



**The Use of Social Media Technologies (SMTs) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria**

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August 2018

## DECLARATION

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## **ABSTRACT**

The purpose of this study was to investigate the use of Social Media Technologies (SMTs) in the provision of library and information services in academic libraries of South-West, Nigeria. This study is motivated by the fact that SMT adoption and use in academic libraries in Nigeria have not been embraced to a large extent in providing information services.

The study adopted the post-positivist paradigm and a survey research design using structured questionnaires and semi-structured interview. The structured questionnaires were utilised to collect quantitative data from 107 academic librarians and 222 4<sup>th</sup> year Computer Science students, while the interview schedule was used to elicit qualitative data from 6 university librarians. Six universities were purposively selected, namely: University of Ibadan, University of Lagos, Ekiti State University, Lagos State University, Babcock University and Covenant University. Response rates of 96.8% and 83.2% for 4<sup>th</sup> year Computer Science students and academic librarians were achieved respectively.

Findings revealed that the degree of awareness of SMT for each group of respondents in the study was the same. Conferencing tools, Chatting tools, Image and video sharing were the three major SMT technologies respondents were aware of in their day-to-day interaction with the libraries. The results also showed that the respondents were aware of all the listed SMTs in the study. Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp and Google Talk, MSN had the highest level of accessibility, hence its highest adoption; Blogging such as WordPress and Blogger had the least access suggesting they are the least adopted in all the libraries sampled.

The study further revealed that majority of students accessed the Library Services offered through SMT from their classrooms or lecture theatres, while the minority accessed the services from Off-campus. The study further revealed that social networking, chatting tools and image and video sharing tools, were the first set of three most used SMTs by academic librarians in the surveyed universities. The aversion to the use of Podcast was evident in the high number of academic librarians (79.8%) who claimed they never used it regularly. One of the most revealing facts, about the frequency of usage, was the high percentage of respondents who claimed they never used Blogs, Microblogs, Collaborative tools, Podcast, Social tagging and bookmarking,

Scheduling and meeting tools as frequently as possible. Majority of the students (66%) were of the view that as at the time of the study, their information needs in the surveyed university communities were not being met via SMT by academic librarians, while the remaining 34% believed otherwise.

The intercorrelation matrices for both groups of respondents revealed that at  $p < .05$ , there were no multicollinearities between or among the variables of study. All the predictor variables in the study were found good enough to be part of the model in ascertaining the influence of the independent variables on the dependent variable. Moreover, the study showed there is a paradigm shift in library service delivery which negates the conventional method of service provision where clienteles accept whatever the library offers them.

The study recommends the University Management and Library Management to work together in developing strategies of creating awareness about the different SMTs which can be harnessed for the provision of library and information services; and the formulation of policy to guide the adoption and use of SMT in the provision of library services in academic libraries of South-West Nigeria.

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## **DEDICATION**

This thesis is dedicated to Obanlani Jesu who has kept me thus far. His unflinching grace has kept me!

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## LIST OF ACRONYMS AND ABBREVIATIONS

ARL	Association of Research Libraries
AVI	Audio Video Interleaved
BU	Babcock University
CAS	Current Awareness Services
CD	Compact Disc
CD-ROM	Compact Disc Read Only Memory
CLR	Centre for Learning Resources
CU	Covenant University
CVI	Lawshe Content Validity Index
EBSCO	Elton B. Stephens Co.
EDD	Electronic Document Delivery
EKSU	Ekiti State University
ICT	Information Communication Technology
IDT	Innovation Diffusion Theory
IFL	Integration Faith and Learning
IITM	Indian Institute of Technology Madras
IL	Information Literacy
ILL	Inter Library Loan
ILS	Integrated Library System
IM	Instant Messaging
IS	Information Systems
JSTOR	Journal Storage
KDL	Kenneth Dike Library
LASU	Lagos State University
LMS	Library Management System
LOML	Laz Otti Memorial Library
LISREL	Linear Structural Relation
M-Learning	Mobile Learning
MP3	MPEG-1 Audio Layer-3
MPEG	Moving Pictures Expert Groups

MSN	Microsoft Internet Start
NUC	Nigerian University Commission
OARE	Online access to Research in the Environment
OCUL	Ontario Council of University Libraries
OPAC	Online Public Access Catalogue
PE	Perceived Enjoyment
PMV	Perceived Mobility Value
RSS	Really Simple Syndicate
SDI	Selective Dissemination of Information
SMT	Social Media Technologies
SNS	Social Networking Sites
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UI	University of Ibadan
U&G	Uses and Gratification Theory
UK	United Kingdom
UKZN	University of KwaZulu-Natal, South Africa
UNILAG	University of Lagos
USA	United States of America
VoIP	Voice over Internet Protocol
WWW	World Wide Web

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The aim of this research was to examine the use of Social Media Technologies (SMTs) in the provision of library and information services of academic libraries of South-West, Nigeria. The adoption and use of SMTs for the provision of library services is what makes the 21<sup>st</sup>-century academic libraries unique and relevant to her clientele whom Kim and Abbas (2007) and Prensky (2001) opined are mostly digital savvies. Nwezeh (2010) indicated that a higher number of these students' have a poor opinion of the library staff proficiencies and expertise. Therefore, great onus lies on academic libraries to ensure that library services are user-centric which is not restricted by time, location or means due to the ubiquitous nature of SMTs (Jacobsen & Forste, 2011). Giustini and Wright (2014) affirmed that use of SMTs in the 21<sup>st</sup>-century academic libraries is becoming central to the provision of library and information services, which will remarkably negate the present library dissatisfaction that is obvious in most academic communities (Bell, 2007).

SMTs are computing-mediated technologies that enables individuals or group of people in creating, sharing, and exchanging information at real-time within an online community (Buettner, 2016). Kaplan and Haelein (2010) classified SMTs into collaborative tools (Wikipedia); blog and microblogs (Twitter); content communities (YouTube); social networking (Facebook, LinkedIn, Google+); and others. Collaborative tools are SMTs used in facilitating work activities among group of people (Parker & Chao, 2007). In contrast, blogs and microblogs are basically for discourse with limited word count (Blood, 2000). Stutzman, Capra and Thomson (2011) stated that content communities are online contents that are shared and gives an avenue through which people communicates in the cyber-space. Boyd and Ellison (2007:1) defined a social network site (SNS) as a “virtual network that allow a person to create an online profile in a global setting, network with groups by interacting with them in the cyberspace”.

There is a paradigm shift in service delivery in academic libraries which developed countries have embraced in the provision of library services via social media technology (Akintunde, 2004). A traditional library is one that is collection-specific instead of emphasising user services (Mutula, 2007), and has content services that is location-specific which makes it mandatory for library users to visit the library in order to consult library collections (Tripathi & Kumar, 2013). However, the advent of SMT has made library clientele both consumers of information and contributors to library services that is provided for them by academic librarians (Stephens, 2006). Kai-Wah Chu and Du (2012) in this regard affirmed that using SMT for service delivery by academic libraries is now the standard way of library operations in the continent of America, Asia and Europe. Cordova and Vecchione (2011) explained that the ubiquity of SMTs have transformed the way and manner academic librarians render library services in industrialised countries. Similarly, McCallum (2015) believes SMT has afforded academic librarians in Europe, India, and United States of America (USA) the ample chance to render library services through the cyberspace and offer real-time customer library services.

Furthermore, SMT has become the basis for establishing archives of information peculiar to a group of people and is boosting the professional capability of academic librarians for their optimum research output. McCallum (2015) observed that SMT has emerged to be an avenue for academic librarians to express themselves to a wide audience within the academic community in developed countries and underdeveloped countries should learn from this precedent. Boyd and Ellison (2007) asserted that academic librarians can employ SMTs to provide numerous library services and converse with library users. This in essence, will motivate these library patrons interest in accessing the library and services that it offers (Bell, 2007). Witte (2014:89) has called the transformation in providing library services brought about by SMTs as the 'humanization' of libraries using SMTs.

Dalton (2013) maintained that the use of SMTs in the provision of library services is useful for the professional development of academic librarians (Graham, Faix, & Hartman, 2009). Cullen (2008) maintained that SMTs have created an innovative way of performing library services, a novel manner in relating with library clientele and improving the professional development of academic librarians. Cassner and Adams (2006) opined that continuous professional

development is essential for librarians given the technological innovations brought to fore by SMTs.

Farkas (2007) argued that academic librarians globally must ensure that they adopt and use SMT to improve the quality of their service delivery and also improve their research productivity. Collaboration through SMTs is significant to the professional development of academic librarians, which is sacrosanct to their online global visibility and research advancement (Tapscott, 2008). Bradley (2007) asserted that SMT is being harnessed actively by academic librarians in developed countries. Hence, Zohoorian-Fooladi and Abrizah (2012) affirmed that academic librarians in third developed countries like Africa should take a cue from their contemporaries in these developed countries since it is the basis of 21<sup>st</sup>-century library services in academic libraries.

The transformation that SMTs have introduced to service delivery in academic libraries need not be emphasised. Collins and Quan-Haase (2012) declared that Wiki's and Blogs are veritable tools in communicating library information to patrons. Cooper and May (2009) sustained that Blogs, RSS feeds and Flickr can be harnessed by academic librarians in meeting students information needs. Draper and Turnage (2008) equally asserted that Twitter is being used adequately in advertising the various library services. McCallum (2015) on the other hand stated that YouTube is significant in promoting library acquisition and Belden (2008) maintained that MySpace and Wikipedia is vital in promoting collections of digital artefacts.

Extant literature has shown that academic librarians make use of Twitter to enlarge the scope of library services to patrons (Mathews, 2008). On the other hand, Sadeh (2007) ascertained that these SMTs are now being employed in creating an online media status of academic libraries. Consequently, Matthews (2006) suggested that the knowledge of 21<sup>st</sup>-century library users who are familiar with delivery of real-time services should go a long way in determining how academic librarians would adopt SMTs in meeting their information needs.

Kwanya, Stillwell and Underwood (2012) similarly stated that SMT is promoting the provision of user-centric library and information services in a dynamic way from anywhere, anytime and in

many ways. Okonedo, Azubuike and Adeyoyin (2013) add their voice saying the use of SMT in libraries has increased in the areas of offering marketing services, library awareness, reference services, collaboration, document delivery, information literacy, selective dissemination of information (SDI), research services, training services, and user services.

Furthermore, Miller and Jensen (2007) advised that in this era of global visibility, the relevance of academic librarians to library patrons lies on them being able to meet patrons' information needs at the click of a button without any restraint. Else, they will opt for service providers that are ready to meet their information needs anytime, anywhere and in different ways (Miller, 2005:1). Therefore the laggard status of academic libraries in Africa and particularly in Nigeria in adopting and using SMTs in the provision of library and information services can be attributed to some factors such as lack of requisite SMT understanding, lack of technical facilities, and lack of SMT research activities (Zohoorian-Fooladi & Abrizah, 2013). In this regard, Onuoha (2013) stated it is of utmost importance to examine SMTs so as to know how it can be adopted and used in academic libraries in Nigeria.

Therefore, this study intend to examine the use of SMTs for the provision of library and information services in academic libraries of South-West, Nigeria. This study is inspired by the fact that SMT adoption and use in academic libraries in Nigeria have not been embraced largely in providing library and information services. "This is affirmed by Olajide and Oyeniran (2014:16) who stated that the level of understanding of SMTs and its usefulness in academic libraries is still low". This is a lacuna the present study intends to fill.

### **1.1.1 Use of SMT in the Provision of Library and Information Services in Academic Libraries**

Moral anxiety is a usual outcome of a novel use of information technology (Chalaby, 2000; Silverstone, 2005) and the dawn of the television media laid anxieties on people being laidback (Valenzuela, Park, & Kee, 2009). The 1990's ushered in the widespread of the Internet as a means of encouraging people communicating within virtual communities than physically (Mandemack & Fritch, 2001) and the story of SMT and Web 2.0 in libraries is not any different (Boyd & Ellison, 2007). Rogers (2009) perceived that more often than not, Web 2.0 and SMT

denote the same idea in academic libraries which Casey and Savastinuk (2006) asserted are library services offered via the technological innovation brought to the forefront by these web-based technologies.

Nevertheless, despite this fear, Barsky and Purdon (2006) affirmed that SMT has come to stay in the library and it is the mantra for the 21<sup>st</sup>-century academic library. Burkhardt (2010) stated that because of the pervasiveness of SMTs, it can influence the interaction pattern with members of the academic community in innovative ways to market library services. Therefore, to maintain her responsibility as a pivotal part in this epoch of information explosion, academic libraries are finding an appropriate balance between the traditional mode of library services and the 21<sup>st</sup>-century mode of service delivery which is mostly via SMT (Gorman, 2004).

Hence, an academic library is defined as the foundation on which a University is built because its principal responsibility is to ensure that requisite information needed to support curriculum and research activities of the parent institution is adequately provided (Campbell, 2006; Bakare, Owolabi, Bamigboye & Bankole, 2013). Gardner and Eng (2005:405) based on their survey conducted among college students in 2002, called these students "Generation Y", who believe so much in technology mobility and are diverted away from physically using the library in the same way students used it in the past. Harley, Dreger and Knobloch (2001) in their survey, found that 73% of the respondents were more likely to conduct research by using SMT than by going to the library. Recent library statistics appear to reflect this seismic shift, and in many academic libraries, gate counts are declining (Burhanna, Seeholzer & Salem, 2009).

Furthermore, ARL statistics indicated that there was a 10% decline in circulation rates amid 1991–2002 and a 37% waning in in-house use of the library collections. A study of undergraduate libraries found that between 1974 and 1994 circulation figures for books decreased by 66%, and it seems this trend is continuing into the next epoch with Generation Y (Watson, Foote & Person, 1996). When faced with statistics like these, academic libraries need to appeal to this new, smart, internet-savvy generation and avoid becoming irrelevant (Miller & Jensen, 2007). Mishra (2008) therefore argued that adopting and using SMTs in academic libraries in providing library and information services are of the essence.

There is no gain saying that SMT provides academic libraries with the opportunity to develop and maintain closer ties with clientele and to foster the passion for reading, learning, and community (Tella, Olarongbe, Akanbi-Ademolake & Adisa, 2013; Bakare, Chiemenem, Bamigboye & Okonodo, 2015). On this note, Bakare and Mutula (2017:3) affirmed that contemporary academic libraries play a vital role in making information available at “real-time” to the clientele via SMTs. Thus, since SMT is being adopted and used in several academic libraries in developed countries, it is paramount that academic librarians must be apt with these technologies so as to keep pace with their users whose understanding of these technologies is on the increase. Cassner and Adams (2006) maintained that academic libraries have embraced these technologies in interacting with library clientele concurrently. Ezeani and Igwesi (2012) discovered that these technologies are being used by academic librarians to keep patrons abreast of latest news, provide access to information and create awareness about the recently acquired library materials (Tella & Akinboro, 2015).

In addition, the previous top-bottom methodology to the provision of library services in which academic librarians provide information that they believe is relevant to clientele without feedback will be irrelevant to these 21<sup>st</sup>-century clientele. No doubt, library clientele have been longing to have a say in services being provided for them because they are at the receiving end of a system that is not taking cognisance of their needs but instead are concerned with their collections (Baro & Godfrey, 2015). When their needs are being taken into consideration, it goes a long way in fostering a two-way communication channel, offer the prospect for an interactive user-centric library services which will attract them to academic libraries and what they have to offer (Tella & Akinboro, 2015).

Similarly, Mandernack and Fritch (2001) avowed that library services and programs must therefore be designed to be more receptive, more flexible, extra suitable, and additionally tailored to meet clientele’ information needs, putting into consideration diverse form of knowledge acquisition, approaches and motivations to these technologies. Additionally, as these technologies emerge, and are being adopted by academic libraries, academic librarians must become better experienced at flexible SMT interaction with users (Mandernack & Fritch, 2001). This is necessary as users continue to flock libraries precisely because they desire a place where



knowledge transfer exists in a social context that is recognised, trusted, celebrated and beneficial to them (Gorman, 2004).

