouTube – 11%, Flickr – 15%, Slideshare – 7.4%, Delicious – 3.7% and Issuu – 3.7%). Their result also showed that they used social media tools for real-time enquiries with the library users and for information sharing among librarians. Years of experience of social media tools used by librarians were reported varied from one year to four years.

Hamad, Tbaishat and Al-Fadel (2017) looked at the role of social networks in enhancing the library profession and library services in University of Jordan and Al-Balghaa' Applied University. Survey research method was used for the study. The population comprised all the library staff in the two university libraries. Data was gathered with the aid of questionnaire. One hundred and sixty-five library personnel participated in the study while returned rate was 155 (93.9%). Findings revealed that 55 were male while 100 were female.

Results of their study revealed that Facebook was rated highly used among the librarians studied. For example, Jordan University Librarians used Facebook to library updates and events. Their findings also showed that majority of the respondents 83 (53.5%) had moderate experience of social media use while 72 (46.5%) had advanced experience. Out of 155 respondents, 144 (92.9%) indicated daily use of social media tools while 11 (7.1%) agreed to the weekly use of social media tools. However, the authors' findings showed that social media was yet to be fully explored for library service delivery rather more use was recorded against real time virtual communication among colleagues.

Huang, Chu and Chen (2015) conducted a study on librarians' use of social media for interactions with their users. Ten librarians and 1,753 students (English and Chinese speaking students) were involved in the study. Forty university libraries were used for the study. Twenty-one libraries were selected from English speaking countries while 19 selected from Greater China for the study. Mixed method was used for the study. Findings revealed that Facebook, Twitter and Chinese Weibo as social media tools used by their libraries. Eighteen university libraries used Facebook, 11 used Twitter and 11 used Weibo to communicate with their users. The authors' findings showed that social media was used for disseminating library events announcements and library latest additions in terms of online resources. Their study's result also reflected more Facebook and Twitter 'likes' and 'retweets' on one-to-many communication channels than one-to-one communication channels. Results of their investigation further showed that English speaking students used more 'likes' than their Chinese speaking students.

In New Zealand, social media adoption by librarians was examined by Anwyll and Chawner (2013a). Data were collected from 15 librarians through interview method. The results of their research showed that the main social media platforms used by the librarians to communicate with library users were Facebook and Twitter. In a study by Xie and Stevenson (2014) on the social media application in academic libraries, survey design was adopted for data collection. The results of the study showed that among the ten universities studied, three of them used social media tools such as Blogs, Facebook, Flickr, Pinterest, Podcasts, RSS feeds, social news websites, Twitter, and YouTube to render services to their clientele. Furthermore, findings revealed that the frequencies of social media use were indicated as hourly, daily, weekly, and monthly. The use of social media aimed at information generation, promote service, peer-to-peer connection, and share information.

Ndlangamandla, and Chisenga, (2016) examined social media use among librarians in the SADC region. Descriptive research design was adopted for the study. Data was

collected through an online questionnaire from 11 member countries: Botswana, Lesotho, Malawi, Mauritius, Namibia, South Africa, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe. Findings of the study showed that out of the 26 libraries that participated, 19 (73%) had social media presence on their library websites. Facebook was used by all the 19 university libraries studied, followed by Twitter used by 16 (84%) libraries and YouTube used by 11 (58%) libraries. Other social media tools used were Flickr by six (31%), Blogs by five (26.3%) libraries and Google Docs by four (21%) libraries. Their results also disclosed that the three majorly used social media tools were for library activities updates, sharing library general information and photo images. Social media tools were also found to be used for promoting library education, library orientation and training among others.

In Nigeria, a study conducted by Anyaoku, Orakpor and Ezejiolor (2012) on social media adoption indicated that the social media and the services have been embraced by the librarians in both developed and underdeveloped countries for library services. However, their findings recorded librarians' low awareness and use of social media platforms in Anambra State, Southeast Nigeria. The results further disclosed that half of the librarians studied (50.9 per cent) were not aware of Web 2.0 while some correctly understood the concept of Web 2.0. The result of their findings revealed that very low percentage of the respondents identified and used various social media platforms like Facebook, Blog, Wiki and RSS feed. None of the respondents had ever used Myspace and Twitter; 46.4 per cent of the respondents used Facebook and 28.6 per cent used blog for personal purpose. Seventy-five per cent of the respondents never posted on wiki pages. Ezeani (2011) studied librarians' use of ICT for service delivery in Nigeria. The author found that 22 per cent of the respondents used RSS feed, 45 per cent used Wikis, 40 per cent used blogs, 45 per cent used online videos, 34 per cent used social bookmarking, 32 per cent used virtual world and 19 per cent used podcasts for academic purposes.

In a research carried out by Opeke and Onuoha (2013) on the application of social media by librarians, the findings revealed that out of 259 respondents, 146 were female while 113 were male. The age brackets of the most respondents were 31-40 (93 per cent) and 41-50 (77 per cent). Majority of the librarians studied worked in the reference/readers services (74 respondents) followed closely by cataloguing section (64 respondents). Their findings also found that 154 (59.46 per cent) used online social networks while 105 (40.54 per cent) never used social media. Social media was reported to be used for socialising, exchange of photographs, to get updates from family members, locate experts within the library profession, get current information on the library profession, publishing library events (48.05

per cent), collaboration purpose, to get new ideas for research, find solution to work related problems, while 48.05 per cent of the respondents indicated the utilization of social media for delivering services such as publishing library events and 27.92 per cent of the respondents used it to interact with library users. The most useful social network for work related information as indicated by the respondents was NLA online forum and Facebook.

Esse (2013) submission on providing library services was that it is no longer the sole responsibility of the librarians as in the conventional method, but there is a shift towards library 2.0 that encourages interaction in terms of participation and collaboration between librarians and the library users. The author argued that blogs and wikis were useful tools for the delivery of library services and that all the respondents studied in Covenant University indicated very high level of expertise on the use of the browser. Majority of the respondents (83 per cent) had heard about Web 2.0 application such as social media while (56 per cent) respondents had heard and used social media. Few respondents indicated use of Facebook, Blogs, Twitter, Wikipedia, RSS feeds and Flickr. The result showed that librarians used blogs (67 per cent), social tagging (50 per cent), RSS feeds (50 per cent), instant messaging (72 per cent) for service delivery while all the respondents claimed not to have used podcast for service delivery before. Moreover, the research demonstrated that most participants indicated that training is a key factor to the enhancement of social media applications in Nigerian libraries.

Baro, Idiodi, and Godfrey, (2013) in their study on awareness and use of social media by librarians in university libraries in Nigeria found that social media tools such as Facebook was highly used by librarians while the least used social media tools were flickr, RSS feed, podcast and social bookmarking. Ofili and Emwanta (2014) asserted the use of Facebook as a tool for providing information services at the University of Benin Library, Nigeria. Forty-nine librarians and library officers were studied and it was found that all the respondents used Facebook to connect with peers and students; 41 (84 per cent) used the tool to get latest information from other members of the group; 38 (78 per cent) shared personal opinion with colleagues, 33 (67.35 per cent) asked questions, 31 (63 per cent) passed official information, and 23 (47 per cent) passed information to students. Their findings revealed that Facebook was applied to deliver library services such as current awareness, selective dissemination of information, instructions on how to use the library and provision of factual answers to queries. Majority of the respondents rated the services excellent and good while few rated them as fair.



In a similar vein, a study was carried out by Akporhonor and Olise (2015) on use of social media by librarians in Nigeria. Nine university libraries from three states in South-south Nigeria were involved. Descriptive research method was adopted for the study. Three hundred and four librarians constituted the population of the study while questionnaire was used for data collection. Their results revealed that Blog 188 (58.7%), 171 (56%) and Instant Messaging (106 (35.3%)) were the mostly used social media by librarians among fourteen social media tools listed. Their findings further showed that very few librarians used LinkIn (8%), RSS feed (3%) and Twitter (1.7%) while YouTube, Mash-up, Dig, Flickr, Podcast, Myspace and Plurk were not used at all by the librarians studied.

Quadri and Idowu (2016)'s study on the application of social media to disseminate information among librarians in three of the federal universities in Southwestern Nigeria revealed very high level of awareness of social media tools such as Facebook, Google+, Youtube, Twitter, Skype, LinkedIn and Blog out of twelve social media tools listed. Facebook – 68.7 per cent respondents and Google+ – 50 per cent respondents were revealed as highly used by librarians for information dissemination. Current awareness service – 73.3 per cent respondents, and reference services – 63.3 per cent respondents were indicated as services mostly provided with the tools while other services like library orientation and selective dissemination of information were averagely disseminated through the social media tools.

#### **2.4 Institutional factors affecting service delivery among librarians in universities**

Universities existence and their sustainability especially in the developing countries depend basically on institutional factors such as policy, infrastructure, environment, ICT skills and funding. There should be availability and regular updates of these institutional factors in order to effectively and efficiently perform as tertiary institutions. Weerasinghe and Hindagolla (2018) opined that policies that could support academic librarians performance should be prioritised but observed that absence of regular review of university policies has created gap in terms of application of innovative technology for service provision among the universities studied.

In developing countries like Nigeria, Adeyeye and Iweha (2005) examined the state of policy especially relating to ICT in Nigeria. They found that ICT policy has been in existence over 17 years ago. Their findings also revealed that the policy was established based on 16 objectives; readily availability of information technology resources, maximised its benefit in the area of providing global solution to ICT issues, to develop local contents

software packages, local manufacturer of IT hardware, maximised available IT infrastructure and strengthen national identity among others. The authors result also showed that the policy lacked periodical review which had affected the pace at which ICT is developed, hence the need for regular review of policy.

Husain and Nazim (2015) studied ICT infrastructure in India academic libraries. Descriptive research method was adopted for the study. Purposive sampling technique was applied to select 30 out of 42 central university libraries in India. University librarians only were the population of the study. Questionnaire was used to collect data for the study. Fifteen questionnaires were duly filled and returned. This implied that 50% response rate was recorded. Their results revealed that infrastructure was an important integral of achieving effective modern service delivery in universities studied. Use of ICT infrastructure was applied to most of the library functions such as library catalogues, circulation activities, acquisition, reference and other information services as over 50% of the respondents indicated ICT use for the above mentioned services.

Environment is another factor that could determine librarians' level of contribution to service delivery. A conducive working environment should be paramount to physical library space design which would in turn enhance service delivery. Castiglione (2008)' s report showed that librarians who worked in a conducive environment delivered services effectively and efficiently. In a similar study conducted by Ali, Chua and Lim (2015), they investigated employees' physical environment comfort in relation to their work performance. Room temperature, relative humidity, luminance level, work related to writing, reading, use of computer and self-movement were assessed. Descriptive survey method was adopted for the study. Three research universities and 90 respondents were involved in the study. Closed-ended questionnaire was adopted for data collection. Their findings showed high correlate of room temperature, lighting and relative humidity to work performance. Their submission revealed that comfortable work environment determines effective service delivery in universities studied, therefore the three universities studied work environment condition were considered fairly good.

Husain and Nazim (2015) study asserted that in the area of data management, the respondents 14 (70%) indicated that they received training to perform the function. Other ICT skills related functions were indicated by the respondents to be low due to lack of training; content management 12 (60%), Metadata management 13 (65%), web development 15 (75%), hardware maintenance 14 (70%) and computer programming 17(85%). Handling library service delivery entails application of ICT skills which librarians should possess.

In a similar study conducted in India by Mathew and Baby (2012), the study investigated librarians' skills, level of awareness and application of ICT to library services, evaluate their attitude to ICT applications, find out challenges encountered and proffer solutions. Survey research method was used for the study while questionnaire was used for data collection. The results revealed that majority of the participants were not involved in the application of ICT for library services. Furthermore, their results revealed that majority of the respondents were of moderate ICT skills. Fifty per cent of the participants were skilled in electronic resources management, 41% participants were skilled in Linus operation, 23 % were skilled in institutional repository activities, 22% of the respondents had computers maintenance skills, 17% of the participants were skilled in software development and 14 % of the participants could handle metadata. Further, their findings reported that acquisition of necessary ICT skills would tremendous benefits library and information profession. Inadequate training in ICT applications and lack of infrastructural facilities were identified as impediment to achieving desired ICT skills by the information professionals studied.

Mutula (2001) examined the funding of universities information services in Eastern and Southern Africa. The findings posited that university libraries in Africa should be adequately supported with funds that will enhance their functions to their users. He further submitted that other sources of funding like fundraising and grants could improve their finances in order to be abreast of information and communication technologies applications. Though Mutula (2001) observed that the universities studied had continued to experience declined funding which in turn had negatively affected effective service delivery.

In Nigeria, a study by Inyang and Igwechi (2015) examined public university libraries funding. Survey research method was used for the study. Purposive sampling technique was adopted to determine sample size of 105 librarians who were involved in the study. Questionnaire was adopted for data collection. Their results showed that library facilities provision and maintenance, provision of information resources and human capital sustainability should be adequately funded in order to maximise the provision of library services. However, the authors' finding revealed that library service delivery in public universities in Rivers State was not adequately funded. Their study recommended that other sources of funding should be explored to support government funding. Institutional factors such as policy, infrastructure, environment, ICT skills and funding are important components that contribute to universities library service delivery.

## **2.5 Institutional factors and service delivery in university libraries**

All university libraries are propelled to meeting the information age service delivery. In achieving effective library service delivery, adequate provision for institutional factors such as library policy; infrastructural facilities like Information and Communication Technologies: the Internet, bandwidth, computers, laptops, mobile phones, electricity supply; environmental facilities such as conducive office; ICT skills and funding are paramount. Availability of library policy that would cater for adequate institutional factors and guide the use of social media to deliver services could set a standard that would give effective result between the librarians and the university staff and students. Carr and Maier (2013) submitted that every institution should have a policy in place that must be known to both parties and their compliance should be adhered to. By doing this, necessary facilities could be provided by management of the university and libraries which in turn would enhance optimal service delivery and uphold their prestige.

Akporhonor and Endouware (2016) study found out that effective library service delivery could be achieved majorly through library policy that embedded social media use guideline which is lacking among university libraries studied. Other institutional factors identified for effective library service delivery were computers and internet facilities. University library policy requires periodic review to cater for dynamic service delivery to the university staff, students and researchers alike.

In a study by Owusu-Ansah, Gontshi, Mutibwa and Ukwoma (2015) on rules and regulations that guide library services provision and application of social media found that the presence of formal library policy enhanced social media use among the information professionals in Rhodes University, South Africa while other university libraries studied in Uganda, Ghana and Nigeria indicated that lack of social media policy made use of social media to render library services ineffective. Hamid Chang, Waycott and Kurnia (2011) reported that the presence of e-learning policy encouraged the use of social media for learning support in Malaysian higher institutions; hence, the application of social media for communication, teaching and learning was highly encouraged. However, Facebook use was banned in some of the universities studied during normal official hours except break and after office hours. A study by Abidinet, Kiran and Shah (2013) found no definite policies on social media use for the services rendered.

Studies have revealed that library policies have relationship with effective library service delivery. Findings of a study on 'do policies matter' carried out by Ngimwa (2010) established that policies presence impacted on library services and infrastructure support like

information and communication technologies and bandwidth provision. Nnadozie (2016)'s investigation revealed that policies challenge was identified as a hurdle to effective delivery of library services.

In a study conducted by Kind, Genrich, Sodhi and Chretien (2010) on United States medical schools, it was found that out of 132 schools surveyed, only 13 had policy guiding the application of social media where such guideline was made available on their websites. It is worth noting that, even in many developed countries, higher education policy guiding social media application was elucidated. Their findings further revealed that all the medical schools had website with Facebook and Twitter presence.

There should be rules and regulations to be followed / observed in the application of social media on the provision of library services in higher institution libraries. This is to ensure that the library is well represented virtually and the kind of content generated is acceptable. The study conducted by Nathan, MacGougan and Shaffer (2014) revealed that all the thirteen universities from developed countries studied had policies that support the application of social media but two of the universities made their policy available on their webpage. The findings further revealed that the policy was more concerned about using respectful language, compliance with institutional guidelines that were connected to social media use, development, lists of do and do not among others. They further submitted that policies should be updated from time to time in order to cater for the technologies advancement and their ever-changing capacities that its use creates. They opined that social media policy and its creators should be regarded as a living document enabling iteration which will discourage stifle innovation and learning.

In a similar study by Pomerantz, Hank, and Sugimoto (2015), they found that out 822 institutions that had social media policies, 660 policies were only for the institution, 91 policies were for one or more individual departments or campus units and 71 had only for the institution, 91 for a single or several individual departments or campus units while 71 had institutional and departmental based policies. The content of the policies addressed staff, students, communication with external agencies, appropriate content, online behaviour, community, compliance with law and appropriate tone, among others. The study further showed that about one-quarter of the institutions studied had an accessible policy on social media. Jerson, Lewis, Smith and Brushwood Rose (2007) submitted that policies were meant to map, steer, and facilitate institutional change in light of the promise of a technological economic revolution. Policy should serve as a tool to facilitate positive institutional changes. It is essential for any institutional library to have a policy guiding all

aspects of their functions in order to ensure compliance to library service delivery. Ajala and Ojo (2011) opined that new library service delivery mechanisms should be supported with regulations and laws for effective results.

According to Husain and Nazim (2015), inadequate infrastructure was found as one of the main obstacles to ICT applications in Indian university libraries studied for service delivery. Their findings further revealed that 55 per cent of the participants indicated that infrastructural facilities like computers, Internet and communication tools provided were insufficient to render effective services to the library users. Makori (2012) study found that lack of infrastructure in African universities has caused hurdles to the implementation and application of social media by the libraries. Pall (2014), submitted that there is need for adequate infrastructure in order to adequately meet their staff and students information needs.

Ahmed (2014) investigated the IT infrastructure facilities provided for service delivery as well as librarians' ICT skills capacity in government owned academic libraries in Bangladesh. Survey research design was used for the study. Mixed method (questionnaire, on-site observation and interview) was adopted for data collection. Data collected were analysed and presented in frequency counts and percentages. The population of the study was 33 university librarians in Bangladesh public universities. Of the 33 university libraries, 31 responded and data collected were useful for the study. Their findings showed that only Dhaka University Library had the largest collections of print information resources but they were obsolete. Over half of the libraries studied had free subscription to online resources such as Access to Global Online Research in Agriculture (AGORA), Access to Research for Health programme (HINARI) and Online Access to Research in the Environment (OARE) while just six per cent subscribed to JSTOR and ScienceDirect.

On the infrastructure of the libraries studied, findings revealed the first generation university libraries had good IT facilities in place than the newer public university libraries. Futhermore, findings revealed that 13% of the higher institution libraries studied had no Internet facilities. Forty-two per cent of the university libraries had a modest Bandwidth of 2Mbps while 13 per cent had the largest Internet bandwidth of over 10 Mbps and above. Author's findings also found that there was inadequate computers and poor infrastructure to handle library service activities such as library automation among the libraries studied. His result further indicated that some computers in the older university libraries were connected to the Local Area Network (LAN) and the Internet.

Formation and application of policies targeted at provision and application of ICT especially Internet services in universities in Nigeria should be of preference Nnadozie (2016). Saleem, Aly, and Genoni (2015) study of social media use by information professionals in Iraq revealed that degradation of infrastructural facilities was one of the major bottlenecks faced on service delivery. Similarly such barriers have been observed in previous studies by Raman and Rao (2003), Cholin (2005), Makori (2012).

Jayasundara, Ngulube and Minishi-Majanja (2009) conducted a study on relationship between institutional factors such as building environment, furniture and facilities, technology, collection and access and service delivery satisfaction in Sri Lanka. Survey design was used for the study. Questionnaire and focus group was used for data collection. Relationships between the constructs were tested using Cronbach alpha at acceptable point of 0.5 and above. Their findings revealed that institutional factors had influenced effective service delivery. The authors findings revealed that the Cronbach alpha for furniture and facilities was 0.77 been the highest among the institutional factors indicated by the respondents, followed by collection and access and building environment. Other institutional factors such as technology, information resources and library education, library website and online public access catalogue had 0.63 – 0.68 Cronbach alpha level. Further results from the focus group discussion transcript revealed that relationship existed between institutional factors and library service delivery. Eze and Uzoigwe (2013) examined librarians work space enablement for service delivery. Their findings reported that over 75 per cent of the participants indicated that they carried out their duties in an in-conducive office setting. In the context of this research, institutional factors like physical environment features could negatively affect librarians' service delivery if it is neglected.

Anyaku, Orakpor and Ezejiofor (2012) study on Internet connectivity facilities in some universities in Southeastern Nigeria revealed that 70 per cent of the participants had no Internet connections in the libraries and departments hence resulted to cybercafé and personal Internet facilities. According to a study carried out by Baro, Idiodi, and Godfrey, (2013) on librarians in Nigeria found that institutional factors such as computers and the Internet access contributed to the use of social media to deliver library services in the university studied. Kim and Jeong (2015) studied the use of communication technologies like the Internet for multipurpose functions among the Korean media users. Survey research approach was adopted for the study. Questionnaire was used to collect data from the respondents. Percentage and regression were used for data analysis. Findings of their study showed that personal traits such as age and level of educational background had correlation

with the use of the Internet for multipurpose functions. The authors findings further found that work experience and attitude influenced the use of the Internet for multiple functions.

Ezeani (2011) studied facilities provision and use by librarians for service delivery in Nigerian university. She adopted survey research design for the research. The method employed was total enumeration while the instrument used for data collection was a questionnaire. Data gathered was analysed and presented using frequency counts, percentages, mean, standard deviation, and inferential statistical method. Findings showed that there was adequate provision for the Internet facilities in the library as librarians used the Internet to communicate their users for service delivery. Esse (2013) conducted a study on librarians' perception, knowledge and reception of social technologies at Covenant University Library, Nigeria. The findings revealed that all the librarians studied indicated availability of Internet access for good collaboration between the librarians and users. The results further showed that 89 per cent of the participants indicated that management support was an important factor to the adoption and utilisation of social media in the university library studied. Adetimirin (2009) in her study found that institutional factors such as high speed Internet connection, good bandwidth were identified as essential facilities for delivering library services in university libraries but were found lacking among the university libraries studied. Usluel, Askar and Bas (2008) study found that the respondents indicated availability of computers (64 per cent) and the Internet accessibility (56 per cent) in their various offices.

Ugwuanyi and Ejikeme (2011) investigated the preparedness of new era librarians' skills for delivering services in university libraries in Nigeria. Survey research approach was adopted for the study. The study population was made up of academic librarians in four federal government-owned higher institutions in the South-east Nigeria. They were 88 in number, all participated in the study but 74 (84 per cent) returned and found useful. Questionnaire was used for data collection while results of the analyses were presented using mean at 2.5 as acceptable mean in agreement with the research questions. Findings of the study revealed that all the research questions posted returned with respond rates with lowest average mean of 2.6 and the highest average mean score was 3.8. Their findings further showed that high percentage of the new era librarians were aware of their emerging role such as creation of databases, users educator and digitisation among others. They also found that majority of the respondents attested to capacity development through training on ICT



applications in libraries, followed by regular educational programme, attendance of conferences and workshops, formal education and online professional forum.

A study by Nnadozie (2016) assessed the relationship between librarians, their ICT skills and the services rendered to the faculty members of the universities studied. Survey research design was adopted for the study. One hundred and twelve librarians and 4,469 lecturers from 11 universities constituted the population of the study. Data was collected through the use of questionnaire and analysed using descriptive and inferential statistics. The Person's Product Moment Correlation (PPMC) was used to infer the relationship between librarians ICT skills and lecturers' satisfaction with the services rendered. The results showed that the information professionals indicated the importance of ICT skills to manage resources and rendered information service delivery to users with the highest mean score of 3.2. Author's findings further showed that the connection between the information professionals' ICT skills and users' service satisfaction was weak which indicated that the ICT competencies of the librarians studied was low compare to the faculty members' level of service delivery satisfaction. However, Nnadozie's (2016) result statistically revealed that p-values of librarians ICT skills and faculty members satisfaction – 0.399 and 0.347 respectively were greater than the 0.05 level of significance, therefore correlation coefficient of the two variables was found to be statistically insignificant.

Ajayi, Shorunke and Akinola (2013) studied the factors influencing ICT use by library personnel in tertiary institutions in Oyo and Osun States, Nigeria. The study adopted survey method. The target population was all library personnel in college libraries. Total enumeration method of sampling was adopted because of the small population size. A structured questionnaire was used for data collection. Out of 240 questionnaires that were administered on the respondents, 193 questionnaires were returned and found useful for analysis. Data collected were analysed using frequency counts and percentages. Findings of the study revealed that over half or the participants were male while less than 50 per cent were female. Majority 84 (43 per cent) were between 31 and 40 years of age, while 52 (27 per cent) respondents were within 21-30 years of age.

Their findings further showed that larger percentage of the respondents 160 (83 per cent) specified that they made use of printer, 155 (80 per cent) admitted that they made use of personal computer as types of ICT tools accessible for utilisation in the library. Many of the library personnel 139 (72 per cent) confirmed that they use scanner and 142 (74 per cent) of the respondents made use of flash drive. Their findings further showed that other types of ICT tools accessible for use in the library were laptops, projector, optical disc (CD/DVD),

mobile phone with WAP. The results also found that 80 per cent of the participants used ICT facilities to retrieve information, 78 per cent of the participants claimed the use of ICT tools to disseminate information, 76 per cent respondents indicated that they used the ICT tools for storing information while 70 per cent of the participants used ICT facilities to process information.

Gbaje and Ukachi (2011) explored librarians ICT skills competencies and the need for capacity development in Nigerian two universities. Survey research method was used for the study. Academic librarians in Ahmadu Bello University and University of Lagos constituted the population of the study. Twenty academic librarians from each university were selected through purposive sampling technique. Questionnaire and observation checklist were used to collect data. Data analysed were presented in frequency counts and percentages. Eighty-five per cent of the questionnaire were returned and found usable for data analysis. ICT facilities were directly observed to support or be against the findings from the questionnaire. They found that the respondents indicated high use of ICT skills in word processing, Internet searching and email with 71 per cent, 71 per cent and 68 per cent respectively. The respondents agreed to average use of library management software, and PDF software. The respondents consented to low use of digitization software, Microsoft office software other than Microsoft word, information technology facilities and devices trouble shooting, software installation, and very low ICT skills in the area of web design and social media use.

Further, a study by Gbaje and Ukachi (2011) revealed that all respondents attested to ICT skills training on Microsoft word access and excel. More than half of the librarians indicated acquisition of their skills on Virtual/Alice for windows and digitization software, other ICT skills were below average while no training on graphic design, network management, installation of printer, scanner and computer, computer programming, computer security knowledge, connection of patrons laptops to library wireless and creation of online instructional materials. Majority of the participants admitted that mode of their ICT skills acquisition were through in-house and Nigeria Library Association training workshops. The least mode of ICT skills acquisition as identified by the respondents were through international organisation such as Macarthur, Carnegie and non-governmental organisation such as eIFL.net Majority of the respondents attested to the need for ICT skills in the area of web design, evaluation of Internet resources, social media, computer security knowledge and software installation.

In a similar study conducted by Ojedokun and Okafor (2011), the authors examined the relevancy and adequacy of librarians ICT skills competencies. Survey research method was used for the study. Ten university libraries in Southern Nigeria were selected for the study using stratified sampling technique. Data was gathered with the aid of questionnaire. One hundred and fifteen copies of the questionnaire were distributed, out of which 76 (66 per cent) were returned and found useful. Of the 76 respondents, 36 were from the South-east, 14 were from the South-south and 26 were from the South-west. The analysis of the data was carried out through the use of Statistical Package for the Social sciences (SPSS). Findings of the study were presented in frequency counts and percentages. Results of the study showed that majority of the participants 73 per cent indicated that they had Master of Library or Information Science, followed by 16 per cent with Bachelor in Library Studies, nine per cent had Doctor of Philosophy and one per cent had Master of Philosophy and National Diploma in Library Science. Majority of the respondents had five years of work experience in library practice, 27 per cent had ten to 15 per cent while four per cent had about 30 years of librarianship practice.

In a study by Ojedokun and Okafor (2011) further results showed that majority of the respondents can conveniently use email to compose, forward, reply and attach files in email but lack skills in exploring the use of e-mail features such as set of signature, filtering, creation of folder and spam mails among others. The authors found that over 80 per cent of the librarians could use basic Microsoft word processing features such as formatting operations. However, less than half of the respondents could use features such as bookmarking, referencing, footnote, drop-cap and watermarking. Question was asked on the Internet and database searching, 87 per cent and 67 per cent of the participants claimed that they could formulate as well as refine search on the Internet and databases respectively. Majority of the librarians indicated that they lacked search engines, directories, subject gateways, database management and web design skills.

Mommoh and Saka (2016) conducted a study on librarians' competencies in the area of Information and Communication Technology use for delivering services in some libraries in Abuja, Nigeria. Five ICT skills such as computer skills, database skills, Internet skills, libraries application package skills and networking skills were assessed. Descriptive research method was used to assess the competencies of librarians in the area of technology application. The study's participants were 51 librarians from 14 special libraries in Abuja. Questionnaire was used for data collection. Data was analysed and presented in frequency counts and percentage. Forty questionnaire representing 78 per cent were returned and found

useful for data analysis. Findings of the study revealed that 50 per cent of the librarians had first degree in Library Studies, 42 per cent had second degree in Art, Science and Library while eight per cent had third degree. The authors' findings revealed that all the respondents indicated that they had acquired modern technology skills like computers, databases, the Internet, library management software and networking on the job. Majority of the librarians 75 per cent confirmed that they used database skills, followed by 70 per cent who consented to use of the Internet skills for service delivery. Other ICT skills were used at above average level while networking skills was used below average.

Husain and Nazim (2015) findings revealed that 80 per cent of the participants admitted that they use ICT to render library in-house database service, 75 per cent of the participants indicated that they were involved in the provision of electronic books, electronic journals and electronic articles, 55 per cent of the participants revealed that they provided web-based reference and other information services. They further found that ICT based services that has to do with the use of social media were rated low by the librarians. Forty per cent of the respondents used ICT to render online tutorials, 35 per cent of the respondents used subject gateways/web portals, 15 per cent used FAQ database while 10 per cent used e-mailing alert system for information sharing between librarians and users. Owusu-Ansha *et al.* (2015) found that Rohde University Library acquired ICT devices like i-pad, tablet, kindle, and e-pad to enable librarians get acquainted with technologies in order to render effective services with such technologies.

Amoah and Akussah (2017) assessed academic librarians' capacity development and performance in Sam Jonah Library, Ghana. Semi-structured Interview guide was employed to collect data from Sam Jonah Library's senior members (library management staff) and later transcribed. Findings revealed that training programmes was in existence for staff to tap in to both internally and externally. Seminars, training on specialised activities in the library and library orientation for newly employed staff were among the internal programmes highlighted. While the external training programmes include formal professional training programmes outside the library. They concluded that staff development as one of the techniques for improving an employee's effectiveness is found to be quite valuable and necessary in all libraries.

Bamigboye and Agboola (2011) conducted a study on Internet facilities provision in two university libraries in South-west Nigeria. Teaching, non-teaching staff and students were studied. Questionnaire was used for data collection from 300 respondents. Data collected were analysed using simple counts, percentage and t-test analysis at 0.05 level of

significance. Their findings showed that majority of the participants (80 per cent) revealed that Internet service was provided and been used for teaching, learning and research. Their findings revealed that 60 per cent of the participants submitted that Online Public Access Catalogue (OPAC) was made accessible via the Internet and over 80 per cent of the respondents claimed to have been provided with electronic databases. Their findings further showed that 76 per cent of the participants revealed access to virtual libraries while 90 per cent of the respondents attested to remote access to information and library materials within and outside their campuses. Their findings also found that librarians provided adequate information to users on electronic resources holdings and over 70 per cent of the respondents provided electronic document delivery to their users. Findings of the study showed that over 80 per cent of the participants attested to the provision of timely, current and accurate information to users while 29 per cent of the participants indicated inadequate training on the part of the library towards information retrieval from the web.

A study on Internet facilities was conducted by Ferdinand, Patrick and Ogo (2016) at a federal university library in Nigeria. Survey research method was employed for the study. Academic staff, non-teaching staff and students comprised the population of the study. Questionnaire was used for data collection. Their findings showed that internet facilities were available and accessible to staff and users of the library but access was found to be irregular. Majority of the participants 267 (93.7 per cent) used the Internet on daily basis. All the participants indicated use of the Internet for academic activities which included research and development. Purpose of use were to access newly published materials online 273 (95.8 per cent), assignment purposes 188 (65.9 per cent), project works 187 (65.6 per cent), exchange of ideas via social network sites 163 (57.1 per cent) and article publishing 161 (56.5 per cent). On the contrary, Ferdinand *et al.* (2016) reported that there were regulations in place which guided access and use of Internet in the library studied. All the respondents acknowledged that they were aware of the regulations.

Baro *et al.* (2013) submitted that librarians' skills and time were important factors that support service delivery in university libraries. Akporhonor and Endouware (2016)'s findings revealed that adequate skills/technical knowledge (86 per cent), stable internet access/signal (107 per cent), regular power supply (105 per cent) and website presence to promote social media use (89 per cent) for service delivery were indicated by librarians as factors that enhanced social media application to the delivering of library services. On the contrary, Ahmed (2014) study's result revealed that all the librarians in the Bangladesh universities studied had no skills in the area of IT related activities. The author submitted

that there was urgent need to have national and international training for librarians in order to fill the gap.

Ahmed and Nwalo (2013) examined fund allocation relationship with the maintenance of Nigerian university libraries. Research design of correlational type was used to collect data for the study. The target population was professional librarians which includes departmental/faculty librarians in Nigeria's first generation federal universities. According to their findings, government subvention was the primary source of funding university libraries studied. The survey also discovered that the university libraries' allocation was split between the main and faculty libraries. In order to see if there is a link between fund allocation and resources provision, the findings revealed that the two variables had a strong positive association. This implies that the amount of money allocated had a significant impact on the availability of resources and the long-term viability of faculty libraries in universities in Nigeria. They concluded that, the resources (human and physical) was predicted to improve as the budgetary allocation improves.

The findings by Rogers (2015) revealed that adequate funding determined the application of infrastructure in both academic and public universities studied. Differences in funding of individual university libraries determined effective library service delivery. Nnadozie (2016)'s study opined that adequate funding would enhance information delivery by librarians to the faculty members studied. Raman and Rao (2003), Cholin (2005), Makori (2012) found that inadequate funds were allotted ICT infrastructure development in the universities studied. There is cognisance that good funding is the bedrock of any effective and innovative service delivery. Lack of funds would paralyse the application of such new technologies. Ferdinand *et al.* (2016) opined that government and university management fund allocation should be increased in order to enhance high speed Internet service.

In a study carried out by Ubogu and Okiy (2011) on the assessment of major funding sources in university libraries in Delta State, Nigeria. Ten tertiary institutions in Delta State were studied. Questionnaire was used to collect data from ten higher education librarians on sources of funding. The results of the research were presented in frequency counts and percentages. Findings showed that university librarians derived funds from a variety of sources to support libraries' activities. The results further revealed that the main source of libraries funding was through government subvention; other sources of funding that contributed to the finance of Nigerian tertiary libraries studied were gift, donations, academic recovery cost, endowment, launching and miscellaneous fees.

In a similar study conducted by Chaputula (2014) on private universities in Malawi, the study used quantitative and qualitative methods. Data was collected through interview guides and coding schedules. Interviews were conducted with university librarians and finance officers of the two institutions to collect data on financial status and data relating to acquisition and management of library collections. The findings showed that private university libraries were funded mainly by the parent institutions. Inadequate funding was reported to be major constraints to collection development and staff training in the universities studied. This according to Chaputula (2014) results showed that underfunding negatively affected collection development practices that included purchase of materials and staff training. Collection development activities in universities studied varies due to different level of funding from parent institutions. The author therefore concluded that libraries in Malawi faced shortfall of professional staff due largely to inadequacy funding.

In a similar vein, Ishola (2014) investigated inadequate funding issues in some university libraries in Nigerian in order to proffer solution inefficient information service delivery. The research adopted survey method. Data were gathered from undergraduates and university librarians using questionnaire and interview guide respectively. The findings showed that government owned libraries largely depend on government subvention as their source of funding while private university libraries were funded by the management of the institutions. However, the respondents claimed that much of these funds were gathered from students' fee charges. Findings revealed that in all the private universities studied, charges such as the Internet and e-resources accessibility were embedded in the students' fee charges while pay per access was practiced by government public universities. The findings also showed that heads of university libraries studied indicated that funding university libraries was mainly on government and management allocations while fee base services are yet to be fully adopted as generated funds from fee based library services was relatively low.

Lorenzen (2010) assessed the issue of generating fund for university libraries. The research adopted a phenomenological strategy based on interviews with library management personnel from higher institutions in Canada and United States of America. Members on the list of Association of Research Libraries (ARL) constituted the population of the study. In terms of strategy for identifying donors, three vital areas emerged from the respondents. These include outreach, addressing the absence of graduates and donors. The author concluded that different strategies could be deployed to different individual at different moments leading to raising fund for the library.

In Nigeria, Asogwa (2014) measured performance, competencies and constraints to university libraries in Nigeria. Questionnaire was used as primary data collection instrument. The results revealed that academic libraries and librarians in Nigeria are competent in three vital areas namely educational roles, research and professional development. However, the findings revealed that fund allocation was inadequate hence, poor use of library resources, collection development and low information technology skills. The study also reported poor Internet connection, low bandwidth, unsteady electricity supply and lack of Internet expertise as the main challenges. The author suggested that suitable financing, benchmark performance and staff multi-skilling would reduce these challenges in developing regions to the barest minimum. A study was conducted by Nnadozie (2013) on alternative funding models for Nigerian academic libraries. Survey method was deployed to collect data from ten academic libraries in Nigeria on their funding patterns. The result revealed that academic libraries studied were under funded which had contributed to poor service delivery among academic libraries studied.

Mapulanga (2013) reviewed issues on funding and fundraising among academic libraries in Malawi. Case study approach was adopted for the study. Data were collected from five university librarians in Malawi through interview method. Budget estimates of these universities spanning the period of six financial years (2005-2010) were analysed to evaluate the revenue generated by the libraries. The findings revealed that University of Malawi as a whole had high level of revenue generation that was equivalent to subvention. This development, therefore, permits, universities in Malawi to be at the receiving end for the period of four (2005-2008) financial years, as university budgets from the libraries generated nil revenue in their record. The author concluded that university libraries in Malawi were majorly dependent on government allocation for running the library operations, hence the need to look inward and generate other avenues for raising funds.

Khan and Bhatti (2016) examined the influence of funds on collection development of Pakistan university libraries. The study explored annual budget allocation of well-established university libraries in the province of KPK over the previous five years and their connection with grants from Higher Education Commission (HEC) to determine the shares of libraries. The study adopted survey research method. Interview method was used for data collection. The study covered all the public universities which were accredited by the government of KPK, recognised by HEC, and entitled to HEC grants on annual basis. On the bases of the assessment, 15 public universities were selected for the survey. Their results revealed that there was no specific rule guiding the allocation of funds to the university



libraries studied. Their report showed that librarians were not involved in the affairs of financial management of their libraries as well as lack of policy for funding distribution. The findings of the study further showed that university administrations in KPK had failed in allotting adequate funds to university libraries in Pakistan.

In United States of America, Sullivan (2007) revealed that grant and other sources of funding were made available to both government and private libraries use. Ahenkorah-Marfo and Osei-Boadu (2013) conducted a study on other sources of generating funds like fee-based services in public university libraries in Ghana. A structured questionnaire was deployed for data collection from three major government university libraries; University of Ghana, Legon, University of Cape Coast, Cape Coast, and Kwame Nkrumah University of Science and Technology, Kumasi. Library officers and librarians in these universities were purposively sampled. The findings revealed that respondents in this study had worked in various sections of the libraries and had known the reasons for which the university libraries were established. Libraries A and B were non-profit-oriented while Library C had formally established a unit for the pricing of products and services meant for the users. Most of the participants, (83 per cent) indicated that for libraries to generate revenue internally and packaging of library products and services for a fee is a feasible alternative. In addition, the authors submitted that customers are always willing to pay for the services they receive, thus, it is imperative that libraries provide the scholarly community they serve with quality services.

vanDuinkerken, Smith, Harrell, Reynolds, Tucker and Carrigan (2009) assessed means of developing a flexible fund framework to address both library and users' needs and goals. Secondary source of data was employed for the paper. They noted that interdisciplinary learning environment requires adaptation in order to satisfy the evolving requirements of academic libraries users. Findings further revealed that the library professionals should demonstrate ability to react to fresh curriculum and research demands, and concluded that the library should device means of deploying new methods of fund for improved university libraries service delivery.

## **2.6 Institutional factors and social media use by librarians**

Literature has revealed that institutional factors such as library policy, infrastructure, work environment, ICTs skills and funding are essential for social media application by librarians in the university libraries. Ahenkorah-Marfo and Akussah (2016) carried out a survey of six extremely ranked private and public universities in Ghana. Their

findings revealed that library policy supporting social media use by librarians should be made and implemented. Findings from their study showed that, there was no policy supporting social media use in universities studied. Their findings further submitted that presence of library policy on social media application will serve as a guide in regulating and supporting use of social media to deliver university library services.

Ahenkorah-Marfo and Akussah (2016a) studied changing the face of reference and user services: social media adoption in top academic libraries in Ghana. Questionnaire was used to gather data from academic librarians in some universities in Ghana. Three public universities and three private universities were studied. The questionnaire was to elicit data on the use of social media for delivering reference services to the users. Their results showed that there was a need for higher education and library in particular, to have a policy that would encourage the use of social media by librarians for effective service delivery.

In a study conducted in 2017 on employees and the application of social media according to Human Resource Management International Digest, interview method was adopted to collect data from the communication managers at sixteen Belgian companies. The results of the study showed that most of the companies have a policy that guides the use of social media. The findings also showed that other companies' policies and staff involvement served as guide for creating their policies. They reported the following reasons for creating social media use guidelines: many employees use social media, hence the need for the provision of standard guidelines for its use thus reducing confusion; social media evolves, therefore, not all staff have experienced most recent social media tools as some older staff could lack knowledge of the social media tools; hence, the need for manual or guide and training to embrace transparency between the company and their customers.

In a study conducted by Noorhidawati, Chu, Rajagopal, Wan, and Yeung (2015), they found that only six libraries out of the 28 libraries studied had library policies that support library services while two libraries had guidelines. Only one library 'Library R7' had a policy called Social Media Policy and a Mobile Strategy that guided and enhanced staff confidence on the application of social media for delivering library services. Library R 10 made their guidelines for posting on social media especially blogs opened and accessible on their library website. Some adopted their parent universities guidelines while others were at social media policy draft stage.

Internet is the life wire that enables the ICTs devices to communicate with one another regardless of time and location. As social media use is ICTs compliant, they both work together to enable people interact, communicate, share and collaborate on different

social media platforms like Facebook. In Asia, a study was conducted by Saleem, Aly and Genomi (2015) on the application of social media by academic librarians in Iraq. The study adopted survey research design. They found that Iraqi librarians and scholars used social media such as Facebook as a method of communication and exchange of information via the Internet with the aid of computers, mobile phones and other smart devices. They reported that Iraqi librarians used these ICTs facilities to render library services such as library development, updates and users' enquiries. Their findings further submitted that Internet based social media have been established as core channels of communication between librarians and users.

In Africa, Mutula (2001) submitted that South Africa and Botswana libraries were the leading Africa university libraries that have embraced the application of ICTs devices and facilities. Use of the Internet, computers and modern communication like email to render information literacy programmes, library users registration, access to library online public access catalogue, deliver information resources and communicate with staff and students were identified (Behrens and Myrna, 2000; Mutula, 2001). Mutula (2004) stated that adequate provision of infrastructure to enhance ICTs related activities cannot be overemphasised in university libraries while inadequacy will continue to result in digital divide. In Nigeria, Haliso (2011)'s study on ICTs use by academic librarians and factors that inhibited effective use in some universities in Nigeria revealed the use of wireless and Local Area Network (LAN)/ Wired Area Network (WAN) Internet connection. His findings also revealed that many libraries lack dedicated bandwidth which enhances the connection speed to the Internet. Libraries studied depend on the Universities' media information system. Necessary and relevant infrastructural facilities should be adequately catered for in order to effectively embrace ICTs related library service delivery in universities in Africa and especially in Nigeria.

Electricity supply is the bedrock of any interaction with the computers, mobile devices and other ICTs devices. Uninterruptable electricity supply would enhance smooth, timely and ease of social media use for service delivery. Baro, Eze and Nkanu (2013) submission was that for information technological devices and facilities to be well integrated into the new trends and services rendered, innovation and revatilisation of the library environment is necessary in university libraries in Nigeria. Findings by Ahenkorah-Marfo and Akussah (2016a) buttress the importance of regular electricity supply in using social media for delivering library services in academic libraries.

Librarians are expected to be competent in the areas related to ICTs facilities and devices use. This includes word processing, internet and databases search, software installation, communication, trouble shooting, etcetera. Infrastructures provided for social media use especially the computers, mobile and smart phones are prone to viruses or malware attacks. Findings by Zimmerman (2011) confirmed that some ICTs facilities were attacked by viruses such as Trojan which destroy the contents and may even prevent computers from working. A study conducted by Shih, Lin, Chiang and Shih (2008) established viruses attacks through the use of Internet and Bluetooth to share or transfer information, software and images. Librarians should be able to install and update antivirus and other software to prevent viruses' attacks on their computers. Zimmerman (2010) opined that it is essential for library computers to be protected from malware attacks.

In a study by Heinrichs and Lim (2009) on the requirement for librarians ICT competencies in United States of America, electronic questionnaire was deployed to collect data from the participants. Descriptive statistics and ANOVA were used to analyse the data collected. Of 627 request sent, 216 were returned, which resulted in 34.5 per cent response rate. Eighty-one per cent (175) were female while 19 per cent (41) were male respondents. The respondents indicated their desired and perceived competencies in seven ICT areas: Web design, multimedia, computer skills, database, spreadsheet, presentation, and word processing. Their findings revealed that respondents desired level ranged from proficient Database - 3.65 to very skilled Computer skills - 4.45. The findings further revealed that perceived level of competency ranged from least as Database – 1.87, word processing – 3.68 and computer skills – 3.45. The findings indicated that the respondents had high skills in the word processing and computer use and low skills in database and web design. The respondents indicated need for improved skills in the area of database (95 per cent), web design (94 per cent) and multimedia (82.6 per cent).