Mandernack and Fritch (2001) also stressed that the value-added services of academic librarians' area of professional proficiency and social influence, sharpened and cultivated over years of working with information source would be of immense usefulness when harnessed with SMT. Mishra (2008) noted that the ability of academic librarians' to define and promote the library as a social place characterised by professional expertise would determine whether libraries eventually become empty shells or thriving research, educational, and entertainment centres in their communities. Mandernack and Fritch (2001) concluded that clientele might find themselves more likely to turn to services offered by academic libraries when faced with a need for high-quality and substantiated information because of information glut prevalent on the internet. It is at this juncture that academic librarians must display their prowess in the usage of these technologies, to serve their clientele (who are at a phase of information anarchy) better.

Roblyer, McDaniel, Webb, Herman and Witty (2010) also utilised Facebook in their library and contended that academic library must create a relationship with patrons before essentially promoting library services to them. Graham, Faix and Hartman (2009) affirmed that Facebook was used to provide reference services, step-by-step library usage and to promote library services at the Kimbel Library in the University of Carolina. Cooper and May (2009) described the implementation of a Blog at a small academic library in Alabama as a tool in reaching out to students, regardless of their presence on campus or previous affinity with the library. Draper and Turnage's (2008) survey of 265 academic librarians found Blogs were overwhelmingly used to market the library's services, while Belden (2008:99) emphasised that using external sites, such as "Wikipedia and MySpace, was influential in supporting the electronic databases of a small academic library in North Texas".

Farkas (2006:122) maintained that "academic libraries have a vital role, as educators in the online environment; that is, it is a different thing to be where library users are and at the same time being useful to them" and academic libraries must pursue SMT with specific goals in mind. According to Murray (2006:1), "as of September 2006, eighty-one libraries have Facebook profiles, twenty academic libraries have MySpace profiles, and an unknown number of

individual librarians have MySpace/Facebook profiles. Several library-related groups exist on both MySpace and Facebook such as Librarians and Facebook group with 143 members in October 2006 and 5,349 members in 2017". In essence, academic libraries should not just follow the hype of SMT but should know that the main reason for adopting and using SMT in rendering library services is to cater to the needs of her clientele in ways that serve their interest and not the other way around.

Gardner and Eng (2005) avowed that many students now perceive their learning as mobile and use the library remotely, so it is imperative that academic libraries have an infrastructure that facilitates remote usage of their resources. It is crucial that the structures work properly, are consistently maintained, and that any problems are dealt with swiftly since Generation Y students have extremely high expectations when it comes to technology in academic libraries and will not tolerate disruptions of service. With so many students now doing library activities in remote locations, academic librarians need to go beyond traditional phone reference by providing round the clock library services embedded with SMT. These services, already popular in academic libraries in developed countries, allow users to email their reference questions or chat at real-time with an academic librarian when the information need arises, regardless of where they are physically located. This is because clientele have high expectations; they expect customisation, are technology savvy, and utilise new communication modes which are based on the principles of SMT.

A study in 2000s indicated that almost all academic library administrators and the society at large in USA saw no reason why libraries should be involved with SMTs (De Rosa, Cantrell, Havens, Hawk, Jenkins, Gauder & Cellentani, 2007). The importance of academic libraries in the cyber-space was seen to be inappropriate given the features of SNS, and concerns on inadequate time and physical resources spent on SNS were raised. However, the importance of operating SNS in academic libraries has been confirmed via these technologies (Chu & Meulemans, 2008). They concluded that given the technological nature of MySpace and Facebook, as well as other SMTs, academic libraries should continue in adopting and using SMT appropriately in their academic community when opinions of patrons have been sampled on how these SMTs can be leveraged to serve them better.

McCallum (2015), in a survey of 600 academic librarians, discovered that more than 70% of libraries are using SMT, and sixty percent have had an SMT account for a minimum of three years. Thirty percent of academic librarians post on SMT platforms at least daily, while Facebook and Twitter has the highest dominance, but the variety of networks used is increasing at an unprecedented rate. Roblyer, McDaniel, Webb, Herman and Witty (2010) noted that college libraries are tapping into Facebook and MySpace. Chu and Du (2013) observed through an electronic survey of 140 academic libraries with a response rate of 27%. The outcome of the study revealed that 27 libraries with (71.1 %) used SNS, 5 (13.1 %) were prospective consumers, and 6 (15.8 %) were not interested in using these SMTs. The geographical locations of libraries that have been using SNS are Europe (30%), China (7%), Korea (4%), United States (18%), Hong Kong (15%), Singapore (7%), Canada (4%), Taiwan (7%), and Japan (4%). The outcome of the study also indicated that Facebook with (62.9%) and Twitter with (62.9%) were the most generally accepted SMTs in academic libraries.

Farkas (2007:27) explained this uniqueness that “many academic libraries have established a presence via SMT with hyperlinks to products and information services aimed for online students”. Similarly, the Brooklyn College Library has added a hyperlink to MySpace portal which is a linkage to catalogue and databases, as well as, electronic documents on how to access library resources outside campus”. Mack, Behler, Roberts and Rimland (2007:5) investigated which SMTs students use in asking reference questions or whether they prefer the face-to-face form of communication. Students in this study favoured using Facebook and email than face-to-face. Also, the reference librarian established the use of Facebook in communicating with students. Furthermore, Matthews (2006:306) stated that “the reference librarian had the opportunity of networking with 1,300 first-year mechanical engineering students on Facebook out of 1,700. This provided an ample opportunity to promote library products and services to 75% of them”.

Mathews (2006:307) avowed that Facebook had helped achieve the objective of promoting the library as an object of networking library patrons and also meet their real-time information needs. Another means of helping students when they are not physically in the library is to go where they are embarking on research. The undergraduate libraries at Harvard University instituted a “Roving Librarian” project in spring 2003, bringing academic librarians to spaces on

campus where they would not usually be found, such as the student union building (Connor, 2014:12). By using these technologies academic librarians can reach distant clientele and have a better influence on research being done by undergraduates at their institutions (Gardner & Eng, 2005).

But despite the advantages of these SMTs, an evaluation of 366 Valparaiso University first-year students on using Facebook and MySpace as an outreach medium of reaching clientele. Connell (2009:12) suggested that academic librarians should “proceed with caution” on this decision. The findings of the study revealed that despite the fact that most student see this as laudable, 12% viewed this idea as an intrusion on their privacy. Previously, the findings of Chu and Meulemans (2008) indicated that students were sceptical in using Facebook or MySpace in relating with academic librarians. They prefer communication via email which they opined is a formal way of communication. Hendrix and Hasman (2009:46) study also revealed that the result of the study was “inconclusive in defining the significance of Facebook for health sciences libraries”.

Schwartz (2009:13) is one of the few scholars who hold a strong view about the benefit of these forms of communication. He affirmed that “Facebook is a part of a larger society, a cyberspace in which we network, it helps keep the communication door easily accessible, increases the potential for a pervasive and virtual discourse”. Academic libraries must therefore, embrace the technological revolution and relate with students who are struggling to cope with the mass of materials available to them and decipher which one is appropriate to use. Academic libraries can no longer be laid back by expecting her users to approach them, but meet these clientele wherever they are, find out their needs, and adapt library services to meet those needs. In practice, thus supplementing existing services with new ways of marketing and online services which serves library clientele better. Hence, the academic library needs to employ “SMT to create awareness about the library’s central objective more broadly which is always user-centric” (Rogers, 2009:3).

As the pace of these changes accelerates, the greatest challenge now is how to keep abreast with the trend so as not to remain irrelevant and insignificant in the knowledge economy (Tella & Akinboro, 2015). Indeed, the latest academic library usage statistics show that there exists a dissonance between the environment, content that academic libraries provide and content that

information consumers want and use (De Rosa, 2005; Miller, 2006). Predisposition for unlimited services, self-service, greater levels of satisfaction, effectual and ease of use have been identified as some of the indicators of this dissonance (Kwanya, Stilwell & Underwood, 2014).

Therefore, academic library service characteristics that support self-service or dis-intermediation (Boyd & Ellison, 2007), user satisfaction and seamlessness such as ease of use, and convenience are now as important to the contemporary library user as quality and trustworthiness of the products that academic libraries have to offer (Kwanya, Stilwell & Underwood, 2014). Moreover, this can only be achieved via SMT which should form the bedrock of 21<sup>st</sup>-century academic library in the provision of library and information services. However, Baro, Joyce and Godfrey (2013) maintained that there is paucity of SMT reseach in developing countries as well as the use of SMT is still being at the infancy stage in Africa.

### **1.1.2 Use of SMT in the Provision of Library and Information Services in Nigerian Academic Libraries**

In Africa, academic libraries are still struggling with the concept of SMT and the development of SMT library services has been very slow and unplanned (Makori, 2012). Application and use of these technologies in developed countries such as United Kingdom, Unites States and Australia have indicated the essence for academic libraries in developing countries to join the SMT drive (Zohoorian-Fooladi & Abrizah, 2013). The introduction of SMT into the mainstream of the provision of library and information services in Nigeria is still at the embryonic stage (Baro & Godfrey, 2015).

Therefore, there is a digital divide between the library and its clientele, who are mostly digital savvies (Kim & Abbas, 2010). Most academic libraries in Nigeria are still stuck with the traditional way of providing library services which are constrained by time and location, and debar synchronous flow of information simultaneously through cyber systems that are boundless (Salmon, Fernandez, & Post, 2010). On the other hand, their counterparts in the developed world have adopted the paradigm shift with services, products, and information from being collection-focused to user-focused. That is, getting clientele to telling us their stories in the way they deem fit and wherever they want to tell it.

These emerging technologies, possibilities and conversations are rapidly altering the fundamental concepts of librarianship (Miller, 2006; Casey & Savastinuk, 2007) in which Miller (2005) asserted that leveraging the approaches typified by SMT offers academic librarians prospect to attend to clienteles innovatively which goes beyond the four-walls of the library and capture a broader audience (Baro & Godfrey, 2015). This further complicates the situation for academic libraries that are not willing to follow the tide of the technological innovation that SMT has brought forth, a fundamental problem that pervades academic libraries in Nigeria (Onuoha, 2013).

These technologies have also created new expectations for better usability, faster response to clienteles needs with better products (Kwanya, Stilwell & Underwood, 2014) and making visible the boundaries of library services provided within a physical space with constraints on time (Shuman, 2001; Chad & Miller, 2005), strict membership requirements, limited information resources and inadequate user involvement in influencing the services they get (Kwanya, Stilwell & Underwood, 2012). It is therefore, pertinent that academic libraries be vast in the knowledge of these technologies to be relevant to their technologically inclined clienteles (Ezeani & Igwesi, 2012).

Baro and Godfrey (2015) in their study which aimed at investigating the extent to which these emerging technologies are being used to render library services, identified challenges such as dearth of SMT skills, electricity failure, shortage of time, scarcity of infrastructures, conservative attitude of some librarians, and absence of requisite policy guiding emerging technologies as deterrents in the use of technologies in a developing country like Nigeria. Okonedo, Azubuike and Adeyoyin (2015) corroborated the preceding when they maintained that inadequate Internet access, absence of funds to pursue SMT training, insufficient time and poor electricity supply are major challenges militating against the adoption and use of these technologies in academic libraries in Nigeria. Olajide and Oyeniran (2014) concluded in their study that more than fifty percent of academic librarians are yet to be vast in the technical capability of using SMT; Facebook has a wider coverage and Skype, Twitter, LinkedIn has the least usage among them. Extant literature has also shown that there is a dearth of adequate understanding of causes

militating academic libraries in adopting SMTs for service delivery in developing countries like Nigeria (Zohoorian-Fooladi & Abrizah, 2012).

Ezeani and Igwesi (2012) asserted that the bad economic state of Nigeria as a nation present academic libraries with no choice than to embrace SMTs in the provision of library services due to the dwindling in library budget. Thus, SMT should become a veritable source for serving library clientele in a robust way which is not confined to a physical space and curb undue spending. Therefore, this should ensure that academic libraries in Nigeria remain relevant in the phase of information explosion which is permeated by SMT.

## **1.2 Contextual Setting of the Study**

The six geo-political zones in Nigeria are North-Central, North-East, North-West, South-East, South-South and South-West, but the study is conducted in six selected universities in South-West, Nigeria. South-West geo-political zone in Nigeria consists of Ondo, Ogun, Oyo, Ekiti, Lagos and Osun State. There are 33 universities in the zone, and the universities are categorised into Federal Universities (6), State Universities (8) and Private Universities respectively (19). Six universities were purposively selected, namely: Ekiti State University (EKSU) and (LASU) Lagos State University (State Universities); Babcock University (BU) and (CU) Covenant University (Private Universities); and University of Ibadan (UI) and (UNILAG) University of Lagos (Federal Universities). The people of South-West are predominantly Yoruba one of the major ethnic groups in Africa. South-West, Nigeria was purposively selected for this study because the region is referred to as pivotal of research activities in Nigeria and thus the most academically progressive (“South West Region”, 2016). Figure 1 shows the map of Nigeria and the South-West geo-political zone is traced in red.



**Figure 1.1: Map of Nigeria showing the South-West States (Source: Travel Hub Nigeria, 2015)**

### 1.3 Statement of the Problem

The essence of University library which are called academic libraries is to provide library services to the university community and the society. There is therefore, the need for such library services targeted at the 21<sup>st</sup>-century clientele to be seamless and effective (Kim & Abass, 2010). Contemporary library services which are embedded within SMT are user-centric and promote delivery of real-time library and information services which are crucial in supporting curriculum and research.

Across developed countries, provision of service delivery to library patrons is becoming robust with innovative technologies (Boyd & Ellison, 2007). Thus, McCallum (2005) affirmed that these technologies are being utilised remarkably well by academic librarians in western countries thereby given the library a face-lift in service delivery to library clientele whose vast majority are



net generation (Kim & Abbas, 2010). This is simply because there is a switch from the traditional mode of service delivery to student-centred library services through these technologies (Bailin & Grafstein, 2005; Aqil, Ahmad, & Siddique, 2011; Mutula, 2007), significantly making academic librarians in these countries of utmost value in the provision of enhanced library services to their clientele than never before (Mishra, 2008). Nevertheless, this is contrary to what is being obtainable in academic libraries in a developing country like Nigeria (Baro & Godfrey, 2015).

Some empirical evidence seems to suggest that these libraries in Nigeria are yet to leverage the technological innovation introduced through SMT to library services (Okonedo, Azubuike & Adeyoyin, 2013). Quadri and Idowu (2016) noted that there is a lack of these SMTs awareness between academic librarians in Nigeria. This is substantiated by Gbaje (2007) who discovered that the change from the conventional library services to a virtual setting for academic libraries in this electronic era is immense, based on the effectual features of SMT which demands constant analysis to comprehend this occurrence well. In the same vein, Onuoha (2013) and Olajide and Oyeniran, (2014) noted dearth of SMT research, lack of SMT education (Tella, Olorongbe, Akanbi-Ademolake, & Adisa, 2013) and absence of requisite standards, plans and policies concerning adoption and usage of these technologies in academic libraries in Nigeria (Baro & Godfrey, 2015). Thus Olasina (2011) decries the dearth of SMT use in the provision of library services in Nigerian university libraries.

Baro, Seimode and Godfrey (2013) suggested that present and upcoming research should, of essence focus on the way these technologies can be adequately employed and leveraged in the provision of library services for the overall effectiveness of 21<sup>st</sup>-century service delivery in Nigerian academic libraries. Therefore, this is the gap the present study filled and systematically investigated the adoption and use of SMT for the provision of library and information services in academic libraries of South-West, Nigeria.

### **1.3.1 Objectives of the Study**

The aim of this research is to investigate the use of SMTs in the provision of library and information services in academic libraries of the South-West, Nigeria. Two main research objectives were addressed by the study:

1. To ascertain the extent of adoption and use of SMT in the provision of library and information services in academic libraries of South-West, Nigeria;
2. To identify factors influencing adoption and use of SMT in the provision of library and information services in academic libraries of South-West, Nigeria.

### **1.3.2 Research Questions**

The following research questions were investigated:

1. What is the level of awareness, adoption, and use of SMT by academic librarians for the provision of library and information services of South-West, Nigeria?
2. What are the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries?
3. What are the factors influencing the adoption and use of SMT for the provision of library and information services by academic librarians?
4. How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services?
5. What institutional mechanisms are used to promote the use of SMT in the provision of library and information services by academic librarians?

### **1.3.3 Research Hypothesis**

The aboved research questions and variables from the theoretical models underpinning the study, the following null hypotheses were tested:

**H<sub>01</sub>:** There is no significant relationship between SMT awareness and use behaviour of academic librarians in providing library and information services.

**H<sub>02</sub>:** There is no significant relationship between (perceived and actual benefits) and use behaviour of SMT by academic librarians in providing library and information services.

**H<sub>03</sub>:** There is no significant relationship between SMT use behaviour of academic librarians and their professional development in South-West, Nigeria.

**H<sub>04</sub>:** There is no significant relationship between relative advantage, image, visibility, result demonstrability, and SMT use behaviour of academic librarians in providing library and information services.

**H<sub>05</sub>:** There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services.

**H<sub>06</sub>:** There is no significant relationship between specific motivation/gratification and SMT use behaviour of academic librarians in providing library and information services.

### **1.4 Significance of the Study**

This research is consequential and relevant in some ways. Firstly, it is based on three theories to reveal new insights into technology adoption and acceptance. Secondly, the study provides useful information on incorporating SMTs into the provision of library and information services in academic libraries in Nigeria for efficient and quality service delivery. Thirdly, the study provides a platform for the improvement of a general policy structure on SMT for academic libraries in Nigeria. And lastly, the study equips academic librarians better to provide effectual library services using SMTs.

## **1.5 Delimitation of the Study**

The study was delimited to the use of SMTs in the provision of library and information services in academic libraries of South-West, Nigeria. The study did not cover all the academic libraries in South-West geopolitical region, but was limited to the University of Lagos, Ekiti State University, University of Ibadan, Babcock University, Lagos State University and Covenant University. The six universities were selected because they are in the forefront of the implementation of SMT in their various categories. The study covered academic librarians and 4<sup>th</sup> year computer science students in the six selected universities under study. The study was inhibited by the dearth of literature on the use of SMT in the provision of library services in developing countries like Nigeria (Baro & Godfrey, 2015). The study thus, consulted literature, particularly journal articles, in western countries and some developing countries. The study was supported by three theories which are IDT, TAM, and U&G.

## **1.6 Structure of the Dissertation**

This thesis comprised of the following seven chapters.

### **Chapter One: Introduction**

This chapter provides the context for the study. It covers background, research objectives, research questions, significance of the study, statement of the problem and research hypotheses, scope and delimitation.

### **Chapter Two: Theoretical Framework**

This chapter presents the theoretical frameworks upon which the study is based. It discusses various theories including TAM, IDT, and U&G.

### **Chapter Three: Literature Review**

The chapter presents a comprehensive review of existing theoretical and empirical literature covering all research questions and research objectives. The gaps in literature are provided and linked to respective research questions.

### **Chapter Four: Methodology**

This chapter examines the research methodology and methods including the paradigm; approaches; research design; study population; sample size; data collection methods; validity and reliability of the instrument; data analysis and ethical issues.

#### Chapter Five: Data Analysis and Presentation of Results

The chapter provides an analysis and presentation of results using theory as the framework.

#### Chapter Six: Discussion of Findings

The chapter discusses the findings of the study using relevant theory and extant literature. The contribution of the study to theory, practice, policy, and society is provided, as is the originality.

#### Chapter Seven: Summary, Conclusion, and Recommendations

This chapter provides a summary of findings, conclusion, and recommendations for further research.

### 1.7 Definitions of Terms

**Social Media Technologies (SMTs):** These are computing-mediated technologies that enables individuals or group of people in creating, sharing, and exchanging information at real-time within an online community.

**Social Networking Sites (SNS):** These are online platforms that allows users to create a public profile and interacts with other users on the website.

**Blog:** This is a virtual platform maintained by a person and contain consistent records of comment, explanation of incident or other resources such as images, records, and are organised in reverse sequential order.

**Wikis:** This is a SMT tool established through the collaborative effort of a group of users with common interest which permits anyone to add content and also be privilege to also edit

**Podcast:** This is a digital file downloaded from the Web and listened to whenever and wherever you want.

**Vodcast:** This is a collation of downloadable video collections (AVI and MPEG).

**Social Bookmarking:** This is the practice of internet users identifying and labelling web pages for use later.

**Social Tagging:** This is the method by which users classify or categorise bookmarked sites for retrievability.

**Really Simple Syndicate (RSS):** These are feeds that update users about the additions or changes which take place on websites of interest, providing updates from one source instead of accessing individual websites.

**Instant Messaging (IM):** This is an online communication between two or more people using text based short messages via the web at real time.

**Media Sharing:** These are SMTs meant for media and video sharing.

## **CHAPTER TWO**

### **THEORETICAL FRAMEWORK**

#### **2.1 Introduction**

The theoretical framework of a research project relates to the philosophical basis on which the research takes place. Moreover, it forms the link between the theoretical properties and practical components of the inquiry being undertaken. Thus, having implications for every decision made in the research process (Mackenzie & Knipe, 2006). That is, a theoretical framework is an assemblage of interconnected concepts that determines what things to measure and what statistical associations to look for. Miles and Huberman (1994:18) opined that “theoretical framework could either be in graphical or in narrative form which entails the things to be studied in a research, that is, key elements, theories or constructs and the assumed relationship among these constructs”.

Welman, Kruger, and Mitchell (2005) on the other hand, defined a theory as a statement that identifies the relationships between variables and explains occurrences of human behaviour. Theories and models are used to shape the pursuit of answers to research questions as to why, what, and how things are happening (Shikongo, 2010); they are interrelated statements intended to explain aspects of social life (Babbie, 2007). Similarly, Strauss and Corbin (1990) defined theory as a model or framework for observation and understanding, which forms both what we perceive and how we comprehend it. It allows the researcher to make connexions between the intangible and the tangible; the hypothetical and the practical; and assumed statements and observational statements in order to infer meaning from the research.

This study addressed the following research questions:

1. What is the level of awareness, adoption and use of SMT by academic librarians for the provision of library and information services of South-West, Nigeria?
2. What are the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries?

3. What are the factors influencing the adoption and use of SMT for the provision of library and information services by academic librarians?
4. How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services?
5. What institutional mechanisms are used to promote the use of SMT in the provision of library and information services by academic librarians?

To address the above research questions, the study adopted the following theoretical models: Innovation Diffusion Theory (IDT) (Moore & Benbasat, 1991); (TAM) Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989); and (U&G) Uses and Gratification theory (Zohoorian-Fooladi & Abrizah, 2012). TAM addressed the SMT use behaviour of academic librarians and library clientele; IDT discussed the innovation adoption rate of SMT among academic librarians and library clientele; while U&G measured motivation and gratification factors of SMT usage by academic librarians and library clientele.

## **2.2 Innovation Diffusion Theory (IDT)**

Introduced in 1962, the Innovation Diffusion Theory (IDT) was fine-tuned by Rogers (1995). According to Rogers (1995), the 1943 investigation by Ryan and Gross using interview-based methodology has remained the prime diffusion research methodology ever since. Although, a number of researchers from rural sociology (Fliegel & Kivlin, 1962) and other disciplines (Weinstein, 1986) have developed on the Ryan and Gross' work to conduct studies and develop theories related to the diffusion of innovations. Surry (1997) affirmed that the scholar responsible for noteworthy findings and convincing theories associated to diffusion is Everett M. Rogers. Consequently, Rogers' book *Diffusion of Innovations*, first published in 1960, and now in its fourth edition (Rogers, 1995) is the closest any researcher has come to presenting a comprehensive theory of diffusion.

The method of embracing novel inventions or innovations has been reviewed for over three decades, and a unique adoption archetypal is depicted by Rogers which he termed *Diffusion of Innovations* (Sherry & Gibson, 2002) and considerable investigation from a wide variation of



profession has used IDT as a framework. Stuart (2000) cited some of these areas of specialisation as public health, political science, technology, history, communications, economics and education, and described Rogers' theory as a generally used theoretical background in the space of technology diffusion and adoption. Innovation diffusion theory (IDT) offers strong concepts and a body of practical effects appropriate to the study of technology assessment, adoption and application (Strüker & Gille, 2010). Furthermore, the diffusion of innovation denotes the procedure by which changes spread to individuals within an organisation or organisations within a population over time (Rogers, 1983).

Innovation Diffusion theory (IDT) advanced the basic underpinning combination of adoption dissemination of information throughout different specializations. This approach is strongly applied to a method of an enquiry directly or absolutely across the effect it portrays and combination with one or two theories. This theory has impacted other investigation of innovation of diffusion (Boyne, Gould-Williams, Law & Walker, 2005). The introduction of an innovation into a context may thus precipitate a process of evolution which, over time, creates a mutually supportive ecology between innovation and context. Thus, the theory affords instruments, both quantifiable and qualitative, for measuring the possible level of flow of technology, and moreover, pinpoints many reasons that accelerate or hamper technology acceptance and application (Al-Somali, 2012).

These reasons involve features of the technology, personalities of those adopting the technology, and the techniques which adopters comprehend, and are convinced to embrace the technology (Rogers, 1983). Fichman (1992) opined that innovation diffusion has now become a common theoretical model for quantitative research in information technologies. Subsequently, IDT inquiry has progressed from an emphasis on constructs influencing the adoption or non-adoption of Information Technology (IT) (Tornatzky & Klein, 1982) to its application in an establishment (Premkumar, Ramamurthy & Nilakanta, 1994) and lately to the structural learning (Fichman & Kemerer, 1997) and implementation (Ramamurthy & Premkumar, 1995) that might be the effect of IT plans. Currently, IDT maintained that the organisation's revolution, organisational characteristics, and an environment where it operates can impact the dissemination and achievement of IT initiatives (Fichman, 2000).

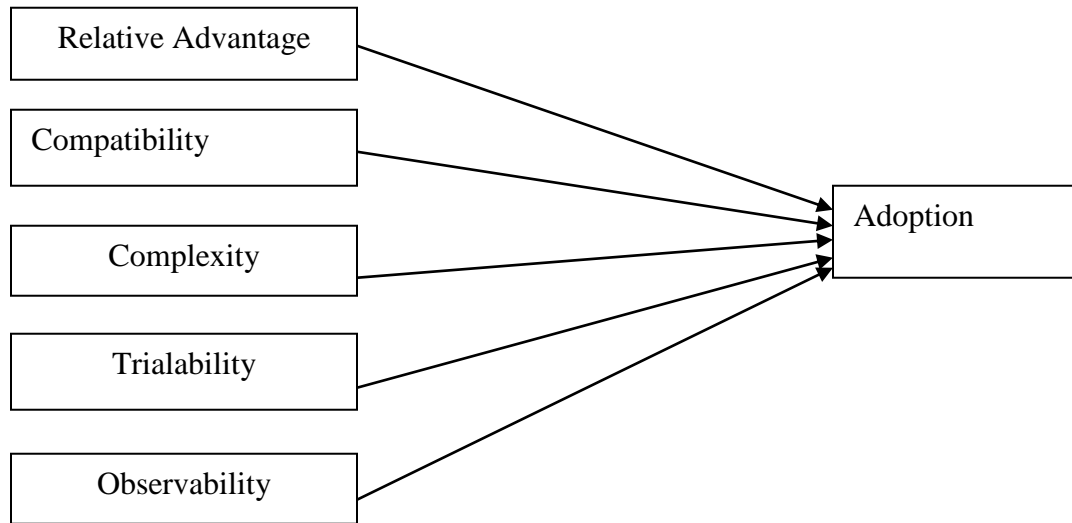
An innovation is "a proposition, application, or thing that is perceived as innovative by a particular person or group of people" (Rogers, 1995:1). What is sacrosanct to an adopter is whether the idea is novel and not concerned about the timing of its actual creation. Although academic libraries in developed countries have adopted and are using SMT in service delivery, however, to academic libraries in Nigeria, it is an innovation. Also, novelty also does not automatically imply or that the innovative idea is farther valuable to a person. IDT explains the way an invention increases through a population; that is, it explains how academic librarians opt for the 21<sup>st</sup>-century way of providing services to the traditional method because SMT makes service delivery better and seamless. Factors like timing of innovation and societal influence can be used to understand the procedure in what way a certain set of people accept, adjusts to, or discards a specific innovation. Diffusion theory takes a universal view of the extent of a change transversely (Straub, 2009). Hence, the global acceptance and usage of SMT in academic libraries in developed countries. Rogers, (2002) stated that an innovation is transferred across specific networks between the members of a community.

Furthermore, IDT research has emphasised five areas which are innovation characteristics that may influence the adoption which are decision-making process that occurs when individuals consider adopting an innovation; specific features that make them possibly to adopt an innovation; the effects for a person or a group of adopting an innovation; and communication channels used in the adoption process. The approach taken by IDT is perhaps radically different when compared to those of other theories of change. The reason being that, instead of focusing on persuading individuals to change, "IDT sees transformation as being mainly about the advancement of products and activities that are appropriate to meet the desires of individuals and a group of people" (Rogers, 1995 cited in Agarwal and Prasad, 1997:558). That is, there is an evolution from the traditional method of providing library services to using SMT for the provision of library services in academic libraries. IDT assumes it is innovation that changes but people do not change. For example, academic libraries have not changed but the manner in which they provide services to clientele have changed via SMT. IDT postulates that "in technology adoption, initial decision to use the system and the interest in sustaining its usage is paramount" (Agarwal & Prasad, 1997:558).

There are four main elements of diffusion: innovation, time, communication, and social system through which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995:5). The diffusion theory states that the views of adopters about the features of the innovation influence its decision to adopt the system. The implication of this is that the way academic librarians view SMT will determine whether they will use it in the provision of library services or not. This view has been widely supported by a variety of innovations, including many IT innovations (Van Slyke, Lou and Day, 2002). A benefit of this theory is that it contemplates a more significant number of elements than does TAM, and consequently offers a deeper interpretation (Plouffe, Hulland, & Vandebosch, 2001). Rogers (1995) observed that the main issues behind the growth in the diffusion of innovation research stems from the difficulty of adopting the innovation (Rogers, 1995). Thus, the complacent attitude of academic librarians to the adoption and use of SMT for providing library services; instead, they prefer the traditional kick and push method of service delivery.

In this theoretical model, the adoption procedure is integrated with the diffusion practise. Diffusion is comprised of distinctive acceptances by an individual and defines the implementation procedure among a group of people within a space of time. Therefore, in this context, adoption is examined considering its position in diffusion theoretical model. The choice of adoption procedure defines five main phases that a person or group of people experience through their appraisal of a change or an innovation. The first stage occurs once a person is conscious of an innovation or change. The awareness of this change is influenced by personal characteristics which are hypothesised as a character feature that encourages transformation display in a person (Wood & Swait, 2002), socio-economic influences, and approach to transformation instruments like mass media (Bandura, 2001). The second phase is the point of persuasion in which a person has developed adequate understanding about the innovation's significant features to assist in making a subjective conclusion; the consequence which could be a favourable or unfavourable interpretation of the innovation. Phase three is the decision period, which is based on a person's choice either to embrace or reject the innovation. While, stage four which is the implementation phase, is when an individual decides to embrace his or her decision as regards the innovation. Finally, in phase five which is the confirmation stage in which a person ponders on the decision and implementation phases and reconsiders if accept or reject the innovation (Rogers, 1995).

There are five attributes of innovation that affect adoption which are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995). First, the relative advantage of an innovation is the observation of an individual that the innovation will be superior or inferior to related ideas. Thus, innovations that are observed to be superior will be adopted quickly than others will. Compatibility is the observation that a specific innovation is congruent with existing understandings of similar and past ideas. Innovations that fit into an individual's existing understanding or schema will be more easily adopted. Complexity refers to the perception of how difficult it is to comprehend an innovation, and it is hypothesised to be negatively related to the rate of adoption of an innovation (Rogers, 1995). Trialability refers to the accessibility of an innovation to an individual for experimentation. Electronics stores encourage trialability by displaying video games for people to play while shopping - the opportunity to try out an innovation will facilitate the adoption of an innovation which can be direct or indirect. Finally, observability is characterised by how available and visible an innovation is to an individual. The idea behind observability is similar to unspoken peer pressure which implies that if everyone else has an innovation, an individual will be more likely to adopt it as well. Observability leads to a social threshold - the point when an innovation becomes so ubiquitous in a culture that even those who would not normally adopt consider its adoption. Technological and other innovations located within the sphere of human activity have an added symbolic dimension involving the representation and understanding of the innovation within the context of human culture and meaning (Pennington, 2004). This implies that the introduction of SMT into library services has precipitated a revolution in academic library and overtime has created a mutually supported paradigm between academic libraries and library clienteles. The Innovation of Diffusion Theory (IDT) is presented in figure 2.1 diagrammatically.