In the same vein, a study by Ajayi, Shorunke and Akintola (2013) revealed that majority of the participants 69.4 per cent had excellent ICT skills in the use of computers, 60.7 per cent in the use of the Internet and 54.4 per cent in the use of mobile phones with WAP. Similarly, a study by Baro *et al.* (2013) confirmed that upgrade of librarians skills is essential for their competencies in rendering library services especially using social media. Their findings also showed that 85.7 per cent of the participants revealed acquisition of skills in the area of emerging technology use for library service delivery. Esse (2013) results found that 72 per cent of the participants indicated that it was important to attend workshops in

order to acquire skills necessary for rendering services especially with the application of social media.

On the contrary, a study by Kattimani and Naik (2013) on the assessment of librarians' ICT competencies and the challenges faced in the engineering libraries in Karnataka, India. Public and private funded colleges in India were involved. The study critically examined librarians ICT skills in the areas such as the creation of files and folders, system trouble shooting, use of desktops and laptops, library management software, Internet use, website design, radio frequency identification detector, conversion of analog information resources to digital and the use of various search engines. Survey research method was used for the study. Librarians in college libraries in India constituted the population of the study. Questionnaire was used for data collection. Data gathered were analysed and results presented using mean, standard deviation, correlation and multiple regression at 0.05 level of significance. Seven hundred and thirty questionnaires were found useful and analysed. Their findings showed that all the categories of librarians studied had ICT skills. The result also showed that majority of the librarians especially those in the librarian range had strong ICT skills in web design than deputy librarian and assistant librarian range.

Funding can be referred to as the determinant of any library's activities which include service delivery. Funding could be in form of government subvention, donation, gift, internally generated revenue (photocopy, bindery, scanning, space service etc.), and Tertiary Education Trust Fund (TETFund) support. Ishola (2014)'s study on funding problems in the public and private universities studied revealed that through registration of library users and Internet use, the libraries studied were able to generate additional income other than government subvention. Mapulanga (2011) carried out a study on university libraries. His findings showed that funding level of the tertiary institutions' libraries determined the type of services to be rendered especially the use of social media. His findings also revealed that inadequate funding affected library service delivery negatively. Underfunded libraries will be denied of effective and efficient service delivery.

Aina (2016) opined that tertiary education is meant to develop the nation but government failed to adequately fund it. He further submitted that TETFund could intervene in the areas such as funding both public and private higher education libraries in Nigeria. Moreover, he argued that infrastructural development such as the Internet which is essential for research and communication in universities in Nigeria should be funded by National Universities Commission and TETFund. As the application of social media encourages the

delivery of library services through the use of ICTs facilities, adequate funding should be provided. Inadequate funding could affect the use of some social media such as Flickr. Social media use requires adequate funding of ICTs facilities that enhance service delivery. Use of social media would depend on good and up-to-date facilities while the information to be rendered to users should be current and timely. They all require adequate funding. Eze and Uzoigwe (2013) posited that rendering library service to meet current trend that include the use of social media solely depend on adequate funding.

## **2.7 Social media use and service delivery in university libraries**

Social media could be referred to as platforms on which two or more people interact, exchange and share information promptly regardless their location. Cohen (2011) defined social media as web based platform that involves online participation, and content creation among users. She further highlighted the following eight characteristics of social media as: content in various formats, cross reference of different platforms, different levels of engagement by users, high speed and breadth of information dissemination, multi-communication patterns, real time communication, use of different devices (laptop, desktop, smartphone, i-pad and etc.), and creation of real - time online events. Social media are Facebook, Twitter, Blogs, RSS feed, E-mail, WhatsApp, YouTube, Flickr and Pinterest among others. The use of social media should be optimally embraced by librarians to deliver effective services to the staff and students in the universities in Nigeria.

Facebook is a powerful and highly recognised social media tool for connecting, sharing opinions, information and images with friends, family, group members and organisations. Twitter is a social media tool that helps to create and communicate information instantly. It allows one hundred and forty character words maximally to communicate information. Twitter assist to discover present happenings at any point in time. Real Simple Syndication (RSS) feed is a simple online 'reader' that automatically manages your favourite online content subscribed to. The feed is easily accessible to with the aid of computer and mobile devices with the Internet connection.

YouTube is a social media tool being used to discover, download, watch and share videos which can inspire and inform individual or group of people across the globe. It could be deployed by university libraries to deliver services like library orientation and exhibition clips. In Turkey private and public university libraries, various social media tools ranging from RSS feed, Facebook, Twitter, Blog and YouTube were used to promote academic libraries services (Aras and Colaklar, 2015).

Pinterest is another social media tool that could be engaged by librarians to render selective dissemination of information to staff and students affected. Whenever library collections are updated, staff and students affected are notified. Blogs are electronic form of publishing library news. A blog is a discussion or information site published on the Internet which contains posts in reverse chronological order (<http://en.wikipedia.org/wiki/Blog>, 2015). Information is being updated on the blog from time to time to reflect library updates on different activities in the library.

Wiki could be used to engage both librarians and their users to share information, ask, and answer questions. The interactions could be archived and in turn serve as reference resource for service delivery (Maness, 2006). Flickr can be referred to as a tool for managing and sharing images such as pictures. It is one of the social media tools that allow images to be described and be tagged for easy identification and retrieval. Such tool could be used for managing libraries' photo collections which could enhance virtual availability, access and use by the users concerned.

Prompt and informative information should be sent by the librarians to the university community members in order to render adequate library services and get users informed about library updates. A research on the skills development of librarians in Africa by Obasola, Alonge, Eyers, and Oladele (2014) revealed that the training on application of social media like Facebook and twitter was very useful to library and information service delivery. A study by Singh and Sarmah (2015) on skills development of librarians in two university libraries in India showed that majority of the librarians indicated that they developed their skills in the area of the application of social media tools through self-practice. Bolton, Parasuraman, Hoefnagels, Migchels, Kabadayi, Gruber, Loureiro, and Solnet (2013) opined that librarians and libraries are expected to be proactive in providing library services to their users especially the Generation Y users who are ICT inclined. The use of social media tools could enhance the delivery of information service to the users either with the aid of desktop, laptop, mobile or smart phones that have internet connection.

Bradley (2007) confirmed that blogs, RSS feeds, instant messaging, podcasts, photo sharing, mash-ups and other social media platforms could be used for delivering library services. Farkas (2007) asserted the use of RSS feeds for notification of newly acquired materials in the library. In a similar vein, Kelly (2008) found that Heriot Watt University Library commenced the use of blog on the library website in 2006. It was used by the library to disseminate information such as news, views, among others to their users while in the United Kingdom Portsmouth City Library used wiki for selective dissemination of

information such as sharing experiences, reviews and recommendations among book club members.

Rogers (2015) study examined the application of social media to services in Mississippi University libraries in the United States and considered particularly the types of social media embedded services and frequencies of use among others. His findings showed that Mississippi academic libraries studied used social media for library services. Mostly used tools were Real simple syndication (RSS) for new acquisition updates, followed by Facebook, Twitter, LinkedIn and Pinterest been used to share images, tag and messages. Other social media used were mash-up, media sharing and streaming, blogs, wikis, instant messaging (IM), Quick Response code (QR code) and social book marking. All the libraries studied used customised website that required login details in order to use personalised library page. Fifty-one out of the seventy-eight libraries studied had links to one or more social media tools associated with the library.

In the developed countries like the United Kingdom and the United States of America, research has demonstrated that social media is used as platforms for service delivery by the university libraries to the users. Harinarayana and Kaju (2010) study showed that in Imperial College London, Johns Hopkins University and Cornell University libraries, social media like podcast was used mainly for delivering services like library tours, updates and news. It is paramount to note that the presence of podcast has availed users of the opportunity to listen to recorded information events, commentaries, research findings, and library services either audio or video format at any time and at the comfort of the users location. Bosque, Leif and Skarl, (2012) study on the application of twitter in some academic libraries in the United States of America revealed that only one academic library used twitter above 60 per cent while others used it below 40 per cent.

Linh (2008) conducted a study on the use of web 2.0 in academic libraries. Findings of the study revealed that in Australia, two-third of the academic libraries used more than one web 2.0 technologies like RSS feed, blogs, IM and podcast. However, RSS feed was identified as most widely social media used among the academic libraries studied. In another study conducted by Smeaton and Davis (2014), survey research method was used. The findings of the research showed that facebook, youtube, flickr, twitter, pinterest, and blogs were the frequently used social media tools in the studied Australian academic libraries. Furthermore, results showed that these libraries tailored their messages and concentrated on the advantages of using social media and its effect on library service delivery. They opined that social media had made libraries to create an additional entry point for the services



rendered to the users and in turn made them more inclined to use library services. The findings further submitted that social media should be updated regularly to reflect relevance and up-to-date information.

In the developing countries such as China, Han and Liu (2010) conducted a study on social media applications in high rated Chinese university libraries. An online survey and content analysis methods were adopted for data collection. The results revealed that among 38 university libraries studied, 31 (81 per cent) used at least one social networks platform for delivering library services. Among the higher institution libraries studied, none of them had used social media tools such as podcast and vodcast for rendering library services. Their findings further revealed that some top university libraries in China used RSS feeds to notify users about latest development in the library, personal information notification like selective dissemination of information (SDI) and current awareness service (CAS) on topic associated with different users and publicising of library events. Use of various social media tools is still at low ebb.

In Saudi Arabia, a study by Ahmad, Hussain and Aqip (2013) on the application of web 2.0 in government and private owned universities was carried out. Findings revealed that among the social media tools like Facebook, Twitter, Youtube, RSS feed, Flickr, LinkedIn, Google+, Blogs, Tumblr Scribd and Vimeo that were examined, facebook, twitter and youtube were the most widely used in both government and private universities studied. Saudi Arabia government universities also used other tools at a very low rate but never used Vimeo while the private universities studied never used RSS feed, Flickr and Tumblr. However, frequency of Google+ and Blogs were very low for current information dissemination throughout the world. All the eight Saudi private universities studied had Facebook and Twitter presence on their website. They had record of their likes and on Facebook in thousand as well as followers in thousand and hundreds. Out of the 24 Saudi government universities studied, twenty one had Facebook and Twitter presence on their websites. Majority of the respondents indicated liked on Facebook as well as Twitter followers in thousands. Three of the universities neither used Facebook nor Twitter.

In a study conducted by Abidinet *et al.* (2013) in Malaysia, fourteen public libraries studied had applied two or more social media tools for service delivery. Their results further revealed that librarians used more of blog and wiki among the social media tools. In India, a study by Husain and Nazim (2015) on the application of different ICTs in some academic libraries revealed that blogs, wikis, RSS feeds and social bookmarking were yet to be fully applied by the university libraries for delivering various services but ICTs had been applied

to other library routine activities. Furthermore, results showed that, 35 per cent of the participants indicated use of wiki, 30 per cent of the participants used RSS, 10 per cent of the participants used Blogs and 10 per cent of the participants used bookmarking for service delivery. Their results also found that all the participants indicated that they used e-mail and phone calls to render services to their users.

In same vein, a study conducted by Madhusudhan and Nagabhushanam (2012) on virtual based services in some universities in India covered twenty universities. The study adopted survey method. Data were collected with the aid of questionnaire. Their results found that majority of the university libraries studied rendered virtual based library services to their clientele, however, many of the libraries studied were yet to fully harness the use of social media to deliver services. Virtual based library services were rendered through the library website. It was found that librarians who worked in reference, acquisition, circulation, cataloguing, periodicals, inter-library loan, and document delivery rendered library services like electronic document delivery, online reference services, electronic current awareness service, electronic research guides, online current awareness bulletins and electronic selective dissemination of information services to the users.

The authors findings also revealed that other services rendered were online reference desk/ask-a-librarian, online update of new arrivals, alert services provision such as new additions, electronic reserves, Online public access catalogue (OPAC), online charging and discharging, online knowledge of available resources, online reservation of documents, online user account status, online posting of overdue details, electronic article delivery, article alert service, online Table Of Contents (TOCs), electronic document delivery, interlibrary loan based services, e-mail based services, and online library news among others. The result of their findings showed that members of the faculty and research students attested to the use of these web based library services.

The application of social media in Indian university libraries is gradually being implemented for library service delivery. There was an attempt to incline the use of social media to deliver services in some universities studied in Southern India but was at a slow pace. Preedip and Kumar (2011) conducted a study on the application of web technology to provide information services by South Indian technological universities. Survey research method was deployed in the study. Findings showed that application of current web development technologies was yet to be fully deployed for information services as web based information services were present in very few academic libraries. Most academic libraries

were found to be working in the conventional library settings and the use of web information services was comparatively low.

In a study conducted by Bhardwaj (2014) on the application of social media by librarians, results revealed that social media application among librarians was for personal engagements and professional development like meeting friends and family, upcoming conferences to mention a few. Among librarians studied by Tyagi (2012), he found that librarians had knowledge of social media but its use was more towards personal lives. Singh and Sarmah (2015) study of two university libraries in India revealed high level of social media awareness among the librarians. The authors' findings further revealed that librarians studied were more familiar with blog, wiki and RSS feed among the social medial tools. Other findings revealed that very high percentage 86 per cent of the librarians indicated that social media was used to deliver library services.

Shafique and Riedling (2013) studied the use of emerging technologies to complement conventional library service delivery in Pakistani. The study pattern was based on descriptive method. Review of literature and personal interviews anchored the study. The study concluded that most libraries in Pakistan were aware and had embraced the use of social media and Second Life for delivering library services. Vanwynsberghe, Boudry, Vanderlinde and Verdegem (2014) examined the role of experts in the application of social media for information dissemination in three pubic academic libraries in Belgium. The study used survey research method. Mixed method that involved questionnaire administration and interview were adopted for data collection. Data collected was analysed and presented in frequency counts, percentage and mean. Two hundred and twenty librarians (77 per cent) participated in the study. Their returned rate was recorded and found useful for the study. Five social media experts were interviewed. Interview audio-recorded was transcribed using NVivo 10.

Vanwynsberghe *et al.* (2014) carried out a study and findings revealed that social media use experts were central to information dissemination in the libraries studied. The librarians facilitated information service delivery in work-related and personal matters through the application of social media. The authors also found that social media use was at low level. It was reported that reasons for low level application of social media to delivering of library services by the participants was due to lack of specification in the job description while other participants disclosed lack of time to use social media. Their results further showed that librarians used social media at work and at home. The librarians' technological and cognitive competencies were low. The authors' findings also revealed that the librarians

used social media for information dissemination to library users as well as exchange of social media information among librarians.

Deng and Zhang (2015) examined users' perceptions on the application of using social media platforms and creation of a library's reference services' response website. Social questions and answers (SQA) site was used as data collection source for the study. The findings revealed that there were posts of 258 questions on library reference, 458 questions on library reference services, 48 questions on virtual reference and 1,000 on reference librarians. The findings revealed that out of 878 SQA posted, 69 per cent were for reference librarians, 11 per cent made use of reference service while four per cent subscribed to Yahoo!Answer. It was concluded that librarians rendered reference services through the use of both conventional and social media in disseminating library services.

Siddall and Liew (2014) critically evaluated cataloguers' opinion on the application of social media. The authors adopted survey research design. An online questionnaire was administered among the concerned participants. The findings showed that frequently sought services through social media platforms among the participants was general current awareness information while specific current awareness services was done through face-to-face method. Ngai, Moon, Lam, Chin and Tao (2015) conducted a study on social media models, technologies, and applications from academic perspectives. A two-stage approach was used for the study. The literature review on social media research and actual case were employed to demonstrate the framework facilities of social media application. Their reports revealed that social media have numerous applications and individual made use of it for different purposes like publicising customer relationship, information sharing, collaboration, training and development.

Luo, Wang and Han (2013) examined the use of social media in marketing. The study reviewed steps involved in library's online video marketing project such as preparation, production, distribution, promotion and evaluation. From the users' point of view, questionnaire was used to collect data on the application of social media for audio-visual marketing. Components that facilitated the success of the project were also investigated. The results revealed four major components that were attributed to the success of the project. Among the components was social media application. The findings of the study further showed that librarians partnered with staff and students in library marketing. The results also revealed that the marketing project could influence the publicity of library brand awareness, promotion of library resources, facilities and services, which in turn would encourage the optimal use of the library through video marketing by social media application.

Noah, Daluba and Maxwell (2013) conducted a study on effect of social media on the use of academic library by undergraduate students in tertiary institutions with reference to Kogi State University, Anyigba. Survey research design was adopted for the study. A 20 - items questionnaire was developed and used for data collection. Data were analysed and presented using frequency counts, mean and standard deviation while the hypothesis at 0.05 level of significance. The findings of the study revealed that the use of academic libraries by undergraduates was influenced by the use of social media and there was no significant difference between the mean value and the gender of the respondents.

Kyung-Sun and Sei-Ching (2016) evaluated the use of social media from academic context. Two web surveys were developed for undergraduates and the librarians. The results revealed that students and librarians had similarity in terms of social media tools used and the main purposes of using them. The findings also showed that significant gap exist between strategies used by students and librarians in evaluating information on social media.

Aramide, Ladipo and Akinade (2013) investigated the human and material resources contributions to service delivery in school library media centres (SLMCs) in Nigeria. Descriptive research design was used for the study. The results of the research showed that library services were been rendered within the sphere of library. Findings also revealed that ICT resources, human resources and accommodation were predictors of service delivery in SLMCs. Further results showed that ICT and learning resources had joint relationship with service delivery.

Deodato (2014) conducted a study on the participatory culture of Web 2.0 users. The author noted that librarians had ethical responsibility in designing evidence based systems that would encourage broad-based involvement and diverse participation of users. The findings further submitted that applying Web 2.0 technologies and design to library services would assist users gain the necessary skills to utilise various resources and services. The use of Web 2.0 would further create spaces for dual or multiple conversations, pertinent inquiry, and alternative viewpoints expression. Participatory culture therefore provides a model of socially responsible librarianship based on giving users some authority and providing them with the tools to fully contribute to knowledge creation.

Khan and Ansari (2014) carried a study in India on the role of social networks (SN) in ascertaining efficiency and effectiveness of library service delivery. Descriptive research design was applied and the results showed that majority of the participants 233 (57 per cent) were male. Findings further showed that many young professional librarians 331

with age ranged 35 years had better knowledge of social networks. Their academic qualifications showed that 192 (47 per cent) had a second degree, 147 (36 per cent) with first degree while only 69 (17 per cent) had doctoral degree. The findings showed that majority of the participants 326 (80 per cent) used social networks daily, whereas 53 (13 per cent) used them 2-3 times weekly, 12 (three per cent) used them 4-5 times at least every two weeks and 4 (1 per cent) used social networks once a week.

The findings further showed that most popular social network used were Facebook (192, 47 per cent), followed by Google (90, 22 per cent), Twitter (49, 12 per cent), Flickr (20, 5 per cent), MySpace (12, three per cent) and Bebo (4, 1 per cent). The participants' satisfaction level of content search on social network tools was (175, 43 per cent), 163 (40 per cent) participants used social media tools very frequently, whereas only 41 (10 per cent) participants were objectively satisfied. A total of 20 (5 per cent) participants indicated that they were fairly satisfied, and 12 (3 per cent) participants had no view. Their findings on accessing library on social network showed that a majority of the participants 233 (57 per cent) indicated the use of their library through social networks while 159 (39 per cent) participants did not use their library through SN. Information update from the library that were made known to the users through social networks were the catalog update, abstracts and indexes with (208, 51 per cent) participants who indicated receipt of such updates, 167 (41 per cent) participants declined the need of social networks to deliver such updates while 33 (eight per cent) respondents were uncertain about this sort of activity.

In terms of virtual reference services, a total of 188 (46 per cent) participants indicated the need for virtual reference services with particular interest in connection with reference staff through social networks, while 184 (45 per cent) participants indicated no interest as they argued that face-to-face communication is required for delivering reference services. The remaining 37 (nine per cent) participants were uncertain about either virtual or face-to-face reference service. The overall findings showed that librarians indicated that in library practice, social network remain very effective medium and its utilisation would enhance improved library functions and services. The study concluded that there was a major need for librarians and users skills development on the invaluable significance of utilising social networks in library and information services.

Kalbande, Sonwane and Golwal (2012) discussed the benefits of social networking site such as Facebook in creating awareness among the LIS professionals of MLOSC group. The study specifically examined the purpose to which Library and Information Science (LIS) professionals' use Facebook and its impact on academic pursuit and social interactions. The

findings revealed that Facebook had the capacity to effectively impart information, knowledge and generate awareness. Facebook was also found as an important tool for effective online collaboration and sharing among LIS Professionals of MLOSC. The analysis showed that LIS professionals derived major benefits from Facebook use.

Moise and Cruceru (2014) conducted an empirical study on strategies to promote various types of events through different social networks websites in Romania. The study adopted the use of questionnaire to collect data from the participants. The study deployed over 500 participants, with age ranged 18 and 35 years old (74 per cent students, 24 per cent employees and two per cent unemployed). Their investigation was aimed at identifying various activities that were been promoted through social networks. The results showed that 93 per cent of the participants used Facebook, 31 per cent used Twitter, 74 per cent used YouTube, 15 per cent used LinkedIn, eight per cent used Google Plus, and seven per cent used other social networks like MySpace, Netlog, Hi5, Flickr, Instagram and WhatsApp. Services commonly promoted through social media tools were conferences, tradeshows, expositions, concerts, symposiums, fundraising galas, trainings, seminars, and webinars. Other special events reported were showcase of technology discoveries and social functions such as organisational annual meetings.

The results of the study further showed that the participants indicated that events such as trainings, workshops, seminars and conferences could be advertised especially on LinkedIn as over 87 per cent of the participants admitted its application while 85 per cent above indicated that Twitter could be used and 79 per cent participants confirmed the use of Google+. On the other hand, services like tradeshows, exhibitions, launching of new products, opening hours and concerts were delivered through Facebook as indicated by 84 per cent and Youtube with 94 per cent. The authors emphasised that most respondents expect Youtube to have features that could transmitted all types of events, conferences, seminars, tradeshows or exhibitions. Findings further showed that the respondents indicated change in behaviour as the events were of interest. They were also willing to further communicate and even announce the information on future activities in order to attract other members.

Keloğlu-İşler (2014) assessed commodification of knowledge communication mediums from library to social media. Descriptive method was adopted for the study. Findings revealed that printed communication sources were found to be very effective in creation and sharing of intellectual information. The author noted that, at the beginning of 20th Century, such sources of information have been replaced by social media. The respondents admitted the wealth of second generation information technologies (social

technologies) as information was created and shared at a quicker rate and in a more participatory scale.

Anwyll and Chawner (2013a) conducted a study on social media and readers' experiences in New Zealand. Interview was adopted to gather data for the study. 15 librarians were interviewed. Three were three main reasons public librarians adopted social media. The first reason centred on individual staff interest, second by conferences like the annual Library and Information Association of New Zealand/Aotearoa (LIANZA) conference and third by forums attendance. The interviewees indicated three common objectives for social media tools application; first, to serve as a means of contacting library patrons, particularly those who are not everyday library users. A second objective was the promotion of books and other materials. Third objective was to engage with library users.

The authors' findings showed that there were regulations for the application of social media postings. Organisations created rules and regulations to ensure that everyone follows a similar framework and was consistent in what they post. Seven of the fifteen interviewees followed the agreed-upon procedures. Three of them were in the process of establishing and developing guidelines for rest of the team members to follow. Only five of the participants did not follow any formal guidelines. The findings showed that a body called Council Guidelines and Restrictions was established and all New Zealand public libraries were part of the local council. The Council had organisational standard and rules in place that regulate what library employees are allowed to write about and what they are not allowed to write about. Four of the interviewees were subjected to council restrictions that applied to social media postings. They noted that the challenges to effective use of the tools include insufficient time and IT issues which restrain librarians from optimal use of the social media tools.

In another study by Smeaton and Davis (2014a) on social technologies best practices among public libraries in Australia, the article focused on the practice of two Australian libraries which were Yarra Plenty Regional Library (YPRL) and City Libraries Townsville (CLT). They had deployed the use of social technologies in the delivery of a participatory library service to the clientele. The case study adopted mixed methods - interviews, document analyses, and social media observations. The findings of the study revealed that social media that are commonly used were Facebook and Twitter in Australia libraries studied. The findings further showed that communities were created to facilitate interested users through these social media. The respondents also indicated that the use of social media also made the users to be part of the library development initiatives as well as real time



interactions with the library. The general feeling about the use of Facebook and Twitter was that their presence remains a worthwhile investment for library relevance in future.

Aharony (2009) study on librarians' use of social media showed that they used blog to post information on professional, personal and both issues on the same platform with hyperlink and comments. Their average posting per day was reported to be once. In a study conducted in Nigeria by Adeleke and Habila (2012) on use of weblogs by librarians, 67 per cent of the population of the study constituted the librarians from academic setting. Their findings showed that level of weblogs awareness among librarians was high and confirmed its benefits for personal and professional use. Thirty per cent of the respondents indicated that their libraries had institutional weblog, 20 per cent claimed personal weblog, five per cent indicated lack of awareness while special, national and others claimed 45 per cent. Only 15 respondents used the weblog on daily and weekly basis.

Makori (2012) opined that increase in the application of web 2.0 which social media belong would support and promote university libraries services to their users. The study showed that few university libraries in Africa used web 2.0. According to Munatsi (2010) on the use of web 2.0 in University of Pretoria, University of Johannesburg, University of Western Cape, Witswaters and University of South Africa noted that these universities had made huge attempt to apply web 2.0. The author argued that there is need for shift from conventional to technological system of information service provision and delivery. The findings showed that technological system would enhance dual involvement of both users and librarians in contributing to the development of effective library services and its delivery. The most dominant social media in use in the University of Pretoria were RSS feeds, E-mail, Blogs, and Wikis for service delivery.

Abdelraheem and Ahmed (2015) studied the application of social media, benefits and barriers among the educators and non-educators faculty members of Sudanese university. A descriptive research design was applied to the study. A questionnaire was utilized to collect data from respondents. The questionnaire had three parts. The first part collected demographic information, second part collected data on use of social media and benefits while third part collected data on perceived barriers using five point Likert type scale. It was validated and reliability coefficient of the questionnaire was measured through alpha Cronbach. The reliability coefficient were for social media utilisation 0.84, benefits 0.86 and barriers 0.83. Statistical Package for Social Sciences (SPSS) version 21 was used to analyse the collected data. Their study found that educators who cut across different academic ranks used social media for teaching activities but at low level. They also found

that the respondents used it mostly to communicate among colleagues with the highest mean equal to 3.6.

Akporhonor and Endouware (2016) study on social media revealed that librarians in some federal, state and non-governmental tertiary institutions in the east and west of Southern Nigeria often made use of Facebook, YouTube, twitter and instant messaging while they claimed not to have used friend star, flickr, photo bucket and delicious. Owusu-Ansah *et al.* (2015) examined application of social media for academic endeavour in four selected African universities (Rhodes University Library, South Africa; University of Education, Winneba Library, Ghana; Makerere University library, Uganda and University of Nigeria Library, Nssuka, Nigeria) with the aim of ascertaining social media use experiences. They found that only Rhodes University, social media tools were used to deliver library services to support researchers while other universities made use of the tools to connect and interact with colleagues.

University of Education, Winneba Library, Ghana was found to maintain Facebook presence on their webpage but not active to engage or interact or support researcher. Rhodes University Library applied social media platforms like RSS feeds, Wiki, Facebook, Twitter and Blog at faculty/departments levels in support of research work of community members. Social media tool like twitter was embedded in their library guide and librarians created time to network articles of interest to academics of faculty/department served. Also their presence on facebook was found to enhance interaction with students and other community members. All faculty librarians were granted full administration rights in order to effectively manage activities on the page. RSS feed was reported to be used to notify researchers of new articles published in their area of interest. It was found that the blog was being used among the library staff to share information.

Makerere University Library indicated Facebook and twitter presence and twitter with thirty six followers. Owing to lack of library social media policy, their social media platforms had been inactive. However, the policy was at its completion stage and its implementation would fasten the running and maintenance of the library social media for service delivery. As regards the University of Nigeria Library, the study showed that they maintained blog and Facebook presence but not active. The librarians had one or more social media being used mostly for personal purposes as they were yet to deploy the tools for teaching information literacy and marketing of library services.

Ahenkoral-Marfo and Akussah (2016a) study found that among the five types of social media used for service delivery, 32.2 per cent of the respondents (librarians) used

Facebook daily, 18.4 per cent weekly while 23 per cent had never used Facebook. Fourteen per cent of the respondents used You Tube daily, 40 per cent used it occasionally while 24 per cent had never used YouTube. Twitter was used daily by nine per cent of the respondents, followed by eight per cent weekly and 29 per cent occasionally. Blog was used weekly by 13 per cent of the respondents, 30 per cent used it occasionally and 40 per cent never used it. RSS was used occasionally by 28 per cent while 52 per cent never used it. Three per cent of the respondents used Delicious weekly, 16 per cent used it occasionally while 69 per cent never used Delicious.

A similar research was conducted on social media application among African libraries for delivering effective services to users by Ayiah and Henewaa (2011). The authors adopted descriptive survey research design. Their findings indicated that there was social media presence on the Library's web page which facilitated collaborations between the library and the university community. On the part of the students, over 70 per cent of the participants expressed interest in accessing their library on a social network. The findings further showed that respondents preferred online interaction with reference librarian on their social network than face-to-face interactions. Some of the reasons given were that, technological advancement is paramount to this age and should be incorporated to enhance easy and quick communication and sharing of information that saves users time.

Fasola (2015) studied awareness and acceptance of social media application for library services promotion by information professionals in Oyo State, Nigeria. The author adopted survey research method. Questionnaire and interview schedule were used to gather data for the study. Majority of the respondents agreed that they had Facebook profile while minority had Twitter account. Most participants submitted that Facebook and Twitter should be used for sharing information with users as well as marketing of the library services. Eighty-five per cent of the respondents agreed to the application of Facebook and Twitter for library services promotion among the libraries studied while 15 per cent disagreed on the utilisation of Facebook and Twitter for marketing library services. From the above reviews and assertions, the researcher concluded that social media is being increasingly use for library and information service delivery in developing nations of the world, particularly in Nigeria. Therefore, more efforts could be geared towards sustaining this development.

Noorhidawati, Chu, Rajagopal, Wan, and Yeung (2015) examined the application of social media platforms in enhancing libraries activities and challenges of integrating social media into libraries service. Survey method was used for the study. One hundred and ten libraries in Greater China, Switzerland, United States, United Kingdom, Australia and New

Zealand were studied through online survey. Both academic and public libraries were involved in the study. From 110 libraries covered, 28 responses were returned and analysed. Among the 28 responses, academic libraries made up 68 per cent of the respondents, while 32 per cent constituted the respondents from public libraries. Answers were provided to raised research questions on types of social media used by libraries studied, different library services the social media was used for, perception of social media usefulness, availability of policies on social media application, benefits and challenges associated with using social media in libraries.

Furthermore, study by Noorhidawati *et al.* (2015) questions were analysed quantitatively. The study adopted a 5-point Likert-type rating scale while descriptive statistics was used to analyse and present their findings. Respondent libraries were coded as R1 to R28, and the corresponding librarian representatives were labelled L1 to L28. Their findings revealed that out of the 28 libraries that participated, 22 libraries had used more than two social media tools for over four years. This invariably showed that majority of the libraries studied had embraced the application of social media tools for delivering services. Academic libraries used RSS feed while public libraries used Flickr. Findings also revealed that both academic and public libraries used blogs most frequently. Findings of their study further revealed that both academic and public libraries used social media for inclusion and outreach activities. Facebook was found to be the most frequently applied social media tool for users' services such as exhibitions, virtual references, book recommendations and library news postings. According to the authors' findings, another frequently used social media tool was the blog. Blog was been used for online library user guides and book recommendations while YouTube had been adopted by some academic libraries for services like library tours. Also Flickr was found to be used for exhibitions by public libraries. Social media platforms could be used for library service delivery. Various social media platforms should be applied to deliver different library services. Moreover, a platform could also be adopted by Nigerian university libraries for the delivery of different library services.

## **2.8 Challenges of service delivery in the university libraries**

Information and Telecommunication Technologies has changed the way libraries deliver services to their users in the present age. Conventional ways of service delivery has been complemented with the presence and use of ICTs which include the social media, internet, computers and their devices such as laptops, i-pad, smart phones, to mention a few.

Librarian in the course of delivery services had encountered various challenges due to present state of university libraries especially in Nigeria.

In India, Madhusudhan and Nagabhushanam (2012a) conducted a study on web based library services in universities. Based on librarians' view point, most of the participants 65 per cent specified that lack of skilled professionals was ranked top among the barriers militating effective library service delivery. Other militating factors were inadequate computers, slow internet connection and lack of adequate training on ICT skills. A study by Baro and Asaba (2010) found that over 70 per cent of the librarians studied lacked the competencies to optimally utilise social technology tools for delivering library services. Their findings further revealed that about half of the participants showed that lack of time contributed to the low use of social media tools. Arif and Mahmood (2012), submitted that lack of computer training and literacy skills were specified by the librarians studied as hindrance to effective service delivery. In a similar study conducted by Muneja and Abungu (2012), the results revealed that lack of technical knowledge in the application of social media was a challenge to the librarians in Tanzania in rendering library services.

Owusu-Ansah, Gontshi, Muhbwa and Ukwoma (2015) investigated the application of social media and the results showed that lack of ICT skills was among the identified challenge by the library staff to effective service delivery. It was reported that Rhodes University Library provided continuous professional development training session twice a term to share knowledge, experiences and accomplishments of the library. They opined that there should be professional capacity development to keep abreast with current trends. In a study conducted by Nnadozie (2016) on ICT skills of university librarians and faculty members information delivery satisfaction in the South-East Nigeria, his findings revealed that out of 112 librarians studied, 87 responded and the data gathered were analysed using combination of descriptive and inferential statistics. The result showed that librarians' ICT skills affected the information delivery satisfaction of faculty members studied. The findings further found that librarians in the universities studied were yet to fully apply technologies to information delivery hence the need to improve on their proficiency in ICT use.

In a study conducted by Hamid, *et al.* (2011) on the use of online social networking revealed that barriers such as supported policy for social media use, technical: security, privacy and infrastructure, control and supervision, time, skills, cultural differences and language were identified for low utilisation of social media at the lecturers, students and higher education levels. Findings of a study conducted by Nnadozie (2016) revealed that lack of functional policy, modern ICT equipment and inadequate funding were indicated as

factors that hindered effective information delivery. Ola (2010) submitted that lack of proper funding, infrastructural issues and maintenance of Information Technology experts were identified for inefficient service delivery in university library. In a study by Ferdinand, Patrick and Ogo (2016), all respondents indicated Internet connection failure as major challenge, followed by shortage of fund for Internet services as admitted by 98 per cent of the participants while among other issues, 96 per cent of the participants attested to slow Internet service.

Noorhidawati *et al.* (2015) findings further showed that 59 per cent of the participants showed inadequate staffing as the libraries studied were under-staffed. The findings of their study also confirmed that lack of skills to apply social media for library inclusion and outreach activities was imminent as majority of the librarians have been practicing for over twenty years without upgrading their skills to meet their dynamic and evolving service delivery. Their findings also revealed that lack of time to adequately manage social media activities was a hindrance, as there was need for content updates as well as responds to feedbacks from library users which required time and efforts.

Kattimani and Naik (2013) studied information professionals ICT skills and challenges encountered in engineering college libraries in India. The authors' findings showed that out of the six challenges listed, the respondents indicated that work overload, lack of motivation and insufficient staff were the major challenges to ICT competencies of the librarians in the college libraries studied. Other challenges agreed to by the respondents as factors inhibiting their ICT competencies were poor funding and negative attitude of college management to regular ICT skills training.

Akporhonor and Endouware (2016) investigated the difficulties faced by university librarians in the Niger Delta area of Nigeria using social media tools. Thirteen university libraries which comprised federal, state and private were studied. The respondents (librarians) indicated that library policy and its use (84 per cent) hindered effective service delivery. Okiy (2005) looked at issues relating to effective application of ICT to information provision in Nigerian universities and opined that lack of national information policy inhibited effective library service delivery among tertiary institutions in Nigeria. In a study conducted by Alasa and Kelechukwu (1999) on internet and academic services in Nigeria, they found that poor supply of electricity was a major challenge to library service delivery. Electricity supply issue would hinder the use of computers, mobile phones, desktops and the Internet facilities by librarians to communicate their library physical and virtual users on library services and updates.

In a similar study conducted by Emwanta (2012), she examined the challenges of ICT application in Nigeria university libraries. Survey research method was used for the study. One hundred professional librarians from three universities in the South-east were selected through purposive sampling technique for the study. Questionnaire was used as instrument for data collection. Descriptive statistical analysis using frequency count and percentage was used to present the result of the author's findings. Eighty per cent of the questionnaire were returned and found useful for data analysis. Among the institutional factors that inhibited effective use of ICT for information service delivery, over 98 per cent of the participants confirmed that unreliable electricity supply, inadequate funding and maintenance issues. Other highlighted challenges were poor subscription of information resources, lack of commitment among stakeholders, literacy skills among staff and students and shortage of manpower.

A study by Akporhonour and Olise (2015) revealed that privacy issues, network problems were found to be obstacles to the optimal utilisation of social media for delivering services in the universities studied. On the contrary, 27 per cent and 47 per cent respondents reported very steady and steady power supply respectively which enhanced the application of social media for delivering library resources and services. Mullan (2009) opined that issue of privacy is a great concern for social media use. His submission corroborates Akporhonour and Olise (2015). Oyewusi (2008) found that non-availability of the Internet, poor electricity supply, and poor telecommunication infrastructure hindered the use of ICTs related tools in a Nigerian public university studied. In a study by Ejedafiru (2010) on challenges of rendering library services such as resource sharing among four Nigerian federal university libraries, findings established that state of the heart technological infrastructure such as the computers and the Internet was a problem to rendering such service.

The study of Husain and Nazim (2015) revealed that lack of ICT trained staff, low level of ICT skills, and lack of awareness of ICT benefits have been identified as main obstacles to ICT applications to library service delivery in Indian universities studied. Among the participants, 85 per cent indicated that lack of training on the use of ICT was a major barrier to ICT use for performing their responsibilities. Their findings also reported that 75 per cent indicated low literacy level of ICT benefits for service delivery. In the same vein, a study by Ajayi, Shorunke and Akintola (2013) on ICT application in tertiary institution libraries revealed that shortage of ICT professionals affected usage of ICT facilities as majority 66 per cent of the participants indicated that they did self-sponsor to

attend ICT training, workshop and seminars, while below 50 per cent of the participants attested to ICT training, workshop and seminars were been sponsored by their library.

In a study conducted by Ahmed (2014) on some public libraries services in Bangladesh found that the major challenge to effective use of ICTs based service was the absence of ICTs facilities that could enhance library activities. Other inhibitors indicated by the author's findings were lack of IT skilled library personnel and dwindling funding for the libraries IT facilities acquisition. Makori (2012) submitted that lack of ICTs, relevant knowledge and skills affected the use of social media for information services.

A study by Singh and Sarmah (2015) found that factors such as copyright, authenticity and institutional fears were indicators of impediment to the optimal use of social media. Ezeani and Igwesi (2012) submitted that issue on awareness among librarians in the developing countries, lack of social communication regulations, bandwidth problem: slow Internet connection, technophobia, lack of maintenance culture, unreliable power supply, lack of training, government intervention and copyright issue have contributed to non or low application of social media tools for delivering library services in Nigerian universities.

In the same vein, the findings of Quadri and Idowu (2016) study revealed that 83 per cent respondents – poor power supply, 82 per cent respondents – poor Internet connectivity, 67 percent respondents – lack of infrastructure and 65 per cent respondents – technical constraints were indicated as challenges of social media application for the dissemination of various library services in federal universities studied. In a study by Mommoh and Saka (2016), results revealed that half of the participants indicated lack of modern training facilities as a major challenge to acquiring ICT skills, followed by lack of fund to librarians training. Other challenges as claimed by the participants were lack of training opportunities, stakeholders and librarians attitude to ICT training.

Anyaoku, Orakpor, and Ezejiofor (2012) conducted a study on librarians' knowledge and use of social media, the findings revealed that 70 per cent of the librarians studied indicated no access to Internet connections in their libraries. In the same vein, Adetimirin's (2009) study on the use of technological facilities like the Internet by information professionals in some selected university libraries in South-west Nigeria found that only 11 per cent of the librarians studied accessed and used institutional based internet facilities while majority relied on other alternatives especially cybercafé. The findings further indicated that slow internet connection, cost of bandwidth and skills in internet facilities hinders its use among information professionals in Nigerian university libraries studied. Mergel (2012) asserted that low bandwidth prevented the use of social media such as Skype



due to poor bandwidth in many universities. Bosque, Leif and Skarl (2012) study found that issues related to institutional factors which affected delivering of services in academic libraries identified were restriction of the Internet access and privacy issues.

Bwalya (2014) examined the virtual library services in two university libraries in Zambia. The author findings from the two public university libraries revealed that major constraints to virtual library service delivery were poor Internet connection and low bandwidth. It was also emphasised by the systems librarians interviewed in the two universities who asserted that the issue of Internet and bandwidth had been on for a while. Other challenges as reported by the author were high cost of Internet subscription, lack of ICT training for staff and staff shortage. The author submitted that as a result of low literacy level of staff on ICT use, many services were not made available virtually on the Internet.

Abdelraheem and Ahmed (2015) study submitted that among the fifteen barriers listed, poor infrastructural facilities such as a slow Internet connection and non-availability of smart phones in the Sudanese university were major inhibitors to the use of social media. Their findings further showed that lack of training, excessive teaching hours, lack of incentive for faculty members and low level of technical support affected their effective use. Similarly, Madhusudhan and Nagabhushanam (2012)'s study result showed that majority of the respondents indicated that slow internet connectivity was a major barrier to accessing web based library services. Other barriers were inadequate terminal access and lack of systems. In a study conducted by Baro and Asaba (2010), on the status of internet connectivity in Nigerian university libraries, the present state according to their results showed that very few university libraries had steady and dependable internet access for use. In a study conducted in Pakistan by Arif and Moshood (2012), they found that unavailability of computers and internet facility hindered effective service delivery in the libraries studied.

In a study by Muneja and Abunju (2012) on the use of social technologies tools in delivering library services among selected libraries in Tanzania revealed that unreliable power supply and poor internet access were the barriers to service delivery. Uwaifo (2008) studied library automation and its ease of application in Nigerian university libraries. The author found that underfunding, poor electricity supply, and inadequate information technology (IT) facilities were hindrances to effective use of automated library systems. The study further revealed that technophobia was identified as a strong indicator that affected the application of automated library systems by the respondents.

The study of Mbofung and Popoola (2014) found that inadequate funding, non-purchase of software and lack of policy among others were major hindrances the librarians

encountered on the modern service delivery. Okiy, (2005) examined the strength of service delivery through the application of information and communication technologies in some university libraries in Nigeria. She reported that inadequate funding was a major factor affecting application of information and communication technology for delivering information services in Nigerian university libraries studied. Other barriers submitted by Okiy (2005) were interruptible power supply, low literacy level of both the government and citizenry on the importance of information and communication technology to development of university libraries. A low skilled personnel in the application of information and communication technology facilities to library services was a problem.

Fabunmi (2009) examined the status, prospect and challenges of virtual libraries in Nigeria. She submitted that university libraries were in an unacceptable state as equipment needed to keep virtual library running were not present. She further reported that inadequate funding was a major challenge to application and sustainability of the virtual libraries. Inadequate funding deprived the university libraries from acquiring necessary ICT facilities that could enhance virtual service delivery in Nigerian universities. Ola (2010) studied reference library service, prospects and challenges faced especially in academic libraries in developing countries. He admitted that the major problem limiting best practice reference service was inadequate funding to acquire the necessary infrastructural facilities that could aid effective reference service delivery. The author further stated that inadequate information technology experts and bureaucratic means of ICT facilities management were barriers to reference service provision.

Abubakar (2011) examined the situation of information services in Nigerian academic libraries and way forward. He submitted that inadequate funding was a major constraint to rendering 21<sup>st</sup> century service to both the physical and virtual library users. The author further reported that poor internet connectivity and lack of ICT equipment in many academic libraries had hindered improved library service delivery. Ola, (2011) discussed funding Nigerian university libraries and submitted that library serves as a centre for teaching, learning, research and recreational functions hence should be adequately funded to achieve and optimise these functions. He posed that denial of adequate funding paralysed research exploitation and academic activities of the university system.

Ubogu and Okiy (2011) assessed sources of funding in some academic libraries in Nigeria. Their findings revealed that all the head of libraries studied indicated that government subvention was the major source of their libraries funding but was found to be inadequate to cater for the acquisition of resources and services provision. Their findings

showed that 80 per cent of the respondents indicated that their main source of funding was insufficient. Anasi and Ali (2012) carried out a study on resource sharing among some university in Nigeria. One hundred and twenty-four professional librarians from six geographical zone of Nigeria were surveyed using descriptive research method. Questionnaire was used to capture data on the subject matter of the study. The findings of their study revealed that inadequate funding was a major problem to achieving resource sharing among the libraries studied. Other barriers identified were unskilled librarians in ICT and erratic power supply.

Eze and Uzoigwe (2013) conducted a study on library and information provision. Descriptive survey design was adopted for the study. One hundred and thirty-two librarians form seven universities in the South East Nigeria were studied. Questionnaire was used to collect data on the study. The authors found that inadequate funding as indicated by 94 per cent of the respondents was a primary challenge to effective service delivery. Their findings further revealed that 93 per cent of the respondents agreed to poor ICT such as electronic facilities. Other barriers as indicated by the respondents were high cost of ICT facilities maintenance, lack of conducive office environment and low level of librarians ICT skills. Ishola (2014) submitted that funding of the public and private universities studied was grossly inadequate as procurement of ICT facilities was very high.