**Figure 2.1: IDT (Source Rogers, 1995)**

Rogers (1995) cited in Agarwal and Prasad (1997) explained that even though innovation usually presents its adopter’s new ways of addressing routines and daily chores, the uncertainty as to whether the innovations will be superior to existing ones presents a considerable obstacle to the high rates of adoption. That is, will SMT help improve library routines of delivering library services compared to the traditional way of rendering services before? A fundamental question this study intends to answer. Taylor and Todd (1995) have shown that IDT consists of six major components: innovation characteristics, individual user characteristics, adopter distribution over time, diffusion networks, innovativeness and adopter categories, and the individual adoption process.

Moore and Benbasat (1991) stated that the purpose of the IDT is the provision of a conceptual paradigm to persons from any discipline interested in the diffusion of an innovation. It provides the understanding of the process of diffusion and social change within any human context. The IDT provides properly developed concepts and shows evidence of technology evaluation, adoption and implementation, as well as tools.

Chew, Grant and Tote (2004), in a study of family physicians and the use of the internet, adopted IDT to identify strategies for increasing internet use by family physicians. This was “carried out by a mail survey of 53 family physicians in a midsized, North-Eastern metropolitan area in the United States” to review internet use and identify sources from which family doctors attain

medical information (Chew *et al.*, 2004:645). The study used IDT to describe the procedure by which physicians make use of the Internet. The findings revealed that doctors' use of the Internet was initiated by drop-in patient rates that resulted in doctors' devoting time to improve their ICT skills. It was because of the time spent using the internet that the doctors experienced familiarity with internet features and their online search skills developed. They were able to explore further the Internet as a tool.

Chew *et al.* (2004) concluded that the innovation attributes of the IDT influence the adoption and use of ICT among the family physicians' user group. Evidence from the study suggested that the rate of internet adoption and use by doctors may increase if more time is provided for the doctors to use the technology. The study recommended regular Internet training to allow the family doctors to increase their level of familiarity and for advanced applications on the Internet which is separate to the basic online searching that they presently use. The study proposed a revised timetable for the doctors to accommodate internet skills training. Lastly, the study observed that gender and recent internet training are not predictors of internet use by this group of professionals.

Folorunso, Vincent, Adekoya and Ogunde (2010) tested the attributes of the IDT using social networking sites (SNS) as the innovative practice. The study comprised of over 100 students of the University of Agriculture, Abeokuta, Nigeria. The tools for data analysis included the Principal Factor Analysis and Multiple Regression. On the one hand the results suggested that the constructs of relative advantage, complexity, and observability of SNS do not positively correlate with attitude towards using the technology. While on the other hand, it indicated that the compatibility and trialability of SNS positively correlate with the attitude towards using the technology.

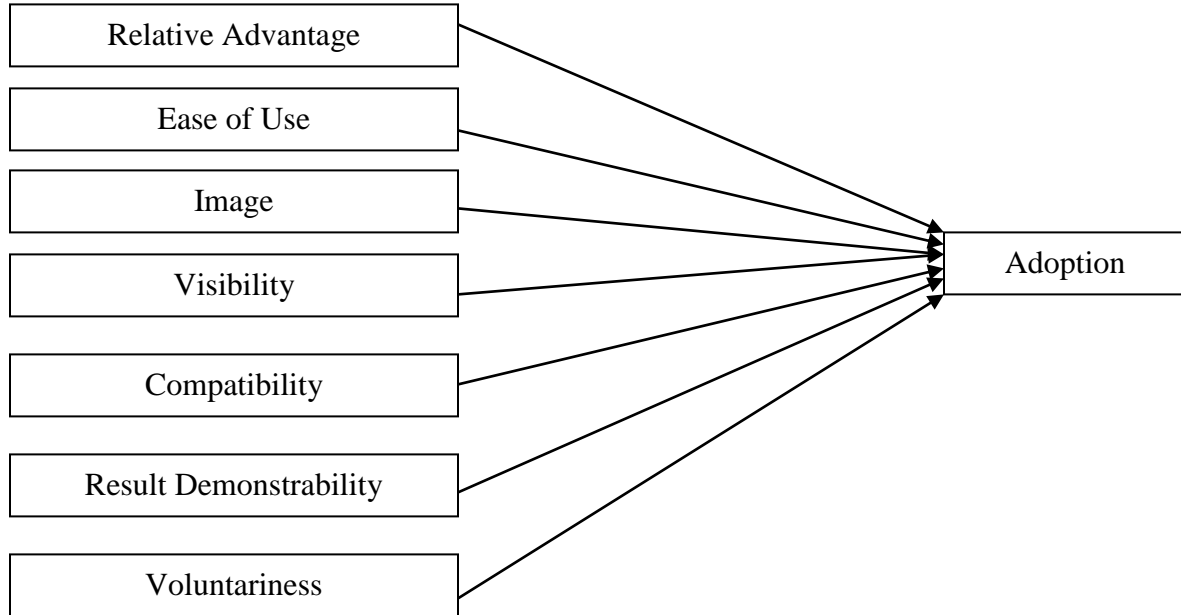
Olatokun and Igbinedion, (2009) presented work on the adoption of automatic teller machines (ATM) in Nigeria and the study tested the attributes of the theory of IDT empirically, using ATMs as the target innovation. The population comprised ATM users in Jos and the sampling frame technique was applied, thus 14 banks that had deployed ATMs were selected. Cluster sampling was employed to select respondents for the study. The data collection instrument was a structured questionnaire administered to 600 respondents of whom 428 were returned, giving a

response rate of 71.3%. The factor analysis revealed that respondents believed in their safety of using the ATM; that ATMs were quite easy to use and fit in with their way of life; that what they observed about ATMs convinced them to use them; and that the ATM was checked out before they used it.

Zhu, Liu and Chuan (2009) focused on the 3G mobile phone usage in china with viewpoint from IDT and TAM. The study analysed reasons behind the IDT and TAM perspectives. Lee (2004) applied Everett Rogers' IDT model to analyse nurses' perceptions toward using a computerised care plan system. Twelve nurses from three respiratory intensive care units in Taiwan voluntarily participated in a one-on-one, in-depth interview. Data were analysed by constant comparative analysis. The content that emerged was compared with the model's five innovation characteristics (relative advantage, compatibility, complexity, trialability, and observability), as perceived by new users. Results indicated that Rogers' model can accurately describe nurses' behaviour during the process of adopting workplace innovations (Rogers, 2000). In addition, related issues that emerged deserve further attention to help nurses make the best use of technology (Lee, 2004). The study concluded that the application of health information technology to improve healthcare efficiency and quality is an increasingly critical task for all healthcare organisations due to rapid improvements in IT and growing concerns with regard to patient's safety.

The IDT has been criticised despite the attempts by the reported successes of the theory to explain the innovation decision process based on the factors determining the rate of adoption and categories of adopters. The limitations of IDT include inclination for only technological aspects of technology adoption (Gillenson & Sherrell, 2002). Stephenson (2003) examined the IDT in the context of agricultural outreach programmes. The assumptions of the IDT were that an innovation might primarily be embraced by a small set of innovative farmers and later diffused to other farmers. The study employed an adoption curve to measure the rate of innovation diffusion. The author stated that over the past 30 years, the theory has been criticised for favouring large wealthy farmers and increasing the inequities in rural areas. He criticised the model for doing more damage than any suggestion of extending knowledge boundaries. The IDT wrongly "assumed that benefits resulting from the adoption of innovations spread and became

homogeneous” (Stephenson, 2003:114). The redefined IDT is represented in the figure 2.2 below.



**Figure 2.2: Redefined IDT (Source: Moore & Benbasat, 1991)**

IDT was adapted for this study by considering relative advantage construct which is operationalised as the extent to which an academic librarian perceives that SMT is effective than the traditional manual method for providing library service to clientele, and the degree to which a student (clientele) perceives that SMT services are better than the traditional services provided by the library. Image construct is operationalised as the extent to which SMT is perceived to enhance the professional status of an academic librarian in the academic library/academic community and the extent to which SMT services is perceived to enhance the academic status of a student among his/her peers. Visibility construct is operationalised in this study as the extent to which an academic librarian can see colleagues using SMT for providing library service to clientele. Result demonstrability construct is operationalised as the extent to which advantages of adopting SMT for the provision of library service to clientele of academic librarians is manifested.



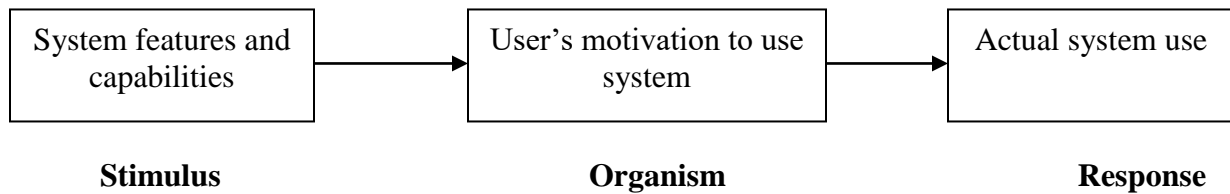
### **2.3 Technology Acceptance Model (TAM)**

The technology acceptance model (TAM) was proposed by Davis (1989) to explain the potential user's behavioural intention to use a technological innovation. TAM is based on the theory of reasoned action (TRA) (1980), a psychological theory that seeks to explain behaviour. However, Venkatesh and Davis (2000) asserted that copious empirical investigations have revealed that TAM consistently elucidates a considerable percentage of the variance (typically about 40%) in usage intentions and behavior, and that the theory compares favorably with alternative models such as the TRA and the Theory of Planned Behavior (TPB). Consequently, this has made TAM the most widely applied model of user acceptance and usage.

Davis (1989) proposed Technology Acceptance Model (TAM) to describe the potential user's behavioural intention to use a technological innovation. TAM involved two primary predictors which are perceived ease of use (EU) and perceived usefulness (PU) and the dependent variable behavioural intention (BI), which Theory of Reasoned Action (TRA) assumes is closely linked to actual behaviour. TAM has become one of the widely-adopted models in Information Systems (IS), because of its appropriate level of comprehension and simplicity (Lee, Kozar & Larsen, 2003). In the past, a considerable amount of effort has been made in explaining and predicting user acceptance of IT. Empirical evidence suggested that TAM is a robust and parsimonious model for explaining usage intentions and behaviour (Davis, 1989).

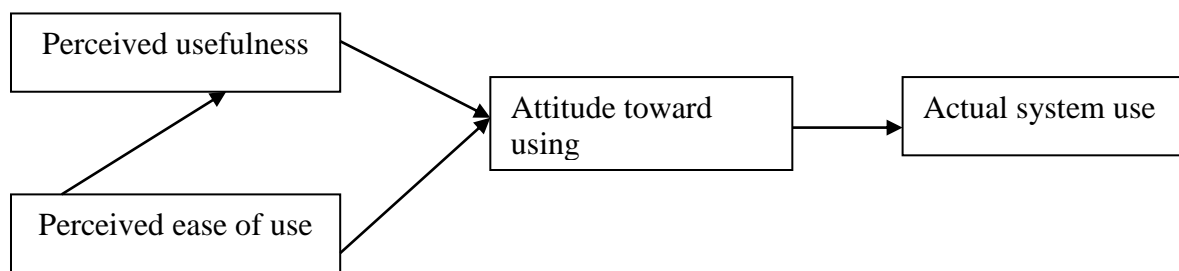
The appeal of TAM is that it is both specific and straightforward. It suggests a small number of factors that jointly account for IT usage. These factors are accurate, easy to understand and can be manipulated through system design and implementation (Taylor & Todd, 1995); also, it can also be generalised across settings. Overall, TAM can successfully guide technology implementation, developments, and innovations within the area of adoption and use of SMT in academic libraries (Yiu, Grant & Edgar, 2007). The reason why TAM is still being used is that it has stood the test of time, and its overarching value adding premise remains appropriate and relevant today, as it did in past years, namely to, "provide an explanation of general determinants of computer acceptance" (Pijpers, Bemelmans, Heemstra & Van Montfort, 2001:960). Davis (1986) proposed that a user's adoption of a technological system is a response that can be explained or predicted by the user's motivation. This, in turn, is directly influenced by an external stimulus consisting of the actual system's features and capabilities. Davies (1986)

isolated the features and capabilities of a system as the major underlying determinant of that system's acceptability by targeted users. A system should, therefore, encapsulate qualities that are sought after by its envisaged users. This allows for acceptance and motivation of potential users to use the system. Only after a potential user has been sufficiently motivated to use the system or the technology do they engage in the actual habit of system use. This is explained in the diagram presented in Figure 2.3:



**Figure 2.3: System Acceptability by a User (Source: Davies, 1986)**

Davies (1986) relied on prior work done by Ajzen and Fishbein (1980) who formulated the TRA to refine his model further. Thus, TAM is deeply rooted in TRA, which proposes that beliefs influence attitudes, which in turn, lead to intentions, and then generates behaviour (Lu, Yu, Liu & Yao, 2003). TAM assumes, usage of a particular technology is voluntary (Davis, 1989) and that once an individual purpose of intention is formed, then their action is without an iota of limitation (Bagozzi, 1992, cited in Kripanont, 2007). This resulted in the TAM model shown in Figure 2.4.

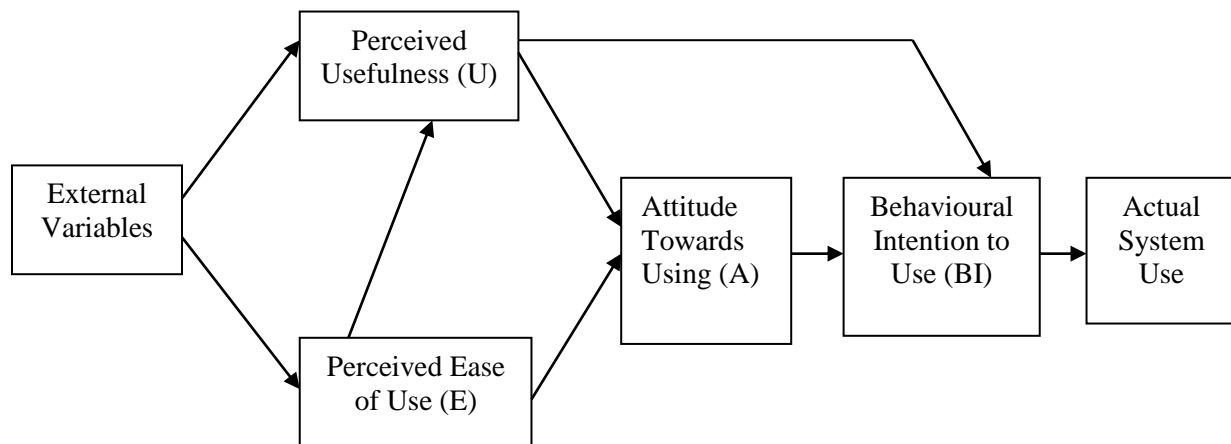


**Figure 2.4: Technology Acceptance Model (Source: Davis, 1986)**

Davis (1986) suggested that users' motivation can be explained by three factors: perceived ease of use, perceived usefulness, and attitude toward using the system. He hypothesised that the attitude of a user toward a method was a key factor which determines if the user will really use or refuse the system. The attitude of the user, in turn, was considered to be influenced by two

major beliefs: perceived usefulness (the extent to which a potential IT user believes that the use of that IT system will enhance that user's job performance) and perceived ease of use (the extent to which a potential IT user perceives or believes that the use of that IT system will be free of effort), with perceived ease of use having a direct influence on perceived usefulness.

For this research, perceived ease of use is operationalised as the extent of ease connected with the usage of SMT by academic libraries for the delivery of library service to clientele and the extent to which a student is of the opinion that accessing SMT library services is free of effort as compared to the traditional mode of accessing library services. Moreover, perceived usefulness is operationalised as the degree to which an academic librarian believes that using SMT will help him/her for the delivery of library service to clienteles and also the extent to which a student believes that accessing SMT library services would enhance his/her academic performance. From the above illustration, if SMT is easy to use, then it will be used by academic libraries for the provision of library and information services. Likewise, if the services are easy to use, clienteles will positively harness them too. However, if the service is not easy to use, it automatically affects the delivery of library service to clienteles. Based on empirical evidence, Davis, Bagozzi, and Warshaw (1989) refined TAM to include attitudes towards using technology rather than just thinking about technology. Davis, Bagozzi and Warshaw (1989) introduced the construct of attitude which they believed would have a direct effect on behavioural intention and which would automatically affect the actual use of the system. This implies that all things being equal, academic librarians form intentions to use SMT because they have a positive attitude towards it. On the contrary, if academic librarians have a negative attitude towards SMT use, there would not have an intention to use in the first place. Similarly, for clienteles, if they have a negative impression to library services provided via SMT, there would not have an intention to harness these services at all. This study adapted TAM which has been successfully applied in examining adoption behaviour of various information systems (Venkatesh & Davis, 2000), in different organisational contexts (Hu, Chau, Sheng & Tam, 1999). TAM is represented in Figure 2.5.



**Figure 2.5: Technology Acceptance Model (Source: Davis, Bagozzi & Warshaw, 1989)**

Figure 2.5 reveals that both perceived usefulness (U) and perceived ease of use (E) predict attitude towards using the system (A). Perceived usefulness and attitude towards using the system, therefore, influences the individual’s behavioural intention (BI) to use the system. This implies that academic librarians’ SMT perceived usefulness of the system and attitude would determine their behavioural intention which will lead to actual use of the system. The actual use of the system is predicted by behavioural intention (Mun & Hwang, 2003). Like Theory of Reasoned Action (TRA), TAM assumes that SMT use behaviour is determined by BI, although BI is regarded as being equally weighed by an individuals’ attitude towards using the system (A) and perceived usefulness (U) (Davis, Bagozzi & Warshaw, 1989). TAM’s dependent variable is actual usage, and it is an important measure of gauging the time of utilising the application (Lederer, Maupin, Sena & Zhuang, 2000).

The A-BI relationship represented in TAM implies that in all circumstances, an individual form plans to perform behaviours concerning which they have confident touch. The A-BI connection is essential to related technology acceptance models (Triandis, 1977; Bagozzi, 1981). The U-BI relationship is based on the idea that, within organisational settings, people form intentions concerning activities they consider might escalate their work production, on whatsoever concurring or negative opinions may be aroused concerning the behaviour. The implication of this is that better implementation is helpful in accomplishing distinct rewards that are extraneous to what the work entails. Intentions regarding such activities are hypothesised to be grounded

typically on intellectual decision guidelines to increase implementation without requiring a re-evaluation each time of how better-quality implementation contributes to purposes and goals higher in one's goal hierarchy; therefore, without necessarily activating the positive affect associated with performance-contingent rewards (Vallacher & Wegner, 1985). If effect is not entirely activated when deciding whether to use a particular system, one's attitude would not be expected to capture the impact of performance considerations on one's intention completely. Hence, the U-BI relationship in TAM represents the resulting direct effect, hypothesising that academic librarians and library clientele form intentions toward using SMT based largely on a cognitive appraisal of how it will improve their performance. Some have ignored intention to use or attitude (Gefen & Straub, 1997) and instead studied the effect of ease of use or usefulness directly on usage; findings of the impact of attitude and intention have not always been significant. Hence, to maintain instrument brevity and permit the study of the antecedents of ease of use and usefulness, the current research similarly studied the direct effect of ease of use and usefulness on SMT usage in the provision of library services to clientele.

TAM postulates that the use of an information system is determined by the behavioural intention, but on the other hand, the behavioural intention is decided by an individual's attitude regarding the usage of the structure and also by his view of its usefulness. Davis (1989) asserted that the outlook of a person is not the only basis that influence the use of a system, but is also founded on the effect which it might have on his production. Therefore, even if an academic librarian does not welcome an information system, the probability that he will use it is high if he perceives that the system will improve his/her performance at work. Besides, the TAM hypothesises a direct link between perceived usefulness and perceived ease of use; with two systems offering the same features, a user will find more useful the one that he finds more comfortable to use (Hong, Thong & Wai-Man Wong, 2002).

In IS research, TAM is considered to be the most widely used and robust model to envisage an individual acceptance of a novel technology (Yusoff, Ramayah & Ibrahim, 2011). In the study of Thong, Hong and Tam (2002), three system interface characteristics, three organisational context variables, and three individual differences were identified as critical external variables that have impact on adoption intention through perceived usefulness and perceived ease of use of the

digital library. Data was collected from 397 users and findings showed that both perceived usefulness and perceived ease of use are determinants of user acceptance of digital libraries. In addition, interface characteristics and individual differences affect perceived ease of use, while organisational context influences both perceived ease of use and perceived usefulness of digital libraries.

Gilbert, Balestrini and Littleboy (2004) used TAM to examine why people prefer electronic delivery of government services over traditional means. They found that factors influencing a positive attitude towards knowledge sharing using IT included time, cost, and personal interaction (categorised as relative benefit). Factors that influenced negative attitudes towards knowledge sharing using IT on the other hand were experience, information quality, and trust. Shah and Mahmood (2013) used the TAM Model to study knowledge sharing behaviour in the dairy sector in Pakistan. It was found that social factors like demographic, cultural, and individual trust affected an individual's behaviour, with respect to knowledge sharing. Hong, Thong and Wai-Man Wong (2002) studied intention to use electronic library in the Open University of Hong Kong and found that perceived ease of use and perceived usefulness were significant antecedents of the intention to use a digital library. Their results revealed that users with higher computer self-efficacy were more likely to report higher ease of use and were more likely to accept computing technology.

TAM has been found to yield consistently high explanatory variance on why users chose to utilise systems (Abdel-Wahab, 2008). The use of TAM was gradually extended to other countries around the world (Sheikhshoei & Oloumi, 2011). The model is believed to be very useful in predicting and explaining technology use in various situations (Dillon & Morris, 1996) and has proved very successful in studies of users' adoptions of technology. This model provides a basis of explaining the impact of variables such as beliefs and intentions using a technological application. TAM has been used in various sectors such as libraries, government agencies, e-commerce, and the business environment. For example, Roberts and Henderson (2000) used this model to examine government workers' experience in the use of computers. They attempted to explain the psychological determinants of attitudes and subsequent acceptance behaviour towards IT in the workplace.

Henderson and Divette (2003), within an electronic commerce setting, used TAM to examine the relationship between the perceived ease of use, usefulness and three electronically recorded indicators of use within the context of an electronic supermarket. Results indicated that TAM could be successfully applied to an electronic supermarket setting, providing empirical support for the ability of TAM to predict actual behaviour. The TAM explained up to 15% of the variance in the behavioural indicators through perceived ease of use and usefulness of the system. However, the perceived ease of use of the system did not uniquely contribute to the prediction of behaviour when usefulness was considered, indicating a mediation effect.

The results from a study by Kowitlawakul (2011) showed that perceived usefulness was the most influential factor that influenced nurses' intentions to use electronic Intensive Care Unit (eICU) technology. The principal factors that influenced perceived usefulness were perceived ease of use, support from physicians, and years of working in the hospital. A similar study by Hu, Chau, Sheng and Yan (1999), revealed that TAM was able to provide a reasonable depiction of physicians' intentions to use telemedicine technology. Perceived usefulness was found to be a significant determinant of attitude and intention, but perceived ease of use was not. Tao (2008) observed that there was a significant growth in the availability and use of electronic resources, and questioned why users selected and used an electronic resource. The study revealed that perceived usefulness played a major role in determining students' intentions to use electronic resources.

Hu, Chau, Sheng and Yan (1999:94) point out that there are several studies "that have assessed TAM's general descriptive influence and quantification validity in different empirical situations characterised by user group, technology, and organisational context". They pointed out that using the theory was of great importance in measuring and understanding perceived usefulness and perceived ease of use on behaviour intention. The TAM is claimed to be capable of providing fairly adequate explanation and prediction of user acceptance of IT (Hu, Chau, Sheng & Yan, 1999).

Thong, Hong and Tam (2002) aimed to understand the acceptance of digital libraries by using TAM. Data was collected from 397 users of an award-winning digital library and findings

showed that both perceived usefulness and perceived ease of use are determinants of user acceptance of digital libraries. In addition, interface characteristics and individual differences affect perceived ease of use, while organisational context influences both perceived ease of use and perceived usefulness of digital libraries. Hong, Thong, and Wai-Man Wong (2002) using TAM as a theoretical framework investigated the effect of a set of individual differences (computer self-efficacy and knowledge of search domain) and system characteristics (relevance, terminology, and screen design) on intention to use digital libraries. All of the individual differences and system characteristics had significant effects on perceived ease of use of digital libraries. In addition, relevance had the strongest effect on perceived usefulness of digital libraries.

Huang, Lin and Chuang (2007) used TAM to explain and predict the acceptance of mobile learning (M-learning), an activity in which users' access learning material with their mobile devices. The study identified two factors that account for individual differences, which are perceived enjoyment (PE) and perceived mobility value (PMV), to enhance the explanatory power of the model. An online survey was conducted to collect data and 313 undergraduate and graduate students in two Taiwan universities answered the questionnaire. Most of the constructs in the model were measured using existing scales, while some measurement items were created specifically for this research. Structural equation modelling was employed to examine the fit of the data with the model by using the LISREL software. The results found that consumers hold positive attitudes for M-learning, and viewed M-learning as an efficient tool. Moreover, the results showed that individual differences had a great impact on user acceptance and that the perceived enjoyment and perceived mobility can predict user intentions of using M-learning. Davis (1989:985) observed that external variables enhance the ability of TAM to predict acceptance of future technology.

This theory has also been found to provide an economical approach when seeking to examine and make sense of the factors that lead and cause users to accept certain technologies and not others. Academic librarians who have a good knowledge of SMT will know the best and appropriate one to use to reach clientele and provide a form of richness to the consumers of these services, as advocated by Evans and Wurster (2000). When compared to other theoretical models aimed at understanding IS adoption behaviour, TAM has been found to have similar or



better explanatory power than more sophisticated models, such as Theory of Planned Behaviour and Theory of Reasoned Action (Davis, Bagozzi & Warshaw, 1989). Venkatesh (2000) averred that though the parsimony of TAM combined with its predictive power make it easy to apply to different situations. However, while parsimony is TAM's strength, it is also the model's key limitation. TAM is predictive but its generality does not provide sufficient understanding from the standpoint of providing system designers with the information necessary to create user acceptance for new systems (Mathieson 1991). Nevertheless, it is adopted for this study and measured perceived usefulness and perceived ease of use in relation to the use of SMT in providing library services in academic libraries.

#### **2.4 Uses and Gratification Theory (U&G)**

Initial history of research in communication ushered in an approach to examine the type of content that appeal to the social and psychological needs of people as well as understanding their gratifications (Cantril, 1942). Subsequently, Klapper (1960) affirmed that other research adopted the experimental or quasi-experimental approach, through which conditions of communication were influenced so as to better understand communication as well as significant effects of communication. While other research on media effects aimed to understand motives and the pattern of new media selection by the audience on different media genres (Ruggiero, 2000). Illustrations of different research on diverse media genres are Waples, Berelson, and Bradshaw (1940) on reading; Herzog (1944) on quiz programs and the gratifications from radio daytime serials; Berelson (1949) on the functions of newspaper reading. However, Uses and Gratification Theory (U&G) is generally recognised to be the substation of McQuail (1994) media effect research conducted in a social-psychological mode and audience based. Hence, in order to understand media effect then we must first understand media audiences (Nabi & Oliver, 2009). Therefore, U&G is a psychological communication perspective (Fisher, 1978), shifting the focus from the direct and undue influence of the media on passive and isolated individuals to achieve audience members selecting and using the media.

Leung and Wei (2000) stated that U&G attempts to explain the uses of the media for individuals, groups, and society in general. There are three objectives of U&G theory which are to tell how individuals use media to gratify needs, that is, what people do with media; secondly, to discover motives for individuals' use; and thirdly, to identify the positive and negative consequences of

individual media use. The theory focuses on what people do with media to meet a certain need rather than what media does to people; that is, the theory has a user and audience-centred approach to fulfil a specific need. In the U&G perspective, audiences are no longer thought of as passive, but rather are active in seeking the type of media to use for satiating a specific need (Hicks, Comp, Horovitz, Hovarter, Miki & Bevan, 2012).

According to Perse and Courtright (1993), this theory assumes that media users are goal-directed in their behaviour, active media users are aware of their needs and select the appropriate media to gratify their needs. The U&G is considered an axiomatic theory in that its principles are generally accepted and applicable to various situations involving mediated communications (Lin, 1999). Therefore, uses and gratification studies have dealt with virtually every kind of mediated communication tool in conventional media, such as newspapers (Elliott & Rosenberg, 1987), radio (Albarran, Anderson, Bejar, Bussart, Daggett, Gibson, Gorman, Greer, Guo, Horst, Khalaf, Lay, McCracken, Bill, & Way, 2007), television (Abrams, Eveland & Giles, 2003) and in non-traditional media, such as cable television (Corn-Revere, 2005), Video Cassette Recorder (Kim & Lee, 2003), pager (Leung & Wei, 1999), e-mail (Dimmick, Kline & Stafford, 2000), the World Wide Web (Luo, 2002), and Twitter (Liu, Cheung & Lee, 2010). Indeed, audiences' motivations and decisions to use a certain type of mediated communication tool has been investigated through this theory (Quan-Haase & Young, 2010). Zohoorian-Fooladi and Abrizah (2012:170) used U&G to measure SMT among “academic librarians in three universities in Malaysia”. It was found that personal and professional gratifications were interaction, communication, and building relationship between librarians and users. In all three university libraries, “it was clear that librarian’s professional gratification of using SMT was related to their obligation and their duty, not personal satisfaction” as shown by the Honeycomb Model of SMT motivation and gratification among academic librarians (Zohoorian-Fooladi & Abrizah, 2012:174).

Early U&G studies were mainly explanatory, looking for avenues to categorise the answers of people into significant groups. Researchers concur that initial investigation had slight theoretic soundness and was primarily behaviourist and subjective in its practical predispositions (McQuail, 1994). The scholars shared a qualitative methodology by trying to group gratification assertions into labelled units, mostly disregarding their occurrence in the population. The initial,

scholars mostly did not try to investigate the connexions amid the gratifications uncovered and the mental or sociological origins of the desires gratified. They stopped to examine the correlation amid the different media roles, whether by measurement or abstractly, in a way that could have led to the discovery of the hidden make-up of media gratifications (Ruggiero, 2000). Analyses of initial U&G research emphasis on its heavy reliance on self-evaluation; it was ingenuous concerning the communal basis of the necessities that audiences bring to the media; it was overly trusting of the likely dysfunction both for the individual and the society of a particular kinds of audience gratification; and was fascinated by the creative mixture of audiences used to pay notice to the limitations of the text (Katz, 1987).

There are several needs and gratification for people which (Leung, 2001) are categorised into five: cognitive needs (acquiring information, knowledge and understanding), affective needs (emotion, pleasure, and feeling), personal integrative needs (credibility, stability, and status), social integrative needs (family and friends), and tension free needs (escape and diversion). The U&G “builds on the basic tenet of an active audience and the notion of an active audience supports a fundamental assumption that media-use behaviours are motivated by certain needs and gratification-seeking motives in which people selectively expose themselves to media contents” because they know that they will develop a kind of gratification when they use this media (Papacharissi & Rubin, 2000:175). Mcquail (1994) advocated that usage of varied categories of media could be categorised into four sets which are diversion (escape from routine and problems); personal relationships (substitution of media for companionships); personal identity (self-understanding); and observation. The most recent interest surrounding U&G is the connection concerning the motive why people use a media and the realised gratification (West & Tuner, 2010); an aspect which is paramount to this study. The U&G scholars are developing the theory to be further analytical and descriptive by relating the necessities, objectives, advantages, and effects of media consumption and usage with individual factors. A growing U&G research program applies the theory to online communication.