Clee and Maguire (1993) examined influence of library environment on library usage. The authors adopted interview and observation methods to gather the opinions of library staff and users on the subject of the study. They submitted that 62 per cent of the respondents were happy about the lighting of the library and that the natural light should be more prevalent. They further indicated that library management should delve more into improving the factors that could serve as the constraints to effective library environment. In a related study, Haynes (2008) assessed the effect of office setting on library personnel productivity in the United Kingdom. The results of the findings indicated that office environment could act as a conduit for library activities; hence it should be conducive for service delivery. The result further emphasised the need for the creation of an enabling environment in order to engender efficient service delivery. In analysing the impact of workplace connectivity on office productivity among worker, Haynes (2008a) suggested that there are some hard variables that are related to the traditional environmental comfort variables such as heat, light and ventilation. While the soft variables such as decoration and cleanliness of the office setting and the occupants' physical safety could have influence on

their productivity. He opined that both hard and soft variables should be present in any work environment as such would make staff to be comfortable to work effectively.

A study by Lin and Liang (2011) explored the influence of physical work environment on customer emotions and service outcome. The physical environment covered was ambient and designs. Survey design was adopted for the study. Questionnaire and observation was used for data collection. The authors' findings revealed that social and physical environment influenced customer emotion and service delivery. Their findings further established that physical environment had more influence on emotion and service delivery.

Haynes, Suckley and Nunnington (2017) evaluated productivity of staff in workplace settings. Assessment of the workplace spaces was carried out by their users in the Middle East region. The study made use of survey method to gather data from the employees of a significant company with operations. They reported that five components of working environment, that is office comfort, types of office space, interaction, distraction and social interaction points could exhibit different impact on the office occupants' perceived productivity. In Netherlands, Been and Beijer (2014) examined workers' office type on support for better job productivity. Survey research design with mixed method (questionnaire and interview) was adopted to gather data from 11,799 respondents. Their results indicated that there were three main common workplace settings common in Netherlands (individual and shared room offices, combi offices and flex offices). Data collected were analysed by regression method in order to establish the impact of these variables on the type of office. They noted that the type of office was a major influence of the variables studied, while people can choose to work in various workspaces like in combi and flex offices, evaluating productivity support, concentration and privacy less positively than people working in personal and shared room offices. In combi offices, people are more satisfied with communication than in personal and shared room offices compared to what is obtainable in flex offices.

Babalhavaeji and Farhadpoor (2012) critically evaluated the impact of academic libraries' external environment on environmental scanning by managers of central libraries of Islamic Azad Universities in Iran. The findings indicated that library managers usually embark on external environment scanning. The participants claimed that technological and socio-cultural sectors were of paramount importance to them. Chadburn, Smith and Milan (2017) assessed productivity as the drivers of knowledge in workplace settings in Central London. Data were gathered with the aid of a closed-ended questionnaire meant for eight

professional companies (Consultancy, Financial and Media Services) staff. The results revealed that comfort, rest room, Internet connection, excellent design and timing had influenced on staff of Central London companies service delivery. Some participants claimed to prefer a flexible variety of office environments to stimulate an open and interconnected job atmosphere, information sharing, cooperation, and quiet concentration free from distractions and noise. Their results further showed that other participants would rather work in open-plan office space with initial resistance.

Roelofsen (2002) investigated the influence of office spaces on the participants' productivity in Netherlands. The conduciveness of the working environment in relationship with enhanced productivity was also examined. The author noted that only the high visually demanding tasks had effect on the indoor workspace settings and lighting levels for effective productivity. Results also demonstrated that good ventilation has a significant effect on the productivity of office workers in both positive and negative terms.

Ugwuanyi and Ejikeme (2011) study on new era information professionals in four Nigerian universities found that all the participants admitted that there were challenges militating against their ICT skills development. The most prominent among the challenges were unreliable power supply with the highest average mean score 3.8, followed by high cost of ICT equipment with average mean score of 3.7 and high cost of training librarians. Other limitations as indicated by the respondents were selection of ICT technologies, problems of hardware and software repairs and change, staff training limited opportunities and staff resistance attitude to change.

Result of a study conducted by Ferdinandi, Patrick and Ogo (2016) supported dwindling funding of academic libraries especially in the area of Internet services. Nnadozie, (2016) findings showed that inadequate funding had contributed to poor service delivery in the university libraries studied. In a study conducted by Ajala and Ojo (2011), they found inconsistent power supply as a major challenge of electronic document delivery service. Other challenges were lack of training and inadequate funding. In same vein, Ajayi *et al.* (2013) findings revealed that inadequate power supply, obsolescence of ICT facilities and inadequate funding were issues peculiar to the use of ICT in the tertiary institutions studied. Seventy-one per cent of the respondents agreed that subvention from the government was inadequate to support the university funding. On the contrary, findings of Ferdinand *et al.* (2016) found that electricity supply was not a problem to Internet facilities access and use.

A study by Opeke and Onuoha (2013) found that restriction in use of social media during official hours topped the challenges, followed by erratic power supply and privacy

issue for service delivery. Rogers (2015) found that the level of application of social media differs among the librarians studied. He opined that funding adequacy level, size of the library staff strength skills were responsible for inequality of service delivery in the university library studied.

## **2.9 Theoretical framework**

There are array of theories and models that are applicable to use of technology for service delivery and the associated factors. Such theories and models are: Diffusion of Innovation Theory (DOI) (Rogers, 2003), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis and Davis, 2003), Technology Acceptance Model (TAM) (Davis, 1989), Media Richness Theory (MRT) (Daft and Lengel, 1984; Daft and Lengel, 1986) and Uses and Gratifications Theory (UGT) (Rosengren, 1974). For the purpose of this study, Media Richness Theory, Uses and Gratifications Theory and Institutional Theory were adapted. The three theories provided the framework for the study.

### **2.9.1 Media Richness Theory**

Media Richness Theory (MRT) was propounded by Daft and Lengel (1984) and the theory proposes that activities could be carried out through different means of communication. Different tasks accomplishment would be improved upon when the tasks to be performed are matched with the appropriate medium of information communication. In the context of this work, it implies that various media could be used to deliver various library services which in turn will create better awareness and increase the use of library information resources and services. It has been proven that MRT has relationship with communication media (Rice, 1992; Rice, 1993; Adetimirin and Agboluaje, 2011). MRT implies that conventional and modern media can be used to deliver services (Daft, Lengel and Trevino 1987). Different library services should match the appropriate medium of service delivery.

Daft and Lengel (1986) argued that the level of richness of each medium differs and the appropriate media should be used as channel of communication. This theory is based on richness of the appropriate medium of delivering services by librarians to the targeted audience.

A study by Park, Chung and Lee (2012) explored the use of three text based communication methods such as electronic mail, mobile phone text and Facebook in relation to Media Richness Theory and Uses and Gratifications Theory and effect of facilities provision. Survey design was used for the study. Data gathered were analysed. The authors'

findings revealed that the concepts of each of the theories and application of diverse institutional factors such as ICT facilities and devices would be an underlying factor to effective utilisation of different media for communication and service delivery. Their findings further revealed that the Internet, computers, mobile phones had influenced the type of text communication opted for by the respondents.

Harrison, Burrell, Velasquez and Schreiner (2017) examined the use of social media among six public and private academic libraries in two Midwest States and its relationship with Institutional Theory. The study assessed contents of the library websites. The authors' result found that social media posting that became the contents of the social media were coded into ten items which were archives, collections, events, exhibits, facility, library community, sentiments, services, site management and university community. These ten items were further categorised to three themes such as libraries provide outreach service, establishing real time connection with their users and users access to content of the library. The study further showed that there was a policy that guided the use of social media postings by the two Midwest States university library.

Yu-Feng and Yang-Siang (2010) carried out a study on social media use for virtual learning and communication. The study assessed RSS feed, email and Short Message System (SMS) for service delivery and the role played by the Media Richness Theory in terms of media richness, timeliness, accuracy and adaptability. Repeated measures of one-way ANOVA analysis was used to analyse data collected. The authors' findings revealed that in terms of content timeliness to concerned users, short message system was found appropriate for instant and sensitive information notifications and reminders as it performed better than RSS feed and email. The result of the study further showed that RSS feed media was best for content precision while email was found best for comprehensive service delivery. The authors' findings submitted that appropriate media should be applied to support learning and information service delivery.

Shinnawy and Markys (1997) investigated Media Richness Theory in the context of electronic and voice mail use in the United States of America. The study adopted survey design method. Data were collected through questionnaire and interview schedule. The instruments were developed from the literature, pretested and piloted in another corporate organisation in order to validate the instruments. The questionnaire consists of 35 items that sought for the participants' preference for voice mail or email for service delivery. One to five Likert type scale rating was used with seven communication situations which was adapted from Daft *et al.* study of 1987. Interviews were conducted to sought the preference

of individuals' and complement the questionnaire responses. Two hypotheses were tested at 0.05 level of significance. Data collected was analysed and presented in means, standard deviations, *t*-scores and probability.

Furthermore, Shinnawy and Markys (1997) found that majority of the respondents indicated that they preferred email to voice mail as mode of communication or service delivery. Transcription from the interviews also supported email for communication purposes. Seventy-four per cent of the respondents agreed to information delivery through e-mail, 16 per cent preferred voice mail while nine per cent declined. Their findings further reported that the respondents' made email their referenced mode of communication because of graphical functionality of email, facilities for the management of correspondences, files download features sharing feature, print possibilities, organisation and retrieval of emails at any point in time. The authors claimed that media such as face-to-face interactions and phone calls is high in richness as it clears ambiguity and uncertainty in content of communication for recipients who did not have access to computers while media such as written mail is low in richness as it is more suitable for disseminating large amount of information.

### **2.9.2 Uses and Gratifications Theory**

The second theory is Uses and Gratifications Theory that was propounded by Rosengren (1974). The theory is about the application of social and emerging technologies to personal, social and educational activities. Uses and Gratifications Theory explained the application of social media and information communication technologies to various services. In the context of this study, various social medial platforms could be used by librarians to gratify users' information needs regardless of location and time. A study by Rauniar, Rawski, Yang, and Johnson (2014) confirmed that a relationship existed between the application of social media and information communication technologies for delivering services. Uses and Gratifications Theory is a social and psychological theory that hallmark human communication behaviour, driven by people's needs and desire (Katz, Blumler, and Gurevitch, 1973, 1974; Rosengen, 1974). Communication with the use of social media platforms to satisfy those needs and desires cannot be overemphasised in the present information age. Users sought and obtain gratification for different purposes with the application of social media (Ruggiero, 2000; Zohoorian-Fooladi and Abrizah, 2012; Gan and Wang, 2015). Within the purview of this study, Uses and Gratifications Theory implied to the use of different types of social media platforms for delivering library and information



services to the users. Librarians could have real-time communication with the users and share information in different formats at anytime.

Librarians strive to render services to their clientele in order to promptly carry their users along with library information and timely solve their information needs. Motive is the core behind communication behavior such as the selection of appropriate social media and type for library service delivery. Specific motives such as different library services have been linked to choosing media such as radio (Lazarsfeld and Field, 1946), television, talk radio, Internet and World Wide Web (Hanson and Hanson, 2006; Kaye and Johnson, 2002; Paracharissi and Rubin, 2000) and recently to web based setting media (Lin, Salwen and Abdulla, 2003; Tewksbury, 2003).

Uses and gratifications approach is useful in the understanding of the audiences' (librarians') media use for various activities, their impact and the effects of use. The theory centred on the application of social media for communication among people. It involves librarians' active interaction and real time communication with their users and the gratification obtained. Zohoorian-Fooladi and Abrizah (2012) examined the relationship between Uses and Gratifications Theory and social media use by academic librarians in Malaysia. Fifteen librarians and three universities constituted the population of the study. Interview method was used for data collection. The authors' findings revealed that majority of the respondents indicated that Facebook would be a good social media to interact with library users. Their findings further submitted that all the university libraries studied used at least four social media applications such as Facebook, YouTube, Delicious, Bog and Twitter. All the libraries studied used Facebook to interact with the library users. Their findings also showed that librarians used social media mostly to announce latest up-dates, new acquisition arrivals and interact with library clientele. Their results also reported that the librarians sought gratification from the use of social media in the area of current trend, communication with the users and connect users with the library.

Lev-On (2015) examined uses and gratifications of members of Ministry of Social Services in Israel. The author found that members of the communities sought gratification in the area of time management and non-restriction in respect to geographical distance. The author's findings further showed that users simultaneously used social media to communicate and share information. The utilisation of social media for delivering library services could not be ascertained without some institutional factors such as policy, infrastructure, environmental factors, ICT skills and funding being put in place which is

embedded in Media Richness Theory, Uses and Gratifications Theory and Institutional Theory.

### **2.9.3 Institutional Theory**

According to Amenta and Ramsey (2010), institutional theory is concerned with sociological, historical and political institutionalism. The institutional theory centred mainly on standards and norms guiding an organisation's structure. In this study such standards could be applied to library policies, infrastructure, environment, ICT skills and funding. Established higher institutions are expected to operate on international standard for optimal service delivery, hence, there should be policies such as rules and regulations guiding and binding their operations. University libraries need to always review their policies to align with current trend in service delivery in order to perform effectively. Infrastructural facilities provision cannot be overemphasised in the university settings reason being that, it is the hub for ICTs based activities. Therefore, availability of infrastructural facilities, access and use would influence the efficient and effective service delivery in university libraries and particularly in Nigeria.

Child, Haridakis and Petronio (2012) investigated the blogging content privacy rules and management before, during and after blogging activities. Five bloggers privacy rule such as self-centric, utilitarian, the planner, the protector and unworried orientation were identified. Six different motives for applying privacy rules and management were also recognised. From the findings, the authors opined that different active reactions of bloggers determined their behavior and as such showed that relationship existed between the rules and social media used. Their findings further submitted that as social media use improved, privacy rules and management would play a fundamental role for its effective application.

Joo and Sang (2013) conducted a study and examined the use of smartphone by Koreans and to establish its correlation or otherwise with Technology acceptance model and Uses and Gratifications Theory. Survey research design was adopted for the study. Population of the study was 419 Korean adults that used Apple's iPhone. The authors findings showed that to a great extent, the use of iPhones' and other smartphones was based on purpose driven motivations and less goal-oriented use. The authors' result also submitted that as ICT and innovation are been explored, more users would be motivated to apply them to their day-to-day activities. Findings further showed that as users applied the use of smartphones their motives were gratified.

This study adapted Media Richness Theory (types and mode of service delivery), Uses and Gratifications Theory (social media: types and frequency) and Institutional Theory (institutional factors: library policy, infrastructure, environment, ICT skills and funding). The adaption is to ascertain the causal relationships between institutional factors and the application of social media to service delivery by professional library staff as proposed by this study. The study proposes as in Media Richness, Uses and Gratifications and Institutional Theories that institutional factors and social media application may influence the provision of library services to support teaching, learning and research. The study therefore assumed that effective delivering of services among librarians in Southern Nigeria universities may have relationship with institutional factors and social media use. The institutional factors and social media use fit into Media Richness Theory (MRT), Uses and Gratifications (UG) and Institutional Theory as they could determine achievement of effective service delivery in Southern Nigeria university libraries.

## **2.10 Conceptual model**

The conceptual model of this study Figure 2.1 shows how the independent variables (institutional factors and social media use) relate to the dependent variable (service delivery). Presence of institutional factors (library policy, infrastructure, environment and ICT skills and funding) and social media use act as supports and means of communicating to university community members on library services may enhance librarians' timely delivery of information and updates, real time communication and closer relationship with the library users.

The review of literature has shown that librarians are anticipated to incline to delivering of timely services to support teaching, learning and research. Services such as library materials recommendation, library registration, interlibrary loan, selective dissemination of information, document delivery, reference service, outreach service among others could be affected by institutional factors (library policy, infrastructure, environment and ICT skills and funding) and social media use (types and frequency). The presence and continuous evolving information and communication technologies have compelled librarians to adopt the use of social media for effective notification of latest addition to the library collections, library education, information literacy, reference services, and library updates. This study proposed variables such as institutional factors (policy, infrastructure, environment, ICT skills and funding) has relationship with social media use and service

delivery. Institutional factors and social media use which are web based correlates effective service delivery by users who are librarians.

The Conceptual model was arrived at from theoretical reviews, empirical reviews as well as logic and reasoning. Thus, the model proposed that there is a relationship between institutional factors and service delivery. Relationship exists between social media use and service delivery while institutional factors have direct relationship with social media use Figure 2.1.

## Conceptual Model

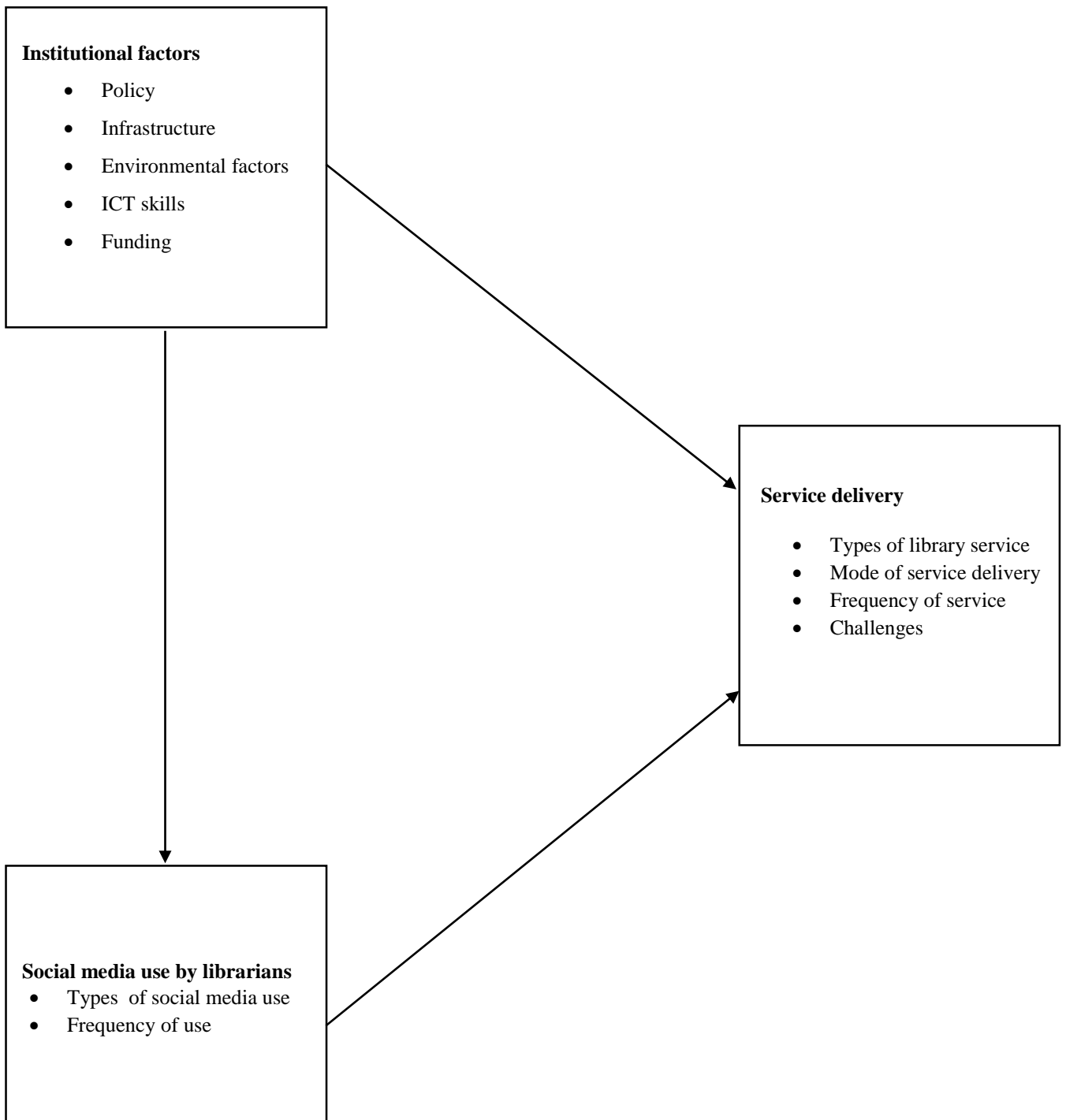


Figure 2.1: *Self-constructed model on factors affecting library service delivery*

## **2.11 Appraisal of the literature reviewed**

Literature reviewed on institutional factors and social media use for service delivery among librarians in the university libraries revealed that application of social media in university libraries has promoted service delivery and bridged the gap between the libraries and their users on access to timely information and other library services. There was awareness of different types of social media among librarians and the social media have been deployed to deliver services to the users in the universities. The influence of institutional factors on social media use and their challenges to service delivery were highlighted by previous researchers.

The literature reviewed affirmed that university libraries have embraced the application of social media for delivering services especially in some developed countries. However, the use of social media is still low in the developing countries' universities and in Nigeria in particular. There was awareness and positive perceptions of social media among the librarians in Nigeria. The use of social media by librarians was highlighted. The importance of social media use has made many university libraries to embrace the delivering of various services in the library virtually. Library personnel, especially the professionals in Nigerian universities have started using social media. However, empirical studies were few in terms of application of social media platforms for delivering services in libraries in Southern Nigeria universities.

In the developed countries such as Australia, United Kingdom and United States of America, studies have further revealed that institutional factors and social media use have positive relationship with delivering of services by the professionals in university libraries. But in the developing countries and Africa in particular, some empirical studies have revealed that there were challenges identified with the relationship between institutional factors and social media use in relation to service delivery. There is need to ascertain the status of service delivery in university libraries in Southern Nigeria.

Many studies on the application of social media have been on perception and awareness. Studies on institutional factors and social media use as jointly related to service delivery in Nigeria university libraries was few. Therefore, there is need for this research to fill the gap in the body of knowledge.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the method and procedure that was applied in achieving the objectives of the study. The study is on institutional factors and social media use as correlates of service delivery among librarians in universities in Southern Nigeria. This chapter discussed the research design, population of the study, sampling technique and sample size, research instruments, validity and reliability of the research instruments, procedure for data collection and method of data analysis.

#### **3.2 Research design**

This study adopted descriptive survey design of the correlational type. Descriptive survey design was adopted owing to the fact that it facilitates the collection of holistic data which could be generalised to a larger group (Aina and Ajiferuke in Aina (2002); Jaiyeoba and Salami in Alegbeleye, Mabawonku and Fabunmi (2006); Rugg and Petre (2007). The descriptive research design allows combination of the use of questionnaire and items observation to collect data on the constructs of the study. The descriptive design also minimises bias and maximises the reliability of the data collected and analysed. The descriptive design of correlational type could be referred to as non-experimental study that determines if relationships exist between variables without manipulating independent variables of a behavioural research study (Pandey and Pandey 2015). Therefore, descriptive survey design of the correlational type was found applicable to this study as it intended to establish or otherwise the relationships between the dependent and independent variables of this study.

#### **3.3 Population of the study**

The population of the study comprised all librarians in the universities in the three geo-political zones of South-East, South-South and South-West of Southern Nigeria. In these geo-political zones there are 17 states in all. There are five states in South-east: Abia, Anambra, Ebonyi, Enugu and Imo; six states in the South-south: Akwa-Ibom, Cross-River,

Bayelsa, Rivers, Delta and Edo; and six states in the South-west: Ekiti, Lagos, Ogun, Ondo, Osun and Oyo. There are eighty-five (85) universities in Southern Nigeria, and in these universities, there were 754 librarians as at the time of this study (National Universities Commission, 2018 and field data).

There were 17 universities in South-east, 23 in the South-south and 45 in the South-west. These were made up of 17 federal, 23 states and 45 private universities. Table 3.1 showed the summary of the universities by giving the types of university and geopolitical zone.



**Table 3.1: Distribution of universities in Southern Nigeria**

<b>Zone</b>	<b>Federal University</b>	<b>State University</b>	<b>Private University</b>	<b>Total</b>
South-East	4	5	8	<b>17</b>
South-South	6	9	8	<b>23</b>
South-West	7	9	29	<b>45</b>
<b>Total</b>	<b>17</b>	<b>23</b>	<b>45</b>	<b>85</b>

*Source: National Universities Commission website <https://www.nuc.edu.ng> (2018).*

According to each geographical zone, there were 174 librarians in the South-east, 224 librarians in the South-south and 356 librarians in the South-west. There were 299 librarians in the federal universities, 229 librarians in the state universities and 226 librarians in the private universities Table 3.2. All the librarians (754) in the 85 universities in the Southern Nigeria constituted the respondents of the study. All the 754 librarians in the universities constituted the research population. The list of librarians available in the universities has been provided in Table 3.2

**Table 3.2: Distribution of librarians in libraries in Southern Nigeria**

<b>Zone</b>	<b>Librarians in Federal Universities</b>	<b>Librarians in State Universities</b>	<b>Librarians in Private Universities</b>	<b>Number of Librarians</b>
South-East	87	54	33	<b>174</b>
South-South	95	88	41	<b>224</b>
South-West	117	87	152	<b>356</b>
<b>Total</b>	<b>299</b>	<b>229</b>	<b>226</b>	<b>754</b>

*Source: Data gathered from the field work March-July, 2018.*

### **3.4 Sampling technique and sample size**

All the librarians (754) in the universities in Southern Nigeria participated in the study (Table 3.2). The total enumeration technique was adopted for the study. This is in line with the position of Isangedighi and Ogomaka (1992), and Denscombe (2003) who submitted that where the population size of the study is not so large, all the population could be studied. Therefore, total enumeration was found suitable for the research because of the size of the population which is not in thousands. They were the subject of the study because they are professionals who have been trained to render service to the staff and students in solving their information needs.

### **3.5 Research instruments**

The research instruments used for this study were questionnaire and observation checklist. The reason for use of questionnaire is that it is a flexible tool for collecting information from the respondents considering time, scope and population of the study. Two sets of questionnaires were used for data collection. The first questionnaire was used to gather data from the librarians while the second was used to collect data from librarians who were heads of libraries. The observation method was used to assess physical library facilities provided for service delivery.

The first questionnaire was meant for the librarians on service delivery, institutional factors and social media use. It was tagged Questionnaire on Librarians' Service Delivery in University Libraries (QLSDUL) and was further divided into five sections (A, B, C, D, and E) with scale to measure the various constructs of the research model.

Section A pertained to the background information. It comprised eleven (11) items such as university, name, gender, marital status, age, status, qualification and work experience.

Section B focused on Institutional Factors and Service Delivery (IFSD) and sought information on institutional factors such as policy, infrastructure, environment, ICT skills, and funding. It comprises five items. The scale used for this section was adapted from the study of Husain and Nazim (2015), Tiganoaia (2015), Ahmed (2014), Lin and Liang (2011), Jayasundara, Ngulube and Minishi-Majanja (2009), Heinrichs and Lim (2009), Mommoh and Saka (2016) and modified to reflect this study. Four Likert type Agreement scale from Strongly Agree (SA) = 4, Agree, (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1

was used to collect data on library policy. The scale was used to gather data on infrastructural facilities. Data was collected on environmental factors while data on ICT skills possessed by librarians was collected with five Likert type of Frequency scale from Very High = 5, High = 4, Moderate = 3, Low = 2 and Very Low = 1 and data on sources of the ICT skills acquisition was collected on four Likert type Agreement scale from Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1.

Section C centred on Social Media Use for Service Delivery by Librarians (SMUSDL). It focused on the types of social media tools used and frequency of use. This section comprised three items in total. The scale used in this section was adapted from the studies of Anwyll and Chawner (2013), Noorhidawati, Chu, Rajagopal, Wan, and Yeung (2015), Kim and Jeong (2015) and partly modified by the researcher to conform with the research study. The scale used for this section was: period of experience with less than a year (1), one to two years (2), three to four years (3), and five years above (4); frequency of use with five Likert type Frequency scale from Daily (5), Twice a week (4), Weekly (3), Monthly (2) and Never (1).

Section D was on Library Service Delivery by Librarians (LSDL). It comprised three items. The section collected data on types of service delivered by the librarians. The scale used for this section was adapted from the study by Adetimirin and Agboluaje (2011) and modified by the researcher. There were 17 services listed: library materials recommendation, library registration, interlibrary loan, selective dissemination of information, document delivery, reference service, outreach service, prompt notification of library development, notification of OPAC additions, notification of institutional repository update, notification of new library resources arrivals, images/photos service, library orientation, library education, translation, charging and discharging of library materials.

Data was also collected on the methods used for service delivery with response options conventional; face-to-face, noticeboard, flyer, journal, newspaper, conference proceedings, exhibition, bulletin/magazine, internal memo, and display rack and virtual; telephone call, text messages, e-bulletin, e-mail, library website, WhatsApp, Facebook, Youtube, Blog, Twitter, Skype, and Flickr. Five - point Likert type Frequency scale responses option was used to collect data on services delivered: Daily (5), 2-3 times a week (4), Weekly (3), Monthly (2) and Never (1).

Section E on Challenges of Service Delivery by Librarians (CSDL) was used to determine the challenges of service delivery. It comprise one item. Four Likert type Agreement scale from Strongly Agree (SA) = 4 , Agree (A) = 3, Disagree (D) = 2, and

Strongly Disagree (SD) = 1 was used to answer the questions. The items were designed by the researcher with the aid of information from the literature (Emwanta 2012; Baro and Asaba 2010). Suggestions on how effective service delivery in university libraries could be achieved was sought (Appendix I).

The second questionnaire was used to collect data from 85 heads of libraries on institutional factors that affected service delivery in their respective libraries. It comprised 19 items (Appendix II).

The Observation method was used to ascertain facilities provided for service delivery in the universities studied. The researcher and five research assistants used the Observation checklist with 11 items for this purpose. (Appendix III for a list of the facilities).

### **3.6 Validity and reliability of the research instrument**

The instrument was face-validated by the supervisor and four lecturers from the Department of Library, Archival and Information Studies (LARIS). The instrument was also assessed for content validity to ensure that all the items on the constructs were derived from the literature. The questionnaire was administered to those not included in the sample of the study. A pre-test of the questionnaire was carried out on 30 librarians from some universities in North-central of Nigeria since the study focused on Southern Nigeria to ascertain the reliability coefficient of the items of the research instrument using the Cronbach Alpha.

Thirty librarians from four university libraries outside the study zone in Kwara State: University of Ilorin, Kwara State University, Landmark University and Al-Hikmah University constituted the respondents from whom data were collected to test the reliability co-efficient ( $r$ ) of the questionnaire. The results showed the following: Service delivery scale:  $r = 0.94$ , Institutional factors scale: library policy=0.97, infrastructure=0.89, environment=0.85, ICT skills=0.96 and funding= 0.78, and Social media use scale:  $r = 0.93$ . The findings implied that the questionnaire was reliable for data collection.

### **3.7 Procedure for data collection**

Copies of the questionnaire for the study were administered to the librarians and heads of university libraries in the selected institutions with the aid of five research assistants. The researcher trained five research assistants on the administration and collection of the instrument from the respondents. The researcher monitored the administration of the questionnaire. The researcher and five research assistants observed the libraries facilities

during the administration of questionnaires in the universities studied between 10:00am and 2:00pm using the observation checklist to ascertain responses of the respondents.

**Table 3.3: Distribution of questionnaire in libraries in Southern Nigeria**

<b>University</b>	<b>No. of copies administered to librarians (Ls) and university librarians (ULs)</b>	<b>No. of copies returned by Ls and ULs</b>	<b>%</b>
Federal universities	299	224	75
State universities	229	179	78
Private universities	226	211	93
<b>Total</b>	<b>754</b>	<b>614</b>	



Table 3.3 shows a total of 754 copies of questionnaire were distributed to the participants while 614 copies were recorded as return rate.

### **3.8 Method of data analysis**

Data collected were analysed using descriptive statistics such as frequency counts, percentages, mean and standard deviation for research questions while correlation and regression analysis was used for the research hypotheses. Pearson Product Moment Correlation was used to analyse hypotheses 1-3 and Multiple regression analysis for hypothesis 4 of this study at 0.05 level of significance. The choice of these methods was because the study sought to determine the relationship between the independent variables (institutional factors and social media use) and the dependent variable (service delivery) of librarians in universities in the Southern Nigeria. The quantitative data were analysed using Statistical Package for Social Sciences (SPSS). Content analysis was adopted to report the findings from observations.

### **3.9 Ethical consideration for the study**

I hereby state that this research was carried out by me and all referenced authors, editors and corporate organisations in this thesis were properly cited and acknowledged. Participants were not under fear or pressure, answers were gathered from them out of their own willingness to be involved in the survey. Therefore, Ethical considerations that guided the research in the course of this work are listed under the following headings:

- a. **Plagiarism:** The research was subjected to check through Turnitin to ascertain the originality of the study. Citations and references in the study complied to University of Ibadan manual style of referencing.
- b. **Confidentiality:** The introductory aspect of the instruments used conveyed sureness and privacy of the respondents as their responses will be used for research purposes only. Third party shall not have access to the data and would not be used for commercial purposes. The questionnaires will be destroyed after the completion of this study to avoid future leakage.
- c. **Informed consent:** Respondents were formally informed and were not under any compulsion to take part in the survey. The details of data gathered and the analysis was strictly meant for research purpose hence, the respondents willingly participated in the survey.

- d. **Falsification and Fabrication of data:** Data gathered only from the field was used by the researcher in this study. Findings and discussions were based on the data gathered from the field and literature reviewed. Therefore, there was neither falsification nor fabrication of data in the study.
- e. **Risk concern:** The participants of this study were librarians in all the Southern Nigeria universities. There is no form of threat involved in the study as questions' relating to religion was eliminated from the instruments.
- f. **Beneficence:** The findings of this study could be useful to the university management, library management, librarians, and library users. Results of this study could improve the mitigating factors and enhance university libraries service delivery.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter reports the findings gathered from the field. The study covers all the librarians in the federal, state and private universities in South-east, South-south and South-west of Nigeria. Data was collected within five months (March – July 2018) with the assistance of five research assistants. The presentation of results is divided into five parts. The first part deals with the response rate of the questionnaire. The second part reports demographic information of the respondents. The third part covers findings of the research questions. The fourth part unveils the result of the research hypotheses while the fifth part deals with the discussion of the findings on the constructs of this study which are institutional factors, social media use and service delivery.

#### **4.2 Questionnaire response rate**

Questionnaire was administered on all the 754 librarians which included the university librarians spread across 85 universities in Southern Nigeria. Two sets of questionnaire were used for data collection. Out of the 669 copies of the first questionnaire administered on the librarians, 546 copies were returned and found valid for analysis. This represents a response rate of 81.6%. Similarly, out of 85 copies of the second questionnaire distributed among the university librarians, 68 copies representing 80% were returned and found useful for analysis. The addition of response rate of librarians (546) and university librarians (68) gave the total of 614. The details of these are as presented in Table 4.1 based on federal, state and private university categories.

**Table 4.1: Questionnaire response rate on Federal, State and Private universities**

<b>University</b>	<b>No. of copies administered to librarians (Ls) and university librarians (ULs)</b>	<b>No. of copies administered to Ls</b>	<b>No. of copies responded to by Ls</b>	<b>No. of copies administered to ULs</b>	<b>No. of copies responded to by ULs</b>
Federal universities	299	282	212	17	12
State universities	229	206	161	23	18
Private universities	226	181	173	45	38
<b>Total</b>	<b>754</b>	<b>669</b>	<b>546 (81.6%)</b>	<b>85</b>	<b>68 (80%)</b>

It could be observed from the information shown in Table 4.1 that in federal universities, total response rate in federal universities was 75% (that is 212 out of 282 copies of the questionnaire were retrieved and valid for analysis). Similarly, twelve copies of the questionnaire administered to the university librarians were retrieved out of the seventeen copies. This represents 70% response rate for the university librarians in federal universities (Appendix V for more details).

The total response rate in state universities was 78%. On the university librarians in state universities, 18 out of the 23 copies of the questionnaire were returned and this also represents a response rate of 78% (Appendix V for more details).

The response rate of questionnaire administered on librarians in private universities in Southern Nigeria as presented in Table 4.1 revealed that response rate in private universities was generally higher than those recorded for federal and state universities as there are more private universities in the Southern Nigeria. Similarly, 38 out of the 45 university librarians in private universities returned their copies of the questionnaire and this represents 84.4% return rate (Appendix V for details).

Finally the overall response rate judging by the total number of questionnaire distributed with those returned was 81.4% which is well above the acceptable rate for researches in the Humanity.

### **4.3 Demographic characteristics of the respondents**

Demographic characteristics such as gender, age, job status, section of work in the library, experience, educational qualifications and job status of the respondents were analysed using descriptive statistics of frequency counts and percentages and the result is as presented in Table 4.2a and Table 4.2b.

**Table 4.2a: Demographic characteristics of the librarians**

<b>Demographic characteristics</b>	<b>Categories</b>	<b>Frequencies (N=546)</b>	<b>Percentages</b>
<b>Gender</b>	Male	264	48.4
	Female	282	51.6
<b>Marital status</b>	Married	441	80.8
	Single	94	17.1
	Widow	10	1.8
	Widower	1	0.2
<b>Age</b>	25 – 35	136	24.9
	36 – 45	198	36.3
	46 – 55	169	30.9
	56 – 65	43	7.9
<b>Status</b>	Deputy University Librarian	70	12.9
	Principal Librarian	93	17.0
	Senior Librarian	124	22.7
	Librarian I	118	21.6
	Librarian II	140	25.6
	Assistant Librarian	1	0.2
<b>Position</b>	Acquisition Librarian	51	9.3
	Circulation Librarian	97	17.8
	Serials Librarian	51	9.3
	Systems Librarian	36	6.6
	Reference Librarian	37	6.8
	Readers' services librarian	66	12.1
	E-resources Librarian	22	4.0
	IR Librarian	12	2.2
	Faculty Librarian	39	7.2
	Digital Librarian	5	0.9
	Cataloguer	130	23.8
	<b>Highest academic qualification</b>	Ph.D	60
MLS		374	68.5
M.Inf.		24	4.4
M.Phil.		10	1.8
PGD		78	14.3
<b>Years of work experience</b>	1 – 5 years	122	22.3
	6 – 10 years	185	33.8
	11 – 15 years	107	19.6
	16 – 20 years	57	10.4
	21 – 25 years	33	6.0
	26 – 30 years	17	3.1
	31 – 35 years	25	4.6
<b>Section of work in the library</b>	Faculty	51	9.3
	Collection Development	45	8.2
	Circulation	92	16.8
	Serials	41	7.6
	Systems	31	5.7
	Reference	40	7.3
	Readers' services	73	13.4
	E-Resources	31	5.7
	Institutional repository	12	2.2
	Cataloguing	125	22.9
Digitisation	5	0.9	

The result shown in Table 4.2a indicated that the distribution according to gender revealed that female librarians were more than male librarians in universities in Southern Nigeria. This is because 282 (51.6%) of the respondents were female while 264 (48.4%) were male. This result implies that although female respondents were more than their male counterparts, there is a relatively balanced gender distribution as the marginal difference in gender was not much. According to the data, notable number of the respondents were discovered in the age category of 36 – 45 years with population of 198 (36.3%), followed by 46-55 years age bracket with population of 169 (30.9%) and only 43 (7.9%) of the respondents were found in the age range 56-65 years. The inference from the age distribution of respondents in this study is that most of the librarians were in their youthful and productive years, hence, they were appropriately informed.

In terms of marital status, 441 respondents indicated that they were married, 94 were single while one was a widower. Further, the distribution according to job status revealed that 140 (25.6%) were librarian II, 124 (22.7%) were senior librarian and 118 (21.6%) were librarian I. It is worthy of note that only one 1 (0.2%) of the respondents claimed to be an assistant librarian. Results on position of respondents showed that the highest number of respondents were cataloguers (130, 23.8%) followed by circulation librarians (97, 17.8%) while only 5 (0.9%) of the respondents claimed to be digital librarian.

The results of the respondents' academic qualification showed that 374 (68.5%) which constituted the majority had master certificate, 60 (11.0%) had doctorate degree while only 10 (1.8%) of the librarians had M.Phil. These findings indicate that university libraries in Southern Nigeria were full of eminently qualified personnel to carry out library and information service delivery expected of them. In terms of years of library work, the result revealed that 122 (22.3%) had below 5 years of experience, 185 (33.8%) had between 6-10 years, 107 (19.6%) had between 11-15 years of experience and 17 (3.1%) of the librarians had experience spanning between 26-30 years. This suggests that the participants in the study were quite experienced in terms of services delivery in library and information settings.

The information on demographic distribution of the university librarians is as presented in Table 4.2b

**Table 4.2b: Demographic characteristics of the University librarians**

<b>Background Information</b>	<b>Categories</b>	<b>Frequencies (N=68)</b>	<b>Percentages</b>
<b>Gender</b>	Male	43	63.2
	Female	25	36.8
<b>Marital status</b>	Married	59	86.8
	Single	7	10.3
	Widow	1	1.5
	Widower	1	1.5
<b>Age</b>	31 – 35	7	10.3
	36 – 40	7	10.3
	41 – 45	7	10.3
	46 – 55	23	33.8
	56 – 60	13	19.1
	> 60	11	16.2
<b>Status</b>	University Librarian	40	58.8
	Ag. University Librarian	28	41.2
<b>Highest academic qualification</b>	PhD	33	48.5
	MLS	31	45.6
	M.Inf.	1	1.5
	M.Phil.	2	2.9
	PGD	1	1.5
<b>Years of work experience</b>	1 – 5 years	10	14.7
	6 – 10 years	17	25.0
	11 – 15 years	5	7.4
	16 – 20 years	9	13.2
	21 – 25 years	6	8.8
	26 – 30 years	10	14.7
	31 – 35 years	11	16.2



It could be observed from the result shown in Table 4.2b that most of the university librarians were male (43, 63.2%) and that 59 (86.8%) were married. In terms of age, university librarians within the age bracket of 46-55 years constituted the majority while those below 45 years were the list category. It could also be noted that 33 (48.5%) of the university librarians were doctorate degree holders with only 1 (1.5%) claiming to have PGD and also another 1 (1.5%) had M.Inf. Finally, most of the university librarians have had working experience ranging from 6-10 years as indicated by 17 (25.0%) of the respondents (Table 4.2b).

#### **4.4 Answers to the research questions**

##### **Research question 1: What are the types of services delivered by librarians in universities in Southern Nigeria?**

Research question 1 sought to identify the types of library services delivered by librarians in universities in Southern Nigeria. In order to provide answer to the research question, respondents were asked to indicate types of the services delivered in their respective libraries from the list of library services itemised. The results of their responses are presented in Table 4.3a and Table 4.3b.

**Table 4.3a: Types of services delivered by librarians in university libraries in Southern Nigeria**

Type of services	Delivered		Rank
	N=546		
	N	%	
Library orientation	386	70.7	1 <sup>st</sup>
Library education	375	68.7	2 <sup>nd</sup>
Reference service	351	64.3	3 <sup>rd</sup>
Library materials recommendation	328	60.1	4 <sup>th</sup>
Selective dissemination of information	315	57.7	5 <sup>th</sup>
Library registration	296	54.2	6 <sup>th</sup>
Notification of new library resources arrivals	294	53.8	7 <sup>th</sup>
Charging and Discharging of library materials	283	51.8	8 <sup>th</sup>
Document delivery	201	36.8	9 <sup>th</sup>
Notification of OPAC additions	175	32.1	10 <sup>th</sup>
Interlibrary loan	164	30.0	11 <sup>th</sup>
Prompt notification of library development	155	28.4	12 <sup>th</sup>
Notification of Institutional Repository update	144	26.4	13 <sup>th</sup>
Outreach service	116	21.2	14 <sup>th</sup>
Images/photos service	81	14.8	15 <sup>th</sup>
Translation services	61	11.2	16 <sup>th</sup>

The results in Table 4.3a revealed that among the services listed, library orientation ranked first in terms of mostly delivered service. Majority of the librarians (386; 70.7%) claimed that library orientation was delivered by them. Close to this, is library education rendered by 375 (68.7%) librarians. In terms of reference services, 351 (64.3%) of the respondents maintained a positive disposition to reference as a service delivered in their libraries while the remaining 195 (35.7%) were not involved in reference services in their libraries. The least delivered service as indicated by the respondents was translation service (Table 4.3a).

This implies that library orientation, library education and reference services were the three leading library services delivered among librarians in Southern Nigeria universities. On the other hand, translation services was least delivered service by librarians in the universities studied as only 61 (11.2%) of the respondents claimed that they were involved in translation services in their libraries. Other services not delivered by most of the respondents were images/photo services (81, 14.8%) and outreach services (116, 21.2%). It could be inferred from this result that translation services, image/photo services and outreach services were not so popular among the librarians in university libraries in Southern Nigeria.

The result of the type of services delivered among library professionals in universities in Southern Nigeria is further distributed by type of university (federal, state and private) as presented in Table 4.3b.

**Table 4.3b: Services delivered by type of universities in Southern Nigeria**

Service	Federal universities		State universities		Private universities	
	N = 212		N = 161		N = 173	
	Delivered		Delivered		Delivered	
	N	%	N	%	N	%
Library materials recommendation	133	62.7	84	52.2	111	64.2
Library registration	108	50.9	85	52.8	103	59.5
Interlibrary loan	64	30.2	44	27.3	56	32.4
Selective dissemination of information	115	54.2	90	55.9	110	63.6
Document delivery	85	40.1	49	30.4	67	38.7
Reference service	131	61.8	101	62.7	119	68.8
Outreach service	58	27.4	32	19.9	26	15.0
Prompt notification of library development	56	26.4	40	24.8	59	34.1
Notification of OPAC additions	63	29.7	48	29.8	64	37.0
Notification of Institutional Repository update	56	26.4	43	26.7	45	26.0
Notification of new library resources arrivals	109	51.4	86	53.4	99	57.2
Images/photos service	31	14.6	26	16.1	24	13.9
Library orientation	147	69.3	118	73.3	121	69.9
Library education	157	74.1	111	68.9	107	61.8
Charging and Discharging of library materials	96	45.3	83	51.6	104	60.1
Translation services	24	11.3	22	13.7	15	8.7

Results shown in Table 4.3b revealed that in federal universities, major services rendered by the librarians were library education, library orientation and library materials recommendation. In state universities, majority of the respondents claimed that they rendered library orientation to their users, followed closely by library education service and reference service to their users. Private universities result revealed that library orientation, reference service, library materials recommendation and selective dissemination of information were the major services rendered as indicated by the librarians. The services delivered by most librarians in federal universities was library education, and in state and private universities, it was library orientation with 118 (73.3%) and 121 (69.9%) respectively. The least delivered service among the three universities was images / photo service.