The Internet is a vast platform that involves a multitude of uses and can satisfy a significant number of diverse needs, including interpersonal communication (Ruggiero, 2000). The rapid growth of the internet and SMT has strengthened the potency of U&G because this medium

requires a higher level of interactivity from its users in comparison with other traditional media (Ruggiero, 2000). Rayburn (1996:100) also suggested that the internet is "intentionally" consumed, as audiences must make purposive choices about which site to visit and allow users to identify varying degrees of products and services. Papacharissi and Rubin (2000) found that entertainment and information-seeking were the most significant reported usages of the Internet, while convenience was also a factor. However, passing time and interpersonal utility were determined to be the least significant reasons for using the Internet. Their findings illustrate that individuals who browse the Internet do so because it allows them to acquire information and possibly save money. Similarly, Song, Easton, and Lin (2004) utilised the U&G perspective concerning Internet gratifications and addiction. They found that the gratifications sought from e-mail, chat rooms, and shopping included information-seeking, aesthetic experience, virtual community, diversion, monetary compensation, relationship maintenance, and personal status. Many of these gratifications were also linked to Internet addiction. Song *et al.* (2004) noted that the gratifications obtained during Internet use could form certain media usage habits. These findings emphasise the relationship between specific media and the gratifications users seek. The gratifications may be so critical that they lead to internet addiction (Song *et al.*, 2004).

For this reason, many researchers have examined psychological and behavioural aspects of users to identify a set of common underlying dimensions for internet usage motivations (LaRose, Mastro & Eastin 2001). Korgaonkar and Wolin (1999) examined internet users' motivations and concerns by categorising 41 items into seven factors which are social escapism, transactional security and privacy, information, interactive control, socialisation, non-transactional privacy, and economic motivation. The study by Korgaonkar and Wolin (1999) suggested that people use the Internet not only for retrieving information but also for seeking entertainment and escape. Lin (1999) identified the relationship between Internet usage motivations and the likelihood of online service adoption. The study revealed that surveillance motivation shows the most substantial effects for visiting both information and infotainment Web sites, whereas shopping sites are most strongly affected by entertainment and surveillance motivations. Papacharissi and Rubin (2000) also developed a scale of Internet usage motivations that consists of five primary motives for using the Internet which are interpersonal utility, pastime, information seeking, convenience, and entertainment. Recently, Luo (2002) explored effects of informativeness, entertainment, and irritation on various on-line consumer behaviours, such as attitude toward the

site, Internet usage, and satisfaction. Therefore, U&G has been quite useful in understanding motivations and needs for using the Internet.

In addition, computer-mediated communication, has enhanced new levels of interaction past what is existing in traditional mass communication (Pavlik, 1996). Interaction on the Internet permits consumers to partake in the persuading practise energetically by regulating the advertising messages, amount of information, and order of presentation at any time, according to their needs and preferences (Hoffman & Novak, 1996). Also, the profitable value of interactivity has been significantly improved since the advent of the Internet. Lee and Ma (2012) asserted that while U&G approach has traditionally been applied to the mass media, this theory is also useful in analysing the goal-directed behaviour of SMT users. Peters, Amato and Hollenbeck (2007:131) posited that “media uses and gratifications theory captures both utilitarian and non-utilitarian motives underlying media consumption. As such, motives underlying television usage are structural (using the medium to fill an empty environment, such as for purposes of entertainment)” Past research regarding implementing innovative technology has revealed that contemporary media often create new levels of gratifications and motivations for users.

Stafford, Stafford and Schkade (2004:260) gathered data and found 45 motivations for internet use. The greatest common motivational items for using the Internet were “information, e-mail, and research, followed by chatting, entertainment, communication, and fun”. Besides, Lee and Ma (2012) found that an individual has an inclination to embrace mobile TV mainly to meet an enjoyment needs, seconded by communication needs, flexibility, and convenience. A current scholarship was on micro-blogging by Coursaris, Yun and Sung (2010) investigated a real-time survey where it showed the desires for enjoyment, recreation and online prominence are determinants of Twitter’s usage. There is a paucity of research on why academic librarians do not use these technologies largely, especially in developing countries like Nigeria (Baro & Godfrey, 2013). In Malaysia, as library SNS developed between 2008 to 2010 early-adopters started to try-out with SMTs “such as RSS feeds, wikis, chat tools, podcasting, video-sharing and bookmarking” (Zohoorian-Fooladi & Abrizah, 2012:168). Nevertheless, many academic libraries are still in the process of learning how to use them effectively to creating awareness on library services and outreach to students (Ayu & Abrizah, 2011). In other words, SMT is created to be

where users are and promote outreach library services; otherwise, the application of SMT would be underused. At the core of U&G lies the proposition that audience keenly seek out the media to gratify individual needs (McQuail, 2001). Lee, Ma and Goh (2011) stated that the advent of SMT has made accessing and sharing news a social experience where users can harness their social networks and social media platforms to filter, assess and react to news. Such distinctive features of SMT are likely to elicit comparable expectations and gratifications from users as these platforms enable users to access more diverse and personally relevant sources of news as well as to learn through interaction with others. SMT is a product of the internet which gives academic libraries the opportunity of providing ubiquitous services to their clientele, services which are not bounded by time and space, and an opportunity for users to respond to these services freely via the same medium of communication.

Additionally, YouTube and iTunes are just a few of the numerous SMTs that give users opportunities to be entertained or used for educational purposes whenever they please. Facebook, blogs and other social websites enable users to socialise while online. Academic libraries too use various SMT tools to satisfy the needs of clientele who are internet savvies (Dalton, 2013). In this 21<sup>st</sup>-century SMT has made it possible for individuals to send, receive, save or retrieve the message at their comfort and U&G theory has been used to study motives and gratification derived from using these technologies. This has enabled academic librarians to interact better with library clientele in real-time, which has improved the provision of library services (Zohoorian-Fooladi & Abrizah, 2013). Also, the benefit of media content can be evaluated by a group of people; that is, library clientele who are the direct recipients of SMT services can determine the value of SMT in the provision of library services.

Recent research on content support and information sharing using SMT have recognised certain motivational factors that predict information sharing behaviour. For example, position accomplishment (getting attention) and info seeking (future retrieval) were discovered to be the main motivations driving users to contribute annotations in mobile and online media (Goh, Ang, Chua & Lee, 2009). Hsu and Lin (2008) also suggested that the enthusiasms for distributing content in blogs comprise launching social interactions and reputations. Recent studies on SNS also highlight that satisfactions such as enjoyment, information searching and seeking, mingling, and instituting status and reputation are important in the usage of SMT to facilitate social

interaction and group discussion (Dunne, Lawlor & Rowley, 2010). Collectively, past research suggested that motivational factors driving users to share information include information seeking, socialising, entertainment, and status seeking. Compared to other informational content shared online, news is valued much more in terms of timeliness, accuracy, objectivity, and social responsibility (Sundar, 1999). Moreover, news content has much influence on civil program, public opinion as well as individual perceptions of social existence than other forms of content in social media (McCombs & Reynolds, 2009).

With the prevalence of SMT, these emerging news platforms have attracted much interest from U&G research; not only can content that used to be distributed by traditional media channels be delivered but new features to make news consumption more personalised and participatory are also integrated (Dunne *et al.*, 2010). Some prior analyses have attempted to explore the gratification factors that are related with news consumption based on the Internet as well as in SMT. Lin, Salwen, and Abdulla (2005) proposed that the observed gratifications of online news were entertainment, interpersonal communication, information seeking, and information learning. Dunne *et al.* (2010) proposed several gratifications, such as entertainment, information search, peer acceptance, and relationship maintenance, as related to use of SNS.

Similarly, Park, Kee and Valenzuela (2009) proposed four gratifications derived from SMT use, including information seeking, socialising, entertainment and self-status seeking. Of the few studies that relate to content sharing on SMT, Chiu, Hsu, and Wang (2006) found that social interaction and socialising were related to knowledge sharing behaviours, while Lee and Ma (2012) revealed that users' sharing of mobile media content was an attempt to seek for gratifications such as entertainment, information seeking, and socialising. Review of U&G and its related studies on information sharing highlights two important points. First, these studies demonstrate the appropriateness of the U&G approach in the context of the online environment and its potential explanatory ability in predicting individuals' news sharing behaviours. Second, although media usage motives vary among individuals, situations, and media, most U&G studies on SMT deal with the following gratifications: entertainment, socialisation, entertainment, information, and status seeking (Lee & Ma, 2012).

Whiting and Williams (2013:362) identified ten uses and gratifications for using SMT which are “uses and gratifications are social interaction, information seeking, pass time, entertainment, relaxation, communicatory utility, convenience utility, expression of opinion, information sharing, and knowledge about others”. The U&G is relevant to social media because of its origins in the communications literature. Leung (2013) has looked at SNS, individual and course-based blogs, and Internet forums to analyse U&G in posting online content, the correlation between gratifications and self-centredness, and the consequences of age on this association and these gratifications. Findings showed that users have passion for general communal and affection which are needed to show negative opinions, recognition, entertainment, and intellectual necessities. Discussion mediums were established to be the primary medium for expressing destructive stances, hypothetically owing to relatively, this platform is more of a one-way form of communication. Related to the constructs of sex, opinion, and consultation as previous study has discovered, U&G disagreed by classification of conceit. Scholars discovered four multi-dimensional egotistical behavioural dispositions which are superiority, attracting attention to oneself, manipulative, and vain. The U&G varied subject on the exact kind of self-conceit a given user had. For example, those who love drawing attention to themselves are inclined to emphasise on U&G by displaying fondness, conveying bad mind-sets, and being self-conceited. Those who portray themselves as exceptional had greater gratifications by intellectual inspirations as compared to perception. The self-centred were most satisfied by identification and attentiveness, and did not exhibit bad mind-sets.

Raacke and Bonds-Raacke (2008) affirmed that socialisation encourages use of interacting sites such as MySpace and Facebook. Users under socialisation could be discover old colleagues, creating new relationships, acquiring knowledge about occasions, building communal practice, and feeling associated. Further investigation has established that although emotive, intellectual, social, and regular uses are motivational to use SMT, not all uses are constantly gratified. Wang, Tchernev and Solloway (2012) in a research examining Facebook groups' users' gratifications in view to their public involvement offline, surveyed about 1,715 college students who rated their positive response with exact motives for exploiting Facebook groups, comprising data acquisition about the campus, enjoyment, social interaction with colleagues and intimate friends, and narcissism (Park *et al.*, 2009). The results of the study indicated that there were four essentials for using Facebook groups, socialisation (Students were concerned in conversation and

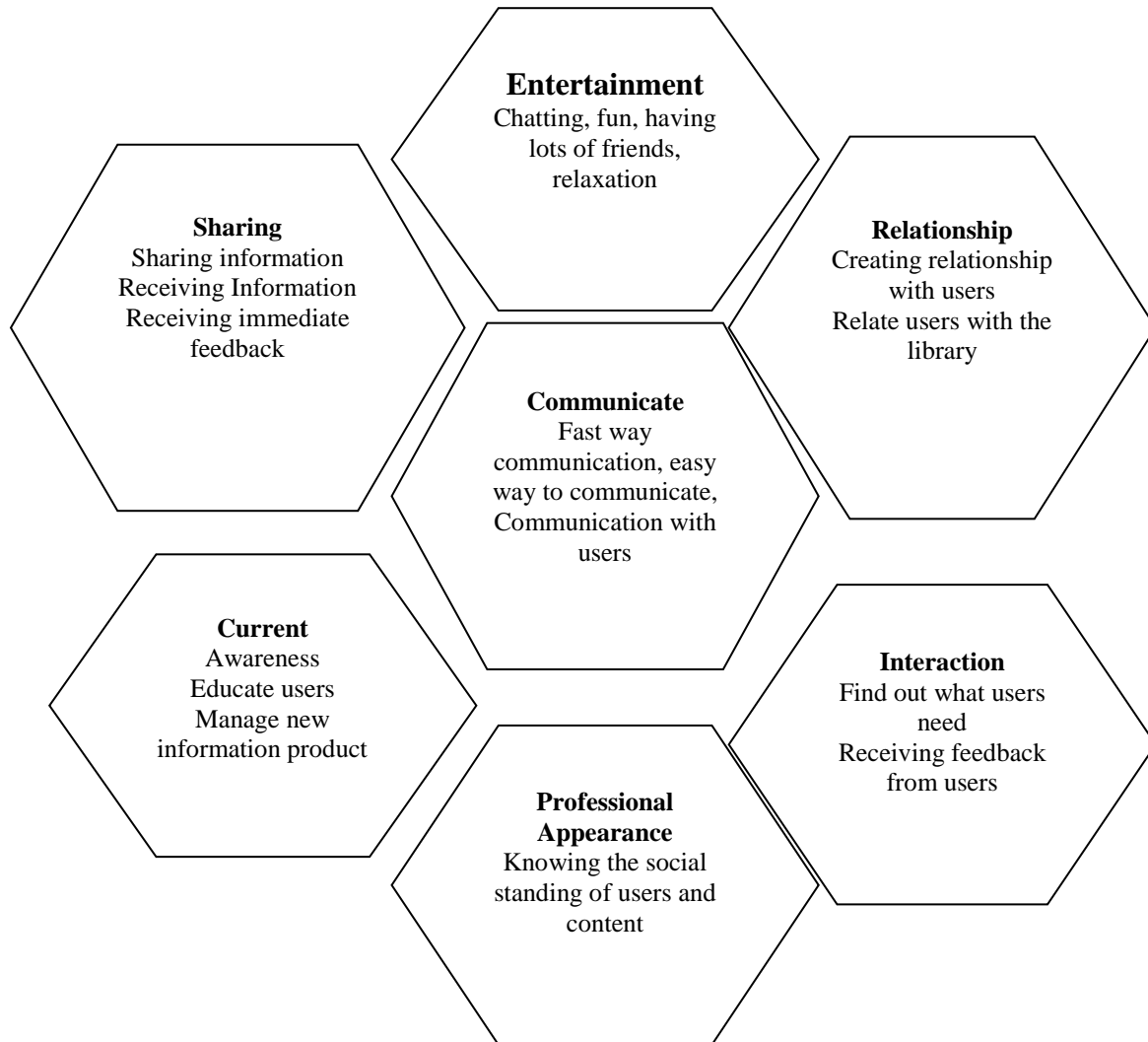


congregating with others to realise a sense of communal and peer encouragement on the particular topic of the group), enjoyment (Students engaged with the groups to amuse themselves), superiority (Students sought out or maintained their personal status, as well as those of their friends, through the online group participation), and communication (Students used the group to receive information about related events going on and off campus).

Research has discovered an affirmative connection concerning effective times exhausted on Twitter and the gratification of a need for a casual feel of friendship combined with association with other users. Moreover, the consistency of tweets and number of replies and public messages facilitated the relationship between Twitter users. Thus, this helped increase both use and gratification of the media by satiating the need for association (Chen, 2011:756). Additional facets of U&G are started in using diverse online platforms that are related to SNS. Many review services, such as Yelp.com, have an aspect of SNS, with user profiles and interconnectivity showing motives for using these technologies and gratification gained. Reasonably, information seeking is tremendous U&G for these applications, specifically like Yelp.com. Other U&G included entertainment, convenience, interpersonal utility, and passing the time (Hicks, Comp, Horovitz, Hovarter, Miki & Bevan, 2012). Similarly, besides information seeking, users who share news are motivated by U&G of socialising and particular about rank symbol, particularly when they are conversant with social media (Lee & Ma, 2012).

In relation to text messaging, related U&G were studied by Leung (2001) on instant messaging, or partaking in a web-based chat, and these outcomes likewise diminished by gender and the gratifications were inclusion, entertainment, sociability, relaxation, fashion, affection, and escape. More so, differences were found based on amount of use and gender. Those who used the instant messaging service regularly were established to be most driven by affection and sociability, while those who are occasional users were most motivated by fashion. Findings revealed that women chatted longer and for sociability; men chatted for less time per session and for entertainment and relaxation (Leung, 2001). Zohoorian-Fooladi and Abrizah (2012) honeycomb model divided academic librarians' motivation into personal gratification, professional gratification and personal/professional gratification. Personal motivation according to them includes sharing (sharing of information, receiving information and receiving immediate feedback), entertainment (chatting, fun, and having lots of friends, relaxation). The researcher

opined that the heart of librarianship is information sharing as corroborated by Onuoha (2013). Therefore, sharing of information could be both professional gratification and personal gratification. McCallum (2015) in the study among 600 academic librarians concluded that in academic libraries it was equally important to show a fun side (entertaining) at appropriate moments too, enabling the library to connect with its users in a human and engaging way, to supplement more formalized communications. Professional motivation according to Zohoorian-Fooladi and Abrizah (2012) are building professional relationship (creating relationship with users and relate users with the library), interaction (finding out what users need and receiving feedback from users), professional appearance (knowing the social standing of users and content) and current awareness (educate users and market new information products). In the heart of this model is communication which can both be personal and professional. It involves fast way communication, easy way to communicate, and communication with users. The Honeycomb Model of SMT motivation and gratification among academic librarians is presented in Figure 2.6.



**Figure 2.6: Uses and Gratification Theory (U&G) (Source: Zohoorian-Fooladi & Abrizah, 2012)**

This model was adapted for this study to explain the motivation and gratification derived by academic librarians in the use of SMT for library and information service delivery. The theory was also adapted to understand the motivation and gratification derived by library clientele in harnessing SMT services provided by academic librarians. The strengths of this theory are founded on its individuality which provides great analysis. The theory helps in analysing and understanding what motivates academic librarians in adopting and using SMT for library service

delivery and the gratification they derive in using these tools. Similarly, the theory is strong in explaining what motivates library clientele in using SMT library services and the gratification they derive in harnessing these services. The gratification could be personal, professional, or a combination of both (Zohoorian-Fooladi & Abrizah, 2012).

People are able to give their opinion about anything nowadays with the introduction of blogs, YouTube, Facebook, or Twitter. The strength of this theory is its ability to allow researchers to study mediated communication situations via a single or multiple set of psychological needs, psychological motives, communication channels, communication content, and psychological gratifications within a particular or cross-cultural context (Zohoorian Fooladi & Abrizah, 2012). This implies that the fundamental questions that U&G theory is answering in this research is “what motivates SMT use and what gratification is derived from its usage by academic librarians”; “what motivates library clientele in harnessing SMT library services and what gratification is derived in the use of these services”. Though U&G has specific relevance to SMT, it has not been given prominence in academic libraries literature (Zohoorian Fooladi & Abrizah, 2013). Also, Ruggiero (2000) affirmed that a diffused notion of an active audience has limited acceptability and scholars of U&G differ in their methodological approach. Therefore, this research applied U&G to help explain why academic librarians use SMT for library and information service delivery.

## **2.5 Summary**

Innovation Technology Acceptance Model (TAM), Diffusion Theory (IDT), and Uses and Gratification theory (U&G) are the three principal theories that underpinned this study. They complemented one another in understanding the adoption and use of SMTs for the provision of library and information services in academic libraries in South-West, Nigeria. These theoretical models (TAM, IDT, and U&G) were selected given that they have significant predictive power and they underscore the major variables of the study namely: SMT adoption, SMT use behaviour, SMT motivation, and gratification. The other constructs from the three models that studied include relative advantage, image, visibility, result demonstrability, perceived ease of use, perceived usefulness, motivation, and gratification.

Constructs from IDT are directly related to Ho<sub>4</sub> which stated, “There is no significant relationship between relative advantage, image, visibility, result demonstrability, and SMT use behaviour of academic librarians in providing library and information services”. Constructs from TAM are directly related to Ho<sub>5</sub> which stated, “There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services”. Moreover, constructs from U&G are directly related to Ho<sub>6</sub> which stated that “There is no significant relationship between specific motivation/gratification and SMT use behaviour of academic librarians in providing library and information services”.

## **CHAPTER THREE**

### **LITERATURE REVIEW**

#### **3.1 Introduction**

The purpose of this chapter is to define key terms, definitions, terminology, identify studies, models, and case studies supporting the topic under consideration. Thus, this goes a long way in enhancing the collective understanding of the present domain by examining what has been done previously, identify its strength, weaknesses and see how the present study fills the existing gaps (Burns & Grove, 1993). The empirical and theoretical literature reviewed in this chapter section is sourced from both print and electronic resources in books, journals, databases and other related media. The literature reviewed cover: Social Media Technologies; Types of SMT; Awareness of SMTs by academic librarians; Challenges encountered in using SMT by academic librarians; Current debates on SMT use in academic libraries; SMT user policies in academic libraries; and Future of SMT in academic libraries.

#### **3.2 Social Media Technologies (SMTs)**

Rogers (2009) points out that SMT refers to activities that integrate technology, social interaction, and the construction of words, pictures, videos, and audio. It is a shift in how people discover, read, and share news, information, and content. Moreover, Rogers (2009) perceives SMT as a fusion of sociology and technology, transforming monologue (one-to-many) into dialog (many-to-many) and is the democratisation of information, transforming people from content readers into publishers. According to Sonawane and Patil (2015), SMT is a powerful new form of communication and the number of users on popular SMT platform is growing at exponential rates. Millions of people are using these technologies as part of their everyday lives for work, studies and play because of its ubiquity.

Barsky (2006) states that SMT is the key to 21<sup>st</sup>-century communication enabling the academic library to fulfil its objectives online, and at the same time promoting library resources and services. Mangold and Faulds (2009) emphasised that SMT encourages instantaneous, real time, interactive communication, and utilises multi-media formats (audio and visual presentations) and

numerous delivery platforms (Facebook, YouTube, and blogs, to name a few), with global reach capabilities.

These technologies make use of web-based technologies to create extremely communicating opportunity through which clienteles and library clienteles co-create, share, modify and discuss, user-generated content (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). Harmon and Messina (2013) opined that with the explosion of mobile devices and on-demand electronic applications, there is a great need for academic libraries to be where users are, allowing the library to be relevant in this day and age. Rogers (2009) stated that today's society has placed academic libraries in a competitive market which clearly necessitates the need to employ SMT to communicate the library's mission more broadly to clienteles who are mostly digital savvies (Boyd & Ellison, 2007).

Adams (2013) stressed that SMT is an innovative technology enabling academic libraries the opportunity to reach out to its patrons, plays a unique role to keep the patrons informed and has transformed the shape of academic libraries service delivery in recent years. Harmon and Messina (2013) emphasised that no other medium gives academic librarians such a direct way to get feedback and responses from patrons, outside of face-to-face contacts than SMT. Given the tremendous exposure of SMT in the popular press today, it would seem that we are in the midst of an altogether new communication landscape of which academic library is not left out (Edosomwan, Prakasan, Kouame, Watson & Seymour, 2011). SMT use in the library context is referred to as Library 2.0 or SMT library. Patridge, Lee and Munro (2010) expressed this concept as a transformation in the communication between the patrons and academic librarians in a novel ethos of relationship by SMTs.

SMT is transforming the library profession including rebranding it in form of an evolution which may enhance user-centred services (Kwanya, Stilwell & Underwood, 2009). Beard (2016) stated that SMTs are here to stay in libraries and the buzz words used for SMT like community, conversation, dialog, sharing- all of them are user-centric, and library patrons are the focus of the library. In essence, SMT in academic libraries is not about what the library gains in terms of financial benefits, that is the Return on Investment (ROI), but it is about how the library can better serve her clienteles (Beard, 2016). Xu, Ouyang and Chu (2009) believe academic libraries

are quickly becoming major players in adopting and using these technologies compared to other types of libraries. Peltier-Davis (2009) avows that these technologies are replacing traditional, one-directional library services which are centred on library collections. However, there is now a paradigm shift to an academic library that is centred on clientele's interest, which is pervasive due to the universal nature of SMT.

Hvass and Myer (2008) stressed that SMTs have dissolved the walls of the libraries, and academic libraries can extend their reach to anywhere in the world. Therefore, as these web-based services continue to grow, a key issue for academic libraries is the identification of the best way of rendering library services to clientele. Bell (2007) affirmed that, to engage library users in a conversation about conducting high quality research effectively, academic libraries need tools and technologies that can arouse the interest of library patrons for the library and what the library has to offer them. Such tools could change the feelings of library dissatisfaction that permeates academic communities because academic libraries cannot connect with 21<sup>st</sup>-century users who are mostly digital savvies (Boyd & Ellison, 2007).

Mishra (2008) noted that SMT technologies not only enhance the practical usability in the library but also help the diminishing academic libraries and also add value to their profession. Sweeney (2005:165) emphasises the impact of digital natives on libraries by stating, "That they comprise the demographic tsunami that will definitely change the library and information cyberspace". Rogers (2009) emphasised that these digital savvy library clientele exist in SMT world and therefore academic libraries should ensure that they connect and foster relationship with them by providing enhanced services. These technologies have enabled a collaborative process where patrons can catalogue the resources they use and can share that information by inviting others to view, comment, rate, and give feedback.

Muneja, Abungu and Makori (2012) asserted that since SMT is an open source and easy to adopt technology, it has revolutionised provision of services and led to quick growth of library services. SMT library services simply means making the library's space more interactive, collaborative, and driven by community needs. That is, a paradigm shift in orientation and interest implies that much attention is now given to meeting and satisfying clientele's needs than being collection oriented. White (2001) states that SMT is an information access service in



which users ask questions via electronic means like WhatsApp, IM, Facebook Messenger, or web forms.

Moyo (2004) affirmed that SMTs have transformed traditional library services into new services that are peculiar to web environment (Cordeiro & Carvalho, 2002). In the same vein, Madhusudan and Nagabhushanam (2012) noted that the traditional methods of offering library and information services have changed greatly in recent years because of the development and application of SMT. Therefore, academic librarians should be expert to hold the hands of users who are moving towards new communication paradigm, a shift from face-to-face human contact to human-machine-interaction, from paper to electronic delivery, from text centred mode to multimedia and from physical presence to virtual presence.

According to Mangold and Faulds (2009) contemporary academic libraries cannot ignore the phenomenon of SMT because it has rapidly become the de facto *modus operandi* for 21<sup>st</sup>-century clientele. In this changed scenario, more and more academic libraries are globally exploring and offering new SMT library services such as current awareness services via SMT, library literacy via SMT, electronic research guides, reference services, and list of new arrivals online to satisfy the library and information demands of its users (Sajjad Ahmed, 2002).

SMT inclusion in academic libraries has been motivated by the following characteristics (Maness, 2006):

1. SMTs are user-centric since it involves users participate in the creation of the content and services. Stephens (2007) maintains that clientele are involved in planning library services, evaluating those services and suggesting improvements in an open conversation.
2. SMTs provide a multi-media understanding. The collections and services of SMT contain video and audio components. For instance, by using YouTube, users can view and listen to video presentations.

3. SMTs are socially rich, involving both synchronous (Instant Messaging allowing on the spot communication through Google talk) and asynchronous (Wikis allowing collaborative production of content) (Stephens & Collins, 2007).
4. SMT are communally innovative and rest on the foundation of libraries as a community service. They seek to continually change services, find new ways to allow communities to seek and utilise information.

Therefore, Rogers (2009:1) asserts that libraries need to stop performing tasks that are no longer needed and take on new tasks available through SMT to manage libraries. He concluded that if the mantra for the 21<sup>st</sup> century academic library is “be where the users are” then participating in SMTs like Facebook is an activity that an academic library ignores at its own peril.

### **3.2.1 Types of Social Media Technologies (SMTs)**

Social media Technologies (SMTs) are a powerful new form of communication which transcends the physical and delves more into the virtual space. Chauhan and Pillai (2013) argue that SMTs are web-based technologies which allow interactions among people that help co-create, share, interchange data, and concepts in cybernetic communities and systems. SMTs used in academic libraries are categorised into the following:

#### **3.2.1.1 Social Networking Sites (SNS)**

Faisal (2015) described SNS as an online platform that allows users to create a public profile and interacts with other users on the website. While Seufert, Von Krogh and Bach (1999) maintain that SNS is a collection of people who relates in a virtual space for the purpose of creating online social interaction.

Based on this fact, most academic libraries globally, have attached a link of SNS to their library’s web pages in order to provide services round the clock. But the same cannot be said of most African academic libraries, most especially in Nigeria (Onuoha, 2013) which are incapacitated by lack of basic infrastructures such as computer systems, internet connectivity, uninterrupted electricity supply etc. (Ezeani & Igwesi, 2012). Social networks possess three functions namely allowing socialisation among individuals; generating participation

opportunities; and facilitating decisions (Passy, 2003). White (2006) categorised SNS into seven based on the functions they provide:

- a. **Social connections:** SNSs which help to build online social connections with friends and family members. Such as Facebook, Google+, Myspace, Twitter, Friendster, Bebo.
- b. **Multimedia sharing:** SNSs which share multimedia content (audio, video, and images). Such as YouTube, Flickr, Picassa.
- c. **Professional:** Connect professionals and support career development and business. Such as LinkedIn, Viadeo, SERMO (doctors), Classroom 2.0 (educators).
- d. **Informational:** Communities made of people who seek answers to everyday problems. Such as Do-It-Yourself Community, SuperGreen Me.
- e. **Educational:** Facilitates collaboration among students and teachers for doing projects and classroom research. Such as the Student Room, the Math Forum.
- f. **Hobbies:** Communities of people with same hobbies and interests. Such as OhMyBloom (gardening), sportshouting.com (sports).
- g. **Academic:** Communities of academics and researchers to conduct projects and share papers. Such as Academia.edu, ResearchGate.

Ayiah and Kumah (2011) observed that the idea of having SNS linked to an academic library's web page is to enable patrons to have a live discussion with a professional on issues pertaining to the use of the library and allow the libraries to advertise their programs and activities. Faisal (2015) agreed that SNS are integrated with academic library's online interfaces in a big way and the most commonly used services are Facebook and Twitter. The main purpose of using SNS in the provision of library services is to:

- (i) Publicise and promote library resources and activities;
- (ii) Provide current awareness service (new resources, journal alerts, library timing);
- (iii) Interact with users and get feedback; and
- (iv) Reach out to the users at their own space and time.

The study of Chu and Du (2013) findings revealed that academic librarians perceived SNS as a useful tool for information sharing, dissemination of real-time library news, promoting reference services and enhancing library services. But only one respondent signified the tools were

insignificant. This finding implies a change in attitudes of academic libraries concerning SNS, which was previously found to be indifferent by Charnigo and Barnett-Ellis (2007). Walia and Gupta (2012:3) in their survey of SMT in 66 national libraries in the world noted, "out of 28 national libraries only 16 national libraries have online presence on social networking site. Findings also revealed that National libraries are using SNS to share events, photos, news, video of past events, and for distributing different links on diverse issues. It was found that only four national libraries are using their Facebook account to disseminate information about the update of the resources. Several national libraries are also using these SNS for creating consciousness about their services and product such as The British Library activity on Facebook entitled Article of the Week" creates awareness among library users about their library collection.

Mishra (2008) acknowledged that Facebook is the most widespread SNS because it is very friendly with librarian, which accommodates many applications like World Cat, JSTOR search, and much more. Shrager (2010) concluded in the study of websites of nine academic law libraries in the Washington DC metro area, that eight of the libraries use SNS. While Nesta and Mi (2011) in a survey of academic libraries in New Jersey, USA and Hong Kong, China, resolved that Facebook was used but the students' participation in these technologies was low. Also in a Chinese study by Han and Liu's (2010) 38 top ranked universities was selected and found that 31 of them used at least one kind of SMT of which SNS was among. In a study carried out in Australia and New Zealand, Linh (2008) analysed the content of 47 university library websites and found that although two-thirds of libraries used such technologies, the general indexes of their use were low.

Graham, Faix and Hartman (2009) assert that it is high time academic libraries in developing countries like Nigeria realised that SMTs are not a fashion but a basic change of our way of communicating with the users, and the meeting place now is via SMT sphere. Chu and Du (2013) found a positive change in academic librarians' attitude regarding SNS. Similarly, Mahmood and Richardson (2011) concluded that academic libraries were using SNS for sharing news, pictures, and video clips and marketing their services. Other academic libraries offered online reference service and OPAC search on their Facebook pages. This might be related to the increasing popularity of SNS in the society in general.

### **3.2.1.1.1 Benefits of Social Networking sites to African Academic Libraries**

Social Networking Sites have benefits to academic librarians and clientele. Some of the benefits according to Ayiah and Kumah (2011:4) are:

- a. “SNS facilitate associations and promote effectual interaction among academic librarians and library clientele.
- b. SNS generate a flow of information excluded from search engines and Library Catalogues.
- c. SNS will lead future delivery of information to meet search queries.
- d. The crucial aim of academic libraries is to make library resources available to patrons so SNS will help achieve this goal.
- e. SNS well linked to a library’s web page has the potential of reaping great results by attracting and serving Distance Education Students. Watts, Dodds and Newman (2002) stress that it is through SNS that any person can communicate over cyberspace.
- f. SNS have the potential to help academic librarians and academic libraries especially in Africa to keep pace with technologies and compete effectively with the developed World.
- g. SNS can help minimise the impact of insufficient academic librarians in the running of these libraries, by serving some of the patrons online.
- h. African academic libraries can use SNS to deliver effective services to clients with limited resources. The use of this tool does not require any special equipment apart from computer, internet connectivity and a trained professional to manage”.