It could be observed from the results shown in Table 4.3b that the three services that were delivered by librarians in federal university libraries were library education (157; 74.1%), library orientation (147; 69.3%) and library materials recommendation (133; 62.7%). Similarly, in state universities, the three types of services mostly delivered by librarians were library orientation (112; 69.6%), library education (111; 68.9%) and reference services (101; 62.7%). As for private universities, the four types of services delivered by most librarians were library orientation (121; 69.9%), reference services (119; 68.8%), library materials recommendation (111; 64.2%) and selective dissemination of information (110; 63.6%) as shown in Table 4.3b.

### **Research question 2: What are the modes of library service delivery among librarians in universities in Southern Nigeria?**

In order to provide an answer to research question 2, services rendered by librarians were listed and respondents were asked to indicate mode of service delivery either by conventional or virtual. The results are as presented in Table 4.4a and Table 4.4b. The results on the modes of service delivered by librarians in libraries in Southern Nigeria are presented in Table 4.4a.

**Table 4.4a: Distribution of conventional mode of service delivery in universities in Southern Nigeria**

Service	Conventional mode of service delivery N=546									
	Face to face	Notice board	Flyer	Journal	Newspapers	Conference proceedings	Exhibition	Bulletin/magazine	Internal memo	Display rack
Library materials recommendation	316 (57.9%)	148 (27.1%)	35 (6.4%)	60 (11.0%)	41 (7.5)	20 (3.7%)	62 (11.4%)	28 (5.1%)	110 (20.1%)	94 (17.2%)
Library registration	387 (70.9%)	77 (14.1%)	20 (3.7%)	7 (1.3%)	8 (1.5%)	6 (1.1%)	12 (2.2%)	13 (2.4%)	22 (4.0%)	11 (2.0%)
Interlibrary loan	217 (39.7%)	50 (9.2%)	18 (3.3%)	12 (2.2%)	11 (2.0%)	9 (1.6%)	11 (2.0%)	9 (1.6%)	38 (7.0%)	18 (3.3%)
Selective dissemination of information	222 (40.7%)	116 (21.1%)	34 (6.2%)	19 (3.5%)	14 (2.6%)	8 (1.5%)	24 (4.4%)	23 (4.2%)	49 (9.0%)	45 (8.2%)
Document delivery	259 (47.4%)	60 (11.0%)	31 (5.7%)	16 (2.9%)	15 (2.7%)	11 (2.0%)	13 (2.4%)	9 (1.6%)	45 (8.2%)	17 (3.1%)
Reference service	342 (62.6%)	62 (11.4%)	27 (4.9%)	17 (3.1%)	21 (3.8%)	8 (1.5%)	12 (2.2%)	17 (3.1%)	31 (5.7%)	32 (5.9%)
Outreach service	147 (26.9%)	80 (14.7%)	49 (9.0%)	12 (2.2%)	18 (3.3%)	15 (2.7%)	26 (4.8%)	18 (3.3%)	26 (4.8%)	26 (4.8%)
Prompt notification of library development	159 (29.1%)	152 (27.8%)	39 (7.1%)	12 (2.2%)	15 (2.7%)	16 (2.9%)	27 (4.9%)	33 (6.0%)	66 (12.1%)	45 (8.2%)
Notification of OPAC additions	130 (23.8%)	108 (19.8%)	35 (6.4%)	15 (2.7%)	17 (3.1%)	8 (1.5%)	14 (2.6%)	32 (5.9%)	61 (11.2%)	29 (5.3%)
Notification of Institutional Repository update	108 (19.8%)	113 (20.7%)	26 (4.8%)	11 (2.0%)	16 (2.9%)	10 (1.8%)	18 (3.3%)	25 (4.6%)	55 (10.1%)	36 (6.6%)
Notification of new library resources arrivals	149 (27.3%)	163 (29.9%)	39 (7.1%)	12 (2.2%)	14 (2.6%)	11 (2.0%)	41 (7.5%)	28 (5.1%)	54 (9.9%)	122 (17.8%)
Images/photos service	97 (17.8)	106 (19.4%)	22 (4.0%)	10 (1.8%)	17 (3.1%)	12 (2.2%)	29 (5.3%)	20 (3.7%)	16 (2.9%)	41 (7.5%)
Library orientation	387 (70.9%)	81 (14.8%)	24 (4.4%)	8 (1.5%)	13 (2.4%)	14 (2.6%)	20 (3.7%)	16 (2.9%)	37 (6.8%)	16 (2.9%)
Library education	379 (69.4%)	93 (17.0%)	28 (5.1%)	16 (2.9%)	13 (2.4%)	14 (2.6%)	28 (5.1%)	24 (4.4%)	36 (6.6%)	22 (4.0%)
Charging and Discharging of library materials	382 (70.0)	41 (7.5%)	9 (1.6%)	10 (1.8%)	13 (2.4%)	7 (1.3)	11 (2.0%)	8 (1.5%)	20 (3.7%)	11 (2.0%)
Translation services	121 (22.2%)	36 (6.6%)	14 (2.6%)	15 (2.7%)	10 (1.8%)	5 (1.5%)	13 (2.4%)	6 (1.1%)	18 (3.3%)	14 (2.6%)

The results revealed that most of the services delivered by librarians in universities in Southern Nigeria were via conventional such as face-to-face. Specifically, 387 (70.9%) of the respondents indicated that library registration and library orientation were done face-to-face with users. Charging and discharging of materials as well as library education through conventional mode were delivered mostly through face-to-face method as indicated by 382 (70.0%) and 379 (69.4%) of the respondents respectively. Other conventional methods used by librarians for service delivery were notice boards (mostly for notification of new library resources arrival), internal memo (for library materials recommendation), display racks (mostly for notification of new library resources arrivals).

On the other hand, conventional modes of library service delivery that were not used by majority of the librarians for service delivery were bulletin, conference proceedings and newspapers. The results further showed that some conventional mode was used by few librarians in universities in Southern Nigeria. For instance, less than 8% of the respondents claimed that they made use of conference proceeding, newspapers, bulletin and magazine for services such as library materials recommendation and notification of new library resources arrivals (Table 4.4a). Results of respondents on conventional mode of service delivery by type of university is further presented in Table 4.4ai - Table 4.4aiii.

**Table 4.4ai: Distribution of conventional mode of service delivery in Federal universities in Southern Nigeria**

Service	Conventional mode of service delivery									
	N=212									
	Face to face	Notice board	Flyer	Journal	Newspapers	Conference proceedings	Exhibition	Bulletin/magazine	Internal memo	Display rack
Library materials recommendation	143 (67.5%)	68 (32.1%)	15 (7.1%)	25 (11.8%)	19 (9.0%)	8 (3.8%)	31 (14.6%)	12 (5.7%)	63 (29.7%)	50 (23.6%)
Library registration	179 (84.4%)	30 (14.2%)	9 (4.2%)	7 (3.3%)	8 (3.8%)	6 (2.8%)	5 (2.4%)	13 (6.1%)	22 (10.4%)	5 (2.4%)
Interlibrary loan	83 (39.2%)	21 (9.9%)	3 (1.4%)	5 (2.4%)	5 (2.4%)	9 (4.2%)	5 (2.4%)	9 (4.2%)	38 (17.9%)	18 (8.5%)
Selective dissemination of information	93 (43.9%)	49 (23.1%)	34 (16.0%)	19 (9.0%)	14 (6.6%)	8 (3.8%)	24 (11.3%)	23 (10.8%)	49 (23.1%)	45 (21.2%)
Document delivery	139 (65.6%)	19 (9.0%)	31 (14.6%)	16 (7.5%)	15 (7.1%)	5 (2.4%)	13 (6.1%)	9 (4.2%)	45 (21.2%)	17 (8.0%)
Reference service	143 (67.5%)	19 (9.0%)	27 (12.7%)	17 (8.0%)	21 (9.9%)	8 (3.8%)	12 (5.7%)	17 (8.0%)	31 (14.6%)	32 (15.1%)
Outreach service	67 (31.6%)	25 (11.8%)	49 (23.1%)	5 (2.4%)	18 (8.5%)	15 (7.1%)	26 (12.3%)	18 (8.5%)	26 (12.3%)	26 (12.3%)
Prompt notification of library development	65 (30.7%)	53 (25.0%)	39 (18.4%)	5 (2.4%)	15 (7.1%)	16 (7.5%)	27 (12.7%)	33 (15.6%)	66 (31.1%)	45 (21.2%)
Notification of OPAC additions	50 (23.6%)	39 (18.4%)	35 (16.5%)	15 (7.1%)	17 (8.0%)	8 (3.8%)	14 (6.6%)	32 (15.1%)	61 (28.8%)	29 (13.7%)
Notification of Institutional Repository update	48 (22.6%)	44 (20.8%)	26 (12.3%)	5 (2.4%)	16 (7.5%)	10 (4.7%)	18 (8.5%)	25 (11.8%)	55 (25.9%)	36 (17.0%)
Notification of new library resources arrivals	69 (32.5%)	63 (29.7%)	39 (18.4%)	5 (2.4%)	14 (6.6%)	5 (2.4%)	41 (19.3%)	28 (13.2%)	54 (25.5%)	122 (57.5%)
Images/photos service	32 (15.1%)	44 (20.8%)	22 (10.4%)	10 (4.7%)	17 (8.0%)	5 (2.4%)	29 (13.7%)	20 (9.4%)	16 (7.5%)	41 (19.3%)
Library orientation	181 (85.4%)	81 (38.2%)	24 (11.3%)	8 (3.8%)	13 (6.1%)	14 (6.6%)	20 (9.4%)	16 (7.5%)	37 (17.5%)	16 (7.5%)
Library education	119 (56.1%)	93 (43.9%)	28 (13.2%)	16 (7.5%)	13 (6.1%)	14 (6.6%)	28 (13.2%)	24 (11.3%)	36 (17.0%)	22 (10.4%)
Charging and Discharging of library materials	153 (72.2%)	41 (19.3%)	9 (4.2%)	5 (2.4%)	13 (6.1%)	7 (3.3%)	5 (2.4%)	8 (3.8%)	20 (9.4%)	5 (2.4%)
Translation services	62 (29.2%)	36 (17.0%)	14 (6.6%)	13 (6.1%)	10 (4.7%)	5 (2.4%)	13 (6.1%)	6 (2.8%)	18 (8.5%)	14 (6.6%)



Results shown in Table 4.4ai revealed that most of the services delivered by librarians in federal universities in Southern Nigeria by conventional mode were done face-to-face as evident in responses shown in Table 4.4ai. Specifically, 179 (84.4%) and 181 (85.4%) of the respondents indicated that library registration and library orientation respectively were done face-to-face with the users. Charging and discharging of materials as well as reference service were delivered mostly by face-to-face method as indicated by 153 (72.2%) and 143 (67.5%) of the respondents respectively. Other conventional methods used by librarians in federal universities for service delivery were notice boards (mostly for notification of new library resources arrival), internal memo (mostly for library materials recommendation), display racks (mostly for notification of new library resources arrivals). On the other hand, conventional mode of library service delivery that was not used by majority of the librarians for service delivery were bulletin, conference proceedings and newspapers. These conventional methods were used by few librarians in federal universities in Southern Nigeria (Table 4.4ai).

**Table 4.4aii: Distribution of conventional mode of service delivery in State universities in Southern Nigeria**

Service	Conventional mode of service delivery									
	N=161									
	Face to face	Notice board	Flyer	Journal	Newspapers	Conference proceedings	Exhibition	Bulletin/magazine	Internal memo	Display rack
Library materials recommendation	97 (60.2%)	47 (29.2%)	9 (5.6%)	20 (12.40%)	12 (7.5%)	7 (4.3%)	12 (7.5%)	10 (6.2%)	27 (16.8%)	30 (18.6%)
Library registration	131 (81.4%)	27 (16.8%)	3 (1.9%)	7 (4.3%)	8 (5.0%)	6 (3.7%)	12 (7.5%)	13 (8.1%)	22 (13.7%)	4 (2.5%)
Interlibrary loan	77 (47.8%)	13 (8.1%)	6 (3.7%)	4 (2.5%)	4 (2.5%)	9 (5.6%)	4 (2.5%)	9 (5.6%)	38 (23.6%)	18 (11.2%)
Selective dissemination of information	82 (50.9%)	37 (23.0%)	34 (21.1%)	19 (11.8%)	14 (8.7%)	8 (5.0%)	24 (14.9%)	23 (14.3%)	49 (30.4%)	45 (28.0%)
Document delivery	72 (44.7%)	23 (14.3%)	31 (19.3%)	16 (9.9%)	15 (9.3%)	4 (2.5%)	13 (8.1%)	9 (5.6%)	45 (28.0%)	17 (10.6%)
Reference service	111 (68.9%)	25 (15.5%)	27 (16.8%)	17 (10.6%)	21 (13.0%)	8 (5.0%)	4 (2.5%)	17 (10.6%)	31 (19.3%)	32 (19.9%)
Outreach service	32 (19.9%)	33 (20.5%)	49 (30.4%)	4 (2.5%)	18 (11.2%)	15 (9.3%)	26 (16.1%)	18 (11.2%)	26 (16.1%)	26 (16.1%)
Prompt notification of library development	56 (34.8%)	48 (29.8%)	39 (24.2%)	4 (2.5%)	15 (9.3%)	16 (9.9%)	27 (16.8%)	33 (20.5%)	66 (41.0%)	45 (28.0%)
Notification of OPAC additions	41 (25.5%)	41 (25.5%)	35 (21.7%)	15 (9.3%)	17 (10.6%)	8 (5.0%)	14 (8.7%)	32 (19.9%)	61 (37.9%)	29 (18.0%)
Notification of Institutional Repository update	31 (19.3%)	33 (20.5%)	26 (16.1%)	4 (2.5%)	16 (9.9%)	10 (6.2%)	18 (11.2%)	25 (15.5%)	55 (34.2%)	36 (22.4%)
Notification of new library resources arrivals	47 (29.2%)	55 (34.2%)	39 (24.2%)	4 (2.5%)	14 (8.7%)	4 (2.5%)	41 (25.5%)	28 (17.4%)	54 (33.5%)	122 (75.8%)
Images/photos service	40 (24.8%)	33 (20.5%)	22 (13.7%)	10 (6.2%)	17 (10.6%)	4 (2.5%)	29 (18.0%)	20 (12.4%)	16 (9.9%)	41 (25.5%)
Library orientation	126 (78.3%)	81 (50.3%)	24 (14.9%)	8 (5.0%)	13 (8.1%)	14 (8.7%)	20 (12.4%)	16 (9.9%)	37 (23.0%)	16 (9.9%)
Library education	128 (79.5%)	93 (57.8%)	28 (17.4%)	16 (9.9%)	13 (8.1%)	14 (8.7%)	28 (17.4%)	24 (14.9%)	36 (22.4%)	22 (13.7%)
Charging and Discharging of library materials	130 (80.7%)	41 (25.5%)	9 (5.6%)	10 (6.2%)	13 (8.1%)	7 (4.3%)	4 (2.5%)	8 (5.0%)	20 (12.4%)	4 (2.5%)
Translation services	39 (24.2%)	36 (22.4%)	14 (8.7%)	15 (9.3%)	10 (6.2%)	5 (3.1%)	13 (8.1%)	6 (3.7%)	18 (11.2%)	14 (8.7%)

In respect to Table 4.4aii, findings revealed that in state universities, conventional mode of service delivery such as face-to-face was highly used for library services such as library registration, charging and discharging of library materials, library education, library orientation and reference service. The respondents (131, 81.4%; 130, 80.7%; 128, 79.5%; 126, 78.3% and 111, 68.9%) respectively indicated that they delivered the mentioned library services by face-to-face. Also, display rack was highly used as indicated by the participants for the notification of latest additions into the library collections.

**Table 4.4aiii: Distribution of conventional mode of service delivery in Private universities in Southern Nigeria**

		<b>Conventional mode of service delivery</b>								
		<b>N=173</b>								
<b>Service</b>	<b>Face to face</b>	<b>Notice board</b>	<b>Flyer</b>	<b>Journal</b>	<b>Newspapers</b>	<b>Conference proceedings</b>	<b>Exhibition</b>	<b>Bulletin/magazine</b>	<b>Internal memo</b>	<b>Display rack</b>
Library materials recommendation	76 (43.9%)	33 (19.1%)	11 (6.4%)	15 (8.7%)	10 (5.8%)	5 (2.9%)	18 (10.4%)	6 (3.5%)	20 (11.6%)	14 (8.1%)
Library registration	77 (44.5%)	20 (11.6%)	8 (4.6%)	7 (4.0%)	8 (4.6%)	6 (3.5%)	3 (1.7%)	13 (7.5%)	22 (12.7%)	3 (1.7%)
Interlibrary loan	62 (35.8%)	16 (9.2%)	9 (5.2%)	3 (1.7%)	3 (1.7%)	9 (5.2%)	3 (1.7%)	9 (5.2%)	38 (22.0%)	18 (10.4%)
Selective dissemination of information	67 (38.7%)	30 (17.3%)	34 (19.7%)	19 (11.0%)	14 (8.1%)	8 (4.6%)	24 (13.9%)	23 (13.3%)	49 (28.3%)	45 (26.0%)
Document delivery	48 (27.7%)	18 (10.4%)	31 (17.9%)	16 (9.2%)	15 (8.7%)	3 (1.7%)	13 (7.5%)	9 (5.2%)	45 (26.0%)	17 (9.8%)
Reference service	90 (52.0%)	18 (10.4%)	27 (15.6%)	17 (9.8%)	21 (12.1%)	8 (4.6%)	3 (1.7%)	17 (9.8%)	31 (17.9%)	32 (18.5%)
Outreach service	48 (27.7%)	22 (12.7%)	49 (28.3%)	3 (1.7%)	18 (10.4%)	15 (8.7%)	26 (15.0%)	18 (10.4%)	17 (9.8%)	8 (4.6%)
Prompt notification of library development	40 (23.1%)	51 (29.5%)	39 (22.5%)	3 (1.7%)	15 (8.7%)	16 (9.2%)	23 (13.3%)	33 (19.1%)	62 (35.8%)	45 (26.0%)
Notification of OPAC additions	29 (16.8%)	28 (16.2%)	35 (20.2%)	15 (8.7%)	17 (9.8%)	8 (4.6%)	14 (8.1%)	32 (18.5%)	61 (35.2%)	29 (16.8%)
Notification of Institutional Repository update	29 (16.8%)	36 (20.8%)	26 (15.0%)	3 (1.7%)	16 (9.2%)	10 (5.8%)	18 (10.4%)	25 (14.5%)	55 (31.8%)	36 (20.8%)
Notification of new library resources arrivals	33 (19.1%)	45 (26.0%)	39 (22.5%)	12 (6.9%)	14 (8.1%)	3 (1.7%)	41 (23.7%)	28 (16.2%)	54 (31.2%)	122 (70.5%)
Images/photos service	25 (14.5%)	36 (20.8%)	20 (11.6%)	10 (5.8%)	17 (9.8%)	3 (1.7%)	26 (15.0%)	20 (11.6%)	16 (9.2%)	41 (23.7%)
Library orientation	80 (46.2%)	65 (37.6%)	24 (13.9%)	8 (4.6%)	13 (7.5%)	14 (8.1%)	20 (11.6%)	16 (9.2%)	37 (21.4%)	16 (9.2%)
Library education	132 (76.3%)	83 (48.0%)	28 (16.2%)	16 (9.2%)	13 (7.5%)	11 (6.4%)	28 (16.2%)	24 (13.9%)	36 (20.8%)	22 (12.7%)
Charging and Discharging of library materials	100 (57.8%)	41 (23.7%)	9 (5.2%)	10 (5.8%)	13 (7.5%)	7 (4.0%)	3 (1.7%)	8 (4.6%)	20 (11.6%)	3 (1.7%)
Translation services	20 (11.6%)	36 (20.8%)	14 (8.1%)	15 (8.7%)	10 (5.8%)	5 (2.9%)	13 (7.5%)	6 (3.5%)	18 (10.4%)	14 (8.1%)

Table 4.4aiii shows the services delivered by librarians in private universities in Southern Nigeria through conventional mode. Library services that were mostly rendered through conventional mode especially face-to-face were library education and charging and discharging of library materials with 132 (76.3%) and 100 (57.8%) of the respondents respectively who claimed they delivered such services to their users. Other services were delivered to the users through other conventional mode at a low percentage (Table 4.4aiii).

It could be deduced from the results in Table 4.4ai to Table 4.4aiii that among the three types of universities studied, conventional mode that was found to be prominent among others for service delivery was face-to-face. It was used to deliver library orientation, registration and charging and discharging of library materials whereas, face-to-face method was highly used to deliver reference service in federal universities in Southern Nigeria.

Findings on virtual mode of service delivery among librarians in Southern Nigeria universities is as presented in Table 4.4b - Table 4.4biii.

**Table 4.4b: Distribution of virtual mode of service delivery in universities in Southern Nigeria**

Virtual mode of service delivery N = 546												
Service	Telephone call	Text message	e-Bulletin	E-Mail	Library website	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
Library materials recommendation	164 (30.0%)	175 (32.1%)	72 (13.2%)	188 (34.4%)	155 (28.4%)	88 (16.1%)	89 (16.3%)	15 (2.7%)	17 (3.1%)	12 (2.2%)	4 (0.7%)	3 (0.5%)
Library registration	66 (12.1%)	89 (16.3%)	45 (8.2%)	81 (14.8%)	144 (26.4%)	25 (4.6%)	29 (5.3%)	4 (0.7%)	5 (0.9%)	4 (0.7%)	0 (0.0%)	2 (0.4%)
Interlibrary loan	92 (16.8%)	92 (16.8%)	39 (7.1%)	94 (17.2%)	81 (14.8%)	35 (6.4%)	26 (4.8%)	6 (1.1%)	5 (0.9%)	7 (1.3%)	4 (0.7%)	2 (0.4%)
Selective dissemination of information	102 (18.7%)	126 (23.1%)	45 (8.2%)	154 (28.2%)	102 (18.7%)	57 (10.4%)	46 (8.4%)	11 (2.0%)	18 (3.3%)	17 (3.1%)	7 (1.3%)	3 (0.5%)
Document delivery	91 (16.7%)	89 (16.3%)	49 (9.0%)	132 (24.2%)	84 (15.4%)	32 (5.9%)	27 (4.9%)	8 (1.5%)	10 (1.8%)	12 (2.2%)	3 (0.5%)	5 (0.9%)
Reference service	132 (24.2%)	125 (22.9%)	46 (8.4%)	130 (23.8%)	122 (22.3%)	62 (11.4%)	53 (9.7%)	10 (1.8%)	19 (3.5%)	15 (2.7%)	2 (0.4%)	2 (0.4%)
Outreach service	67 (12.3%)	85 (15.6%)	38 (7.0%)	69 (12.6%)	92 (16.8%)	41 (7.5%)	33 (6.0%)	7 (1.3%)	9 (1.6%)	10 (1.8%)	3 (0.5%)	4 (0.7%)
Prompt notification of library development	73 (13.4%)	109 (20.0%)	61 (11.2%)	103 (18.9%)	127 (23.3%)	54 (9.9%)	50 (9.2%)	13 (2.4%)	16 (2.9%)	14 (2.6%)	3 (0.5%)	6 (1.1%)
Notification of OPAC additions	48 (8.8%)	92 (16.8%)	51 (9.3%)	93 (17.0%)	140 (25.6%)	42 (7.7%)	40 (7.3%)	7 (1.3%)	15 (2.7%)	12 (2.2%)	3 (0.5%)	3 (0.5%)
Notification of Institutional Repository update	43 (7.9%)	71 (13.0%)	54 (9.9%)	83 (15.2%)	136 (24.9%)	29 (5.3%)	35 (6.4%)	8 (1.5%)	8 (1.5%)	10 (1.8%)	3 (0.5%)	3 (0.5%)
Notification of new library resources arrivals	80 (14.7%)	114 (20.9%)	69 (12.6%)	125 (22.9%)	156 (28.6%)	56 (10.3%)	59 (10.3%)	12 (2.2%)	17 (3.1%)	14 (2.6%)	2 (0.4%)	6 (1.1%)
Images/photos service	28 (5.1%)	47 (8.6%)	35 (6.4%)	53 (9.7%)	102 (18.7%)	38 (7.0%)	42 (7.7%)	18 (3.30%)	10 (1.8%)	13 (2.4%)	4 (0.7%)	8 (1.5%)
Library orientation	63 (11.5%)	94 (17.2%)	58 (10.6%)	88 (16.1%)	129 (23.6%)	50 (9.2%)	47 (8.6%)	17 (3.1%)	13 (2.4%)	12 (2.2%)	5 (0.9%)	5 (0.9%)
Library education	73 (13.4%)	101 (18.5%)	63 (11.5%)	90 (16.5%)	137 (25.1%)	49 (9.0%)	55 (10.1%)	17 (3.1%)	13 (2.4%)	12 (2.2%)	3 (0.5%)	5 (0.9%)
Charging and Discharging of library materials	94 (17.2%)	107 (19.6%)	44 (8.1%)	68 (12.5%)	97 (17.8%)	24 (4.4%)	28 (5.1%)	5 (0.9%)	6 (1.1%)	4 (0.7%)	2 (0.4%)	4 (0.7%)
Translation services	40 (7.3%)	42 (7.7%)	31 (5.7%)	36 (6.6%)	57 (10.4%)	14 (2.6%)	18 (3.30%)	9 (1.6%)	5 (0.9%)	5 (0.9%)	4 (0.7%)	4 (0.7%)

Results shown in Table 4.4b revealed that 175 (32.1%) of the respondents maintained that they delivered library materials recommendation through text messages. while only 42 (7.7%) of the librarians used text message for translation services. As for e- bulletin, only a few of the librarians used e-bulletin for service delivery as shown in Table 4.4b where 63 (11.5%) which was the highest number used e-bulletin for library education service delivery.

Further, e-mail was another virtual mode of service delivery used by librarians. For instance 188 (34.4%) used e-mail for library materials recommendation, 154 (28.2%) used e-mail for selective dissemination of information and 132 (24.2%) used e-mail for document delivery. Library website had 155 (28.4%) of the librarians using it to deliver library materials recommendation, 144 (26.4%) for library registration and 140 (25.6%) used library website for notification of OPAC additions. The virtual mode of library service delivery that were not prominently used by the respondents for delivering services as indicated in Table 4.4b were Youtube, Skype and Flickr as evident in significantly few number of librarians using them for service delivery. The results of the findings on virtual mode of service delivery by type of universities are further presented in Table 4.4bi – Table 4.4biii.

**Table 4.4bi: Distribution of virtual mode of service delivery in Federal universities in Southern Nigeria**

Service	Telephon e call	Text message	e-Bulletin	E-Mail	Library website	WhatsAp p	Facebook	Youtube	Blog	Twitter	Skype	Flickr
	N= 212											
Library materials recommendation	61 (28.8%)	64 (30.2%)	21 (9.9%)	66 (31.1%)	55 (25.9)	23 (10.8%)	23 (10.8%)	2 (0.9%)	1 (0.5%)	2 (0.9%)	1 (0.5%)	0 (0.0%)
Library registration	20 (9.4%)	19 (9.0%)	15 (7.1%)	30 (14.2%)	41 (19.3%)	25 (11.8%)	29 (13.7%)	2 (0.9%)	1 (0.5%)	1 (0.5%)	0 (0.0%)	0 (0.0%)
Interlibrary loan	29 (13.7%)	23 (10.8%)	39 (18.4%)	94 (44.3%)	81 (38.2%)	35 (16.5%)	26 (12.3%)	6 (2.8%)	5 (2.4%)	7 (3.3%)	4 (1.9%)	2 (0.9%)
Selective dissemination of information	34 (16.0%)	41 (19.3%)	45 (21.2%)	154 (72.6%)	102 (48.1%)	57 (26.9%)	3 (1.4%)	2 (0.9%)	3 (1.4%)	17 (8.0%)	2 (0.9%)	1 (0.5%)
Document delivery	31 (14.6%)	21 (9.9%)	19 (9.0%)	132 (62.3%)	84 (40.0%)	16 (7.5%)	27 (12.7%)	8 (3.8%)	2 (0.9%)	2 (0.9%)	3 (1.4%)	5 (2.4%)
Reference service	41 (19.3%)	41 (19.3%)	46 (21.7%)	130 (61.3%)	122 (57.5%)	62 (29.2%)	53 (25.0%)	3 (1.4%)	19 (9.0%)	3 (1.4%)	0 (0.0%)	0 (0.0%)
Outreach service	27 (12.7%)	41 (19.3%)	38 (17.9%)	69 (32.5%)	92 (43.4%)	41 (19.3%)	33 (15.6%)	7 (3.3%)	3 (1.4%)	10 (4.7%)	3 (1.4%)	4 (1.9%)
Prompt notification of library development	21 (9.9%)	32 (15.1%)	61 (28.8%)	41 (19.3%)	127 (60.0%)	54 (25.5%)	16 (7.5%)	3 (1.4%)	4 (1.9%)	4 (1.9%)	3 (1.4%)	2 (0.9%)
Notification of OPAC additions	19 (9.0%)	27 (12.7%)	51 (24.0%)	93 (43.9%)	140 (66.0%)	42 (19.8%)	40 (18.9%)	2 (0.9%)	4 (1.9%)	4 (1.9%)	0 (0.0%)	0 (0.0%)
Notification of Institutional Repository update	18 (8.5%)	21 (9.9%)	54 (25.5%)	83 (39.2%)	136 (64.2%)	16 (7.5%)	16 (7.5%)	2 (0.9%)	2 (0.9%)	3 (1.4%)	1 (0.5%)	1 (0.5%)
Notification of new library resources arrivals	23 (10.8%)	33 (15.6%)	69 (32.5%)	125 (59.0%)	156 (73.6%)	16 (7.5%)	59 (27.8%)	2 (0.9%)	4 (1.9%)	2 (0.9%)	0 (0.0%)	2 (0.9%)
Images/photos service	13 (6.1%)	17 (8.0%)	35 (16.5%)	53 (25.0%)	102 (48.1%)	38 (17.9%)	42 (19.8%)	18 (8.5%)	10 (4.7%)	13 (6.1%)	1 (0.5%)	2 (0.9%)
Library orientation	24 (11.3%)	23 (10.8%)	58 (27.4%)	88 (41.5%)	129 (60.8%)	50 (23.6%)	47 (22.2%)	17 (8.0%)	13 (6.1%)	12 (5.7%)	1 (0.5%)	1 (0.5%)
Library education	23 (10.8%)	32 (15.0%)	63 (29.7%)	90 (42.5%)	137 (64.6%)	49 (23.1%)	55 (25.9%)	17 (8.0%)	13 (6.1%)	12 (5.7%)	1 (0.5%)	1 (0.5%)
Charging and Discharging of library materials	19 (9.0%)	32 (15.1%)	44 (20.8%)	68 (32.1%)	97 (45.8%)	4 (1.9%)	28 (13.2%)	2 (0.9%)	2 (0.9%)	1 (0.5%)	0 (0.0%)	1 (0.5%)
Translation services	21 (9.9%)	21 (9.9%)	16 (7.5%)	16 (7.5%)	19 (9.0%)	14 (6.6%)	18 (8.5%)	2 (0.9%)	1 (0.5%)	1 (0.5%)	1 (0.5%)	1 (0.5%)



Results shown in Table 4.4bi revealed that in federal universities only a few of the services rendered were done through virtual mode by remarkable number of librarians in Southern Nigeria universities. Such services include notification of new library resources arrivals which was done via library website 156 (73.6%), selective dissemination of information by email 154 (72.6%) and Notification of online public access catalogue (OPAC) additions through the library website, 140 (66.0%). It could be observed from the Table that there was generally low level of use of virtual mode for service delivery in federal universities in Southern Nigeria. The results in Table 4.4bi further showed that virtual mode notably and significantly used were library website, e-mail, text messages and telephone calls. Other virtual mode used at a very low level by librarians in federal universities in Southern Nigeria for service delivery were Flickr, Skype, Blog, Youtube and Twitter. The trend is not different among state universities respondents in Southern Nigeria (Table 4.4bi and Table 4.4bii)

**Table 4.4bii: Distribution of virtual mode of service delivery in State universities in Southern Nigeria**

Service	Telephone call	Text message	e-Bulletin	E-Mail	Library website	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
<b>N = 161</b>												
Library materials recommendation	29 (18.0%)	51 (31.7%)	22 (13.7%)	48 (29.8%)	43 (26.7%)	21 (13.0%)	20 (12.4%)	1 (0.6%)	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Library registration	19 (11.8%)	21 (13.0%)	11 (6.8%)	5 (3.1%)	35 (21.7%)	25 (15.5%)	29 (18.0%)	1 (0.6%)	1 (0.6%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
Interlibrary loan	20 (12.4%)	31 (19.3%)	39 (24.2%)	94 (58.4%)	81 (50.3%)	35 (21.7%)	26 (16.1%)	6 (3.7%)	1 (0.6%)	7 (4.3%)	1 (0.6%)	0 (0.0%)
Selective dissemination of information	28 (17.4%)	36 (22.4%)	45 (28.0%)	154 (96.3%)	102 (63.4%)	57 (35.4%)	46 (28.6%)	3 (1.9%)	3 (1.9%)	3 (1.9%)	2 (1.2%)	1 (0.6%)
Document delivery	28 (17.4%)	28 (17.4%)	49 (30.4%)	132 (82.0%)	84 (52.2%)	32 (19.9%)	27 (16.8%)	3 (1.9%)	0 (0.0%)	2 (1.2%)	3 (1.9%)	5 (3.1%)
Reference service	35 (21.7%)	35 (21.7%)	46 (28.6%)	130 (80.7%)	122 (75.8%)	62 (38.5%)	53 (32.9%)	3 (1.9%)	5 (3.1%)	2 (1.2%)	0 (0.0%)	0 (0.0%)
Outreach service	18 (11.2%)	35 (21.7%)	38 (23.6%)	69 (42.9%)	28 (17.4%)	41 (25.5%)	33 (20.5%)	7 (4.3%)	2 (1.2%)	3 (1.9%)	1 (0.6%)	1 (0.6%)
Prompt notification of library development	22 (13.7%)	27 (16.8%)	61 (37.9%)	103 (64.0%)	127 (78.9%)	18 (11.2%)	50 (31.1%)	13 (8.1%)	3 (1.9%)	3 (1.9%)	1 (0.6%)	2 (1.2%)
Notification of OPAC additions	18 (11.2%)	23 (14.3%)	51 (31.7%)	93 (57.8%)	140 (87.0%)	42 (26.1%)	40 (24.8%)	2 (1.2%)	3 (1.9%)	3 (1.9%)	0 (0.0%)	0 (0.0%)
Notification of Institutional Repository update	10 (6.2%)	21 (13.0%)	54 (33.5%)	28 (17.4%)	136 (84.5%)	29 (18.0%)	35 (21.7%)	8 (5.0%)	8 (5.0%)	10 (6.2%)	1 (0.6%)	1 (0.6%)
Notification of new library resources arrivals	17 (10.6%)	30 (18.6%)	21 (13.0%)	125 (77.6%)	156 (96.9%)	56 (34.8%)	59 (36.6%)	5 (3.1%)	3 (1.9%)	5 (3.1%)	0 (0.0%)	2 (1.2%)
Images/photos service	6 (3.5%)	11 (6.8%)	35 (21.7%)	53 (32.9%)	102 (63.4%)	38 (23.6%)	42 (26.1%)	3 (1.9%)	3 (1.9%)	3 (1.9%)	1 (0.6%)	3 (1.9%)
Library orientation	17 (10.6%)	21 (13.0%)	21 (13.0%)	88 (54.7%)	129 (80.1%)	18 (11.2%)	47 (29.2%)	3 (1.9%)	2 (1.2%)	5 (3.1%)	1 (0.6%)	1 (0.6%)
Library education	24 (14.9%)	30 (18.6%)	20 (12.4%)	90 (55.9%)	137 (85.1%)	18 (11.2%)	55 (34.2%)	5 (3.1%)	3 (1.9%)	5 (3.1%)	2 (1.2%)	2 (1.2%)
Charging and Discharging of library materials	25 (15.5%)	32 (19.9%)	18 (11.2%)	68 (42.2%)	97 (60.2%)	24 (14.9%)	28 (17.4%)	2 (1.2%)	2 (1.2%)	1 (0.6%)	0 (0.0%)	1 (0.6%)
Translation services	10 (6.2%)	11 (6.8%)	31 (19.3%)	36 (22.4%)	57 (35.4%)	5 (3.1%)	5 (3.1%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	1 (0.6%)	1 (0.6%)

Results shown in Table 4.4bii showed that in state universities in Southern Nigeria, library services were rendered by the librarians mostly through virtual mode such as library website and e-mail. Such services include notification of new library resources arrivals, notification of OPAC additions, selective dissemination of information, document delivery and reference service.

**Table 4.4biii: Distribution of virtual mode of service delivery in Private universities in Southern Nigeria**

Service	Telephone call	Text message	e-Bulletin	E-Mail	Library website	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
	<b>N= 173</b>											
Library materials recommendation	75 (43.4%)	60 (34.7%)	30 (17.3%)	64 (37.0%)	57 (32.9)	44 (25.4%)	46 (26.6%)	9 (5.2%)	9 (5.2%)	8 (4.6%)	2 (1.2%)	2 (1.2%)
Library registration	27 (15.6%)	49 (28.3%)	19 (11.0%)	27 (15.6%)	49 (28.3%)	25 (14.5%)	29 (16.8%)	2 (1.2%)	5 (2.9%)	2 (1.2%)	0 (0.0%)	2 (1.2%)
Interlibrary loan	47 (27.2%)	38 (22.0%)	39 (22.5%)	27 (15.6%)	81 (46.8%)	35 (20.2%)	15 (8.7%)	6 (3.5%)	5 (2.9%)	7 (4.0%)	4 (2.3%)	2 (1.2%)
Selective dissemination of information	40 (23.1%)	49 (28.3%)	45 (26.0%)	49 (28.3%)	102 (59.0%)	57 (32.9%)	46 (26.6%)	5 (2.9%)	5 (2.9%)	5 (2.9%)	7 (4.0%)	2 (1.2%)
Document delivery	32 (18.5%)	40 (23.1%)	49 (28.3%)	132 (76.3%)	84 (48.6%)	32 (18.5%)	27 (15.6%)	8 (4.6%)	10 (5.8%)	12 (6.9%)	3 (1.7%)	5 (2.9%)
Reference service	55 (31.8%)	49 (28.3%)	46 (26.6%)	130 (75.1%)	40 (23.1%)	62 (35.8%)	53 (30.6%)	10 (5.8%)	5 (2.9%)	15 (8.7%)	2 (1.2%)	2 (1.2%)
Outreach service	22 (12.7%)	49 (28.3%)	38 (22.0%)	69 (39.9%)	92 (53.2%)	15 (8.7%)	33 (19.1%)	7 (4.0%)	9 (5.2%)	10 (5.8%)	3 (1.7%)	4 (2.3%)
Prompt notification of library development	30 (17.3%)	50 (28.9%)	61 (35.3%)	103 (59.5%)	127 (73.4%)	54 (31.2%)	15 (8.7%)	5 (2.9%)	16 (9.2%)	5 (2.9%)	2 (1.2%)	4 (2.3%)
Notification of OPAC additions	31 (17.9%)	42 (24.3%)	51 (29.5%)	27 (15.6%)	9 (5.2%)	42 (24.3%)	40 (23.1%)	7 (4.0%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	2 (1.2%)
Notification of Institutional Repository update	15 (8.7%)	29 (16.8%)	54 (31.2%)	83 (48.0%)	136 (78.6%)	29 (16.8%)	35 (20.2%)	8 (4.6%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	2 (1.2%)
Notification of new library resources arrivals	16 (9.2%)	50 (28.9%)	69 (39.9%)	125 (72.3%)	156 (90.2%)	56 (32.4%)	59 (34.1%)	12 (6.9%)	5 (2.9%)	4 (2.3%)	2 (1.2%)	4 (2.3%)
Images/photos service	9 (5.2%)	19 (11.0%)	35 (20.2%)	53 (30.6%)	102 (59.0%)	15 (8.7%)	42 (24.3%)	18 (10.4%)	10 (5.8%)	13 (7.5%)	4 (2.3%)	4 (2.3%)
Library orientation	22 (12.7%)	49 (28.3%)	58 (33.5%)	88 (50.9%)	129 (74.6%)	50 (28.9%)	15 (8.7%)	17 (9.8%)	13 (7.5%)	12 (6.9%)	5 (2.9%)	5 (2.9%)
Library education	26 (15.0%)	39 (22.5%)	63 (36.4%)	40 (23.1%)	137 (79.2%)	15 (8.7%)	55 (31.8%)	17 (9.8%)	13 (7.5%)	12 (6.9%)	3 (1.7%)	5 (2.9%)
Charging and Discharging of library materials	50 (28.9%)	43 (24.9%)	44 (25.4%)	68 (39.3%)	97 (56.1%)	24 (13.9%)	28 (16.2%)	2 (1.2%)	4 (2.3%)	2 (1.2%)	2 (1.2%)	2 (1.2%)
Translation services	9 (5.2%)	10 (5.8%)	31 (17.9%)	36 (20.8%)	57 (32.9%)	14 (8.1%)	18 (10.4%)	9 (5.2%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	2 (1.2%)

The results shown in Table 4.4biii indicated that librarians in private universities used more of the virtual method to deliver library services than their counterparts in federal and state universities. For example, library materials recommendation, library registration and reference services were done via telephone calls, text messages, e-mails and library website (mode: telephone calls - library materials recommendation 75, 43.4% and reference service 55, 31.8%). Other virtual methods of service delivery were moderately used, while few recorded low percentage of use among library professionals in the non-governmental universities in Southern Nigeria (Table 4.4biii).

**Research question 3: What is the frequency of service delivery among librarians in universities in Southern Nigeria?**

Results on frequency of services delivery by librarians in universities in Southern Nigeria are presented in Table 4.5a, Table 4.5bi and Table 4.5bii.

**Table 4.5a: Frequency of service delivery among librarians in universities in Southern Nigeria**

Service	N=546										Mean	STD
	Daily		2-3times a week		Weekly		Once a month		Never			
	N	%	N	%	N	%	N	%	N	%		
Library materials recommendation	214	39.2	63	11.5	93	17.0	140	25.6	36	6.6	3.51	1.395
Library registration	316	57.9	50	9.2	78	14.3	77	14.1	25	4.6	4.02	1.304
Interlibrary loan	199	36.4	34	6.2	125	22.9	108	19.8	80	14.7	3.30	1.489
Selective dissemination of information	221	40.5	46	8.4	151	27.7	90	16.5	38	7.0	3.59	1.342
Document delivery	201	36.9	52	9.5	142	26.1	104	19.1	46	8.4	3.47	1.371
Reference service	320	58.7	39	7.2	105	19.3	59	10.8	22	4.0	4.06	1.255
Outreach service	197	36.1	43	7.9	146	26.7	93	17.0	67	12.3	3.38	1.428
Prompt notification of library development	180	33.0	51	9.4	156	28.6	110	20.2	48	8.8	3.38	1.353
Notification of OPAC additions	179	32.8	42	7.7	159	29.1	108	19.8	58	10.6	3.32	1.382
Notification of Institutional Repository update	163	29.9	48	8.8	157	28.8	102	18.7	75	13.8	3.22	1.406
Notification of new library resources arrivals	161	29.5	45	8.3	152	27.9	130	23.9	57	10.5	3.23	1.369
Images/photos service	151	27.7	32	5.9	157	28.8	139	25.5	67	12.3	3.11	1.379
Library orientation	179	32.8	26	4.8	115	21.1	191	35.0	35	6.4	3.23	1.385
Library education	191	35.0	35	6.4	111	20.4	176	32.3	33	6.1	3.32	1.390
Charging and Discharging of library materials	314	57.5	25	4.6	80	14.7	98	17.9	29	5.3	3.91	1.383
Translation services	167	30.6	33	6.0	110	20.1	103	18.9	133	24.4	3.00	1.566
<b>Total</b>											<b>55.05</b>	<b>22.197</b>

In order to measure the frequency of services delivered by librarians in universities in Southern Nigeria, five scales measurement (Daily - 5, 2-3 times a week - 4, Weekly - 3, Once a month - 2 and Never - 1) was used. The five scale measure (5, 4, 3, 2 and 1) was added which gave a score of 15. The division of 15 by five gave three. The threshold for decision were: below three indicates that the frequency of services delivered was low, three indicates moderate while three point five and above indicates high.

An observation of Table 4.5a revealed that reference service, library registration, charging and discharging of library materials and selective dissemination of information were the most frequently delivered services by the respondents in Southern Nigeria universities. This is because notable number of respondents with ( $\bar{x} = 4.06$ ) claimed they delivered reference service on a daily, 2-3 times a week while only few librarians maintained that they were never involved in reference service delivery. Another frequently delivered service by librarians according to the results shown in Table 4.5a was library registration which had a mean score of 4.02. It was found that librarians participated in the registration of bonafide students and staff of their universities.

Charging and discharging of library materials also had a mean score of 3.91 which occupy the third most frequently delivered services as a high number of librarians posited that they delivered charging and discharging of library materials on daily basis while a few claimed they never render charging and discharging of materials. Moreover, the results on Table 4.5a revealed that majority of the respondents indicated that selective dissemination of information with mean score of 3.59 was among the frequently delivered services in Southern Nigeria universities. On the other hand, the three least frequently delivered services by librarians in universities in Southern Nigeria were translation service (mean = 3.00), images and photo services (mean = 3.11) and notification of institutional repository update (mean = 3.22). Further results on frequency of library service delivery by types of universities are as presented in Table 4.5bi, Table 4.5bii and Table 4.5biii.

**Table 4.5bi: Frequency of service delivered by librarians in Federal universities in Southern Nigeria**

Service	Responses N=212										Mean	STD
	Daily		Twice a week		Weekly		Monthly		Never			
	N	%	N	%	N	%	N	%	N	%		
Library materials recommendation	82	38.7	29	13.7	31	14.6	56	26.4	14	6.6	3.38	1.056
Library registration	112	58.2	19	9.0	29	13.7	39	18.4	13	6.1	3.99	.591
Interlibrary loan	90	42.5	14	6.6	44	20.8	32	15.1	32	15.1	3.21	.760
Selective dissemination of information	87	41.0	21	9.9	55	25.9	33	15.6	16	7.5	3.63	.899
Document delivery	80	37.7	19	9.0	61	28.8	34	16.0	18	8.5	3.52	1.002
Reference service	114	53.8	15	7.1	48	22.6	24	11.3	11	5.2	4.11	.983
Outreach service	77	36.3	24	11.3	48	22.6	34	16.0	29	13.7	3.26	.860
Prompt notification of library development	71	33.5	17	8.0	54	25.5	51	24.1	19	9.0	3.22	.895
Notification of OPAC additions	67	31.6	16	7.5	59	27.8	43	20.3	27	12.7	3.41	.815
Notification of Institutional Repository update	67	31.6	15	7.1	61	28.8	41	19.3	28	13.2	3.17	1.137
Notification of new library resources arrivals	59	27.8	21	9.9	64	30.2	42	19.8	26	12.3	3.15	1.064
Images/photos service	56	26.4	13	6.1	60	28.3	52	24.5	31	14.6	3.08	1.023
Library orientation	62	29.2	11	5.2	44	20.8	78	36.8	17	8.0	3.29	.955
Library education	67	31.6	11	5.2	43	20.4	76	36.0	15	7.1	3.35	.913
Charging and Discharging of library materials	99	46.7	13	6.1	37	17.5	51	24.1	12	5.7	4.06	.835
Translation services	73	34.4	10	4.7	40	18.9	48	22.6	41	19.3	2.89	.755



It could be deduced from the results presented in Table 4.5bi that in federal universities, reference services ( $\bar{x} = 4.11$ ), charging and discharging of books ( $\bar{x} = 4.06$ ), library registration ( $\bar{x} = 3.99$ ) and selective dissemination of information ( $\bar{x} = 3.63$ ) were the most frequently delivered services by notable numbers of librarians in universities in Southern Nigeria, while translation service ( $\bar{x} = 2.89$ ) was indicated by the respondents to be rendered occasionally. Results on frequency of library service delivery by librarians in state universities is as presented in Table 4.5bii.

**Table 4.5bii: Frequency of service delivered by librarians in State universities in Southern Nigeria**

	Responses N=161										Mean	STD
	Daily		Twice a week		Weekly		Monthly		Never			
Service	N	%	N	%	N	%	N	%	N	%		
Library materials recommendation	57	35.4	12	7.5	29	18.0	46	28.6	17	10.6	3.33	1.039
Library registration	99	61.5	14	8.7	20	12.4	21	13.0	7	4.3	4.10	.750
Interlibrary loan	71	44.1	8	5.0	28	17.4	32	19.9	22	13.7	3.21	.740
Selective dissemination of information	73	45.3	11	6.8	46	28.6	18	11.2	13	8.1	3.42	.805
Document delivery	68	42.2	16	9.9	39	24.2	26	16.1	11	6.8	3.51	.835
Reference service	95	59.0	12	7.5	29	18.0	18	11.2	6	3.7	3.93	.806
Outreach service	75	46.6	11	6.8	43	26.7	16	9.9	16	9.9	3.13	.960
Prompt notification of library development	61	37.9	10	6.2	48	29.8	27	16.8	14	8.7	3.38	.801
Notification of OPAC additions	67	41.6	10	6.2	40	24.8	27	16.8	17	10.6	3.32	.853
Notification of Institutional Repository update	63	39.1	12	7.5	42	26.1	19	11.8	24	14.9	3.24	.747
Notification of new library resources arrivals	55	34.2	9	5.6	39	24.2	41	25.5	16	9.9	3.23	.740
Images/photos service	61	37.9	7	4.3	42	26.1	34	21.1	17	10.6	3.11	.753
Library orientation	56	34.8	5	3.1	37	23.0	51	31.7	12	7.5	3.23	.915
Library education	61	37.9	8	5.0	33	20.5	46	28.6	13	8.1	3.32	.659
Charging and Discharging of library materials	98	60.9	7	4.3	27	16.8	20	12.4	9	5.6	3.91	.755
Translation services	65	40.4	8	5.0	30	18.6	25	15.5	33	20.5	3.00	1.076

In state universities, most of the respondents claimed that the following services: library registration ( $\bar{x} = 4.10$ ), reference services ( $\bar{x} = 3.93$ ) and charging and discharging of library materials ( $\bar{x} = 3.91$ ) were frequently delivered. The trend in state universities was that library registration, reference services and charging and discharging of books were the three most frequently delivered services by librarians while translation services ( $\bar{x} = 3.0$ ) was delivered at moderate level (Table 4.5bii). Results on frequency of library service delivery by librarians in private universities is as presented in Table 4.5biii.

**Table 4.5biii: Frequency of service delivered by librarians in Private universities in Southern Nigeria**

Service	Daily		Twice a week		Weekly		Monthly		Never		Mean	STD
	Responses N=173											
	N	%	N	%	N	%	N	%	N	%		
Library materials recommendation	75	43.4	22	12.7	33	19.1	38	22.0	5	2.9	3.48	.911
Library registration	105	60.7	17	9.8	29	16.8	17	9.8	5	2.9	4.21	.608
Interlibrary loan	38	22.0	12	6.9	53	30.6	44	25.4	26	15.0	3.29	.751
Selective dissemination of information	61	35.3	14	8.1	50	28.9	39	22.5	9	5.2	3.43	1.093
Document delivery	65	37.6	17	9.8	42	24.3	44	25.4	17	9.8	3.54	.979
Reference service	111	64.2	12	6.9	28	16.2	17	9.8	5	2.9	4.15	.968
Outreach service	45	26.0	8	4.6	55	31.8	43	24.9	22	12.7	3.39	.968
Prompt notification of library development	48	27.7	24	13.9	54	31.2	32	18.5	15	8.7	3.32	.955
Notification of OPAC additions	45	26.0	16	9.2	60	34.7	38	22.0	14	8.1	3.22	1.003
Notification of Institutional Repository update	33	19.1	21	12.1	54	31.2	42	24.3	23	13.3	3.01	1.038
Notification of new library resources arrivals	47	27.2	15	8.7	49	28.3	47	27.2	15	8.7	3.17	.981
Images/photos service	34	19.7	12	6.9	55	31.8	53	30.6	19	11.0	3.10	.969
Library orientation	61	35.3	10	5.8	34	19.7	62	35.8	6	3.5	3.21	1.054
Library education	63	36.4	16	9.2	35	20.2	54	31.2	5	2.9	3.25	1.024
Charging and Discharging of library materials	117	67.6	5	2.9	16	9.2	27	15.6	8	4.6	4.11	.926
Translation services	29	16.8	15	8.7	40	23.1	30	17.3	59	34.1	2.89	1.024

It was found in Table 4.5biii that private universities respondents indicated that they rendered the following services very regularly: library registration ( $\bar{x} = 4.21$ ), followed by reference service ( $\bar{x} = 4.15$ ) and charging and discharging of library materials ( $\bar{x} = 4.11$ ). The results also revealed that some of the participants indicated that they rendered library orientation and images/photo services moderately while translation service was the least among services delivered. (Table 4.5biii). In conclusion, among all the services listed, the most frequently delivered services by librarians in federal, state and private universities in Southern Nigeria were library registration, reference services as well as charging and discharging of library materials.

**Research question 4: What are the institutional factors (policy, infrastructure, environment, ICT skills and funding) that affect library service delivery in universities in Southern Nigeria?**

Respondents were asked to indicate their level of agreement with statements on institutional factors such as policy, infrastructure, environment, ICT skills and funding which affect service delivery. The results are presented in Table 4.6, Table 4.7, Table 4.8, Table 4.9 and Table 4.10.

**Table 4.6a: Respondents' opinions on library policy in universities in Southern Nigeria**

Statement on library policy	Agreement score		Disagreement score	
	Responses N=546			
My university library:	N	%	N	%
has a written policy that guide service delivery	400	73.3	146	26.7
policy is reviewed regularly	300	55.0	246	45.0
policy makes provision for guidelines for social media use	303	55.5	243	44.5
policy makes provision for upgrade of institutional facilities	390	71.4	156	28.6
policy makes provision for acquisition of a new institutional facilities	361	66.1	185	33.9
policy is accessible to librarians	292	53.5	254	46.7
policy is clear and understood	341	62.5	205	37.5

Results on opinions of librarians towards library policy as an institutional factor as shown in Table 4.6a showed that majority of the librarians indicated that they had written library policy as indicated by 400 (73.3%) respondents. The result was followed closely by 71% of the respondents who claimed that there was provision for facilities upgrading in the library policy, while 146 (26.7%) of the participants submitted that there was no formal policy in place guiding service delivery in their university libraries. The inference that could be drawn from the responses shown in Table 4.6a was that most of the respondents in Southern Nigeria universities were of the positive opinions that there was library policy which guided library service delivery and facilities improvement.

Further analysis on the library policy as an institutional factor is presented in Table 4.6b based on type of university.

**Table 4.6b: Respondents' opinions on library policy by type of university**

Statement	Federal Universities				State Universities				Private Universities			
	N = 212				N = 161				N = 173			
	Agreement score		Disagreement score		Agreement score		Disagreement score		Agreement score		Disagreement score	
	N	%	N	%	N	%	N	%	N	%	N	%
My university library:												
has a written policy that guide service delivery	159	75.0	53	25.0	118	73.3	43	26.7	123	71.1	50	28.9
policy is reviewed regularly	108	50.9	104	49.1	99	61.5	62	38.5	93	53.8	80	46.2
policy makes provision for guidelines for social media use	115	54.2	97	45.8	88	54.7	73	45.3	100	57.8	73	42.2
policy makes provision for upgrade of institutional facilities	156	73.6	56	26.4	111	68.9	50	31.1	122	70.5	51	29.5
policy makes provision for acquisition of a new institutional facilities	131	61.8	81	38.2	106	65.8	55	34.2	124	71.7	49	28.3
policy is accessible to librarians	92	43.4	120	56.6	91	56.5	70	43.5	109	63.0	64	37.0
policy is clear and understood	115	54.2	97	45.8	85	52.8	76	47.2	121	69.9	52	30.1



It was observed that in federal universities, 159 (75.0%) of the respondents claimed that there was a written policy for service delivery. State university libraries respondents 118 (73.3%) and 123 (71.1%) respondents of private university libraries indicated that written policy existed in their libraries and this document served as guide on service delivery. The result also showed that librarians in private universities had a higher agreement score on new facility acquisition (71.7%) than those in federal and state universities. This is an indication that larger number of respondents in private universities in Southern Nigeria claimed that their library policy allowed for the acquisition of new institutional facilities to that of federal and state universities. The opinion of the respondents on the provision of guidelines on social media use in the university libraries showed that private universities also had higher opinions in terms of agreement score (57.8%) than both federal and state universities (Table 4.6b). Results on infrastructure as an institutional factor is presented in Table 4.7a - Table 4.7b.

**Table 4.7a: Respondents' opinions on infrastructure in universities in Southern Nigeria**

Infrastructure	SA		A		D		SD		Mean	STD
	N=546									
	N	%	N	%	N	%	N	%		
<b>Computers/phones/software</b>										
Desktops are provided for service delivery in the library	284	52.0	198	36.3	54	9.9	10	1.8	3.38	.739
Laptops are provided for service delivery in the library	151	27.7	125	22.9	234	42.9	36	6.6	2.72	.943
Mobile/Smart phones are provided for service delivery in the library	18	3.3	74	13.6	334	61.2	120	22.0	1.98	.698
I-pads are provided for service delivery in the library	26	4.8	67	12.3	287	52.6	166	30.4	1.91	.782
Antivirus software is installed on the devices to prevent computers and mobile devices corruption	162	29.7	224	41.0	129	23.6	31	5.7	2.95	.871
<b>Internet facility</b>										
University Internet is accessible	262	48.0	257	47.1	27	4.9	-	-	3.43	.587
University Internet connection is very fast	132	24.2	243	44.5	151	27.7	20	3.7	3.18	1.344
Bandwidth assigned to the library is very good	105	19.2	213	39.0	197	36.1	31	5.7	2.72	.838
I use personal data subscription for service delivery	51	9.3	214	9.3	213	39.0	68	12.5	2.45	.828
<b>Power supply</b>										
There is regular electricity supply	105	19.2	210	38.5	181	33.2	50	9.2	2.68	.886
Other sources of energy supply – Generator	259	47.4	251	46.0	25	4.6	11	2.0	3.39	.671
Other sources of energy supply – Inverter	155	28.4	230	42.1	126	23.1	35	6.4	2.92	.876
Other sources of energy supply – Solar	113	20.7	192	35.2	172	31.5	172	31.5	2.64	.948
Other sources of energy supply - Uninterruptable power supply (UPS)	85	15.6	197	36.1	181	33.2	83	15.2	2.52	.931
Other sources of energy supply - Power bank	119	21.8	192	35.2	175	32.1	60	11.0	2.68	.936
<b>Total</b>									<b>41.55</b>	<b>12.878</b>

In order to measure the opinions of the respondents on infrastructure in universities in Southern Nigeria, four scales measurement (Strongly Agree - 4, Agree - 3, Disagree - 2 and Strongly Disagree - 1) was used. The four scale measure was added which gave a score of 10. The division of 10 by four gave two point five. The threshold for decision were: below two point five indicates low agreement rate, two point five indicates moderate while two point nine and above indicates high.

It could be observed from Table 4.7a that infrastructure such as desktop/laptops, phones and software, desktop computers was adequately provided for as majority of the respondents with mean score 3.38 attested to the availability of desktop computers in their libraries for service delivery. Availability of anti-virus software on the computers was also high with the mean score of 2.95. However, the result further showed that smart devices as indicated by most of the respondents was not adequately provided. This was as revealed in the low mean scores that devices such as i-pads (mean = 1.91) and mobile/smart phones (mean = 1.98) were not adequately provided for service delivery.

On the Internet facility that affected service delivery among library professionals in in Southern Nigeria universities, Internet access was indicated to be adequately provided as it was the consensus of the respondents that university Internet was accessible (mean = 3.43), yet some of the participants claimed that they used personal Internet subscription (mean = 2.45) for library service delivery. Another type of infrastructure used for service delivery was power supply. It was indicated by most of the respondents that other sources of electricity supply such as generator was used for service delivery (mean = 3.39) whenever there is general electricity supply outage. Government electricity supply was moderately supplied as claimed by the respondents (Table 4.7a). Additional analysis on infrastructure as institutional factor based on type of university is as presented in Table 4.7bi – Table 4.7biii.

**Table 4.7bi: Respondents' opinions on infrastructure in Federal universities in Southern Nigeria**

Infrastructure	SA		A		D		SD		Mean	STD
	N=212									
	N	%	N	%	N	%	N	%		
<b>Computers/phones/software</b>										
Desktops are provided for service delivery in the library	109	51.4	85	40.1	15	7.1	0	0.0	3.43	1.083
Laptops are provided for service delivery in the library	53	25.0	45	21.2	101	47.6	13	6.1	2.26	1.017
Mobile/Smart phones are provided for service delivery in the library	7	3.3	31	14.6	119	56.1	55	25.9	1.52	0.958
I-pads are provided for service delivery in the library	11	5.2	20	9.4	114	53.8	67	31.6	1.82	0.901
Antivirus software is installed on the devices to prevent computers and mobile devices corruption	61	28.8	89	42.0	48	22.6	14	6.6	2.66	1.001
<b>Internet facility</b>										
University Internet is accessible	107	50.5	90	42.5	14	6.6	1	0.5	3.41	0.901
University Internet connection is very fast	7	3.3	48	22.6	90	42.5	67	31.6	3.21	0.882
Bandwidth assigned to the library is very good	39	18.4	76	35.8	82	38.7	15	7.1	2.63	0.937
I use personal data subscription for service delivery	22	10.4	81	38.2	86	40.6	23	10.8	2.42	0.874
<b>Power supply</b>										
There is regular electricity supply	26	12.3	71	33.5	86	40.6	29	13.7	2.51	0.808
Other sources of energy supply – Generator	97	45.8	99	46.7	11	5.2	5	2.4	3.39	1.005
Other sources of energy supply – Inverter	66	31.1	83	39.2	47	22.2	16	7.5	2.65	0.879
Other sources of energy supply – Solar	44	20.8	65	30.7	68	32.1	35	16.5	2.54	0.766
Other sources of energy supply - Uninterruptable power supply (UPS)	31	14.6	78	36.8	73	34.4	30	14.2	2.49	0.955
Other sources of energy supply - Power bank	45	21.2	76	35.8	66	31.1	25	11.8	2.68	1.083

It could be observed that in federal universities in Southern Nigeria based on Table 4.7bi, infrastructure such as desktop/laptops, phones and software, desktop computers was adequately provided for as majority of the respondents with mean score 3.43 attested to the availability of desktop computers in their libraries for service delivery. The respondents also indicated that anti-virus software was installed on the computers as high number of librarians with the mean score of 2.66 affirmed it. However, the result further showed that smart devices as indicated by most of the respondents was not adequately provided. This was as revealed in the low mean scores that devices such as i-pads (mean = 1.82) and mobile/smart phones (mean = 1.52) were provided at a very low rate for service delivery.

On the Internet facility that affected service delivery by librarians in federal universities in Southern Nigeria, Internet access was indicated to be adequately provided as it was the consensus of the respondents that university Internet was accessible (mean = 3.41), yet some of the participants claimed that they used personal Internet subscription (mean = 2.42) for library service delivery. Another type of infrastructure used for service delivery was electricity supply. It was found that most of the respondents with mean score 3.39 indicated that other sources of electricity supply such as generator was used as source of electricity supply to carry out their electricity related duties. It could be deduce from Table 4.7bi that regular electricity was fairly supplied as claimed by the respondents. Results on infrastructure as institutional factor based on state universities is as presented in Table 4.7bii.

**Table 4.7bii: Respondents' opinions on infrastructure in State universities in Southern Nigeria**

Infrastructure	SA		A		D		SD		Mean	STD
	N=161									
	N	%	N	%	N	%	N	%		
<b>Computers/phones/software</b>										
Desktops are provided for service delivery in the library	65	40.4	75	46.6	19	11.8	2	1.2	3.35	.833
Laptops are provided for service delivery in the library	29	18.0	55	34.2	68	42.2	9	5.6	2.64	.943
Mobile/Smart phones are provided for service delivery in the library	5	3.1	24	14.9	106	65.8	26	16.1	1.97	.698
I-pads are provided for service delivery in the library	5	3.1	34	21.1	82	50.9	40	24.8	1.82	.782
Antivirus software is installed on the devices to prevent computers and mobile devices corruption	40	24.8	73	45.3	40	24.8	8	5.0	2.95	.871
<b>Internet facility</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>		
University Internet is accessible	63	39.1	96	59.6	8	5.0	0	0.0	3.51	.901
University Internet connection is very fast	6	3.7	45	28.0	69	42.9	47	29.2	3.15	.890
Bandwidth assigned to the library is very good	27	16.8	74	46.0	59	36.6	7	4.3	2.70	1.021
I use personal data subscription for service delivery	18	11.2	80	49.7	57	35.4	13	8.1	2.30	.791
<b>Power supply</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>		
There is regular electricity supply	37	23.0	66	41.0	50	31.1	8	5.0	2.64	.866
Other sources of energy supply – Generator	72	44.7	81	50.3	6	3.7	2	1.2	3.35	.953
Other sources of energy supply – Inverter	47	29.2	71	44.1	33	20.5	10	6.2	2.88	.690
Other sources of energy supply – Solar	32	19.9	57	35.4	54	33.5	18	11.2	2.63	.932
Other sources of energy supply - Uninterruptable power supply (UPS)	27	16.8	60	37.3	49	30.4	25	15.5	2.51	1.021
Other sources of energy supply - Power bank	40	24.8	58	36.0	44	27.3	19	11.8	2.64	.689

Table 4.7a revealed that infrastructure such as desktop/laptops, phones and software, desktop computers was adequately provided for as majority of the respondents with mean score 3.35 agreed to the availability of desktop computers in their libraries for service delivery. Anti-virus software was installed on the computers in the libraries as high number of respondents with the mean score of 2.95 confirmed it. It was also found that laptops were moderately provided as revealed by the mean score 2.64. However, the result further showed that smart devices as indicated by most of the respondents was not adequately provided. This was as revealed in the low mean scores that devices such as i-pads (mean = 1.82) and mobile/smart phones (mean = 1.97) were not adequately provided for service delivery.

On the Internet facility that affected service delivery among librarians in Southern Nigeria universities, the respondents claimed that they had Internet access whenever they need to use it. It was the consensus of the respondents that university Internet was readily accessible (mean = 3.51), though a few number of the participants claimed that they used personal Internet connection (mean = 2.30) for library service delivery. Another type of infrastructure used for service delivery was electricity supply. It was indicated by most of the respondents that generator sets were highly used as alternate to irregular electricity supply for service delivery (mean = 3.35). Additional analysis on infrastructure as institutional factor based on private universities is as presented in Table 4.7bi – Table 4.7biii.

**Table 4.7biii: Respondents' opinions on infrastructure in Private universities in Southern Nigeria**

Infrastructure	SA		A		D		SD		Mean	STD
	N=173									
	N	%	N	%	N	%	N	%		
<b>Computers/phones/software</b>										
Desktops are provided for service delivery in the library	103	59.5	45	26.0	21	12.1	4	2.3	3.52	.813
Laptops are provided for service delivery in the library	61	35.3	35	20.2	61	35.3	16	9.2	2.89	.931
Mobile/Smart phones are provided for service delivery in the library	6	3.5	16	9.2	117	67.6	34	19.7	2.11	.872
I-pads are provided for service delivery in the library	9	5.2	19	11.0	97	56.1	48	27.7	2.01	.841
Antivirus software is installed on the devices to prevent computers and mobile devices corruption	60	34.7	64	37.0	41	23.7	8	4.6	2.77	.915
<b>Internet facility</b>	N	%	N	%	N	%	N	%		
University Internet is accessible	83	48.0	83	48.0	7	4.0	0	0.0	3.31	.827
University Internet connection is very fast	5	2.9	41	23.7	96	55.5	31	17.9	3.19	.916
Bandwidth assigned to the library is very good	40	23.1	80	46.2	52	30.1	1	0.6	2.62	.952
I use personal data subscription for service delivery	13	7.5	77	44.5	58	33.5	24	13.9	2.41	.954
<b>Power supply</b>	N	%	N	%	N	%	N	%		
There is regular electricity supply	44	25.4	73	42.2	46	26.6	10	5.8	2.69	.922
Other sources of energy supply – Generator	90	52.0	71	41.0	8	4.6	4	2.3	3.43	.811
Other sources of energy supply – Inverter	42	24.3	76	43.9	46	26.6	9	5.2	2.85	.941
Other sources of energy supply – Solar	37	21.4	70	40.5	50	28.9	50	28.9	2.52	.817
Other sources of energy supply - Uninterruptable power supply (UPS)	27	15.6	59	34.1	59	34.1	28	16.2	2.47	.884
Other sources of energy supply - Power bank	34	19.7	58	33.5	65	37.6	16	9.2	2.61	.791



In private universities category, Table 4.7biii recorded that desktops were adequately provided for library functions as majority of the participants with mean score 3.52 claimed that they had desktop computers to work with. The respondents with mean score 2.89 also claimed that there were moderate number of laptops readily available for library service delivery. A very few number of participants with mean score 2.01 indicated that there was provision for mobile devices for library services. On the Internet access, majority of the respondents (mean = 3.31) claimed that they had access to university Internet connection while a few number of the respondents (mean = 2.41) used personal data subscription. Half of the participants with mean score 2.69 agreed to regular electricity supply to carry out their duties while majority of the respondents with mean score 3.43 claimed that they relied on other sources of electricity supply such as generators to work effectively.

In conclusion, most of the respondents in federal, private and state universities agreed that desktops were highly provided for service delivery. This is apparent in the responses given by librarians in federal universities with mean score 3.43, in state universities (mean = 3.35) universities and private universities (mean = 3.52). This result indicates that majority of the respondents maintained a positive disposition to the provision of desktops for service delivery. On the other hand, only a few number of respondents in federal, state and private universities claimed that mobile/smart phones were adequately provided for service delivery in the libraries, while majority of the respondents in all the three types of universities disagreed with the provision of i-pads for service delivery. This implies that the respondents' indication was negative toward mobile devices provision for service delivery in universities in Southern Nigeria. This means that mobile devices such as smart phones and i-pads were not adequately made available for service delivery in universities in federal, private and state universities in Southern Nigeria (Table 4.7bi – Table 4.7biii).

Internet facilities were accessible to the respondents in federal, state and private universities as the librarians indicated with high mean score (Table 4.7bi – Table 4.7biii). This implied that, the respondents' disposition to the Internet accessibility was positive. However, most of the librarians indicated moderate speed of the university Internet connection as only few of the respondents in federal, private and state universities agreed to having very fast Internet connections. This means that although the Internet was accessible, but it was not effective.

The result on electricity supply as an infrastructure showed that generators were mostly relied upon to execute library activities which included service delivery. This implies that there was irregular electricity supply in Nigerian universities in the Southern Nigeria. It

is apparent from this result that there was regular electricity supply in private universities than their federal and state counterparts. This implies that respondents from private universities claimed that they had constant electricity supply in their institutions (Table 4.7biii).

Result on environment as an institutional factor affecting service delivery in universities in Southern Nigeria is presented in Table 4.8.

**Table 4.8: Opinions of respondents on office environment in universities in Southern Nigeria**

Factors	Federal universities N = 212				State universities N = 161				Private universities N = 176				Aggregate (N=546)			
	Agreement score		Disagreement score		Agreement score		Disagreement score		Agreement score		Disagreement score		Agreement score		Disagreement score	
I work in a conducive office environment with:	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Comfortable furniture	91	42.9	121	57.1	66	41.0	95	59.0	70	40.5	103	59.5	227	41.6	319	58.4
Adequate lighting	141	66.5	71	33.5	107	66.5	54	33.5	124	71.7	49	28.3	372	68.1	174	31.9
Functional air conditioning	161	75.9	51	24.1	125	77.6	36	22.4	138	79.8	35	20.2	424	77.7	122	22.3
Good ventilation	144	67.9	68	32.1	95	59.0	66	41.0	117	67.6	56	32.4	356	65.2	190	34.8

From Table 4.8, majority of the respondents (424; 77.7%) indicated that they had conducive office environment in terms of functional air conditioning. It could be observed that librarians in all the three types of university (federal, state and private universities) maintained that there was conducive office environment in Southern Nigeria universities. This is apparent in high agreement scores as indicated by the respondents. However, the respondents from the three types of universities studied indicated that there was inadequate provision of comfortable furniture in their offices (Table 4.8).

Analysis of ICT skills of librarians as one of the institutional factors examined in universities in Southern Nigeria is presented in Table 4.9a, Table 4.9bi and Table 4.9bii.

**Table 4.9a: Respondents' level of ICT skills acquired in universities in Southern Nigeria**

ICT skills	N = 546											
	Very High		High		Moderate		Low		Very Low		Mean	STD
	N	%	N	%	N	%	N	%	N	%		
<b>Social media use: Ability to use:</b>												
Facebook	26	4.8	166	30.4	238	43.6	96	17.6	20	3.7	3.15	.892
Blog	228	41.8	177	32.4	90	16.5	37	6.8	14	2.6	4.05	1.034
You Tube	129	23.6	169	31.0	136	24.9	76	13.9	36	6.6	3.53	1.167
Twitter	125	22.9	160	29.3	185	33.9	63	11.5	13	2.4	3.59	1.037
Skype	109	20.0	185	33.9	165	30.2	56	10.3	31	5.7	3.52	1.094
WhatsApp	141	25.8	207	37.9	97	17.8	63	11.5	38	7.0	3.62	1.193
Flickr	213	39.0	192	35.2	103	18.9	29	5.3	9	1.7	4.02	.969
<b>Microsoft office Ability to install, update and use ms office such as:</b>												
Word processing	94	17.2	126	23.1	184	33.7	69	12.0	76	13.9	3.17	1.260
Power point	203	37.2	132	24.2	175	32.1	35	6.4	1	0.2	3.90	.980
Excel spreadsheet	212	39.9	134	24.5	130	23.8	63	11.5	1	0.2	3.92	1.054
Access	107	19.6	93	17.0	156	28.6	131	24.0	59	10.8	3.11	1.272
Publisher	101	18.5	84	15.4	166	30.4	141	25.8	54	9.9	3.07	1.243
Outlook	95	17.4	69	12.6	136	24.9	161	29.5	85	15.6	2.87	1.314
Sharepoint	82	15.0	122	22.3	154	28.2	117	21.4	71	13.0	3.06	1.245
<b>Information retrieval</b>												
Information retrieval: Search and retrieve information from Online Public Access Catalogue	232	42.5	160	29.3	109	20.0	41	7.5	4	0.7	4.05	.995
Internet use	225	41.2	156	28.6	80	14.7	61	11.2	24	4.4	3.91	1.181
Search for information	236	43.2	169	31.0	92	16.8	42	7.7	7	1.3	4.07	1.010
Download materials	297	54.4	153	28.0	73	13.4	12	2.2	11	2.0	4.31	.925
Save materials	286	52.4	142	26.0	78	14.3	25	4.6	15	2.7	4.21	1.028
Print materials	279	51.1	142	26.0	93	17.0	21	3.8	11	2.0	4.20	.988
Use e-mail	268	49.1	164	30.0	79	14.5	19	3.5	16	2.9	4.19	1.002
Use diverse search engines	232	42.5	177	32.4	65	11.9	55	10.1	17	3.1	4.01	1.109
<b>Programming</b>												
Website design	86	15.8	99	18.1	145	26.6	98	17.9	118	21.6	2.88	1.358
Networking	60	11.0	80	14.7	172	31.5	121	22.2	113	20.7	2.73	1.251
Software installation	149	27.3	131	24.0	164	30.0	55	10.1	47	8.6	3.51	1.234
<b>Conservation/preservation skills</b>												
Digitisation into different formats	193	35.3	135	24.7	126	23.1	60	11.0	32	5.9	3.73	1.216
Create records of digitised information	158	28.9	127	23.3	122	22.3	91	16.7	48	8.8	3.47	1.301
Upload files into the repository	125	22.9	158	28.9	128	23.4	78	14.3	57	10.4	3.40	1.270
<b>Total</b>											<b>101.30</b>	<b>31.622</b>

It could be noted from the results shown in Table 4.9a that most of the librarians in universities in Southern Nigeria indicated that the skills in the use of social media was very high most especially blog (mean= 4.05), Flickr (mean= 4.02) and WhatsApp (mean= 3.62). The skills in the use of Facebook (mean= 3.15) by librarians were however not as high as the other social media tools used by librarians. Similarly, the skills in the use of Microsoft office by librarians was relatively above average as indicated in Table 4.9a. For instance, the ability of the librarians to use Microsoft excel spreadsheet was high as indicated in the mean score of 3.92 and this was followed PowerPoint with a mean score of 3.90. Microsoft outlook had the least mean score which means that the level of skills possessed by the respondents was lower than other Microsoft office package.

In terms of information retrieval, the level of skills possessed by the participants was very high as shown in the high scores recorded. The highest mean score of 4.31 recorded for skills of downloading materials was the overall highest mean score for all the items listed in the Table 4.9a. In terms of skills in programming, it was found that majority of the librarians had low level skills in networking (2.73) and website design (2.88). Further analysis on ICT skills of librarians by type of university is presented in Table 4.9bi and Table 4.9bii.

**Table 4.9bi: Respondents' level of ICT skills acquired in Federal universities**

ICT skills	N = 212											
	Very High		High		Moderate		Low		Very Low		Mean	STD
	N	%	N	%	N	%	N	%	N	%		
<b>Social media use:</b>												
<b>Ability to use:</b>												
Facebook	12	5.7	64	30.2	90	42.5	37	17.5	9	4.2	3.22	1.047
Blog	91	42.9	64	30.2	38	17.9	14	6.6	5	2.4	4.08	.932
You Tube	48	22.6	72	34.0	46	21.7	27	12.7	19	9.0	3.23	.867
Twitter	50	23.6	67	31.6	65	30.7	26	12.3	4	1.9	3.39	.936
Skype	45	21.2	78	36.8	56	26.4	18	8.5	15	7.1	3.32	.785
WhatsApp	53	25.2	84	40.0	34	16.2	23	11.0	16	7.6	3.55	.958
Flickr	84	39.6	70	33.0	45	21.2	9	4.2	4	1.9	3.98	1.095
<b>Microsoft office</b>												
Ability to install, update and use ms office such as:												
Word processing	44	20.8	48	22.6	66	31.1	23	11.0	31	14.6	3.17	1.053
Power point	79	37.2	50	23.6	65	30.7	18	8.5	0	0.0	3.90	.937
Excel spreadsheet	80	37.7	56	26.4	46	21.7	29	13.7	1	0.5	3.92	.881
Access	44	20.8	38	17.9	55	25.9	50	23.6	25	11.8	3.11	.936
Publisher	44	20.8	29	13.7	62	29.2	53	25.0	24	11.3	3.07	.797
Outlook	41	19.3	29	13.7	50	23.6	57	26.9	35	16.5	2.87	.930
Sharepoint	34	16.2	50	23.6	58	27.3	39	18.4	31	14.6	3.06	.718
<b>Information retrieval</b>												
Search and retrieve information from electronic resources database	96	45.3	62	29.2	38	17.9	15	7.1	1	0.5	4.05	1.038
Search and retrieve information from Online Public Access Catalogue	95	44.8	55	25.9	26	12.3	26	12.3	10	4.7	3.91	1.016
<b>Internet use</b>												
Search for information	102	48.1	59	27.8	34	16.0	15	7.1	2	0.9	4.31	.941
Download materials	119	56.1	52	24.5	32	15.1	4	1.9	5	2.4	4.21	.813
Save materials	115	54.2	54	25.5	29	13.7	8	3.8	6	2.8	4.20	.971
Print materials	116	54.7	50	23.6	34	16.0	6	2.8	6	2.8	4.19	1.062
Use e-mail	110	51.9	59	27.8	29	13.7	7	3.3	7	3.3	4.01	1.087
Use diverse search engines	98	46.2	58	27.4	25	11.8	24	11.3	7	3.3	3.81	1.020
<b>Programming</b>												
Website design	27	12.7	33	15.6	60	28.3	44	20.8	48	22.6	2.73	.829
Networking	20	9.4	28	13.2	75	35.4	47	22.2	42	19.8	3.51	.995
Software installation	58	27.4	44	20.8	64	30.2	23	11.0	23	11.0	3.22	.921
<b>Conservation/preservation skills</b>												
Digitisation into different formats	81	38.2	50	23.6	48	22.6	25	11.8	8	3.8	3.47	1.048
Create records of digitised info	66	31.1	44	20.8	50	23.6	37	17.5	15	7.1	3.40	.932
Upload files into the repository	50	23.6	59	27.8	49	23.1	34	16.0	20	9.4	3.52	.881

Table 4.9bi revealed the ability of respondents in the use of social media tools. Librarians in federal universities had very high level of skills in the use of Blogs (mean = 4.08), Flickr (mean = 3.98), and WhatsApp (mean = 3.55) but majority of librarians generally had moderate skill level in the use of social media tools such as Skype (mean = 3.32), YouTube (mean = 3.23) and Facebook (mean = 3.22).

Further, the skills possessed by most librarians in federal universities were very high in the use of Microsoft office applications such as Excel spreadsheet (mean = 3.92) and PowerPoint (mean = 3.90) but low skill level was recorded against respondents in federal universities in the use of Outlook and SharePoint. Information retrieval skills of librarians in federal university was rated to be very high as most of the librarians (mean = 4.01) claimed to possess very high level of skills in searching and retrieving information from electronic resources database as well as from the Online Public Access Catalogue (OPAC) (mean = 3.91). The level of skills possessed by librarians in the use of Internet was significantly higher than any other ICT tools (Table 4.9bi).

Furthermore, respondents in federal universities claimed to possess high skills in the downloading of materials, saving materials, printing materials from the Internet and searching for information through the Internet as the mean score for each of this service was above four. However, most of the librarians maintained that their level of skills in programming was moderate while that of website design was low (mean = 2.73). Results of ICT skills possessed by librarians in state universities is as shown in Table 4.9bii.



**Table 4.9bii: Respondents' level of ICT skills acquired in State universities**

ICT skills	N = 161											
	Very High		High		Moderate		Low		Very Low		Mean	STD
	N	%	N	%	N	%	N	%	N	%		
<b>Social media use:</b>												
<b>Ability to use:</b>												
Facebook	0	0.0	48	31.0	68	43.9	33	21.3	6	3.9	2.96	1.175
Blog	64	41.3	50	32.3	22	14.2	14	9.0	5	3.2	3.85	.940
You Tube	37	23.9	43	27.7	38	24.5	25	16.1	12	7.7	3.48	.997
Twitter	36	23.2	38	24.5	55	35.5	21	13.5	5	3.2	3.50	.849
Skype	31	20.0	46	29.7	49	31.6	20	12.9	9	5.8	2.88	.767
WhatsApp	34	22.2	58	37.9	26	17.0	22	14.4	13	8.5	3.49	.877
Flickr	66	42.6	56	36.1	25	16.1	8	5.2	0	0.0	4.11	1.034
<b>Microsoft office</b>												
Ability to install, update and use ms office such as:												
Word processing	19	12.3	37	23.9	56	36.1	17	11.0	26	16.8	3.11	.937
Power point	59	38.1	36	23.2	53	34.2	7	4.5	0	0.0	3.82	.810
Excel spreadsheet	66	42.6	37	23.9	37	23.9	15	9.7	0	0.0	4.01	.704
Access	29	18.7	22	14.2	45	29.0	45	29.0	14	9.0	2.73	.959
Publisher	22	14.2	31	20.0	46	29.7	43	27.7	13	8.4	3.07	1.062
Outlook	20	12.9	18	11.6	45	29.0	49	31.6	23	14.8	2.65	1.175
Sharepoint	19	12.3	35	22.9	45	29.0	39	25.2	17	11.0	2.79	.940
<b>Information retrieval</b>												
Search and retrieve information from electronic resources database	52	33.5	53	34.2	33	21.3	15	9.7	2	1.3	4.19	.849
Search and retrieve information from Online Public Access Catalogue	52	33.5	50	32.5	26	16.8	20	12.9	7	4.5	3.98	.767
<b>Internet use</b>												
Search for information	60	38.7	65	36.3	26	14.5	12	6.7	2	1.1	4.27	1.034
Download materials	81	52.3	47	30.3	20	12.9	4	2.6	3	1.9	4.15	.948
Save materials	73	47.1	43	27.7	21	13.5	10	6.5	8	5.2	4.23	.937
Print materials	71	45.8	40	25.8	31	20.0	9	5.8	4	2.6	4.13	.810
Use e-mail	69	44.5	48	31.0	23	14.8	9	5.8	6	3.9	4.23	.704
Use diverse search engines	55	35.5	52	33.5	25	16.1	16	10.3	7	4.5	3.92	.959
<b>Programming</b>												
Website design	21	13.5	33	21.3	36	23.2	30	19.4	35	22.6	2.42	1.175
Networking	11	7.1	26	16.8	46	29.7	32	20.6	40	25.8	3.31	.940
Software installation	35	22.6	45	29.0	47	30.3	16	10.3	12	7.7	2.43	.997
<b>Conservation/preservation skills</b>												
Digitisation into different formats	50	32.3	39	25.2	34	21.9	13	8.4	19	12.3	3.31	.767
Create records of digitised info	44	28.4	40	25.8	31	20.0	19	12.3	21	13.5	3.38	.877
Upload files into the repository	39	25.2	42	27.1	33	21.3	20	12.9	21	13.5	3.33	1.034

The results of the level of ICT skills possessed by librarians in state universities as shown in Table 4.9bii revealed that respondents with mean score of 4.11 claimed that they had very high skills in using Flickr and librarians with mean score of 3.85 indicated very high in the level of ability to use Flickr. None of the librarians in state university claimed very high skill in the use of WhatsApp (mean = 3.49). This implied that majority of the respondents maintained that they had moderate skills in the use of social media. Further, the skills possessed by most librarians in state universities were very high in the use of Microsoft office applications such as Excel spreadsheet (mean = 4.01) and PowerPoint (mean = 3.82) but there was low level of skills possessed by the respondents in state universities in the use of SharePoint, Outlook and Access Microsoft office packages (Table 4.9bii).

Similarly, information retrieval skills of librarians in state universities was rated to be high as most of the librarians (mean = 4.19) claimed to possess high level of skills in searching and retrieving information from electronic resources database as well as from the Online Public Access Catalogue (mean = 3.98). The level of skills possessed by the respondents in the use of Internet was significantly higher than any other ICT tools. For example, notable number of the respondents claimed to have a very high level of skill in downloading of materials, saving materials, using e-mails and searching for information through the Internet (Table 4.9bii). However, most of the librarians maintained that their level of skills in programming was low as indicated by some participants (mean = 2.42) for website design and software installation (mean = 2.43) while the ability of librarians on the application of networking was moderate (Table 4.9bii). In the area of conservation of library information resources, result revealed that high number of respondents had moderate skills level as the mean scores recorded against digitisation, creation of records and uploading into the repository were above three (Table 4.9bii). Findings on ICT skills possessed by librarians in private universities is as shown in Table 4.9biii.

**Table 4.9biii: Respondents' level of ICT skills acquired in Private universities**

ICT skills	N = 173										Me an	STD
	Very High		High		Moderate		Low		Very Low			
	N	%	N	%	N	%	N	%	N	%		
<b>Social media use: Ability to use:</b>												
Facebook	14	7.8	54	30.2	80	44.7	26	14.5	5	2.8	3.65	.809
Blog	73	40.8	63	35.2	30	16.8	9	5.0	4	2.2	4.15	.804
You Tube	44	24.6	54	30.2	52	29.1	24	13.4	5	2.8	3.66	.839
Twitter	39	21.8	55	30.7	65	36.3	16	8.9	4	2.2	3.87	.838
Skype	33	18.4	61	34.1	60	33.5	18	10.1	7	3.9	3.63	.755
WhatsApp	50	27.9	65	36.3	37	20.7	18	10.1	9	5.0	4.22	.805
Flickr	63	35.2	66	36.9	33	18.4	12	6.7	5	2.8	3.93	.934
<b>Microsoft office</b>												
Ability to install, update and use ms office such as: Word processing	33	18.5	40	22.5	62	34.8	24	13.5	19	10.7	3.59	.933
Power point	64	35.8	47	26.3	57	31.8	10	5.6	1	0.6	4.05	.839
Excel spreadsheet	72	40.2	41	26.3	47	26.3	19	10.6	0	0.0	3.92	.737
Access	34	19.0	33	18.4	56	31.3	36	20.1	20	11.2	3.17	.895
Publisher	35	19.6	24	13.4	58	32.4	45	25.1	17	9.5	3.12	.843
Outlook	34	19.0	22	12.3	41	22.9	55	30.7	27	15.1	2.63	.856
Sharepoint	30	16.7	39	21.8	51	28.5	39	21.8	20	11.2	3.01	.809
<b>Information retrieval</b>												
Search and retrieve information from electronic resources database	84	46.9	45	25.1	38	21.2	11	6.1	1	0.6	4.12	.839
Search and retrieve information from Online Public Access Catalogue	78	43.6	51	28.5	28	15.6	15	8.4	7	3.9	3.93	.838
<b>Internet use</b>												
Search for information	74	41.3	65	36.3	26	14.5	12	6.7	2	1.1	4.29	.805
Download materials	97	54.2	54	30.2	21	11.7	4	2.2	3	1.7	4.27	.934
Save materials	98	54.7	45	25.1	28	15.6	7	3.9	1	0.6	4.32	.923
Print materials	92	51.4	52	29.1	28	15.6	6	3.4	1	0.6	4.21	.933
Use e-mail	89	49.7	57	31.8	27	15.1	3	1.7	3	1.7	4.11	.839
Use diverse search engines	79	44.1	67	37.4	15	8.4	15	8.4	3	1.7	3.89	.737
<b>Programming</b>												
Website design	38	21.2	33	18.4	49	27.4	24	13.4	35	19.6	2.70	.843
Networking	29	16.2	26	14.5	51	28.5	42	23.5	31	17.3	3.33	.856
Software installation	56	31.3	43	24.0	54	30.2	13	7.3	13	7.3	2.79	.809
<b>Conservation/preservation skills</b>												
Digitisation into different formats	62	34.6	46	25.7	44	24.6	22	12.3	5	2.8	3.67	.839
Create records of digitised info	48	26.8	43	24.0	41	22.9	35	19.6	12	6.7	3.59	.838
Upload files into the repository	36	20.1	57	31.8	46	25.7	24	13.4	16	8.9	3.80	.755

According to Table 4.9biii, the respondents in private universities claimed that they had a very high level skills in the use of WhatsApp (mean = 4.22) and Blogs (4.15). The level of skills acquired by the respondents in the application of Microsoft office suit was also high as majority of the respondents had mean scores above three. The trend is not different from the submission of respondents from federal universities on Internet use, programming and conservation skills in Southern Nigeria (Table 4.9bi) that there was high level of skill acquisition in respect to information use and management. The inference that could be drawn from the foregoing analysis is that the level of ICT skills of librarians in federal, state and private universities was significantly high. In addition, the source of ICT acquisition of librarians was investigated and the result is presented in Tables 4.10a and 4.10b.

**Table 4.10a: Distribution of respondents by source of ICT skills acquisition in universities in Southern Nigeria**

Source	N=546			
	Agreement score		Disagreement score	
	N	%	N	%
Self-learning	523	95.8	23	4.2
Through In-house training	430	78.8	116	21.2
Through National conferences and workshops	421	77.1	125	22.9
Through international conferences and workshops	289	52.9	257	47.1
Through professional online networks	342	62.6	204	37.4

The results shown in Table 4.10a revealed that almost all the librarians (95.8%) agreed that they acquired their ICT skills through self-learning. Another source of ICT skills acquisition by librarians in Southern Nigeria universities was through national conference as indicated by 421 (77.1%) of the respondents in terms of agreement score. Further results on the source of ICT skills acquisition by type of university is as presented in Table 4.10b.

**Table 4.10b: Distribution of respondents by source of ICT skills acquisition by type of university**

Source	Federal Universities N=212				State Universities N=161				Private Universities N=173			
	Agreement score		Disagreement score		Agreement score		Disagreement score		Agreement score		Disagreement score	
	N	%	N	%	N	%	N	%	N	%	N	%
Self-learning	203	95.8	9	4.2	159	98.8	2	1.2	161	93.1	12	6.9
Through In-house training	167	78.8	45	21.2	120	74.5	41	25.5	140	80.9	33	19.1
Through National conferences and workshops	169	79.7	43	20.3	122	75.8	39	24.2	130	75.1	43	24.9
Through international conferences and workshops	118	55.7	94	44.3	84	52.2	77	47.8	99	57.2	86	49.7
Through professional online networks	133	62.7	79	37.3	100	62.1	61	37.9	109	63.0	64	37.0

Results shown in Table 4.10b revealed that most of the librarians in all the three type of universities indicated that they acquired their ICT skills through self-learning where the highest percentage of agreement score of 98% was recorded in state universities. ICT skills acquired through international conferences and workshops recorded lowest agreement scores in the three types of universities, but librarians in federal universities had higher agreement scores than private counterpart (Table 4.10b).

University librarians were asked to respond to funding issues as an institutional factor affecting service delivery among librarians in universities in Southern Nigeria and the results are presented in Table 4.11a and Table 4.11b.



**Table 4.11a: Frequency of funding library services in universities in Southern Nigeria**

	Very often		Often		Rarely		Never		Mean	STD
	N=68									
Question	N	%	N	%	N	%	N	%		
How frequent is the government subvention in funding your library service delivery	25	36.8	9	13.2	16	23.5	18	26.5	2.01	.828
How frequent is university funding your library service delivery	32	47.1	29	42.6	6	8.8	1	1.5	3.27	.754
How frequent is IGR in funding your library service delivery	33	48.5	16	23.5	13	19.1	6	8.8	2.91	.760
How frequent is TETFUND your library service delivery	26	38.2	20	29.4	1	1.5	21	30.9	3.24	.780
How frequent is fundraising in funding your library service delivery	20	29.4	8	11.8	12	17.6	28	41.2	2.19	.658
How frequent is gift in funding your library service delivery	17	25.0	21	30.9	26	38.2	4	5.9	1.79	.565
<b>Total</b>									<b>15.41</b>	<b>4.345</b>

Results shown in Table 4.11a revealed the total responses from all the heads of university libraries on the various sources and frequency of funding library services. University funding was rated as the highest source of funding library services as indicated by 32 university librarians with mean score 3.27, followed closely was funding through TETFund with mean score 3.24. However, gift was indicated as the least source of funding library services (Table 4.11a). Further distribution on funding by type of university is as presented in Table 4.11ai - Table 4.11aiii.

**Tables 4.11ai: Frequency of funding library service in Federal universities**

	N = 12									
	Very often		Often		Rarely		Never		Mean	STD
Question	N	%	N	%	N	%	N	%		
How frequent is the government subvention in funding your library service delivery?	4	33.3	3	25.0	5	41.7	0	0.0	3.43	.689
How frequent is university funding your library service delivery?	3	25.0	5	41.7	4	33.3	0	0.0	3.27	.763
How frequent is IGR in funding your library service delivery?	7	58.3	3	25.0	2	16.7	0	0.0	3.49	.863
How frequent is TETFUND your library service delivery?	4	33.3	8	66.7	0	0.0	0	0.0	3.85	.893
How frequent is fundraising in funding your library service delivery?	2	16.7	0	0.0	5	41.7	5	41.7	1.08	.792
How frequent is gift in funding your library service delivery?	2	16.7	5	41.7	4	33.3	1	8.3	1.83	.735
<b>Total</b>									<b>16.95</b>	<b>4.735</b>

It could be observed from the result presented in Tables 4.11ai that library services delivery in federal universities were mostly funded through Tertiary Education Trust Fund (TETFUND). Tertiary Education Trust Fund is an agency established by government to manage, disburse and monitor the education tax to federal and state tertiary institutions in Nigeria. A notable number of respondents with mean score 3.85 claimed that library services were sustained highly by TETFUND. Internally Generated Revenue (IGR) is a kind of fund generated internally to complement funds emanating from the government and private institutions. This is apparent in the responses given by the university librarians in the universities studied. For instance, high number of participants with mean score of 3.49 claimed that the frequency of Internally Generated Revenue in funding library services was reasonable. Results on funding university libraries by state category is as presented in Table 4.11aii.

**Tables 4.11aii: Frequency of funding library service in State universities**

Question	N = 18								Mean	STD
	Very often		Often		Rarely		Never			
	N	%	N	%	N	%	N	%		
How frequent is the government subvention in funding your library service delivery	7	38.9	4	22.2	7	38.9	0	0.0	1.22	.707
How frequent is university funding your library service delivery	8	44.4	8	44.4	1	5.6	1	5.6	3.87	.734
How frequent is internally generated revenue (IGR) in funding your library service delivery	9	50.0	4	22.2	3	16.7	2	11.1	3.26	.594
How frequent is TETFUND your library service delivery	7	38.9	8	44.4	1	5.6	2	11.1	2.36	.747
How frequent is fundraising in funding your library service delivery	6	33.3	2	11.1	3	16.7	7	38.9	1.89	.785
How frequent is gift in funding your library service delivery	5	27.8	2	11.1	11	61.1	0	0.0	1.56	.492
<b>Total</b>									<b>14.16</b>	<b>4.059</b>

Results shown in Table 4.11aii revealed that university funding and Internally Generated Revenue (IGR) with an average scores 3.87 and 3.26 respectively were the two main sources of funding for library services delivery in state universities. It could be observed from the Table that heads of libraries in state universities in Southern Nigeria claimed that the rate of using university funding for services delivery was often as well as IGR. It was also observed that government subvention was poor as the respondents with mean score 1.22 claimed very inadequate fund support to service delivery in state universities in Sothern Nigeria. Results on funding university libraries by private category is as presented in Table 4.11aiii.

**Tables 4.11aiii: Frequency of funding library services in Private universities**

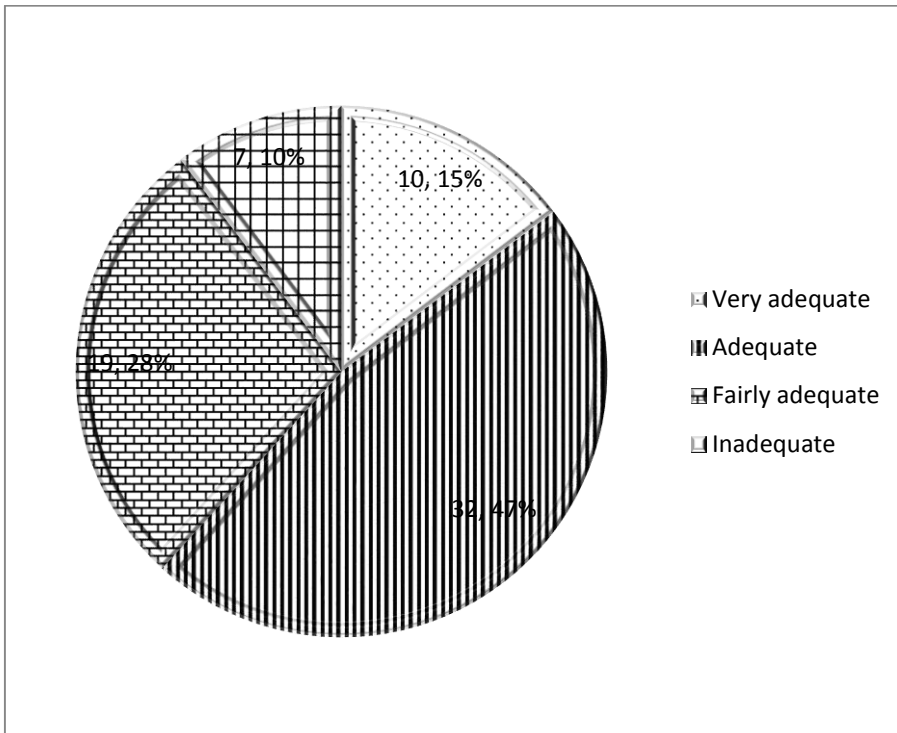
Question	N = 38								Mean	STD
	Very often		Often		Rarely		Never			
	N	%	N	%	N	%	N	%		
How frequent is the government subvention in funding your library service delivery	14	36.8	2	5.3	4	10.5	18	47.8	1.77	.499
How frequent is university funding your library service delivery	21	55.3	16	42.1	1	2.6	0	0.0	3.84	.502
How frequent is internally generated revenue (IGR) in funding your library service delivery	17	44.7	9	23.7	8	21.1	4	10.5	3.32	.463
How frequent is TETFUND funding your library service delivery	0	0	0	0	0	0.0	38	100.0	1.00	.487
How frequent is fundraising in funding your library service delivery	12	31.6	6	15.8	4	10.5	16	42.1	2.52	.502
How frequent is gift in funding your library service delivery	10	26.3	14	36.8	11	28.9	3	7.9	2.69	.497
<b>Total</b>									<b>15.14</b>	<b>2.950</b>

In private universities, the university librarians claimed that university funding was the most frequent source of funding library services delivery as claimed by most of the respondents with mean score 3.84. The second main source according to the responses shown in Table 4.11aiii was Internally Generated Revenue (IGR) with mean score 3.32 of the university librarians that claimed the rate of using IGR to fund library services delivery was very often. The rate at which libraries in private universities in Southern Nigeria used various sources of funding such as University funding, IGR, fundraising and gift were significant when compared to their federal and state counterparts. It was also found that private university libraries never received TETFUND (Table 4.11ai, Table 4.11aaii and Table 4.11aiii).

An observation of information provided by the university librarians in Table 4.11ai to Table 4.11aiii revealed that the major sources of funding for federal universities were through Tertiary Education Trust Fund (TETFUND), Internally Generated Revenue (IGR) and university funding. In the case of state universities, they are mainly supported by university funding and IGR but private universities got their funding from founders of the universities and IGR. It was the consensus from the university librarians' responses that there was paucity of funds which hindered the services delivered in their respective universities.

University librarians were asked to rate the adequacy of funding service delivery. Results on adequacy of funding are as presented in Figure 4.1 - Figure 4.4.

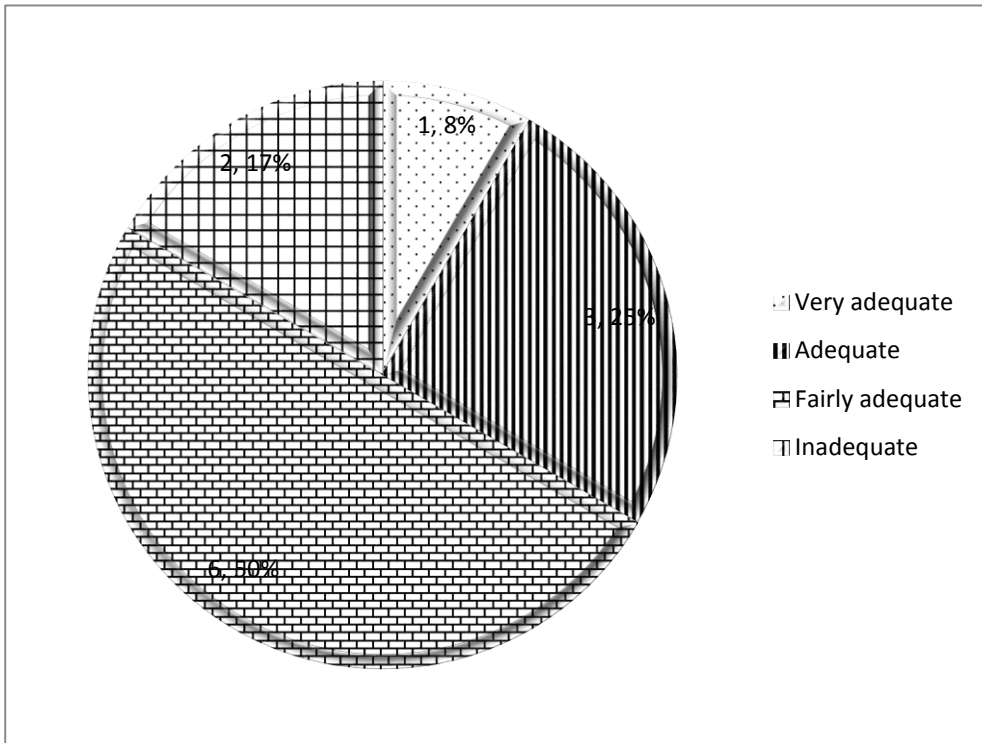




**Figure 4.1: University Librarians' responses on adequacy of funding in universities in Southern Nigeria**

**Key:** N = 68

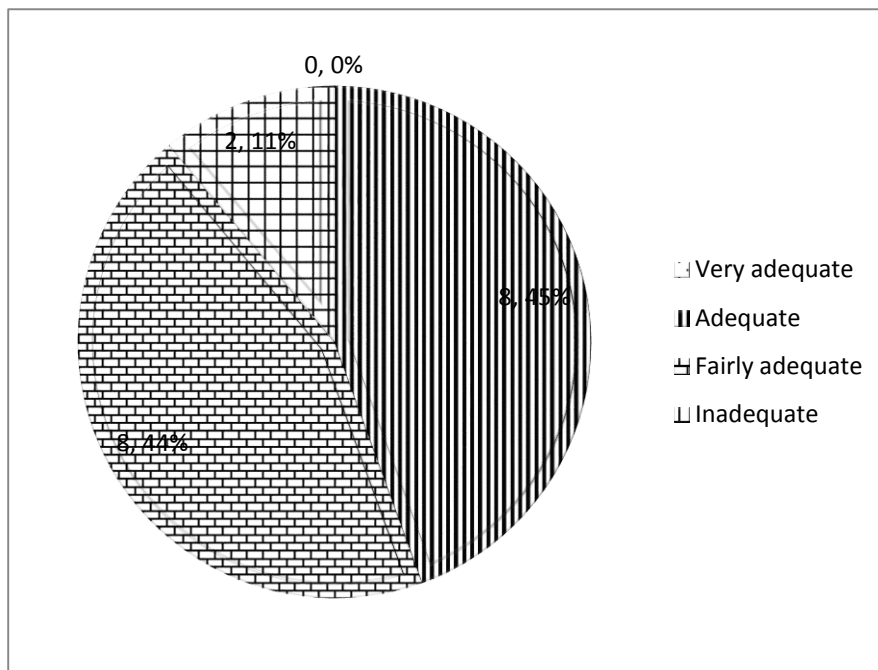
Figure 4.1 revealed that out of 68 university librarians from Southern Nigeria that responded to the questionnaire, only 10 (14.7%) of the participants claimed that funding of service delivery was very adequate while about half of the respondents agreed to adequate funding of service delivery in universities in Southern Nigeria. Ten per cent of the respondents reported that funding library service delivery was inadequate.



**Figure 4.2: University Librarians' responses on adequacy of funding in Federal universities in Southern Nigeria**

**Key:** N = 12

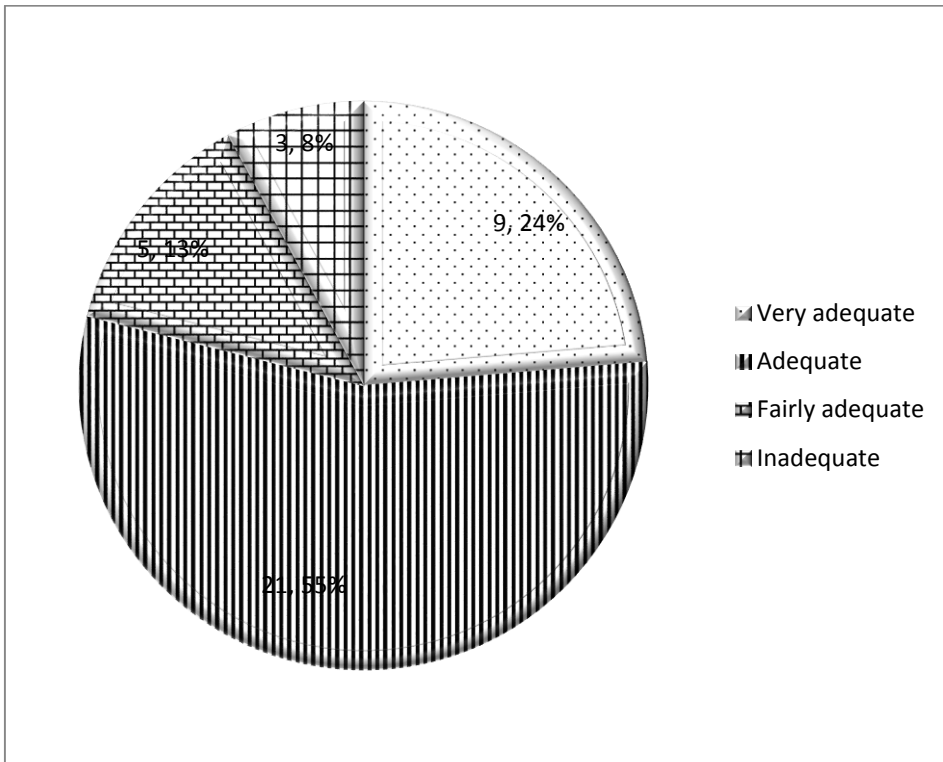
The results presented in Figure 4.2 on funding as claimed by majority of the heads of university libraries owned by federal government of Nigeria revealed that funding was poor while only one out of 12 university librarians indicated that library service delivery was well funded. This implied that federal government has not been supporting university libraries with adequate funds. This means that lack of funds would have caused adverse effects on all aspect of library functions.



**Figure 4.3: University Librarian's responses on adequacy of funding in State universities in Southern Nigeria**

**Key:** N = 18

Result gathered from Figure 4.3 showed that none of the state university libraries was very adequately funded. Forty-four per cent of the participants from state universities claimed that funding was adequate while 66% of the participants claimed that libraries were underfunded.



**Figure 4.4: University Librarian’s responses on adequacy of funding in Private universities in Southern Nigeria**

**Key:** N = 38

The result shown in Figure 4.4 revealed that a few private university libraries 9 (24%) in Southern Nigeria were fully funded. From Tables 4.11bi to Table 4.11biii, it could be observed that funding library service delivery was inadequate as recorded by university librarians in federal and state universities in Southern Nigeria, while 21 out of 38 private universities claimed that funding library service delivery was adequate. In conclusion, it could be inferred from the results in Figure 4.1 - Figure 4.4 that university libraries in Southern Nigeria were not adequately funded.

**Research question 5: What are the types of social media use for service delivery in universities in Southern Nigeria?**

In an effort to answer research question five of the study, the participants were asked to indicate types of social media used for library services. The result is presented in Table 4.12a and Table 4.12b.



**Table 4.12a: Types of social media used for service delivery in universities in Southern Nigeria**

Service	N = 546						
	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
Library materials recommendation	88 (16.1%)	89 (16.3%)	15 (2.7%)	17 (3.1%)	12 (2.2%)	4 (0.7%)	3 (0.5%)
Library registration	25 (4.6%)	29 (5.3%)	4 (0.7%)	5 (0.9%)	4 (0.7%)	0 (0.0%)	2 (0.4%)
Interlibrary loan	35 (6.4%)	26 (4.8%)	6 (1.1%)	5 (0.9%)	7 (1.3%)	4 (0.7%)	2 (0.4%)
Selective dissemination of information	57 (10.4%)	46 (8.4)	11 (2.0%)	18 (3.30%)	17 (3.1%)	7 (1.3%)	3 (0.5%)
Document delivery	32 (5.9%)	27 (4.9%)	8 (1.5%)	10 (1.8%)	12 (2.2%)	3 (0.5%)	5 (0.9%)
Reference service	62 (11.4%)	53 (9.7%)	10 (1.8%)	19 (3.5%)	15 (2.7%)	2 (0.4%)	2 (0.4%)
Outreach service	41 (7.5%)	33 (6.0%)	7 (1.3%)	9 (1.6%)	10 (1.8%)	3 (0.5%)	4 (0.7%)
Prompt notification of library development	54 (9.9%)	50 (9.2%)	13 (2.4%)	16 (2.9%)	14 (2.6%)	3 (0.5%)	6 (1.1%)
Notification of OPAC additions	42 (7.7%)	40 (7.3%)	7 (1.3%)	15 (2.7%)	12 (2.2%)	3 (0.5%)	3 (0.5%)
Notification of Institutional Repository update	29 (5.3%)	35 (6.4)	8 (1.5%)	8 (1.5%)	10 (1.8%)	3 (0.5%)	3 (0.5%)
Notification of new library resources arrivals	56 (10.3%)	59 (10.3)	12 (2.2%)	17 (3.1%)	14 (2.6%)	2 (0.4%)	6 (1.1%)
Images/photos service	38 (7.0%)	42 (7.7%)	18 (3.30%)	10 (1.8%)	13 (2.4%)	4 (0.7%)	8 (1.5%)
Library orientation	50 (9.2%)	47 (8.6%)	17 (3.1%)	13 (2.4%)	12 (2.2%)	5 (0.9%)	5 (0.9%)
Library education	49 (9.0%)	55 (10.1%)	17 (3.1%)	13 (2.4%)	12 (2.2%)	3 (0.5%)	5 (0.9%)
Charging and Discharging of library materials	24 (4.4%)	28 (5.1%)	5 (0.9%)	6 (1.1%)	4 (0.7%)	2 (0.4%)	4 (0.7%)
Translation services	14 (2.6%)	18 (3.30%)	9 (1.6%)	5 (0.9%)	5 (0.9%)	4 (0.7%)	4 (0.7%)

Results of types of social media used by librarians showed that WhatsApp, Facebook, Youtube, Blog, Twitter, Skype and Flickr were used for service delivery in the universities in the Southern Nigeria. The findings revealed that 88 (16.1%) of the librarians claimed that they used WhatsApp for library material recommendation, 89 (16.3%) used Facebook for library material recommendation. Flickr and Skype were the social media type used by only very few librarians for library material recommendation. It could be noted from the type of social media used (Table 4.12a and Table 4.12b) that WhatsApp, Facebook and Blog were the three types of social media used for delivering library services such as recommendation of library materials for acquisition, reference services, selective dissemination of information and notification of new library resources.

**Table 4.12b: Types of social media used for service delivery by type of university**

Service	Federal universities (N=212)							State universities (N=161)							Private universities (N=173)						
	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
Library materials recommendation	39 (18.4%)	40 (18.9%)	9 (4.2%)	9 (4.2%)	3 (1.4%)	2 (0.9%)	0 (0.0%)	20 (12.4%)	13 (8.1%)	3 (1.9%)	4 (2.5%)	3 (1.9%)	1 (0.6%)	2 (1.2%)	29 (16.8%)	36 (20.8%)	3 (1.7%)	4 (2.3%)	1 (0.6)	1 (0.6)	1 (0.6)
Library registration	12 (5.7%)	16 (7.5%)	3 (1.4%)	4 (1.9%)	3 (1.4%)	0 (0.0%)	0 (0.0%)	1 (0.6%)	2 (1.2%)	0 (0.0)	1 (0.6%)	0 (0.0)	0 (0.0%)	2 (1.2%)	12 (6.9%)	11 (6.4%)	1 (0.6)	0 (0.0%)	1 (0.6)	0 (0.0%)	0 (0.0%)
Interlibrary loan	17 (8.0%)	14 (6.6%)	4 (1.9%)	4 (1.9%)	4 (1.9%)	2 (0.9%)	0 (0.0%)	7 (4.3%)	5 (3.1%)	2 (1.2%)	3 (1.9%)	1 (0.6%)	2 (1.2%)	2 (1.2%)	11 (6.4%)	7 (4.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Selective dissemination of information	27 (12.7%)	23 (10.8%)	6 (2.8%)	10 (4.7%)	9 (4.2%)	3 (1.4%)	0 (0.0%)	15 (9.3%)	7 (4.3%)	2 (1.2%)	4 (2.5%)	4 (2.5%)	3 (1.9%)	2 (1.2%)	15 (8.7%)	16 (9.2%)	3 (1.7%)	4 (2.3%)	4 (2.3%)	1 (0.6)	1 (0.6)
Document delivery	19 (9.0%)	13 (6.1%)	6 (2.8%)	7 (3.3%)	7 (3.3%)	1 (0.5%)	1 (0.5%)	3 (1.9%)	40 (24.8%)	2 (1.2%)	0 (0.0)	3 (1.9%)	1 (0.6%)	3 (1.9%)	10 (5.8%)	10 (5.8%)	0 (0.0%)	2 (1.2%)	2 (1.2%)	1 (0.6)	1 (0.6)
Reference service	35 (16.5%)	26 (12.3%)	7 (3.3%)	12 (5.7%)	7 (3.3%)	0 (0.0%)	0 (0.0%)	6 (3.7%)	8 (5.0%)	2 (1.2%)	4 (2.5%)	6 (3.7%)	1 (0.6%)	2 (1.2%)	21 (12.1%)	19 (11.0%)	1 (0.6)	3 (1.7%)	2 (1.2%)	1 (0.6)	0 (0.0%)
Outreach service	23 (10.8%)	15 (7.1%)	5 (2.4%)	7 (3.3%)	8 (3.8%)	2 (0.9%)	2 (0.9%)	7 (4.3%)	7 (4.3%)	1 (0.6%)	1 (0.6%)	1 (0.6%)	1 (0.6%)	2 (1.2%)	11 (6.4%)	11 (6.4%)	1 (0.6)	1 (0.6)	1 (0.6)	0 (0.0%)	0 (0.0%)
Prompt notification of library development	27 (12.7%)	25 (11.8%)	10 (4.7%)	10 (4.7%)	10 (4.7%)	2 (0.9%)	2 (0.9%)	17 (10.6%)	5 (3.1%)	1 (0.6%)	4 (2.5%)	3 (1.9%)	1 (0.6%)	4 (2.5%)	10 (5.8%)	20 (11.6%)	2 (1.2%)	2 (1.2%)	1 (0.6)	0 (0.0%)	0 (0.0%)
Notification of OPAC additions	21 (9.%)	21 (9.%)	5 (2.4%)	8 (3.8%)	8 (3.8%)	2 (0.9%)	2 (0.9%)	6 (3.7%)	4 (2.5%)	1 (0.6%)	2 (1.2%)	1 (0.6%)	1 (0.6%)	2 (1.2%)	15 (8.7%)	15 (8.7%)	1 (0.6)	5 (2.9%)	3 (1.7%)	0 (0.0%)	0 (0.0%)
Notification of Institutional Repository update	16 (7.5%)	19 (9.0%)	6 (2.8%)	4 (1.9%)	7 (3.3%)	2 (0.9%)	2 (0.9%)	3 (1.9%)	6 (3.7%)	1 (0.6%)	2 (1.2%)	1 (0.6%)	2 (1.2%)	2 (1.2%)	10 (5.8%)	10 (5.8%)	1 (0.6)	2 (1.2%)	2 (1.2%)	0 (0.0%)	0 (0.0%)
Notification of new library resources arrivals	22 (10.4%)	26 (12.3%)	10 (4.7%)	11 (5.2%)	11 (5.2%)	2 (0.9%)	2 (0.9%)	9 (5.6%)	8 (5.0%)	1 (0.6%)	2 (1.2%)	2 (1.2%)	1 (0.6%)	4 (2.5%)	25 (14.5%)	25 (14.0%)	1 (0.6)	4 (2.3%)	4 (2.3%)	0 (0.0%)	0 (0.0%)
Images/photos service	19 (19.0%)	20 (9.4%)	11 (5.2%)	6 (2.8%)	9 (4.2%)	3 (1.4%)	4 (1.9%)	8 (5.0%)	10 (6.2%)	2 (1.2%)	1 (0.6%)	3 (1.9%)	1 (0.6%)	3 (1.9%)	11 (6.4%)	12 (6.9%)	5 (2.9%)	3 (1.7%)	1 (0.6)	0 (0.0%)	1 (0.6)
Library orientation	22 (10.4%)	21 (9.%)	9 (4.2%)	9 (4.2%)	9 (4.2%)	1 (0.5%)	1 (0.5%)	8 (5.0%)	8 (5.0%)	3 (1.9%)	1 (0.6%)	2 (1.2%)	3 (1.9%)	3 (1.9%)	5 (2.9%)	18 (10.4%)	5 (2.9%)	3 (1.7%)	2 (1.2%)	1 (0.6)	1 (0.6)
Library education	26 (12.3%)	25 (11.8%)	7 (3.3%)	9 (4.2%)	10 (4.7%)	2 (0.9%)	1 (0.5%)	4 (2.5%)	12 (7.5%)	4 (2.5%)	2 (1.2%)	2 (1.2%)	1 (0.6%)	4 (2.5%)	19 (11.0%)	18 (10.4%)	6 (3.5%)	2 (1.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Charging and Discharging of library materials	10 (4.7%)	14 (6.6%)	3 (1.4%)	4 (1.9%)	2 (0.9%)	1 (0.5%)	1 (0.5%)	2 (1.3%)	4 (2.5%)	1 (0.6%)	1 (0.6%)	2 (1.2%)	1 (0.6%)	3 (1.9%)	12 (6.9%)	10 (5.8%)	1 (0.6)	1 (0.6)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Translation services	8 (3.8%)	9 (4.2%)	3 (1.4%)	3 (1.4%)	2 (0.9%)	1 (0.5%)	1 (0.5%)	4 (2.5%)	5 (3.1%)	3 (1.9%)	1 (0.6%)	1 (0.6%)	2 (1.2%)	2 (1.2%)	2 (1.2%)	4 (2.3%)	3 (1.7%)	1 (0.6)	2 (1.2%)	1 (0.6)	1 (0.6)

Results on the types of social media platforms used by library professionals in federal universities in Southern Nigeria revealed that WhatsApp and Facebook were used respectively by 39 (18.4%) and 40 (18.9%) of the librarians for library materials recommendation. It could also be noted that 35 (16.5%) of the librarians in federal universities used WhatsApp for reference service and 27 (12.7%) for selective dissemination of information. Social media tools such as Twitter, Skype and Flickr were hardly used for library service delivery in federal universities as shown in Table 4.12b.

Similarly, in state universities, the results shown in Table 4.12b revealed that social media tools were scarcely used for library service delivery as only a significant number of the librarians in the state universities used WhatsApp for library materials recommendation, (20; 12.4%), prompt notification of library development (17; 10.6%). It could be observed that in private universities, most of the social media tools (WhatsApp: 29; 16.8%, Facebook: 36; 20.8%, YouTube: 6; 3.5%, and Blog: 5; 2.9%) were used for library service delivery though Skype and Flickr were not used except by one librarian. In conclusion, it could be deduced from the results on Table 4.12b that in federal, state and private university libraries, social media such as WhatsApp and Facebook were common and highly used among librarians for service delivery while other social media like Flickr, Blog and Skype were used at very low ebb.

**Research question 6: What is the frequency of use of social media for service delivery in universities in Southern Nigeria?**

In an attempt to answer research question six, the respondents were asked to indicate the type of social media use for service delivery. The results are presented in Table 4.13a and Table 4.13b.

**Table 4.13a: Frequency of social media used for service delivery in universities in Southern Nigeria**

Social Media	N = 546										Mean	STD
	Daily		Twice a week		Weekly		Monthly		Never			
	N	%	N	%	N	%	N	%	N	%		
Facebook	316	57.9	46	8.4	64	11.7	34	6.2	86	15.8	3.86	1.533
Twitter	104	19.0	62	11.4	90	16.5	110	20.1	180	33.0	2.63	1.505
Wikis	54	9.9	87	15.9	99	18.1	77	14.1	229	41.9	2.38	1.410
Podcast	37	6.8	34	6.2	123	22.5	66	12.1	286	52.4	2.03	1.249
You tube	139	25.5	55	10.1	103	18.9	92	16.8	157	28.8	2.87	1.557
Blog	77	14.1	41	7.5	117	21.4	92	16.8	219	40.1	2.39	1.428
RSS feed	39	7.1	51	9.3	123	22.5	72	13.2	261	47.8	2.15	1.304
LinkedIn	95	17.4	69	12.6	60	11.0	154	28.2	168	30.8	2.58	1.470
Skype	54	9.9	67	12.3	113	20.7	136	24.9	176	32.2	2.43	1.316
Flickr	30	5.5	69	12.6	90	16.5	113	20.7	244	44.7	2.14	1.263
My space	34	6.2	62	11.4	118	21.6	113	20.7	219	40.1	2.23	1.268
Google+	195	35.7	71	13.0	84	15.4	84	15.4	112	20.5	3.28	1.568
Instagram	119	21.8	65	11.9	108	19.8	90	16.5	164	30.0	2.79	1.522
Pinterest	48	8.8	58	10.6	106	19.4	117	21.4	217	39.7	2.27	1.318
Whatsapp	339	62.1	40	7.3	55	10.1	43	7.9	69	12.6	3.98	1.476
<b>Total</b>											<b>40.01</b>	<b>21.187</b>

Result on the frequency of use of social media for service delivery by librarians in universities in Southern Nigeria as shown in Table 4.13a revealed that WhatsApp was highly used by the respondents for service delivery. WhatsApp recorded the highest mean score of 3.98 in terms of use which points to the fact that most of the librarians in universities in Southern Nigeria used WhatsApp frequently for rendering library services. Another type of social media used frequently by librarians for rendering library services in Southern Nigeria universities was Facebook which recorded high use by the respondents with a mean score of 3.86. Google+ was also found to be used regularly by the respondents as the mean score recorded for frequency of use of Google+ for service delivery by librarians in universities in Southern Nigeria was 3.28. On the other hand, Podcast (mean = 2.03), Flickr (mean = 2.14) and RSS Feed (mean = 2.15) were the three least frequently used social media for delivering services by library professionals in Southern Nigeria universities.

Result on the frequency application of social media by the respondents for delivering services according to type of university (federal, state and private) is presented in Table 4.13bi – Table 4.13biii.

**Table 4.13bi: Frequency of social media used for service delivery by Federal universities**

	N = 212						
<b>Social Media</b>	<b>Daily</b>	<b>Twice a week</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Never</b>	<b>Mean</b>	<b>STD</b>
Facebook	126 (59.4%)	18 (8.5%)	26 (12.3%)	11 (5.2%)	31 (14.6%)	3.71	.700
Twitter	37 (17.5%)	26 (12.3%)	36 (17.0%)	41 (19.3%)	72 (34.0%)	2.52	.768
Wikis	20 (9.4%)	33 (15.6%)	44 (20.8%)	23 (10.8%)	92 (43.4%)	2.29	.890
Podcast	14 (6.6%)	12 (5.7%)	49 (23.1%)	21 (9.9%)	116 (54.7%)	2.01	.622
You tube	51 (24.1%)	25 (11.8%)	43 (20.3%)	35 (16.5%)	58 (27.4%)	2.67	.632
Blog	31 (14.6%)	13 (6.1%)	49 (23.1%)	34 (16.0%)	85 (40.1%)	2.33	.692
RSS Feed	16 (7.5%)	19 (9.0%)	52 (24.5%)	29 (13.7%)	96 (45.3%)	2.16	.668
LinkedIn	34 (16.0%)	23 (10.8%)	26 (12.3%)	71 (33.5%)	58 (27.4%)	2.52	.620
Skype	20 (9.4%)	31 (14.6%)	46 (21.7%)	56 (26.4%)	59 (27.8%)	2.28	.804
Flickr	9 (4.2%)	22 (10.4%)	41 (19.3%)	46 (21.7%)	94 (44.3%)	2.17	.710
My space	13 (6.1%)	22 (10.4%)	48 (22.6%)	43 (20.3%)	86 (40.6%)	2.13	.724
Google+	70 (33.0%)	33 (15.6%)	32 (15.1%)	37 (17.5%)	40 (18.9%)	3.09	.662
Instagram	41 (19.3%)	25 (11.8%)	47 (22.2%)	34 (16.0%)	65 (30.7%)	2.59	.719
Pinterest	15 (7.1%)	20 (9.4%)	48 (22.6%)	41 (19.3%)	88 (41.5%)	2.22	1.078
WhatsApp	133 (62.7%)	18 (8.5%)	20 (9.4%)	18 (8.5%)	23 (10.8%)	3.78	.968

Findings on the frequency of use of social media for service delivery by librarians in federal universities in Southern Nigeria as shown in Table 4.13bi reported that WhatsApp and Facebook were highly used by the respondents for service delivery. WhatsApp recorded the highest mean score of 3.78 in terms of use which signified that most of the librarians in universities in Southern Nigeria used WhatsApp frequently for rendering library services. Another type of social media used frequently by librarians for rendering library services in Southern Nigeria universities was Facebook which recorded high use by the respondents with a mean score of 3.71. Google+ was also found to be used moderately by the respondents as the mean score recorded for frequency of use of Google+ for service delivery by librarians in universities in Southern Nigeria was 3.09. On the other hand, Podcast (mean = 2.01), My Space (mean = 2.13), RSS Feed (mean = 2.16) and Flickr (mean = 2.17) were the four least used social media for delivering services among librarians in federal universities in Southern Nigeria. Result on the frequency application of social media by the respondents for delivering services by state universities category is presented in Table 4.13bii.



**Table 4.13bii: Frequency of social media used for service delivery by State universities**

<b>Social Media</b>	<b>N = 161</b>					<b>Mean</b>	<b>STD</b>
	<b>Daily</b>	<b>Twice a week</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Never</b>		
Facebook	94 (58.4%)	10 (6.2%)	17 (10.6%)	12 (7.5%)	28 (17.4%)	3.77	0.995
Twitter	40 (24.8%)	14 (8.7%)	27 (16.8%)	28 (17.4%)	52 (32.3%)	2.52	0.657
Wikis	17 (10.6%)	17 (10.6%)	26 (16.1%)	30 (18.6%)	71 (44.1%)	2.33	0.613
Podcast	16 (6.9%)	4 (2.5%)	34 (21.1%)	20 (12.4%)	13 (8.1%)	2.01	0.620
You tube	41 (25.5%)	9 (5.6%)	26 (16.1%)	28 (17.4%)	57 (35.4%)	2.89	0.825
Blog	27 (16.8%)	8 (5.0%)	27 (16.8%)	27 (16.8%)	72 (44.7%)	2.43	0.762
RSS Feed	15 (9.3%)	17 (10.6%)	38 (23.6%)	15 (9.3%)	82 (50.9%)	2.19	0.680
LinkedIn	29 (18.0%)	12 (7.5%)	12 (7.5%)	35 (21.7%)	65 (40.4%)	2.50	0.585
Skype	25 (15.5%)	16 (9.9%)	28 (17.4%)	32 (19.9%)	61 (37.9%)	2.39	0.815
Flickr	17 (10.6%)	21 (13.0%)	18 (11.2%)	28 (17.4%)	77 (47.8%)	2.15	0.783
My space	17 (10.6%)	18 (11.2%)	29 (18.0%)	30 (18.6%)	67 (41.6%)	2.27	0.827
Google+	61 (37.9%)	21 (13.0%)	22 (13.7%)	16 (6.9%)	41 (25.5%)	3.30	0.669
Instagram	45 (28.0%)	18 (11.2%)	20 (12.4%)	25 (15.5%)	53 (32.9%)	2.77	0.814
Pinterest	26 (16.1%)	14 (8.7%)	22 (13.7%)	35 (21.7%)	63 (39.1%)	2.26	0.770
WhatsApp	101 (62.7%)	7 (4.3%)	16 (6.9%)	9 (5.6%)	28 (17.4%)	3.99	0.750

Result on the frequency of social media usage for service delivery by librarians in state universities in Southern Nigeria as shown in Table 4.13bii revealed that WhatsApp was highly used by the respondents for service delivery. WhatsApp recorded the highest mean score of 3.99 in terms of use which points to the fact that most of the librarians in state universities in Southern Nigeria used WhatsApp frequently for rendering library services. Another type of social media used frequently by the respondents for rendering library services in Southern Nigeria universities was Facebook which recorded very high use by the participants with mean score of 3.77. Further, Google+ was also found to be used regularly by the respondents as the mean score recorded for frequency of use of Google+ for service delivery by librarians in state universities in Southern Nigeria was 3.30. On the other hand, Podcast (mean = 2.01), Flickr (mean = 2.15), RSS Feed (mean = 2.19) and My Space (mean = 2.27) were the four least used social media for delivering services by library professionals in state universities in Southern Nigeria. Result on frequency uses of social media by the respondents for delivering services by private universities category is presented in Table 4.13biii.

**Table 4.13biii: Frequency of social media used for service delivery by Private universities**

Social Media	N = 173					Mean	STD
	Daily	Twice a week	Weekly	Monthly	Never		
Facebook	96 (55.5%)	18 (10.4%)	21 (12.1%)	11 (6.4%)	27 (15.6%)	3.93	0.656
Twitter	27 (15.6%)	22 (12.7%)	27 (15.6%)	41 (23.7%)	56 (32.4%)	2.63	0.729
Wikis	17 (9.8%)	37 (21.4%)	29 (16.8%)	24 (13.9%)	66 (38.2%)	2.38	0.706
Podcast	12 (6.9%)	40 (23.1%)	25 (14.5%)	83 (48.0%)	87 (50.3%)	2.03	1.003
You tube	47 (27.2%)	21 (12.1%)	34 (19.7%)	29 (16.8%)	42 (24.3%)	2.87	0.824
Blog	19 (11.0%)	20 (11.6%)	41 (23.7%)	31 (17.9%)	62 (35.8%)	2.39	0.633
RSS Feed	8 (4.6%)	21 (12.1%)	33 (19.1%)	28 (16.2%)	83 (48.0%)	2.15	0.606
LinkedIn	32 (18.5%)	26 (15.0%)	22 (12.7%)	48 (26.8%)	45 (26.0%)	2.58	0.809
Skype	10 (5.8%)	20 (11.6%)	38 (22.0%)	48 (27.7%)	56 (32.4%)	2.43	0.744
Flickr	4 (2.3%)	26 (15.0%)	31 (17.9%)	39 (22.5%)	73 (42.2%)	2.11	0.779
My space	4 (2.3%)	22 (12.7%)	41 (23.7%)	40 (23.1%)	66 (38.2%)	2.13	0.839
Google+	64 (37.0%)	17 (9.8%)	30 (17.3%)	31 (17.9%)	31 (17.9%)	3.16	0.740
Instagram	33 (19.1%)	22 (12.7%)	41 (23.7%)	31 (17.9%)	46 (26.6%)	2.59	0.632
Pinterest	7 (4.0%)	24 (13.9%)	36 (20.8%)	40 (23.1%)	66 (38.2%)	2.17	0.789
WhatsApp	105 (60.7%)	15 (8.7%)	19 (11.0%)	16 (9.2%)	18 (10.4%)	4.18	0.819

Findings on the frequency of use of social media for service delivery by librarians in private universities in Southern Nigeria as shown in Table 4.13biii found that WhatsApp and Facebook were highly used by the respondents for service delivery. WhatsApp recorded the highest mean score of 4.18 in terms of use which signified that most of the librarians in universities in Southern Nigeria used WhatsApp frequently for rendering library services. Another type of social media used frequently by librarians for rendering library services in Southern Nigeria universities was Facebook which recorded high use by the respondents with a mean score of 3.93. Google+ was also found to be used moderately by the respondents as the mean score recorded for the frequency of use for service delivery by information professionals in private higher institutions in Southern Nigeria was 3.16. The least used among the social media platforms were Podcast (mean = 2.03), Flickr (mean = 2.11), My Space (mean = 2.13) and RSS Feed (mean = 2.15) as indicated by respondents in private universities in Southern Nigeria.

It could be deduced from the results shown in Table 4.13bi to Table 4.13biii that among the three categories of universities studied, WhatsApp, Facebook and Google+ recorded high frequency of use for delivering services by their librarians. The frequency of use of WhatsApp for delivering services was higher among respondents in private universities than their counterparts in federal and state universities in Southern Nigeria. However, other social media such as Podcast, Flickr, RSS Feed and My Space were used at low level in all the universities studied.

**Research question 7: What is the relative contribution of institutional factors and social media use to service delivery among librarians in universities in Southern Nigeria?**

Table 4.14 show the contribution of institutional factors and social media use to service delivery among librarians in universities in Southern Nigeria.

**Table 4.14: Relative contribution of institutional factors (library policy, infrastructure, environment, ICT skills and funding) and social media use to the prediction of service delivery of librarians in universities in Southern Nigeria**

	Unstandardised Regression Coefficients		Standardised Regression Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.432	.164		2.637	.009
Library Policy	.014	.018	.022	.759	.048
Infrastructure	.008	.016	.015	.531	.039
Environment	.015	.018	.024	.828	.408
ICT Skills	.022	.027	.023	.816	.015
Funding	-.059	.025	-.069	-2.397	.017
Social media use	.772	.030	.749	26.128	.000

The relative contribution of institutional factors and social media application for delivering services among librarians in Southern Nigeria universities was expressed as beta weights (Table 4.14). To determine the relative contributions of the independent variables to the explanation of the dependent variable (service delivery) using the hierarchical regression coefficients, the relative contributions of the independent variables to the dependent variable are as follows: institutional factors (library policy:  $\beta = 0.022$ ,  $t = 0.759$ ; infrastructure:  $\beta = 0.015$ ,  $t = 0.531$ ; environment  $\beta = 0.024$ ,  $t = 0.828$ , ICT skills:  $\beta = 0.023$ ,  $t = 0.816$  and funding:  $\beta = -0.069$ ,  $t = 2.397$ ) and social media use ( $\beta = 0.749$ ,  $t = 26.128$ ). The positive values of the institutional factors and social media use show that the two independent measures have relative contribution to service delivery of librarians in universities in Southern Nigeria.

**Research question 8: What are the challenges to effective service delivery in universities in Southern Nigeria?**

Results on challenges to effective service delivery in universities in Southern Nigeria is presented in Table 4.15a.

**Table 4.15a: Challenges to effective service delivery in universities in Southern Nigeria**

Challenges	N = 546				Rank
	Agreement score		Disagreement score		
	N	%	N	%	
Inadequate funding	454	83.2	92	16.8	1 <sup>st</sup>
Lack of awareness of library policy	386	70.7	160	29.3	2 <sup>nd</sup>
Technological obsolescence	385	70.5	161	29.5	3 <sup>rd</sup>
Slow speed of internet connection	381	69.8	165	30.2	4 <sup>th</sup>
Lack of written policy	378	69.2	168	30.8	5 <sup>th</sup>
Computer upgrading problems	374	68.5	172	31.5	6 <sup>th</sup>
Erratic electricity supply	364	66.7	182	33.3	7 <sup>th</sup>
Inadequate laptops	363	66.5	183	33.5	8 <sup>th</sup>
Technophobia	316	57.9	230	42.1	9 <sup>th</sup>
Unavailability of I-Pads	310	56.8	236	43.2	10 <sup>th</sup>
Inadequate desktops	308	56.4	238	43.6	11 <sup>th</sup>
Lack of conducive environment	297	54.4	249	45.6	12 <sup>th</sup>
Unavailability of smart phones	292	53.5	254	46.5	13 <sup>th</sup>
Inadequacy of ICT skills required	292	53.5	254	46.5	14 <sup>th</sup>
Inadequate mobile phones	277	50.7	269	49.3	15 <sup>th</sup>
Social media privacy issue	275	50.4	271	49.6	16 <sup>th</sup>
Proliferation of social media	263	48.2	283	51.8	17 <sup>th</sup>
Unavailability of internet connection	256	46.9	290	53.1	18 <sup>th</sup>
Lack of time to use social media	245	44.9	301	55.1	19 <sup>th</sup>



Inadequate funding was found to be major challenge with the highest agreement score of 454 (83.2%), this was followed by lack of awareness of library policy with an agreement score of 386 (70.7%). Another challenge as indicated by majority of the librarians was technological obsolescence (385; 70.5%). Also, slow speed of the Internet connection (381; 69.8%) was identified as one of the hindrances to effective service delivery by library professionals in Southern Nigeria universities. The finding on the challenges to service delivery by type of university is further presented in Table 4.15b.

**Table 4.15b: Challenges to effective service delivery by type of university in Southern Nigeria**

Challenges	Federal				State				Private			
	N=212				N=161				N=173			
	Agreement score		Disagreement score		Agreement score		Disagreement score		Agreement score		Disagreement score	
	N	%	N	%	N	%	N	%	N	%	N	%
Lack of written policy	163	76.9	49	23.1	115	71.4	46	28.6	100	57.8	73	42.2
Lack of awareness of library policy	169	79.7	43	20.3	127	78.9	34	21.1	90	52.0	83	48.0
Unavailability of internet connection	148	69.8	64	30.2	94	58.4	67	41.6	14	8.1	159	91.9
Slow speed of internet connection	150	70.8	62	29.2	141	87.6	20	12.4	90	52.0	83	48.0
Inadequate desktops	122	57.5	90	42.5	111	68.9	50	31.1	75	43.4	98	56.6
Inadequate laptops	171	80.7	41	19.3	112	69.6	49	30.4	80	46.2	93	53.8
Inadequate mobile phones	129	60.8	83	39.2	90	55.9	71	44.1	58	33.5	115	66.5
Unavailability of smart phones	138	65.1	74	34.9	104	64.6	57	35.4	50	28.9	123	71.1
Unavailability of I-Pads	123	58.0	89	42.0	127	78.9	34	21.1	60	34.7	113	65.3
Computer upgrading problems	179	84.4	33	15.6	124	77.0	37	23.0	71	41.0	102	59.0
Technological obsolescence	147	69.3	65	30.7	145	90.1	16	9.9	93	53.8	80	46.2
Erratic electricity supply	165	77.8	47	22.2	136	84.5	25	15.5	63	36.4	110	63.6
Lack of conducive environment	130	61.3	82	38.7	101	62.7	60	37.3	66	38.2	107	61.8
Inadequacy of ICT skills required	127	59.9	85	40.1	114	70.8	47	29.2	51	29.5	122	70.5
Technophobia	124	58.5	88	41.5	121	75.2	40	24.8	71	41.0	102	59.0
Inadequate funding	193	91.0	19	9.0	123	76.4	38	23.6	138	79.8	35	20.2
Social media privacy issue	108	50.9	104	49.1	89	55.3	72	44.7	76	43.9	97	56.1
Proliferation of social media	110	51.9	102	48.1	88	54.7	73	45.3	65	37.6	108	62.4
Lack of time to use social media	93	43.9	119	56.1	82	50.9	79	49.1	70	40.5	103	59.5

The three most prominent challenges associated with library service delivery as indicated by the respondents in federal universities were inadequate funding with 91.0% agreement score, computer upgrading problems (179; 84.4% agreement score) and inadequate laptops (171, 80.7%). In state universities the three most prominent challenges as pointed out by librarians in terms of agreement scores were technological obsolescence (90.1%), slow speed of the Internet (87.6%) and erratic electricity (84.5%). In the same vein inadequate funding (138; 79.8%), lack of written policy (100; 57.8%) as well as obsolete technology (53.8%) were identified as the three most common challenges in private university libraries in Southern Nigeria. In conclusion, it could be inferred that inadequate funding was a common challenge to all the three types of universities being investigated. However in federal and state university libraries, erratic electricity supply and slow speed of the Internet was found to be common challenge.

#### **4.5 Hypotheses testing**

Four hypotheses were tested in the study at 0.05 level of significance. The results are presented in Table 4.16, Table 4.17, Table 4.18, and Table 4.19.

#### **Hypothesis 1: There is no significant relationship between institutional factors and library service delivery among librarians in universities in Southern Nigeria?**

The relationship between institutional factors and library service delivered by librarians were analysed using Pearson's Product Moment Correlation analysis and the finding is presented in Table 4.16.

**Table 4.16: Relationship between institutional factors and library service delivery in universities in Southern Nigeria**

Variables	Mean	St. dev.	N	Df	r	Sig. p.	Remark
Institutional factors	60.66	18.527	546	544	0.253	0.031	Sig.
Library service delivery	55.05	22.197					

The result in Table 4.16 showed that there was a positive linear relationship between institutional factors and library service delivered by the participants in Southern Nigeria universities ( $r = 0.253$ ;  $P < 0.05$ ). The fact that p-value is less than 0.05 shows that the relation was significant and the strength of the relationship ( $r = 0.253$ ) was positive. The implication of this is that as institutional factors improve, there will be significant improvement in the services delivered by the professionals in Southern Nigeria universities. The hypothesis was rejected.

**Hypothesis 2: There is no significant relationship between social media use and service delivery among librarians in universities in Southern Nigeria?**

Result of hypothesis 2 using Pearson's Product Moment Correlation is presented in Table 4.17

**Table 4.17: Relationship between social media use and service delivery in universities in Southern Nigeria**

Variables	Mean	St. dev.	N	Df	r	Sig. p.	Remark
Social media use	40.01	21.187	546	544	0.167	0.041	Sig.
Library service delivery	55.05	22.197					

The result shown in Table 4.17 showed a linear and positive relationship exists between the application of social media and services delivered by the participants in universities in Southern Nigeria. This is evident in the positive value of correlation coefficient of  $r = 0.167$  which shows the existence of relationship between the variables (policy, infrastructure, environment, ICT skills and funding) and library service delivery and that the relationship was linear and positive. This means that an increase in the application of social media by librarians for delivering library services will result to a corresponding increase in the level of services delivered by librarians in universities in Southern Nigeria ( $p < 0.05$ ). Therefore, hypothesis 2 was rejected.

**Hypothesis 3: There is no significant relationship between institutional factors (library policy, infrastructure, environment, ICT skills and funding) and social media use by librarians in universities in Southern Nigeria.**

Hypothesis 3 was analysed using Pearson's Product Moment Correlation and the result is presented in Table 4.18

**Table 4.18: Relationship between institutional factors and social media use in universities in Southern Nigeria**

Variables	S/N					Institutional factors					Social media use
		Sub-Constructs	Mean	Std. Dev.		1	2	3	4	5	6
						Policy	Environment	ICT skills	Infrastructure	Funding	Social media
Institutional factors	1	Library Policy	19.11	5.649	Pearson Correlation	1.000	.709	.700	.577	.816	.664
					Sig. (2-tailed)		.002	.030	.011	.000	.010
					N	546	546	546	546	546	546
	2	Environment	11.34	3.367	Pearson Correlation	.709	1.000	.665	.675	.704	.658
					Sig. (2-tailed)	.012		.004	.022	.008	.000
					N	546	546	546	546	546	546
	3	ICT skills	101.30	31.622	Pearson Correlation	.700	.665	1.000	.456	.661	.779
					Sig. (2-tailed)	.030	.004		.039	.005	.012
					N	546	546	546	546	546	546
	4	Infrastructure	41.55	12.878	Pearson Correlation	.577	.675	.456	1.000	.851	.727
					Sig. (2-tailed)	.011	.022	.039		.000	.000
					N	546	546	546	546	546	546
	5	Funding	8.94	1.722	Pearson Correlation	.816	.704	.661	.851	1.000	.632
					Sig. (2-tailed)	.000	.008	.005	.000		.000
					N	97	97	97	97	97	97
Social media use	6	Social media use	40.01	21.187	Pearson Correlation	.664	.658	.779	.727	.632	1.000
					Sig. (2-tailed)	.010	.000	.012	.000	.000	
					N	546	546	546	546	546	546

Sig. p values are 0.012, 0.030, 0.011, 0.000, 0.022, 0.011 at p=0.05



The result in Table 4.18 indicated that the five sub-scales of institutional factors have strong positive correlations with social media use by respondents in universities in Southern Nigeria (policy  $\bar{x} = 19.11$ , St.D.= 5.65  $r = 0.65$ ,  $p = 0.00$  environment  $\bar{x} = 11.34$ , St.D.= 3.37  $r = 0.71$ ,  $p < 0.05$ , ICT skills,  $\bar{x} = 101.30$ ,  $r = 0.67$ , St.D.= 31.62  $p = 0.004$  infrastructure  $\bar{x} = 41.55$  St.D.= 12.88,  $r = 0.51$ ; funding:  $\bar{x} = 8.94$ , St.D.= 1.72,  $r = 0.82$ ,  $p = 0.000$ ). This implies that since all the indices of institutional factors have positive linear correlations with social media use, it follows that there is a significant correlation between institutional factors and the use of social media by librarians in Southern Nigeria. Thus, the hypothesis that states that there is no significant relationship between institutional factors and the use of social media by librarians in universities in Southern Nigeria is therefore rejected.

**Hypothesis 4: Institutional factors and social media use will not significantly predict service delivery among librarians in universities in Southern Nigeria.**

Hypothesis 4 was analysed using multiple regression and the results are presented in Table 4.19.

**Table 4.19: Summary of multiple regression showing prediction of service delivery**

<b>R</b>	<b>R-square</b>	<b>Adjusted R-Square</b>	<b>Std. Error of the Estimate</b>		
0.751	0.563	0.559	0.531		
ANOVA					
<b>Source of Variation</b>	<b>Sum of Square</b>	<b>Df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
Regression	195.596	6	32.599	115.714	.000(a)
Residual	151.567	538	.282		
Total	347.163	544			

The prediction of the independent variables namely institutional factors (library policy, infrastructure, environment, ICT skills and funding) and social media use to service delivery was presented in Table 4.19. The result showed that institutional factors and social media use positively predicted service delivery. The result further revealed a coefficient of multiple correlations (R) of 0.751, and a multiple R square of 0.563. This means that 56.3% of the variance in the service delivery was accounted for by the two predictor variables when taken together. The significance of the composite contribution of the prediction was tested at  $\alpha < 0.05$  using the F- ratio at the degrees of freedom (df = 6, 538). It could be deduced from Table 4.19 that the analysis of variance for the regression yielded an F-ratio of 115.714 (significant at 0.05 level). This means that the independent variables made a major contribution to the dependent variable, and that other variables not included in this model may have accounted for the remaining variance. Thus, the hypothesis which stated institutional factors and social media use will not significantly predict service delivery among librarians in universities is rejected.

#### **4.6 Results from the observation checklist**

The observation method was used to assess physical library facilities provided for service delivery in universities in Southern Nigeria. Observation checklist was used to assess physical library facilities in universities in Southern Nigeria. Out of the 85 universities studied, facilities available in 72 (84.7%) university libraries were observed through the use of checklist. The 72 university libraries consisted of 14 federal, 20 states and 38 private. Findings from the observation of the facilities in these university libraries are presented in Table 4.20.

**Table 4.20: Facilities observed in the university libraries in Southern Nigeria**

Facility	N = 72	
	Available and Functional	
	No of universities with:	%
Written policy	58	80.6
Desktop computers	68	94.4
Laptop computers	50	69.4
Smart phones	31	43.0
I-pad	19	26.4
Internet connection	63	87.5
Anti-virus software	61	84.7
Government electricity alone	57	79.2
Generator	62	86.1
Inverter	31	43.0
Solar	15	20.8
Furniture	63	87.5
Lighting	66	91.7
Air-conditioner	56	77.8

The results of the observation revealed that the following were available; written policy (in 58 universities (80.6%), desktop computers (in 68 universities (94.4%) and laptops (in 50 universities (69.4%). They were readily available and functional for service delivery in the universities while smart phones and I-pads provision were very few (Table 4.20). Furthermore, the results also showed that there was Internet connection and anti-virus installation on the computers in the libraries studied. Majority of the university libraries facilities observed in terms of sources of electricity supply revealed that they used generator as the alternative source of electricity supply. However, it was found that 31 (43%) universities had inverter to support government electricity supply while only 15 (20.8%) universities operated on solar as alternative source of electricity supply. In terms of working environment, observation results revealed that the librarians worked under conducive environment (furniture: 87.5%, lighting: 91.7% and air-conditioner: 77.8%) (Table 4.20).

#### **4.7 Comments by the respondents on how to improve library service delivery**

Comments and suggestions made by respondents from the open ended questions on ways of improving library service delivery were harmonised and listed below:

1. Provision of regular electricity supply to the library to improve conventional and virtual methods of service delivery.
2. Hardware like desktops and laptops should be changed regularly and installation of current software like anti-virus to enhance service delivery.
3. Provision of uninterrupted Internet connection in the library and its environment.
4. Management of institutions should provide fund to enable them meet their obligation of dissemination of information effectively and efficiently to their clientele.
5. Source of funding should be optimally harnessed.
6. Existence of library policy should be made known to library staff to enhance service delivery.
7. There should be regular review of library policy guiding effective service delivery.
8. Mutual relationship between ICT Department and Library to enhance electronic service delivery.
9. Training programmes should be made available in form of short-courses, workshops, conferences, ICT training programmes to librarians.
10. More professional staff should be employed.

## **4.8 Discussion of the findings**

This section discussed the findings of the study in line with results from previous studies and literature.

### **4.8.1 Types of library service rendered by librarians in universities in Southern Nigeria**

There are different types of services rendered by librarians in Southern Nigeria universities. The response to the question on types of service rendered by librarians revealed that all the librarians rendered one service or the other among the sixteen listed services. Fifty per cent and above of the respondents indicated that they rendered charging and discharging of library materials, library registration, library materials recommendation, Selective Dissemination of Information (SDI), reference service, library education and library orientation. This implied that librarians in the universities in the Southern Nigeria were up to their responsibilities in attending to users' information need through the services they rendered. The result is in consonance with those of Smeaton and Davis (2014) and Ola (2010) who submitted that reference service and information literacy programme in Australia and Nigeria respectively are essential service to be provided by the librarians.

In a study conducted by Knepp, White and McCormack (2011) in United States of America, their findings established that over 80 per cent of the respondents attested to receipt of reference service and library update notification services. Eke and Ekwelem (2014) submitted that over half of the librarians studied in Nigeria rendered reference services to their users. The authors submissions on types of service delivered are in consonance with the result of this study on services such as reference, library orientation and update notification being delivered by library professionals in universities in Southern Nigeria.

In similar vein, Ajala and Ojo (2011) opined that electronic document delivery was among the services rendered by librarians in the university libraries in Nigeria. Poiton (2009), Aina (2014) and Husain and Nazim (2015) enumerated library services like outreach service, public access catalogue, physical and web based reference service, online tutorials, and automatic mailing alert being rendered by librarians in the university libraries studied in India and Nigeria. Relating types of service rendered, Alabi, Nduka and Olatise (2012) and Madhusudhan and Nagabhushanam (2012a) submitted that librarians in Nigeria and India rendered various services to their users. On the contrary, Mbofung (2014) found that translation service was not delivered to users in the Nigerian libraries studied while Eze and

Uzoigwe (2013) reported that library and information professionals in Nigeria universities rendered services such as reference, internet, interlibrary loans and information resources services to their users. This implies that librarians are multitasking and could render different library services to their users.

#### **4.8.2 Mode of service delivery: conventional and virtual**

Library services are delivered through conventional and virtual methods. The findings showed a very high prevalence of face-to-face for library registration and library orientation among the conventional methods of service delivery. Further, services such as charging and discharging of materials and library education respectively were delivered face-to-face as indicated by the respondents. Other conventional methods that were used are noticeboard, internal memo and display rack. They were used to deliver services like notification of new library arrival, recommendation of library materials and notification of new library arrival respectively. It was also recorded that bulletin, magazine and newspaper were the least used methods of service delivery among librarians in Southern Nigeria universities.

This result reflects the submission of Ola (2010) on method of reference service delivery in university libraries in Nigeria that reference service should be rendered through conventional and virtual methods. Findings of this study on the frequently used conventional method of service delivery also corroborate those of Poiton (2009) and Alabi, *et al.* (2011) who opined that face-to-face method was used to deliver outreach, library orientation and library education programmes in United States of America and Nigeria respectively. The findings also support the submission in the report of Kavulya (2004) that librarians in Kenya rendered library service such as library updates, current awareness through noticeboards, library manual and guide. On the contrary, Mbofung and Popoola (2014) found that bulletin was among the methods mostly used to deliver library service in Nigerian libraries studied.

In line with the findings from the literature, the results show that librarians engaged in conventional mode of service delivery in order to identify their users and strengthen their relationship for better user-centred library service. This method also removes any ambiguity or uncertainty of library service delivered as stated in the Media Richness Theory. MRT applied by Shinaway and Markys (1997) who reported that conventional method of service delivery such as face-to-face was high in richness to deliver services.

Concerning virtual method of delivering services, the results of this study revealed that e-mail, text messages and telephone calls were prevalent among the virtual methods

used to deliver library services by librarians in the universities in the Southern Nigeria. Another method used by librarians to deliver library service was through library website platform. It was also reported that e-bulletin, YouTube, Skype and Flickr recorded least usage for virtual method of service delivery. With reference to specific uses, the result also revealed that e-mail was used for library materials recommendation, selective dissemination of information and document delivery. Telephone call, text message and library website were used for library materials recommendation while library website was used for library registration and notification of online public access catalogue additions.

Relating virtual method of service delivery to types of library service, it could be deduced that librarians have demonstrated their expertise by using the appropriate method to deliver different library service to their users. This result is in consonance with that of Ola (2010) who asserted that virtual method of library service delivery is inevitable in the information age. The result is also in line with the finding of Mabawonku (2017) that librarians in Nigeria have inclined to the application of virtual method such as email, text messages and social media platforms to deliver services to their users.

This result is also in agreement with the findings of Madhusudhan and Nagabhushanam (2012) who studied twenty university libraries in India that using virtual method like their library websites to deliver services such as online public access additions, reference, library materials recommendation, and current awareness services among others. The results further corroborate the submission in the report of Bamigboye and Agboola (2011) that virtual method was used by librarians in Nigerian universities to render electronic document delivery to a very high percentage of their users. Findings of this study on the use of different virtual methods to deliver library services is in line with Nnadozie's (2016) and Ajala and Ojo (2011) submissions that established the use of e-mail as one of the methods of service delivery among librarians in Nigeria universities.

Relating this result to Media Richness Theory proposed by Daft and Lengel (1984), it could be deduced that library service is delivered through the media which could be either conventional, virtual or both. This result corroborates the findings of Park, Chung and Lee (2012) who found that three text based communication methods such as e-mail, mobile phone text and Facebook were used as channels of communication among Southwestern public university students studied in the United States of America. Also, Ezeani (2011) reported that e-mail was used by a significant number of librarians in Nigerian university for various library services delivery. Further, Yu-Feng and Yang-Siang's (2010) findings on media richness indicated that e-mail as a method of service delivery was best for



comprehensive service delivery in Taiwan. It could be concluded that there is growing use of both conventional and virtual methods by librarians to deliver services to users in universities in the Southern Nigeria.

#### **4.8.3 Frequency of service delivery by the librarians**

Library services were found to be delivered to the users of the libraries at regular interval. The findings of this study revealed that reference service topped the most frequently delivered service as over half of the respondents claimed they delivered the service on daily basis. The result also found that the second most frequent service, 'library registration' was delivered very regularly. Another frequently delivered service indicated by the librarians was charging and discharging of library materials. Library services like translation and photo service were the least delivered service by librarians in all the federal, state and private universities studied.

Reference service is a very demanding service in the university libraries. This is because many users wish to optimally use the library facilities and resources to solve their learning, teaching and research information needs. Thus, the librarians were involved in frequent reference service. In terms of library registration, charging and discharging services, having access to use the physical library requires registration hence, librarians are expected to frequently register users to enable them gain access to use the library facilities and resources at any time. This result is in agreement with that of Adetimirin and Agboluaje (2011) who found that library service were rendered to users in Nigerian university studied on daily basis, weekly basis and monthly basis.

In a similar vein, Luo (2015) posited that reference service was delivered regularly by the librarians in an African university studied. This is in agreement with the findings of this study on the frequency of services rendered. A study by Smeaton and Davis (2014) in Australia confirmed that reference service and library instruction were frequently and timely rendered by librarians studied. Their submission is in consonance with the result of this study on frequency of service delivery. The findings on frequency of library service delivery corroborates the submission by Madhusudhan and Nagabhushanam (2012a) that the respondents delivered document delivery, current awareness, reference and selective dissemination of information services very often in India.

#### **4.8.4 Institutional factors (policy, infrastructure, environment, ICT skills and funding) that affect service delivery**

Institutional factors such as library policy, infrastructure, environment, ICT skills and funding has been reported to have effect on service delivery in universities in Southern Nigeria. Findings on the institutional factors that affect service delivery revealed that majority of the respondents indicated availability of library policy that guided service delivery. The result also showed that the use of social media was yet to be fully incorporated into the library policy. This could be as a result of non-periodic review of library policy by the library management. The finding is in agreement with Owusu-Ansah *et al.* (2015) submission that some of the African universities studied lacked library policy on the use of social media which was one of the factors responsible for the low usage for service delivery. To further buttress this report, university librarians were asked to indicate how often they review their library policy. Their responses majorly revealed that library policy was not regularly reviewed. This result is in consonance with that of Noorhidawati *et al.* (2015) that 22 libraries out of 28 libraries studied in Greater China, Switzerland, United States, United Kingdom, Australia and New Zealand had not incorporated the use of social media into their policy. Abidinet *et al.* (2013) and Hamid *et al.* (2011) findings from Malaysia showed that there was no policy supporting the use of social media for service delivery which could be as a result of non or lack of periodic review of their library policy. Regular review of library policy is essential in order to cater for rapid and dynamic development in the Information Age.

Results on infrastructure as one of the institutional factors revealed that majority of the respondents indicated that only desktops were adequately provided for service delivery. Other devices such as smart phones and i-pads were not provided. As librarians are being proactive in service delivery, there is need for the provision of mobile devices that could be used to attend to users anytime anywhere. The computer cannot be moved around to deliver service quickly. The findings of Madhusudhan and Nagabhushanam (2012a) showed that there were inadequate computers to work with in Indian libraries studied. This is contrary to the result of this study. On the contrary, in Iraq, the study of Saleem *et al.* (2015) revealed that mobile phones and smart devices were provided and used by librarians to deliver services such as library development to their users. Owusu-Ansah *et al.* (2015) findings from Greater China, Switzerland, United States, United Kingdom, Australia and New Zealand also revealed provision of i-pads, smart phones and kindle to library staff for service delivery purpose.

On the Internet connection as one of the infrastructural facilities that affected service delivery, there was adequate provision for the Internet connection as indicated by most of the respondents. Bamigboye and Agboola (2011)'s findings from a study conducted in Nigeria on adequate provision for the Internet is in line with this result. An investigation in Korea by Kin and Jeong (2015) showed that, the participants indicated adequate provision of the Internet for various services. Studies conducted in Nigeria by Esse (2013) and Ezeani (2011) found that libraries studied had adequate Internet connection for various library functions. Their results are in consonance with the findings of this research on the Internet connection. The findings implied that Internet links to university libraries in Nigeria were enhanced. In Nigeria, findings of Ejedafiru (2010) on the infrastructure submitted that the Internet was not adequately provided for as his finding is against this result.

Majority of the participants reported that the speed of the Internet connection was fair. This result could be attributed to the bandwidth that was allocated to the library. Findings by Asogwa (2014) in Nigeria disclosed an insufficient distribution of bandwidth that prevented the smooth delivery of library services. The lead of the author aligned with the results of this study on the Internet connection velocity. However few of the respondents indicated that they used personal data for Internet connection to deliver library service. On the other hand, Anyaoku *et al.* (2012) findings revealed lack of Internet connections in Nigerian universities studied. Haliso's (2011) findings on ICT provision in some universities studied in Nigeria confirmed lack of dedicated bandwidth that could enhance speed of Internet connection. The result of this findings revealed that most of the participants admitted that their desktop contents were protected from viruses and worms attacks.

The results of this study also revealed that there was fair supply of electricity supply as half of the respondents indicated regular electricity supply. Among other sources of power supply that was being used, majority of the respondents indicated that they resorted to the use of generator as alternate power supply for library service delivery. In Nigeria, Ferdinand *et al.* (2016) found that electricity supply was steady and regular, therefore irregular power supply was not an issue for library service delivery. This is in line with the findings of this study. On the contrary, findings of Uwaifo (2008) in Nigeria, reported poor electricity supply. The implication of this result is that service delivery will be enhanced and timely where there is steady electricity supply.

Another institutional factor examined in this study was the work environment. Majority of the respondents indicated that the working environment was satisfactory. This result is at variance with Eze and Uzoigwe's (2013) who found that most of the respondents

had no conducive environment for library service delivery in Nigeria. In a study by Haynes (2008a) on environment in the United Kingdom showed that majority of the respondents were satisfied with their work environment. This result implied that majority of the librarians studied worked in a conducive environment. However, few respondents did not enjoy conducive working environment. Work environment should be made comfortable to enable optimal library service delivery.

In relating ICT skills of librarians as an institutional factor, it was found that the respondents' ICT skills on service delivery in universities in Southern Nigeria were high. The respondents indicated that they possessed high skills in the use of social media use such as WhatsApp, Blog, Facebook and Flickr. This study in 2019 confirmed that Baro *et al.* (2013) which revealed that over 80 per cent of the participants in universities in Nigeria studied claimed possession of ICT skills in the area of social media use. The respondents further indicated that they possessed high skills in Microsoft office package such as Excel, Powerpoint and Outlook, information retrieval and sharing. This result has established that in the Southern Nigeria universities, librarians have possessed high level of ICT skills required to deliver services. The results of this study is in consonance with that of Ajayi *et al.* (2013) whose findings submitted that library personnel in Nigeria were versatile in the use of ICT related equipment and tools to deliver services.

The findings of Gbaje and Ukachi (2011) on the ICT competences of professional personnel in two Nigerian university libraries which showed that high use of ICT skills in Microsoft office package use, Internet search, downloads and printing was prominent among the librarians studied also supports the result of this study on ICT skills of librarians. Mommoh and Saka (2016), Husain and Nazim (2015), Ojedokun and Okafor (2011) findings also reported that librarians were skilled on the use of ICT to deliver different library services in the universities studied in India and Nigeria. Findings on librarians ICT skills is also in agreement with that of Kattimani and Naik (2013) who reported from India on high ICT skills possessed by librarians for service delivery to engineering staff and students. On the contrary, Nnadozie (2016) findings showed that the competencies of librarians in Nigeria in the area of ICT skills were not satisfactory to delivered library service to the faculty members. Furthermore, Baro and Asaba (2010) found that majority of the librarians studied in Nigeria lacked ICT skills in the area of social media application for delivering services.

Funding is another institutional factor investigated in the study. Findings revealed that funding had a high significance influence on all aspects of library service delivery. Fund is required to acquire infrastructure, its maintenance, training of librarians and acquisition of

facilities to achieve effective service delivery. The result showed that federal and state university libraries were funded mainly by government subvention. This result is in line with the submission of Ola (2011) who reported that funding of government university libraries was purely from government subvention. The findings on funding also corroborate Rogers (2015), Nnadozie (2016), Ishola (2014) and Ferdinand *et al.* (2016) from United States of America and Nigeria respectively.

The result of the findings further revealed that both federal and state university libraries got funding from other sources such as the university and TETFund. This result is in agreement with that of Ubogu and Okiy (2011) that government owned institutions derived funds from other sources other than government subvention. However, private institutions got funded by their institution alone. This result is in consonance with that of Chaputula (2014) that private university libraries in Malawi were basically funded by parent institutions. Furthermore, in Nigeria, the study conducted by Zaid (2008) showed that private university libraries depend solely on the board of trustee allotted fund for their sustainability.

#### **4.8.5 Types of social media used for service delivery**

Various types of social media were found to be used by the respondents for delivering library services in universities in Southern Nigeria. A significant proportion of the respondents used social media to deliver library service to users. The findings revealed that WhatsApp and Facebook were highly used to deliver services to their users. In terms of specific service being rendered by the librarians, they indicated that they use social media for services like recommendation of library materials, reference service and prompt notification of new library resources arrival. This result has showed that different social media platforms were used by librarians for service delivery. The findings of Singh and Sarmah (2015) showed that a significant percent of librarians from the two universities studied in India used social media to render services.

This result is also in agreement with that of Deng and Zhang (2015) that confirmed the application of social media platforms for reference services among librarians in China. Furthermore, this result is in agreement with the submissions of Khan and Ansari (2014) in India, Moise and Cruceru (2014) in Romania and Kalbande, Sonwane and Golwal (2012) in India that Facebook was highly used for library service delivery in their various universities.

Similarly, the findings on the use of social media for service delivery is in agreement with that of Smeaton and Davis (2014a) that Facebook was a very popularly used platform

for different service delivery in Australia. Furthermore, the result is in line with the findings of Noorhidawati *et al.* (2015) that Facebook was the predominant type of social media used among the respondents for library services such as virtual reference, book recommendations, library news posting, exhibitions and book talks. The result also corroborates with that of Opeke and Onuoha (2013) on social media use by librarians in Nigerian university libraries that 60 per cent of the respondents used social media. 48 per cent of the respondents used social media for service delivery while 28 per cent used social media to interact with the library users. In a similar study in Nigeria by Ofili and Emwanta (2014), their result confirmed the application of Facebook as a tool for providing information services to library users. On the other hand, use of other social media such as YouTube, Blog, Twitter and Skype were at low ebb. In India, Preedip and Kumar (2011)'s study showed that librarians use of social media for service delivery was at a very low level.

#### **4.8.6 Frequency of social media use for service delivery**

Social media tools were periodically being used by librarians at different levels for delivering services in Southern Nigeria universities. Findings from the study revealed a high level of use of social media by librarians for service delivery. WhatsApp was ranked mostly used for service delivery on daily basis by librarians. Another social media that was indicated to be closely followed was Facebook use by librarians on daily use. Other social media were used at low level for service delivery. This result corroborates the findings of Kalbande, Sonwane and Golwal (2012) who found that Facebook was useful and was applied regularly to library service delivery in India.

In the same vein, findings on the frequency of the use of social media such as Facebook and Whatsapp for service delivery in universities in Southern Nigeria was high and is in consonance with the result of Moise and Cruceru (2014) that very high number of the respondents from Romania frequently used Facebook to deliver services. Findings of this result is also in agreement with Xie and Stevenson's (2014) study that found that librarians used social media on hourly, daily, weekly and monthly basis in United States of America. In India, Khan and Ansari (2014)'s study found that majority of the participants used social media on daily basis. Adeleke and Habila (2012) reported from Nigeria that 15 per cent of the respondents indicated the use of social media such as weblog on daily and weekly basis. The results on the frequency of social media such as Podcast, RSS feed and Flickr were used at a very low level and findings by Ahenkoral-Marfo and Akussah (2016a) from Ghana

confirmed that respondents used other social media such as YouTube, Twitter, Blog and RSS feed occasionally.

#### **4.8.7 Challenges to effective service delivery**

Results on challenges confronting universities in Southern Nigeria indicated that inadequate funding, lack of awareness of library policy and obsolete ICT facilities were major obstacles against effective service delivery. Inadequate funding was found to be a major challenge by notable number of the respondents. In terms of inadequate funding, the findings of Makori (2012) found that their African libraries were underfunded which had affected the ICT infrastructure development. Other authors from Nigeria who submitted that procurement of electronic facilities such as computer, desktops, printers, server and Internet connection facilities were not adequately catered for due to inadequate funding were Ishola (2014), Ferdinand *et al.* (2016), and Okiy (2005). Other authors whose results revealed inadequate funding were Ubogu and Okiy (2011) who found that a significant percentage of the respondents in Nigeria indicated that acquisition of resources and service delivery were hindered due to inadequate funding issue. Ola (2011), Mbofung and Popoola (2014), Enwanta (2012), Anansi and Ali (2012) and Kattimani and Naik (2013) also reported inadequate funding in Nigeria and India university libraries respectively.

Findings of this study revealed that many librarians indicated that they were not aware of library policy. Kind *et al.* (2010) study reported from United States of America that out of 132 medical schools studied, only 13 had policy made open on their website for the information of both staff and students. Nathan *et al.* (2014) findings also revealed that two out of 13 universities studied in developed countries made their policies available on their websites. Pomerantz *et al.* (2015)'s study found that less than one quarter of 822 institutions studied in the United States of America had an accessible guideline policy. Furthermore, Ezeani and Igwesi (2012) submitted that lack of social communication regulations was among the issues that hindered social media use for service delivery in Nigerian universities.

Another challenge as indicated by majority of the librarians was obsolete technology which had over 70 per cent agreement score. In support of this finding, in Iraq, Saleem *et al.* (2015) findings showed that degradation of infrastructural facilities affected library service delivery among the universities studied. In Nigeria same issue of obsolete technology was reported by Ugwuanyi and Ejikeme (2011), Ezeani and Igwesi (2012) and Ajayi *et al.* (2013). Further, Eze and Uzoigwe (2013) findings showed that 94 per cent of the respondents in Nigeria indicated infrastructure degradation as a major obstacle to effective service

delivery. On the contrast, Ahmed (2014)'s findings from Bangladesh submitted that first generation universities studied had good Information Technology facilities in place.

#### **4.9 Discussion of results from test of hypotheses**

##### **4.9.1 Relationship between institutional factors and service delivery among librarians in universities in the Southern Nigeria**

The findings of the hypothesis on the relationship between institutional factors and service delivery among librarians in universities in Southern Nigeria indicated that positive relationship existed between institutional factors and service delivery. The result showed that there was positive linear relationship between institutional factors and service delivery among librarians in the Southern Nigeria universities. It implied that as institutional factors (library policy, infrastructure, environment, ICT skills and funding) are improved upon, service delivery will be enhanced in the universities in the Southern Nigeria. This finding is in consonance with that of Child *et al* (2012) on institutional factors such as policy as it relates to social media application and library service delivery in United States of America. Their findings also revealed that institutional factor such as policy influenced service delivery in university libraries studied. The study of Inyang and Igwechi (2015) findings also revealed significant relationship between funding and service delivery in university libraries in Nigeria as adequate funding will reflect optimal service delivery.

##### **4.9.2 Relationship between social media use and service delivery**

The research results disclosed a linear and positive relationship between the use of social media and provision of services by librarians in universities in Southern Nigeria. This means that an increase in the application of social media among librarians to the delivery of services will result to a corresponding increase in the level of services delivered by librarians in Southern Nigeria universities. This result is in consonance with that of Harrison *et al.* (2017) and Yu-Feng and Yang-Siang (2010) on social media application, service delivery and Media Richness Theory. Zohoorian-Fooladi and Abrizah (2012) also established that there was a positive relationship between social media application and service delivery. This relationship further revealed that Uses and Gratifications Theory had a high significant influence on social media application to service delivery as librarians in Malaysia derived their gratification from the application of social media to service delivery.



#### **4.9.3 Relationship between institutional factors and social media use by librarians in universities in Southern Nigeria**

The relationship between institutional factors and social media use by librarians in Southern Nigeria universities is established from the findings of this study. The result shown from the correlational analysis of the two variables that five sub-scales of institutional factors (policy, infrastructure, environment, ICT skills and funding) had relationship with social media use by librarians in Southern Nigeria universities. Therefore, the result has established that there was linear and positive relationship between institutional factors and social media use among library professionals in Southern Nigeria universities. This means that improved institutional factors would have a significant improvement in the application of social media by librarians for delivering services in universities in Southern Nigeria. Findings of Weerasinghe and Hindagolla (2018) on the use of the Internet as a means of accessing social media in Sri Lanka also confirmed that positive significant relationship exists between institutional factors and social media use and this position is in consonance with the finding of this study that positive linear relationship exists between institutional factors and the use of social media.

In a similar vein, the finding is in agreement with that of Baro, Idiodi and Godfrey (2013) who established that computers, Internet and librarians ICT skills were essential for social media use for service delivery in Nigerian universities studied hence, positive relationship existed between the two independent variables (institutional factors and social media use). The result is also in agreement with that of Khan and Ahsan (2014) who submitted that relationship existed between institutional factors and social media as librarians indicated use of social media with the support of the Internet connection, computers availability and electricity supply in India. Therefore, the availability of facilities had relationship with social media use. Saleem, Aly and Genomi (2015) acknowledged that positive relationship existed between institutional factors and social media use in Iraq as librarians used computers, mobile and smart devices for social media use.

#### **4.9.4 Institutional factors and social media use will not significantly predict service delivery among librarians in universities in Southern Nigeria**

The prediction of the independent variables namely institutional factors (policy, infrastructure, environment, ICT skills and funding) and social media use to service delivery revealed that institutional factors and social media use positively predicted service delivered

by librarians. The result further revealed a coefficient of multiple correlations (R) of 0.751 and a multiple R square of 0.563. The result implies that over 65 per cent of the variance in the service delivery was accounted for by the two predictor variables (institutional factors and social media use) when taken together. The significance of the prediction of the regression resulted positively as the result was higher than the 0.05 level of significant at which the variables were tested. This result implies that the joint contribution of the independent variables to the dependent variable was significant. This result is in agreement with that of Aramide *et al.* (2013) who submitted that institutional factors such as infrastructure, ICT skills and environment will jointly predict service delivery in school libraries studied in Nigeria.

A study by Haliso (2011) confirmed that dedicated bandwidth to libraries would enhance the speed of the Internet connection in Nigeria as librarians will be able to deliver services effectively and efficiently. This implies that institutional factors such as infrastructure will predict effective use of social media for service delivery. Heinrichs (2009)'s findings from the United States of America opined that institutional factor such as ICT skills and social media use will jointly predict service delivery. Further, Baro, Eze and Nkanu (2013) and Aina (2016) studies in Nigeria found that institutional factors such as infrastructure, environment, funding and social media use will jointly predict service delivery in universities in Southern Nigeria.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents a summary of the findings, conclusion, and recommendations adduced from this study. This chapter also states the contribution of the study to knowledge and proffer suggestions for further studies.

#### 5.2 Summary of the findings

The summary of the findings of the study is as follows:

1. Librarians in universities in Southern Nigeria rendered library orientation, library education, reference, library materials recommendation, document delivery and selective dissemination of information services among others to their users.
2. Conventional and virtual methods were used by librarians in rendering library services in Southern Nigeria universities.
3. Librarians delivered reference, library registration, charging and discharging of library materials and selective dissemination of information services frequently in Southern Nigeria universities.
4. Institutional factors such as library policy, infrastructure, environment, ICT skills of librarians and funding influenced library service delivery in universities in Southern Nigeria.
5. Librarians used various social media platforms (Facebook, WhatsApp, Youtube, Blog, Twitter, Skype and Flickr) for delivering library services in Southern Nigeria universities.
6. There was high level use of social media (WhatsApp and Facebook) for library service delivery while other social media tools were used at low ebb.
7. There was significant influence of institutional factors on social media use in Southern Nigeria universities.
8. Inadequate funding and lack of modern ICT facilities were noted as major library service delivery hindrances in Southern Nigeria universities.

9. There was significant relationship between institutional factors and delivery of services by librarians in Southern Nigeria universities.
10. Significant relationship existed between the use of social media and service delivery among librarians in Southern Nigeria universities.
11. There was significant relationship between institutional factors and social media use in Southern Nigeria universities.
12. There was joint significant influence of institutional factors and social media use on library service delivery in Southern Nigeria universities.

### **5.3 Conclusion**

The application of institutional factors and social media by librarians can affect service delivery positively or negatively. This study demonstrated that if service delivery is not adequately supported, there is bound to be under utilisation of library and information resources and facilities. In-efficient library service delivery due to low use of social media could result to poor library patronage. Institutional factors and use of social media are important factors needed for engendering librarians' effective service delivery in Southern Nigeria universities. This is because institutional factors (library policy, infrastructure, environment, ICT skills and funding) would strengthen and enhance service delivery in university libraries. Institutional factors are of supreme importance for enhancing librarians' services in Southern Nigeria universities. Hence, it is important to make adequate support for institutional factors as they contribute significantly to librarians' service delivery.

The use of social media by librarians was found relevant due to the fact that it facilitated the provision of easy and timely library service delivery, therefore low use of social media could lead to users' denial of awareness of available services and real time communication that could improve service delivery to many users at the same time. Therefore social media equally made significant contribution to library service delivery. Institutional factors and use of social media are predictors of service delivery among librarians in universities in Southern Nigeria. The result of this study would be of immense benefits to university policymakers, library management and librarians on improving library service delivery in Nigerian universities.

## 5.4 Recommendations

With the findings of the study, the following recommendations are proffered:

1. The findings of this study have shown that some services were being rendered frequently by librarians in universities in Southern Nigeria. In order to ensure that frequency of services delivered increases, librarians should be proactive in identifying and attending to their users' needs. If this is done, services would be rendered in tandem with users' needs regularly.
2. Among the methods being deployed by librarians for service delivery, it was found that face to face and email were prevalent among the conventional and virtual methods of service delivery. In order to optimally render services to users, other methods of service delivery such as flyers, bulletin, You Tube, Blog, Skype and Flickr should be explored to ensure that physical and virtual users' information needs are timely delivered.
3. The result of the study revealed that many of the university libraries have policies but are not updated. Therefore, it is suggested that library policies in universities in Nigeria be reviewed regularly through library policy committee. This would serve as a means of facilitating balanced collection, equitable distribution of facilities to enhance service delivery. Such policies should be made accessible to librarians for strict compliance with the service delivery guidelines.
4. Findings on institutional factors such as infrastructure revealed that internet connection was found to be very slow among the universities studied and this has contributed to low speed of service delivery. The management of universities in Southern Nigeria should make efforts to improve the infrastructure in their institutions such as up-scaling of Internet bandwidth that serves the libraries as a means of enhancing stress-free and timely service delivery in universities in Southern Nigeria.
5. Another institutional factor is the ICT skills of the librarians. Findings of this study revealed that librarians had low level skills in the area of programming. Therefore, librarians should be exposed to training that would enable them maximally utilise ICT related facilities for library service delivery. Training should be done through national and international staff exchange fellowships, conferences and webinars attendance where librarians can network and share

their experiences in order to learn and improve on their skills for innovative library service delivery.

6. Majority of the universities studied experienced irregular electricity supply in the course of service delivery. Hence, alternative source of electricity supply such as inverter, solar panel and generating set should be deployed by the university libraries to enhance uninterrupted electricity supply.
7. Further, the results of this study reported that there was inadequate funding. Subvention from government and parent institutions' funding should be increased to support the placement of necessary facilities and resources for effective delivery of services in university libraries. Other sources of generating funds such as the incorporation of some fee based library services like book binding, printing and digitisation, donations from the philanthropists and involvement of the friends of the libraries in areas of needs should be explored to support government and private ownership funding.
8. This study found that social media application level for service delivery among the librarians studied is at a low ebb. Librarians should deploy more social media platforms to deliver services. Blogs and RSS feed could be deployed to deliver timely notices and library updates to the users. YouTube could also be explored to deliver library orientation and library education to the users. Skype should be used to engage in interactive session with library users. Flickr is another social media tool that could be deployed to manage images and photos collections for different purposes such as exhibitions, online gallery and documentaries.
9. Whatsapp, Facebook, Youtube, Blog, Twitter, Skype and Flickr were the types of social media used for service delivery by librarians. The predominant among the types of social media utilised were Whatsapp and Facebook. All the social media platforms should be explored to optimise library service delivery.

## 5.5 Contributions of the study to knowledge

The study has contributed to the body of knowledge in the following ways:

- i. The study has revealed that institutional factors (library policy, infrastructure, environment, ICT skills and funding) enhanced library service delivery in universities in Southern Nigeria.
- ii. The study has established that social media tools were very important mechanism through which library service delivery is achieved in universities in Southern Nigeria.
- iii. This study has contributed to knowledge by serving as sensitisation mechanism for specific library management on the need to incorporate the emerging technology development in library policy. This could be attained through effective monitoring and periodic review of library policy.
- iv. It is apparent that there is dearth of literature using Media Richness Theory, Uses and Gratifications Theory and Institutional Theory to test service delivery among librarians in universities in Southern Nigeria. This study thus contributes by testing some components of the theories on librarians' service delivery in universities in Southern Nigeria.
- v. This study has contributed to the body of knowledge by establishing that if social media platforms are put in place in the library system, it will serve as a means of maintaining closer relationship between librarians and users. The relationship will help to identify areas that needed to be improved upon which would enhance effective feedback on service delivery.
- vi. Publications from this study will add to empirical findings to the body of knowledge especially on institutional factors and social media use in Southern Nigeria universities.
- vii. This research has contributed a baseline study in university libraries in Southern Nigeria with the combination of institutional factors, social media use and service delivery variables.

## **5.6 Limitations of the study**

The study did not look at service delivery from the aspect of the users who use the services. Information and Communication Technology scale of this study was assessed from the personnel point of view.

## **5.7 Suggestion for further study**

This study has not covered all the universities in Nigeria and all the constructs embedded in the institutional factors. Therefore, it will be very useful to conduct a similar research among librarians in Northern universities in Nigeria.



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## APPENDIX I

DEPARTMENT OF LIBRARY, ARCHIVAL AND INFORMATION STUDIES,  
UNIVERSITY OF IBADAN

### QUESTIONNAIRE ON LIBRARIANS' SERVICE DELIVERY IN UNIVERSITY LIBRARIES (QLSDUL)

Dear Sir/Ma,

I am carrying out research on librarians' service delivery. This questionnaire is designed to collect data for research purpose only. Data collected will be treated with strict confidentiality.

Thank you very much for your cooperation.

Ilesanmi, Titilayo C. (Mrs.)

Ph.D student

#### SECTION A: Background Information

Please tick [] appropriately to you

1. University (Please state) .....
2. Type of University: Federal [] Private [] State []
3. Name of Library .....
4. Gender: Male [] Female []
5. Marital Status: Married [] Single [] Widow [] Widower []
6. Age: 25-35[  ] 36-45 [  ] 46-55 [  ] 56-65 [  ]
7. Status: Deputy University Librarian [  ] Principal Librarian [  ] Senior Librarian [  ] Librarian I [  ] Librarian II [  ] Assistant Librarian [  ]
8. Position: Acquisition librarian [  ] Circulation librarian [  ] Serials librarian [  ] Systems librarian [  ] Reference librarian [  ] Readers' Services librarian [  ] E-resources librarian [  ] Institutional Repository librarian [  ] Faculty librarian [  ] Digital librarian [  ] Cataloguer [  ]
9. Highest academic qualification: Ph.D [  ] MLS [  ] M. Infor [  ] M.Phil [  ] Others specify.....
10. Years of work experience in the library: 1-5 [  ] 6-10 [  ] 11-15 [  ] 16-20 [  ] 21-25 [  ] 26-30 [  ] 31-35 [  ]
11. Section of the library you work: Faculty [  ] Collection development [  ] Circulation [  ] Serials [  ] Systems [  ] Reference [  ] Readers' Services [  ] E-resources [  ] Institutional Repository [  ] Cataloguing [  ] Digitisation [  ] Others specify.....

## SECTION B: Institutional Factors

12. Please rate the level of your agreement on the following library policy statements for service delivery.

	<b>Statement on library policy</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
	<b>My university library:</b>				
a.	has a written policy that guide service delivery				
b.	policy is reviewed regularly				
c.	policy makes provision for guidelines for social media use				
d.	policy makes provision for upgrade of institutional facilities				
e.	policy makes provision for acquisition of new institutional facilities				
f.	policy is accessible to librarians				
g.	policy is clear and understood				

13. Please rate the level of your agreement on the following infrastructural statements for service delivery if provided.

	<b>Statement on infrastructure</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
	<b>Computers/phones/software:</b>				
a.	Desktops are provided for service delivery in the library				
b.	Laptops are provided for service delivery in the library				
c.	Mobile/Smart phones are provided for service delivery in the library				
d.	I-pads are provided for service delivery in the library				
e.	Antivirus software is installed on the devices to prevent computers and mobile devices corruption				
	<b>Internet facility:</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
f.	University Internet is accessible				
g.	University Internet connection is very fast				
h.	Bandwidth assigned to the library is very good				
i.	I use personal data subscription for service delivery				
	<b>Power supply:</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
j.	There is regular electricity supply				

k.	Other sources of energy supply are available: 1. Generator 2. Inverter 3. Solar 4. Uninterruptable power supply (UPS) 5. Power bank				
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14. Please rate the level of your agreement on the following environmental factors for service delivery.

	Environmental factors	Strongly Agree	Agree	Disagree	Strongly Disagree
	Conducive office environment:				
a.	I have comfortable furniture in my office				
b.	My office have adequate lighting				
c.	I work in a functional air-conditioning office				
d.	I work in a good ventilated office				

15. Please rate your ICT skills possessed in rendering library services. Please tick (√) the appropriate boxes. **Key:** Very High = VH, High = H, Moderate = A, Low = L and Very Low = VL.

	ICT Skills	VH	H	M	L	VL
	<b>Social media:</b> Ability to use:					
a.	Facebook					
b.	Blog					
c.	YouTube					
d.	Twitter					
e.	Skype					
f.	WhatsApp					
g.	Flickr					
h.	<b>Microsoft office:</b>					

	Ability to install, update and use Microsoft office such as: i. Word processing ii. Power point iii. Excel Spreadsheet iv. Access v. Publisher vi. Outlook vii. SharePoint					
	<b>Information retrieval:</b> Ability to:					
i.	search and retrieve information from electronic resources databases					
j.	search and retrieve information from Online Public Access Catalogue					
	<b>Internet use:</b> Ability to:					
k.	search for Information					
l.	download materials					
m.	save materials					
n.	print materials					
o.	use email					
p.	use diverse search engines					
	<b>Programming:</b> Ability to:					
q.	design website					
r.	network systems					
s.	install software such as antivirus					
	<b>Conservation/preservation skills:</b> Ability to:					
t.	digitise to different formats such as PDF, TIFF and JPEG					
u.	create records of digitised publications					
v.	upload files into the repository					
	<b>Source of ICT skills development</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	
a.	Self-learning					
b.	Through in-house training					
c.	Through national conferences and workshops					
d.	Through international conferences and workshops					
e.	Through professional online networks					

16. Please indicate your source of ICT skills acquisition for service delivery.

**SECTION C: Social Media Use for Service Delivery by Librarians**

17. For how long have you been using social media for service delivery? 0 - 11Months

1-2 years  3-4 years  5 years above

18. Please indicate the frequency of use of the following social media for service delivery. Tick (√) as many options as possible

	<b>Social media</b>	<b>Daily</b>	<b>Twice a week</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Never</b>
a.	Facebook					
b.	Twitter					
c.	Wikis					
d.	Podcast					
e.	YouTube					
f.	Blog					
g.	RSS feed					
h.	LinkedIn					
i.	Skype					
j.	Flickr					
k.	MySpace					
l.	Google+					
m.	Instagram					
n.	Pinterest					
o.	WhatsApp					
	Others please specify					

**SECTION D: Library Service Delivered by Librarians**

19. What type of services do you render to users? Tick (√) as many as it applies to you.

Library materials recommendation  Library registration  Interlibrary loan

Selective dissemination of information  Document delivery  Reference

service  Outreach service  Prompt notification of library development

Notification of OPAC additions  Notification of Institutional Repository update

Notification of arrival of new library resources  Images/photos service

Library orientation  Library education  Translation

Charging and Discharging of library materials

Others specify .....

20. What are the conventional methods of service delivery available for use in your library? Please tick (√) as many as it applies to you.

	Service	Conventional mode of service delivery									
		Face to face	Notice board	Flyer	Journal	Newspaper	Conf. proceedings	Exhibition	Bulletin/Magazine	Internal Memo	Display rack
a.	Library materials recommendation										
b.	Library registration										
c.	Interlibrary loan										
d.	Selective dissemination of information										
e.	Document delivery										
f.	Reference service										
g.	Outreach service										
h.	Prompt notification of library development										
i.	Notification of OPAC additions										
j.	Notification of Institutional Repository update										
k.	Notification of new library resources arrivals										
l.	Images/photos service										
m.	Library orientation										
n.	Library education										
o.	Charging and Discharging of library materials										
p.	Translation										
	Others please specify										



21. What are the virtual methods of service delivery available for use in your library?  
Please tick (✓) as many as it applies to you.

	Service	Virtual mode of service delivery											
		Telephone call	Text message	E-bulletin	E-mail	Library website	WhatsApp	Facebook	Youtube	Blog	Twitter	Skype	Flickr
a.	Library materials recommendation												
b.	Library registration												
c.	Interlibrary loan												
d.	Selective dissemination of information												
e.	Document delivery												
f.	Reference service												
g.	Outreach service												
h.	Prompt notification of library development												
i.	Notification of OPAC additions												
j.	Notification of Institutional Repository update												
k.	Notification of new library resources arrivals												
l.	Images/photos service												
m.	Library orientation												
n.	Library education												
o.	Charging and Discharging of library materials												
p.	Translation												
	Others please specify												

22. How often do you render these services if applicable? Tick (√) as it applies to you.

	<b>Service</b>	<b>Daily</b>	<b>2-3 times a week</b>	<b>Weekly</b>	<b>Once a month</b>	<b>Never</b>
a.	Library materials recommendation					
b.	Library registration					
c.	Interlibrary loan					
d.	Selective dissemination of information					
e.	Document delivery					
f.	Reference service					
g.	Outreach service					
h.	Prompt notification of library development					
i.	Notification of OPAC additions					
j.	Notification of Institutional Repository update					
k.	Notification of new library resources arrivals					
l.	Images/photos service					
m.	Library orientation					
n.	Library education					
o.	Charging and Discharging of library materials					
p.	Translation					
	Others please specify					

**SECTION E: Challenges to Service Delivery by Librarians**

23. What are the challenges to library service delivery? Please tick (✓) as many as applies to you

	<b>Challenges</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
a.	Lack of written library policy				
b.	Lack of awareness of library policy				
c.	Unavailability of Internet connection				
d.	Slow speed of Internet connection				
e.	Inadequate desktops				
f.	Inadequate laptops				
g.	Inadequate mobile phones				
h.	Unavailability of smart phones				
i.	Unavailability of I-pads				
j.	Computers upgrading problems				
k.	Technological obsolescence				
l.	Erratic electricity supply				
m.	Lack of conducive environment				
n.	Inadequacy of ICT skills required				
o.	Technophobia				
p.	Inadequate funding				
q.	Social media privacy issue				
r.	Proliferation of social media				
s.	Lack of time to use social media				

24. Please make suggestions or comments that could be useful for effective service delivery in this library

.....  
 .....  
 .....

Thank you.

## APPENDIX II

### DEPARTMENT OF LIBRARY, ARCHIVAL AND INFORMATION STUDIES, UNIVERSITY OF IBADAN

#### QUESTIONNAIRE FOR UNIVERSITY LIBRARIANS

Dear Sir/Ma,

I am carrying out research on librarians' service delivery. This questionnaire is designed to collect data for research purpose only. Data collected will be treated with strict confidentiality.

Thank you very much for your cooperation.

Ilesanmi, Titilayo C. (Mrs.)

Ph.D student

August 2017.

#### Section A: Background Information

Please tick [] appropriately

1. University (Please state) .....
2. Type of University: Federal [] Private [] State []
3. Name of Library .....
4. Gender: Male [] Female []
5. Marital Status: Married [] Single [] Widow [] Widower []
6. Age: 31-35[  ] 36-40 [  ] 41-45 [  ] 46-55 [  ] 56-60 [  ] 61- [  ]
7. Status: University Librarian [  ] Ag. University Librarian [  ]
8. Academic qualification: Ph.D [  ] MLS [  ] M. Infor [  ] M.Phil [  ]  
Others specify .....
9. Years of work experience in the library: 1-5 [  ] 6-10 [  ] 11-15 [  ] 16-20 [  ]  
21-25 [  ] 26-30 [  ] 31-35 [  ]

#### Section B: Institutional Factors in Support of Service Delivery

10. Do you have written policy that support library services? Yes [  ] No [  ]
11. When last did your library review its policy? .....
12. Does the policy support use of social media for library service delivery? Yes [  ]  
No [  ]

13. Does the policy support upgrading/change the following institutional facilities for library service delivery?

- |                             |         |        |
|-----------------------------|---------|--------|
| Desktops                    | Yes [ ] | No [ ] |
| Laptops                     | Yes [ ] | No [ ] |
| Mobile/smart phones         | Yes [ ] | No [ ] |
| Antivirus Software          | Yes [ ] | No [ ] |
| Internet connection         | Yes [ ] | No [ ] |
| Bandwidth                   | Yes [ ] | No [ ] |
| Electricity supply          | Yes [ ] | No [ ] |
| Comfortable furniture       | Yes [ ] | No [ ] |
| Adequate lighting           | Yes [ ] | No [ ] |
| Functional air-conditioning | Yes [ ] | No [ ] |

14. How would you rate the following infrastructural facilities in support of library service delivery?

- |                             |               |          |          |         |
|-----------------------------|---------------|----------|----------|---------|
| Desktops                    | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Laptops                     | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Mobile/smart phones         | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Antivirus Software          | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Internet connection         | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Bandwidth                   | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Electricity supply          | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Comfortable furniture       | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Adequate lighting           | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |
| Functional air-conditioning | Very good [ ] | Good [ ] | Fair [ ] | Bad [ ] |

15. How would you assess the work environment as it relates to service delivery by librarians in this university? Very conducive [ ] Conducive [ ] Fairly conducive [ ] Not conducive [ ]

16. What are the sources of funding service delivery in your library? Government subvention [ ] University funding [ ] Internally Generated Revenue [ ] TETFUND [ ] Fundraising [ ] Gift [ ]  
Others please specify .....

17. How frequent is the funding of your library service delivery?

Source of Funding	Very Often	Often	Rarely	Never
Government subvention				
University funding				
Internally Generated Revenue				
TETFUND				
Fundraising				
Gift				
Others please specify:				

18. How would you rate the adequacy of library services funding? Very adequate [ ]  
 Adequate [ ] Fairly adequate [ ] Inadequate [ ]

19. Please suggest ways that library service delivery by librarians can be improved in the university

.....  
 .....  
 .....

**Thank you**

### APPENDIX III

#### OBSERVATION CHECKLIST TO BE COMPLETED BY THE RESEARCHER AND THE FIELD ASSISTANTS

Based on what you observed in the universities you are covering, you are to answer the questions below for each university:

Name of University: .....

1. Tick the types of infrastructural and environmental facilities available and functional for use by librarians in the libraries

	Available		Not available
	Functional	Non-functional	
Written policy			
Desktops			
Laptops			
Mobile/smart phones			
I-pads			
Internet connection			
Antivirus Software installation			
Electricity supply: i. Government electricity ii. Generator iii. Inverter iv. Solar v. Uninterruptable power supply (UPS) vi. Power bank			
Comfortable furniture			
Adequate lighting			
Functional air-conditioning			

#### APPENDIX IV

Distribution of Federal Universities in Southern Nigeria					
S/N	University	Acronym	Location by State	Location By Geo-political Zone	Population of Librarians
<b>Federal</b>					
1.	Federal University of Technology, Owerri	FUTO	Imo	South East	14
2.	Michael Okpara University of Agriculture, Umudike	MOUA	Abia	South East	10
3.	Nnamdi Azikwe University, Akwa	NAU	Anambra	South East	18
4.	University of Nigeria, Nsukka	UNN	Enugu	South East	45
5.	Federal University of Petroleum Resources, Effurun	FUPRE	Delta	South South	9
6.	Federal University of Otuoke	FUO	Bayelsa	South South	11
7.	University of Benin	UNIBEN	Edo	South South	12
8.	University of Calabar	UNICAL	Cross River	South South	16
9.	University of Port-Harcourt	UNIPOINT	Rivers	South South	22
10.	University of Uyo	UIUYO	Akwa-Ibom	South South	25
11.	Federal University of Technology, Akure	FUTA	Ondo	South West	12
12.	Federal University, Oye-Ekiti, Ekiti State	FUOYE	Ekiti	South West	6
13.	National Open University of Nigeria, Lagos.	NOUN	Lagos	South West	6
14.	Obafemi Awolowo University, Ile-Ife	OAU	Osun	South West	23
15.	Federal University of Agriculture, Abeokuta	FUNAAB	Ogun	South West	21
16.	University of Ibadan	UI	Oyo	South West	31
17.	University of Lagos	UNILAG	Lagos	South West	18
Total					<b>299</b>



Distribution of Private Universities in Southern Nigeria					
S/N	University	Acronym	Location by State	Location By Geo-political Zone	Population of Librarians
<b>Private</b>					
1.	Caritas University, Enugu	CUE	Enugu	South East	5
2.	Evangel University, Akaeze	EUA	Ebonyi	South East	3
3.	Gregory University, Uturu	GU	Abia	South East	4
4.	Godfrey Okoye University, Urgwuomu-Nike	GOU	Enugu	South East	5
5.	Madonna University, Okija	MU	Anambra	South East	4
6.	Paul University, Akwa	PU	Anambra	South East	4
7.	Renaissance University, Ojiagu-Agbani	RU	Enugu	South East	3
8.	Rhema University, Aba	RU	Abia	South East	4
9.	Benson Idahosa University, Benin-City	BI	Edo	South South	9
10.	Igbinedion University, Okada	IU	Edo	South South	5
11.	Novena University, Ogume	NU	Delta	South South	6
12.	Obong University, Obong Ntak	OUO	Akwa-Ibom	South South	4
13.	Ritman University, Ikot-Ekpen	RU	Akwa-Ibom	South South	2
14.	Samuel Adegboyega University, Ogwa	SAU	Edo	South South	8
15.	Wellspring University, Benin-City	WU	Edo	South South	2
16.	Western Delta University, Oghara, Delta	WDU	Delta	South South	6
17.	Achievers University, Owo	AC	Ondo	South West	4
18.	Adeleke University, Ede.	AU	Osun	South West	7
19.	Afe Babalola University, Ado-Ekiti	ABUAD	Ekiti	South West	6
20.	Ajayi Crowther University, Oyo	ACU	Oyo	South West	9
21.	Augustine University, Ilera-Epe	AU	Lagos	South West	3
22.	Babcock University, Ilishan-Remo	BU	Ogun	South West	9
23.	Bells University of Technology, Otta	BUT	Ogun	South West	7
24.	Bowen University, Iwo	BU	Osun	South West	8
25.	Caleb University, Lagos	CUI	Lagos	South West	3
26.	Chrisland University	CU	Ogun	South West	2
27.	Christopher University, Mowe	CU	Ogun	South West	2

28.	Covenant University Ota	CU	Ogun	South West	17
29.	Crawford University Igbesa	CU	Ogun	South West	5
30.	Crescent University,	CU	Ogun	South West	5
31.	Dominican University, Ibadan	DU	Oyo	South West	2
32.	Elizade University, Ilara-Mokin	EU	Ondo	South West	3
33.	Fountain University, Osogbo	FUO	Osun	South West	8
34.	Hallmark University	HU	Ogun	South West	3
35.	Joseph Ayo Babalola University, Ikeji-Arakeji	JABU	Osun	South West	5
36.	Kings University, Ode Omu	KU	Osun	South West	2
37.	Koladaisi University, Oyo	KUO	Oyo	South West	2
38.	Lead City University, Ibadan	LCU	Oyo	South West	11
39.	Mcperson University, Seriki Sotayo, Ajebo	MU	Ogun	South West	2
40.	Mountain Top University, Prayer-City	MTU	Ogun	South West	3
41.	Oduduwa University, Ipetumodu	OUI	Osun	South West	4
42.	Pan-Atlantic University, Lagos	PAU	Lagos	South West	5
43.	Redeemer's University, Ede	RUN	Osun	South West	10
44.	Southwestern University, Oku Owa	SWU	Ogun	South West	2
45.	Wesley University of Science & Tech., Ondo	WUST	Ondo	South West	3
<b>Total</b>					<b>226</b>

Distribution of State Universities in Southern Nigeria					
S/N	University	Acronym	Location by State	Location By Geo-political Zone	Population of Librarians
State					
1.	Abia State University, Uturu	ASU	Abia	South East	5
2.	Chukwuemeka Odumegwu Ojukwu University, Uli <b>former</b> Anambra State University of Science and Technology	COOU	Anambra	South East	10
3.	Ebonyi State University, Abakaliki	EBSU	Ebonyi	South East	9
4.	Enugu State University of Science and Technology	ESUST	Enugu	South East	13
5.	Imo State University, Owerri	IMSU	Imo	South East	17
6.	Akwa-Ibom State University of Technology, Uyo	AKSUT	Akwa-Ibom	South South	7
7.	Ambrose Ali University, Ekpoma	AAU	Edo	South South	7
8.	Cross River University of Science and Technology	CRUTECH	Cross River	South South	11
9.	Delta State University, Abraka	DELSU	Delta	South South	21
10.	Edo University, Iyamu	EUI	Edo	South South	2
11.	Ignatus Ajuru University of Education, Rumuolumeni, Port-Harcourt	IAUER	Rivers	South South	5
12.	Niger Delta University, Yenagoa	NDU	Bayelsa	South South	18
13.	Rivers State University of Science and Technology, Port-Harcourt	RSUST	Rivers	South South	9
14.	University of Africa, Toru-Orua	UAT	Bayelsa	South South	8
15.	Adekunle Ajasin University, Akungba	AAUA	Ondo	South West	9
16.	Ekiti State University, Ado-Ekiti	EKSU	Ekiti	South West	13
17.	Ladoke Akintola University of Technology, Ogbomoso	LAUTECH	Oyo	South West	14
18.	Lagos State University Ojo, Lagos.	LASU	Lagos	South West	15
19.	Olabisi Onabanjo University, Ago-Iwoye	OOU	Ogun	South West	9
20.	Ondo State University of Science & Technology, Okitipupa	OSUTECH	Ondo	South West	6

21.	Osun State University, Osogbo	OSU	Osun	South West	7
22.	Tai Solarin Univ. of Education, Ijebu-Ode	TASUED	Ogun	South West	8
23.	University of Medical Sciences, Ondo	UNIMED	Ondo	South West	6
<b>Total</b>					<b>229</b>
<b>Grand Total</b>					<b>754</b>

**Source:** National Universities Commission website (2018).

## APPENDIX V

### Questionnaire return rate (Federal Universities category)

S/N	Name of library	University	No of copies administered	No. of copies returned	%	UL
1.	Nimbe Adedipe Library	Federal University of Agriculture Abeokuta	21	17	81.0	1
2.	FUPRE Library	Federal University of Petroleum Resources	9	8	88.9	1
3.	Albert Ilemobade Library	Federal University of Technology, Akure	12	8	66.7	1
4.	The Library, Federal University of Technology, Owerri	Federal University of Technology, Owerri (FUTO)	14	13	92.9	1
5.	Federal University Otuoke Library	Federal University Otuoke	11	6	54.5	-
6.	Federal University, Oye Ekiti Library	Federal University, Oye Ekiti	6	5	83.3	1
7.	Michael Okpara University of Agriculture Library	Michael Okpara University of Agriculture, Umudike	10	6	60.0	1
8.	National Open University of Nigeria Library	National Open University of Nigeria	6	5	83.3	1
9.	Prof. Festos Aghagbo Nwako Library	Nnamdi Azikiwe University, Awka (NAU)	18	6	33.3	-
10.	Hezekiah Oluwasanmi Library	Obafemi Awolowo University	23	14	60.9	1
11.	John Harris Library	University of Benin	12	10	83.3	1
12.	University of Calabar Library	University of Calabar (UNICAL)	16	13	81.3	1
13.	Kenneth Dike Library	University of Ibadan	31	25	80.6	1
14.	University of Lagos Main Library	University of Lagos	18	13	72.2	1
15.	Nnamdi Azikiwe Library (UNN)	University of Nigeria, Nsukka (UNN)	45	30	66.7	-
16.	Donald Ekong Library	University of Port Harcourt	22	14	63.6	-
17.	Nyong Essien Library	University of Uyo, Uyo (UNIUYO)	25	19	76.0	1
<b>Total</b>			<b>299</b>	<b>212</b>	<b>75.2</b>	<b>12 (70.6%)</b>

**Questionnaire return rate (State Universities category)**

S/N	Name of library	University	No of copies distributed	No. of copies returned	%	UL
1.	Olusegun Oke	Ladoke Akintola University (LAUTECH)	14	12	85.7	1
2.	Gbenga Daniel Library	Tai Solarin University of Education (TASUED)	8	7	87.5	1
3.	CRUTECH Library	Cross River University of Technology	11	10	90.9	1
4.	Adekunle Ajasin University Library	Adekunle Ajasin University	9	8	88.9	1
5.	Sola Akinrinade Library	Osun State University	7	6	85.7	1
6.	Ambrose Alli University Library	Ambrose Alli University	7	4	57.1	-
7.	OSUTECH Library	Ondo State University of Science and Technology	6	5	83.3	1
8.	Olabisi Onabanjo University Library	Olabisi Onabanjo University, Ago-Iwoye	9	5	55.6	1
9.	Fatiu Ademola Akesode Library	Lagos State University	15	10	66.7	1
10.	Rivers State University Central Library	Rivers State University	9	5	55.6	1
11.	Niger Delta University Library	Niger Delta University	18	14	77.8	1
12.	Ekiti State University Main Library	Ekiti State University, Ado Ekiti (EKSU)	13	12	92.3	-
13.	Enugu State University of Science and Technology Library	Enugu State University of Science and Technology (ESUT)	13	5	38.5	-
14.	Akwa Ibom State University Library	Akwa Ibom State University (AKSU)	7	6	85.7	1
15.	Abia State University Library	Abia State University	5	3	60.0	1
16.	Chukwuemeka Odumegwu Ojukwu Library	Chukwuemeka Odumegwu Ojukwu University, Uli <b>former</b> Anambra State University of Science and Technology	10	6	60.0	-
17.	Ebonyi State University Library	Ebonyi State University, Abakaliki	9	5	55.6	1
18.	Imo State University Library	Imo State University, Owerri	17	10	58.8	1
19.	Delta State University Library	Delta State University, Abraka	21	12	57.1	1
20.	Edo University Library	Edo University, Iyamu	2	-	-	-
21.	University of Medical Sciences Library	University of Medical Sciences Ondo	6	5	83.3	1
22.	Ignatus Ajuru University of Education Library	Ignatus Ajuru University of Education Rumuolumeni Ph.	5	4	80.0	1

23.	University of Africa Toru-Orua Library	University of Africa Toru-Orua	8	7	87.5	1
<b>Total</b>			<b>229</b>	<b>161</b>	<b>78.2</b>	<b>18 (78.3%)</b>

**Questionnaire return rate (Private Universities category)**

S/N	Name of library	University	No of copies distributed	No. of copies returned	%	UL
1.	Igbinedon University Library	Igbinedon University	5	4	80.0	-
2.	Fountain University Library	Fountain University, Oshogbo	8	7	87.5	1
3.	TY Danjuma	Ajayi Crowther University	9	8	88.9	1
4.	Afe Babalola University Library	Afe Babalola University, Ado Ekiti (ABUAD)	6	5	83.3	1
5.	Lead City University Library	Lead City University, Ibadan	11	7	63.6	1
6.	Tekrna Tamuno Library	Redeemer's University	10	6	60.0	1
7.	Kings University Library	Kings University	2	1	50.0	1
8.	Western Delta University Library	Western Delta University	6	5	83.3	1
9.	Oduduwa University Library	Oduduwa University	4	3	75.0	1
10.	Adeleke University Library	Adeleke University	7	6	85.7	1
11.	Benson Idahosa University Library	Benson Idahosa University	9	6	66.7	1
12.	Wellspring University Library	Wellspring University	2	1	50.0	1
13.	Babcock University Library	Babcock University	9	8	88.9	1
14.	Augustine University Library	Augustine University	3	2	66.7	1
15.	Hallmark University Library	Hallmark University	3	2	66.7	1
16.	Nelson Mandela Library	Christopher University	2	1	50.0	1
17.	Southwestern University Library	Southwestern University	2	1	50.0	1
18.	Mountain Top University Library	Mountain Top University	3	2	66.7	-
19.	Achievers University Library	Achievers University	4	3	75.0	-
20.	Centre for Learning Resources	Covenant University	17	16	94.1	1
21.	Bells University of Technology Library	Bells University of Technology	7	6	85.7	-
22.	Bola Ajibola College of Law Library	Crescent University, Abeokuta	5	4	80.0	-
23.	Timothy Olagbemi Library	Bowen University	8	7	87.5	1
24.	Koladaisi University Library	Koladaisi University	2	1	50.0	1



25.	Crawford University Library	Crawford University	5	4	80.0	1
26.	PAU Library	Pan-Atlantic University (PAU)	5	4	80.0	1
27.	Joseph Ayo Babalola University Library	Joseph Ayo Babalola University	5	4	80.0	1
28.	Dominican University Library	Dominican University	2	1	50.0	1
29.	Caleb University Library	Caleb University, Imota, Lagos	3	2	66.7	1
30.	Elizade University Library	Elizade University	3	2	66.7	-
31.	McPherson University Library	McPherson University	2	1	50.0	1
32.	Wesley University Library	Wesley University, Ondo	3	2	66.7	1
33.	Samuel Adegboyega University Library	Samuel Adegboyega University, Ogwa Edo State	8	7	87.5	1
34.	Chrisland University Library	Chrisland University, Abeokuta	2	2	100.0	-
35.	Ritman University Library	Ritman University, Ikot-Ekpene, Akwa Ibom State	2	1	50.0	1
36.	Paul University Library	Paul University, Awka	4	3	75.0	1
37.	Renaissance University Ugbanka Library	Renaissance University Ugbanka, Ojiagu-Agbani, Enugu	3	2	66.7	1
38.	Godfrey Okoye University Library	Godfrey Okoye University, Urgwuomu-Nike, Enugu	5	4	80.0	1
39.	Olusegun Obasanjo Library	Gregory University Uturu	4	3	75.0	1
40.	Rhema University Library of information Centre	Rhema University	4	3	75.0	1
41.	Caritas University Library	Caritas University	5	4	80.0	1
42.	Evangel University Akaeze Library	Evangel University Akaeze	3	2	66.7	1
43.	Obong University Library	Obong University, Obong-Ntak, Akwa-Ibom	4	3	75.0	1
44.	Novena University Library	Novena University, Ogume, Delta State.	6	4	66.7	1
45.	Madona University alibrary	Madona University, Okija.	4	3	75.0	1
<b>Total</b>			<b>226</b>	<b>173</b>	<b>95.6</b>	<b>38 (84.4%)</b>

## APPENDIX VI

### Institutional factors (Library policy)

Statement on library policy	SA		A		D		SD	
	N	%	N	%	N	%	N	%
My university library has a written policy that guide service delivery	181	33.2	219	40.1	97	17.8	49	8.9
My university library policy is reviewed regularly	143	26.2	157	28.8	118	21.6	128	23.4
My university library policy makes provision for guidelines for social media use	90	16.5	153	28.0	201	36.8	102	18.7
My university library policy makes provision for upgrade of institutional facilities	180	33.0	210	38.5	69	12.6	87	15.9
My university library policy makes provision for acquisition of a new institutional facilities	101	18.5	260	47.6	101	18.5	84	15.4
My university library policy is accessible to librarians	95	17.4	197	36.1	153	28.0	101	18.5
My university library policy is clear and understood	114	20.9	227	41.6	115	21.1	90	16.4

**Library policy by type of university**

Statement on library policy	Federal Universities (212)								State Universities (161)								Private Universities (173)							
	SA		A		D		SD		SA		A		D		SD		SA		A		D		SD	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
My university library has a written policy that guide service delivery	58	27.4	101	47.6	21	9.9	32	15.1	42	26.1	76	47.2	27	16.8	16	9.9	42	24.3	81	46.8	27	15.6	21	12.1
My university library policy is reviewed regularly	46	21.7	62	29.2	65	30.7	39	18.4	44	27.3	55	34.2	38	23.6	24	14.9	32	18.5	67	38.7	53	30.6	27	15.6
My university library policy makes provision for guidelines for social media use	55	25.9	60	28.3	57	26.9	40	18.9	38	23.6	50	31.1	43	26.7	30	18.6	30	17.3	70	40.5	23	13.3	50	28.9
My university library policy makes provision for upgrade of institutional facilities	46	21.7	110	51.9	26	12.3	30	14.2	55	34.2	56	34.8	29	18.0	21	13.0	43	24.9	79	45.7	41	23.7	10	5.8
My university library policy makes provision for acquisition of a new institutional facilities	53	25.0	78	36.8	59	27.8	22	10.4	31	19.3	75	46.6	37	23.0	18	11.2	28	16.2	98	56.6	29	16.8	20	11.6
My university library policy is accessible to librarians	31	14.6	61	28.8	69	32.5	51	24.1	33	20.5	57	35.4	39	24.2	31	19.3	19	11.0	90	52.0	38	22.0	26	15.0
My university library policy is clear and understood	55	25.9	60	28.3	52	24.5	45	21.2	29	18.0	56	34.8	33	20.5	23	14.3	31	17.9	90	52.0	30	17.3	22	12.7

### Institutional factors (Environment)

Statement on environment	Federal Universities (212)								State Universities (161)								Private Universities (173)							
	SA		A		D		SD		SA		A		D		SD		SA		A		D		SD	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Comfortable furniture	32	15.1	69	32.5	73	34.4	38	17.9	23	14.3	33	20.5	45	28.0	50	31.1	32	18.5	37	21.4	63	36.4	40	23.1
Adequate lighting	53	25.0	88	41.5	50	23.6	21	9.9	47	29.2	60	37.3	28	17.4	26	16.1	64	37.0	60	34.7	28	16.2	21	12.1
Functional air conditioning	56	26.4	95	44.8	33	15.6	18	8.5	29	18.0	96	59.6	22	13.7	14	8.7	68	39.3	70	40.5	21	12.1	14	8.1
Good ventilation	73	34.4	71	33.5	33	15.6	29	13.7	48	29.8	47	29.2	43	26.7	23	14.3	57	32.9	60	34.7	44	25.4	12	6.9

**Institutional factors (Environment)**

<b>Conducive office environment</b>	<b>SA</b>		<b>A</b>		<b>D</b>		<b>SD</b>	
	N	%	N	%	N	%	N	%
Comfortable furniture	91	16.7	136	24.9	220	40.3	99	18.1
Adequate lighting	163	29.9	209	38.3	111	20.3	63	11.5
Functional air conditioning	190	34.8	234	42.9	67	12.3	55	10.1
Good ventilation	222	40.7	134	24.5	112	20.5	78	14.3

### Source of ICT skills acquisition

Statement on ICT skills acquisition	Responses (N=546)							
	SA		A		D		SD	
	N	%	N	%	N	%	N	%
Self-learning	235	43.0	288	52.7	15	2.7	8	1.5
Through In-house training	173	31.7	254	46.5	72	13.2	47	8.6
Through National conferences and workshops	109	20.0	312	57.1	57	10.4	68	12.5
Through international conferences and workshops	91	16.7	210	38.5	95	17.4	162	29.7
Through professional online networks	123	22.5	219	40.1	90	16.5	116	21.2

### Source of ICT skills acquisition by type of university

Statement on ICT skills acquisition	Federal Universities (212)								State Universities (161)								Private Universities (173)							
	SA		A		D		SD		SA		A		D		SD		SA		A		D		SD	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Self-learning	123	58.0	80	37.7	5	2.4	4	1.9	60	37.3	99	61.5	1	0.6	1	0.6	52	30.1	109	63.0	9	5.2	3	1.7
Through In-house training	71	33.5	96	45.3	29	13.7	16	7.5	40	24.8	80	49.7	23	14.3	18	11.2	62	35.8	78	45.1	20	11.6	13	7.5
Through National conferences and workshops	38	17.9	131	61.8	25	11.8	18	8.5	32	19.9	90	55.9	11	6.8	28	17.4	39	22.5	91	52.6	21	12.1	22	12.7
Through international conferences and workshops	24	11.3	94	44.3	44	20.8	50	23.6	23	14.3	61	37.9	22	13.7	55	34.2	44	25.4	55	31.8	29	16.8	57	32.9
Through professional online networks	47	22.2	86	40.6	21	9.9	58	27.4	29	18.0	71	44.1	26	16.1	35	21.7	47	27.2	62	35.8	43	24.9	23	13.3

**Institutional factors (Infrastructure)**

Infrastructure	Responses (N=546)									
	SA		A		D		SD		Mean	ST. D
	N	%	N	%	N	%	N	%		
<b>Computers/phones/software</b>										
Desktops are provided for service delivery in the library Word processing	284	52.0	198	36.3	54	9.9	10	1.8	3.38	0.739
Laptops are provided for service delivery in the library	151	27.7	125	22.9	234	42.9	36	6.6	2.72	0.943
Mobile/Smart phones are provided for service delivery in the library	18	3.3	74	13.6	334	61.2	120	22.0	1.98	0.698
I-pads are provided for service delivery in the library	26	4.8	67	12.3	287	52.6	166	30.4	1.91	0.782
Antivirus software is installed on the devices to prevent computers and mobile devices corruption	162	29.7	224	41.0	129	23.6	31	5.7	2.95	0.871
<b>Internet facility</b>										
University Internet is accessible	262	48.0	257	47.1	27	4.9	-	-	3.43	0.587
University Internet connection is very fast	132	24.2	243	44.5	151	27.7	20	3.7	3.18	1.344
Bandwidth assigned to the library is very good	105	19.2	213	39.0	197	36.1	31	5.7	2.72	0.838
I use personal data subscription for service delivery	51	9.3	214	9.3	213	39.0	68	12.5	2.45	0.828
<b>Power supply</b>										
There is regular electricity supply	105	19.2	210	38.5	181	33.2	50	9.2	2.68	0.886
Other sources of energy supply – Generator	259	47.4	251	46.0	25	4.6	11	2.0	3.39	0.671
Other sources of energy supply – Inverter	155	28.4	230	42.1	126	23.1	35	6.4	2.92	0.876
Other sources of energy supply – Solar	113	20.7	192	35.2	172	31.5	172	31.5	2.64	0.948
Other sources of energy supply - Uninterruptable power supply (UPS)	85	15.6	197	36.1	181	33.2	83	15.2	2.52	0.931
Other sources of energy supply - Power bank	119	21.8	192	35.2	175	32.1	60	11.0	2.68	0.936
<b>Total</b>									<b>41.55</b>	<b>12.878</b>



### Challenges to effective service delivery

Statement on challenges	SA		A		D		SD	
	N	%	N	%	N	%	N	%
Lack of written policy	173	31.7	205	37.5	101	18.5	67	12.3
Lack of awareness of library policy	168	30.8	218	39.9	93	17.0	67	12.3
Unavailability of internet connection	184	33.7	72	13.2	155	28.4	135	24.7
Slow speed of internet connection	201	36.8	180	33.0	100	18.3	65	11.9
Inadequate desktops	118	21.6	190	34.8	123	22.5	115	21.1
Inadequate laptops	179	32.8	184	33.7	96	17.6	87	15.9
Inadequate mobile phones	162	29.7	115	21.1	165	30.2	104	19.0
Unavailability of smart phones	155	28.4	137	25.1	149	27.3	105	19.2
Unavailability of I-Pads	123	22.5	187	34.2	113	20.7	123	22.5
Computer upgrading problems	171	31.3	203	37.2	101	18.5	71	13.0
Technological obsolescence	222	40.7	163	29.9	87	15.9	74	13.6
Erratic electricity supply	191	35.0	173	31.7	118	21.6	64	11.7
Lack of conducive environment	105	19.2	192	35.2	143	26.2	106	19.4
Inadequacy of ICT skills required	100	18.3	192	35.2	184	33.7	70	12.8
Technophobia	136	24.9	180	33.0	133	24.4	97	17.8
Inadequate funding	239	43.8	215	39.4	59	10.8	33	6.0
Social media privacy issue	73	13.4	202	37.0	122	22.3	149	27.3
Proliferation of social media	89	16.3	174	31.9	141	25.8	142	26.0
Lack of time to use social media	75	13.7	170	31.1	169	31.0	132	24.2

### Challenges to effective service delivery by type of university

Statement on challenges	Federal (N=212)								State (N=161)								Private (N=173)							
	SA		A		D		SD		SA		A		D		SD		SA		A		D		SD	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Lack of written policy	53	25.0	110	51.9	29	13.7	20	9.4	33	20.5	82	50.9	28	17.4	18	11.2	33	19.1	67	38.7	31	17.9	42	24.3
Lack of awareness of library policy	79	37.3	90	42.5	33	15.6	10	4.7	43	26.7	84	52.2	20	12.4	14	8.7	29	16.8	61	35.3	43	24.9	40	23.1
Unavailability of internet connection	81	38.2	67	31.6	22	10.4	42	19.8	32	19.9	62	38.5	39	24.2	28	17.4	4	2.3	10	5.8	93	53.8	66	38.2
Slow speed of internet connection	73	34.4	77	36.3	32	15.1	30	14.2	60	37.3	81	50.3	9	5.6	11	6.8	12	6.9	78	45.1	35	20.2	48	27.7
Inadequate desktops	51	24.1	71	33.5	49	23.1	41	19.3	41	25.5	70	43.5	29	18.0	21	13.0	23	13.3	52	30.1	41	23.7	57	32.9
Inadequate laptops	90	42.5	81	38.2	18	8.5	23	10.8	52	32.3	60	37.3	23	14.3	26	16.1	31	17.9	49	28.3	33	19.1	60	34.7
Inadequate mobile phones	48	22.6	81	38.2	53	25.0	30	14.2	29	18.0	61	37.9	39	24.2	32	19.9	22	12.7	36	20.8	44	25.4	69	39.9
Unavailability of smart phones	43	20.3	95	44.8	54	25.5	20	9.4	32	19.9	72	44.7	30	18.6	27	16.8	19	11.0	31	17.9	71	41.0	52	30.1
Unavailability of I-Pads	41	19.3	82	38.7	29	13.7	60	28.3	22	13.7	105	65.2	24	14.9	10	6.2	29	16.8	31	17.9	43	24.9	70	40.5
Computer upgrading problems	71	33.5	108	50.9	21	9.9	12	5.7	40	24.8	84	52.2	17	10.6	20	12.4	11	6.4	60	34.7	69	39.9	33	19.1
Technological obsolescence	42	19.8	105	49.5	45	21.2	20	9.4	59	36.6	86	53.4	11	6.8	5	3.1	23	13.3	70	40.5	49	28.3	31	17.9
Erratic electricity supply	82	38.7	83	39.2	29	13.7	18	8.5	87	54.0	49	30.4	9	5.6	16	9.9	13	7.5	50	28.9	50	28.9	60	34.7
Lack of conducive environment	49	23.1	81	38.2	52	24.5	30	14.2	38	23.6	63	39.1	22	13.7	38	23.6	22	12.7	44	25.4	62	35.8	45	26.0
Inadequacy of ICT skills required	31	14.6	96	45.3	45	21.2	40	18.9	33	20.5	81	50.3	39	24.2	8	5.0	10	5.8	41	23.7	73	42.2	49	28.3
Technophobia	42	19.8	82	38.7	49	23.1	39	18.4	21	13.0	100	62.1	21	13.0	19	11.8	12	6.9	59	34.1	36	20.8	66	38.2
Inadequate funding	103	48.6	90	42.5	10	4.7	9	4.2	56	34.8	67	41.6	21	13.0	17	10.6	48	27.7	90	52.0	19	11.0	16	9.2
Social media privacy issue	43	20.3	65	30.7	54	25.5	50	23.6	36	22.4	53	32.9	23	14.3	49	30.4	26	15.0	50	28.9	38	22.0	59	34.1
Proliferation of social media	29	13.7	81	38.2	61	28.8	41	19.3	32	19.9	55	34.2	43	26.7	30	18.6	26	15.0	39	22.5	67	38.7	41	23.7
Lack of time to use social media	33	15.6	60	28.3	59	27.8	60	28.3	19	11.8	63	39.1	29	18.0	50	31.1	34	19.7	36	20.8	53	30.6	50	28.9

## APPENDIX VII

Mean age of the respondents:

### Librarians

Age range	Frequency
25 – 35	136
36 – 45	198
46 – 55	169
56 – 65	43
<b>Mean = 42.67</b>	<b>Standard deviation = 12.909</b>

### University librarians

Age range	Frequency
31-35	7
36-40	7
41-45	7
46-55	23
56-60	13
61 above	11
<b>Mean=48.03</b>	<b>Standard deviation=9.09</b>

### All librarians

Age range	Frequency
25-35	143
36-45	212
45-55	192
56-65	67
<b>Mean=46.28</b>	<b>Standard deviation=11.31</b>

## APPENDIX VIII

**Mean score of facilities observed to be available in the university libraries in Southern Nigeria**

Facility	N = 72			
	Available and Functional			
	No of universities with:	%	Mean	SD
Written policy	58	80.6	1.482	0.805
Desktop computers	68	94.4	1.857	0.497
Laptop computers	50	69.4	1.939	0.281
Smart phones	31	43.0	0.399	0.490
I-pad	19	26.4	1.442	0.497
Internet connection	63	87.5	1.725	0.745
Anti-virus software	61	84.7	1.646	0.809
Government electricity alone	57	79.2	1.290	0.804
Generator	62	86.1	1.513	0.839
Inverter	31	43.0	0.436	0.838
Solar	15	20.8	0.322	0.755
Furniture	63	87.5	1.428	0.805
Lighting	66	91.7	1.783	0.934
Air-conditioner	56	77.8	1.322	0.923
<b>Overall mean</b>			<b>18.584</b>	<b>10.022</b>