### **3.2.1.2 Blogs**

Bradley (2007) stated that blogs were at the frontline of SMT development. They are designated as virtual platform maintained by a person and contain consistent records of comment, explanation of incident or other resources such as images, records, and are organised in reverse sequential order. Herman, Manfred and Marie-Laure (2014) described a blog or weblog as a regularly efficient website containing of dated records organised in reverse consecutive order so the most current post seems first. Faisal (2015:4) stated that the term “weblog” was coined by John Barger in 1997 and which later shortened as ‘blog’. Blogs can be categorised into three:

- (i) Personal Blogs (developed by an individual and maintained as a diary);
- (ii) Corporate Blogs (maintained by corporates to promote business and for marketing, communication and public relations); and
- (iii) Blogs by General: such as technology blogs, financial blogs, travel blogs, and health blogs.

Microblogging is another kind of blogging practice of posting small pieces of digital content (text, images, links, short videos, or other media) on the internet such as Twitter that contains 140 or less than 140 characters. Researchers have studied blogging in general (Blood, 2004; Herring, Scheidt, Kouper and Wright, 2007), and in librarianship and found that blogs can serve as a source of competitive intelligence and that they can play a role in monitoring products and services (Aharony, 2009a; Maness, 2006; Shrager, 2009). Hence, blogs can be used as a form of publication which could be harnessed by clientele (Maness, 2006), marketing of library resources and events (Stephens, 2006). Bar-Ilan (2007) proposes that library blogs are ideal for disseminating, commenting on, and expressing opinions from clientele.

Walia and Gupta (2012) in their survey of national libraries in the study of sixteen national libraries (57%) found them having accounts on Twitter for showing newest updates of libraries immediately. Amongst these sixteen national libraries, three national libraries, that is National Library of South Africa, National Library of Kenya, and National Library of the Maldives have a hyperlink to Twitter on their website, but the link is not functional. The outstanding thirteen national libraries (46%) are using Twitter for microblogging. Through Twitter, these libraries bear general information about the library. Some of the libraries such as National Library of Ireland, National Library of Australia, The British Library, Library of Congress and National Library of New Zealand also used Twitter for delivering blog updates. Chua and Goh (2010) studied 120 public and academic library websites from North America, Europe and Asia and findings revealed blogs as the most popular among SMTs. In addition, the study in North America by Liu (2008) which investigated websites of 111 ARL member libraries, found the use of blogs in use in various libraries. In UK, Shoniwa and Hall (2007) audited library websites of 152 higher education institutions' blogs which 11% was found to be among SMT used in the libraries.

Clyde (2004a) analysed the content of 55 library blogs from the USA, Canada and the UK and among them, 21 belonged to academic libraries. The study revealed that most of the blogs were made to provide news or information for library users. The study of Lihitkar and Yadav (2008) made an in-depth study of ten university library blogs, including contact details, content coverage, ease of navigation, external links and blog archives. Findings from the study revealed that blogs have become arguably the most popular online personal publishing platform on the Internet. Aharony (2009b:174) also in analysing the contents of 30 Library and Information Science blogs, found that “there was a tendency to write essay-type posts with hypertext links”. In another study, Aharony (2010) analysed the comments appearing in LIS blogs and findings show that most of the comments presented personal information.

Faisal (2015) observed that in the present era of sharing and collaboration, blogs can be effectively incorporated into library services and used as:

- a. An information and communication medium: to inform, announce to, and communicate with the users and get their feedback on library resources and services.
- b. A library marketing and promotional tool: to market, promote and publicise new resources, events, and services through RSS, email subscription, and other features.
- c. A platform to share and create content collaboratively: with users through messages, comments, and forums.

Moreover, extant literature has shown that blogging enhances clientele’s comprehension of library news, communication and enhances library literacy (Huffaker, 2004; Poling, 2005), and that it may serve as a basis that stimulates clientele to reflect on their learning process (Clyde, 2005). Thus, Lee and Bates (2007) analysed eight blogs belonging to academic libraries and librarians in Ireland and found four types of blogs which are internal knowledge log (37.5%); external knowledge log (25%); mixed filter/external k-log (25%); and filter log (12.5%). In addition, the findings from the study of Mahmood and Richardson (2011) revealed that libraries in this study used this technology to share news and announcements.

Barsky (2006) emphasised that blogs are alternative platform for library publications. Though, they there is an absence of someone editing the input and comments, but nevertheless, essential in this era of information flux and its non-existence in service delivery in 21<sup>st</sup>-century library is

unimaginable. The study of Mahmood and Richardson (2011) revealed that through blogs, libraries were publishing news and marketing their services. Some libraries were providing information about new acquisitions and recommending internet resources.

Kaplan and Haelein (2010) noted that LibraryThing site allows library patrons to catalogue their books and see what other users share. LibraryThing moreover, gives library clientele the opportunity to advise themselves about the use of a library material by seeing the collection of others. It also enables them to communicate asynchronously, blog, and tag their books. Also with Lib.rario.us an academic librarian can put media such as books, CDs, and journals on display for easy access and tracking (Mishra, 2008). “Libraries can use blogs as promotional tools to inform clients of changes, additions and other developments in library services and collections” (Mangold & Faulds, 2009:351). Clyde (2004b:391) “studied 55 weblogs and found that they were used for providing news, information, and links to Internet resources for library users”. Stephens (2006a:10) “stated that the library blog can be used as a tool for getting feedback from the users on important aspects, and maintain transparency in the organisation”.

The study of Tripathi and Kumar (2010:200) “concluded that 13–26% of the libraries used blogs to convey general information about libraries; five to 21% of libraries use it to convey research tips; one to 22% of the libraries use blogs to inform about new books added to the collection and 0% to 20% of libraries provide book reviews of popular titles on blogs; 24–43% use blogs to list new databases subscribed by them; 21–43% of the libraries use blogs to inform students about the downtime of servers/databases; 20–43% of the libraries announce hours of operation and holidays through blogs; and 0% to 8% disseminate information about employment and careers; 17% of the libraries have provided links to blogs on their homepages; the blogs of 11.7% of the libraries have links to library catalogues”. The Falvey Memorial Library of Villanova University has a blog where entries are classified and arranged under different categories so that students can browse according to their preferences and the same blog provides a link to the library’s home page and catalogue. Thus, “blogs are used to convey a wide range of information and its success in academic libraries can be understood by the coverage of their contents” (Maxymuk, 2005:43).



### 3.2.1.3 Wikis

Faisal (2015:6) described a “Wiki” as a SMT tool established through the collaborative effort of a group of users with common interest which permits anyone to add content and also be privilege to also edit. Thus, Gorman (2005) and Kille (2006) opined that majority of the writings on Wikis in library science discipline lay emphasis on wiki being a reference based tool, its reliability and how its truth wordiness can affect its use for providing information to students (Clyde, 2005). Bell (2007) affirmed that Wikis invite users to generate their own content and this is the wiki’s greatest strength and its fatal flaw because anyone could write anything. Nevertheless, when it works, academic libraries have a tool for more powerful internal and external communication. Academic libraries mostly use the wiki as an internal communication tool. A good example is a reference department wiki where staff can quickly add content about a specific assignment to the wiki. It can be used to give notice about students asking for specific resources or provide suggestions and tips for helping those students. Wikis are becoming popular because they provide an easy way for staff to participate and share information.

Wikis can also be used in academic libraries for collaborative resource sharing and content creation. Bejune (2007) identified four types of collaboration in the development of library Wikis.

- a. Collaboration among libraries (extra-organisational): To develop and share contents like instructional materials, guidelines, manuals, handouts, bibliographies, tutorials, encyclopaedias.
- b. Collaboration among library staff (intra-organisational): To share and create resources among the library staff, which include, library documents like answers to commonly asked questions, user manuals, staff training resources, working papers, information about conferences, and scholarships.
- c. Teamwork among members of the library and patrons: To create subject guides and knowledge databases.
- d. Collaboration among patrons: The wiki is editable by the patrons to add book reviews, comments, and other contents.

Chu and Du (2013) stated that Wikis was harnessed to cater for required information that are frequently asked (FAQ). This is coherent with the previous discovery of Chu (2009) which revealed that wiki has encouraged two-way discourse between academic libraries and library users. It has also been adopted and used to produce, capture, share and transfer knowledge (Chu, 2009). Faisal (2015) stated that Wikis are used in libraries for sharing of information, supporting professional development activities, gathering of documents, supporting conferences, facilitating librarian to librarian/faculty/patron collaboration, rendering reference services, creating electronic library collections and collating the response rates of students. Bejune (2007) identified thirty-three library wikis and established a cataloguing scheme with four classifications which are collaboration among libraries (45.7%; collaboration among library staff (31.4%); collaboration among library staff and patrons (14.3%); and collaboration among patrons (8.6%). From the study, there is no gain saying that the importance of wikis within the library is enormous, and it was suggested that it should be better explored in academic libraries. Tripathi and Kumar (2010) in their survey revealed that the use of wikis in library is low with approximately 1% of libraries using it to provide materials and resources for training.

Matthies, Helmke and Slater (2006:32) established in their study on how to use wiki for enhancing library instruction that reviewed literature that academic librarians have not utilised it well. This is against the findings of the study which demonstrated that “rather than struggling to keep users engaged during a typical lecture-based library instruction session, this enterprise allows users, faculty, and academic librarians to collaboratively be involved in the teaching and learning”. Thus, academic librarians and instructors became mediators and used their expertise to guide discovery learning in the areas that students do not understand. In addition, Fichter (2005) maintains that wikis are becoming very popular for team-based organisational collaboration in areas such as providing customer services to library clientele. Withers (2005) asserts that academic librarians at the Miami University Library use their wiki collaboratively to share answers to repeated research questions, post unanswered reference and information technology (IT) questions, and post information pertaining to reference interview techniques.

Fitcher (2005:50) also restated that wikis are also used by library intranet for “project teams, departmental initiatives, or special programs”. In the same vein, Davies (2004) argues that another potential use for wikis in academic libraries is for project brainstorming and this is

supported by Lamb (2004) who opines that wiki can be created for specific projects like library course design. Bristow (2005) reiterated that wikis create a virtual study area between academic librarians and their clientele. Delio (2005) supported the preceding assertion that wikis are fundamental in any project that requires the ability to gather input from multiple clientele and attends to their chores in real-time. Greenhow, Robelia and Hughes (2009) concluded that wiki serves as a virtual repository of students' work which allowed academic librarians to diagnose each departmental academic plan and research schedule. In this way, academic librarians are better prepared to help students continue their research, and are able to identify problems at the earliest stage of the semester.

Mahmood and Richardson (2011) acknowledged that library website is considered as a window for providing SMT services to the users electronically even outside the library walls. Thus, the study of Kim and Abbas (2010) surveyed websites of a small sample of 230 academic libraries worldwide; wiki had 20% usage of the sample population. In addition, the study of Harinarayana and Raju (2010) which selected 100 universities from the lists of world university rankings shows that 57 universities were offering at least one SMT service. The content analysis of these 57 websites revealed that Wiki was among the least used technologies in the provision of library services. Similarly, the study of Chua and Goh (2010) which studied 120 public and academic library websites from North America, Europe, and Asia indicated that using wikis for the provision of library services was on the low side. On the contrary, the study by Mahmood and Richardson (2011) revealed that forty libraries were using wiki applications for the provision of library services and collaboration among academic librarians.

Robertson, Burnham, Li and Sayed's (2008:25) findings revealed that 'the ease of interaction and operation makes a wiki an effective tool for mass collaborative authoring'. The findings also concluded that there is an increasing use of wikis by libraries which are internal or closed, while others allow general public access. According to the study, private or internal wikis are commonly used for joint writing projects, organisational planning, conference arrangements, and other similarly collaborative projects. Public access wikis tend toward open collaborative content management projects, where various contributors add material collectively (Wikipedia). Lombardo, Mower and McFarland (2008) revealed that University of Utah's Eccles Health Sciences Library engages numerous wikis to advance project relationships.

Lynch and Rieke, (2008) noted that Drexel University Health Sciences Library uses a wiki to develop discussion among divisions, to substitute the traditional reference handbook, and as an instruction tool. Allan (2007) found that the Quillen College of Medicine Library at East Tennessee State University employs a wiki to administer the library's training sessions, to collaborate resources creation, and to divide the workload. Stony Brook University Health Sciences Library uses wikis, instant messaging, and social networking sites to improve the reference services and staff Intranet system of the library (Chase, 2007).

Robertson *et al.* (2008:31) concluded that currently, "it appears that most academic libraries employ wikis for internal information management and communication issues rather than open, subject-specific information collection". There are a number of reasons for this, ranging from distrust of the software and concerns of outside information "contamination", to simply a shortage of dedicated staff-time. Robertson *et al.*'s (2008) study revealed that wikis are used less in the provision of library services.

#### **3.2.1.4 Podcast and Vodcast**

Barsky (2006) perceived Podcasts as digital files downloaded from the Web and listened to whenever and wherever you want. Harris and Rea (2009), DeVoe (2006), and Murley (2007) also described podcast as an audio file (MP3) forwarded to a web-based platform and accessible for download even when they are located a long way from the library building and are busy doing something else. Consequently, an audio file on a website is not necessarily a podcast until the user can make a subscription for it through Really Simple Syndication (RSS).

Thus, a podcast is not an ordinary product, but it means of delivery is also important (Bierman & Valentino, 2011). Lee (2006) expanded this definition to embrace the collation of video collections (AVI and MPEG), which is called Vodcasting. Podcasts are commonly used to describe and promote various library resources (Bradley, 2007; Bierman & Valentino, 2011). They relieve users of the task of going through lengthy text, and instead enable them to listen to information, guide them on the use of library resources, gives vital research tips at their leisure, and much more (De Sarkar, 2012).

Walia and Gupta (2012) in their study among the 28 national libraries discovered that only 10(35%) national libraries have podcast on their website and on the website of National Library of Canada, podcast list of historical sounds recording, and songs are available. Bierman and Valentino (2011) discovered that nearly more than 50% of American Research Libraries use podcast for one thing or the other which include podcast on scholarly publishing, arts in the library, library news, oral histories, interviews, tours, using the library, events and lectures. This is in contrast with the findings of De Sarkar (2012) who discovered that adoption and use of podcast in libraries varies along the geographical regions. The study found that extension of implementation of podcast is high in North American libraries whereas intension of adoption of podcast is high in Australian libraries. However, the reason of disproportionate use of library podcast may be attributed to the differential internet penetration rate along the regions.

Brown, Brown, Fine, Luterbach, Sugar and Vinciguerra (2009:351) “noted that academic libraries can share pictures, events, and instructions by podcast”. Lee (2006) affirmed that “podcast is a catchy tool to market library services and attract new users”. Tripathi and Kumar (2010:204) stated that “students can listen to library manuals through podcast instead of reading in the text format. Audio streams of library activities and book readings may be beneficial for students who are visually challenged or have poor reading and comprehension competencies”. “Academic libraries use podcasts mainly for offering tips, using the audio format” which is readily available to their clientele (Brown *et al.*, 2009:360). The study of Tripathi and Kumar (2010:202) showed that “approximately 3% of academic libraries use podcasts to deliver the speeches of important people; 9.2% of the academic libraries have provided instructions about how to use podcasts; 6.8% of the academic libraries have provided RSS feeds about scheduled lectures and other audio streams over the podcasts; and 5.8% of academic libraries offer transcripts of the important audio streams broadcasted over podcast”.

The study of Kim and Abbas (2010) in an assessment of 230 websites of academic libraries worldwide revealed 27% use podcast in the provision of library services. However, the study of Harinarayana and Raju (2010) of selected 100 universities from the lists of world university rankings revealed that Podcast and Vodcast has the lowest level of usage amongst SMTs. Thus, the study in UK by Shoniwa and Hall (2007) which audited library websites of 152 higher

education institutions also revealed podcasts as having 5% usage in service provision. Linh (2008) concluded that although two-thirds of academic libraries used such technologies, but the general indexes of their use were low. Nevertheless, the investigation by Liu (2008) found websites of 111 ARL member libraries and podcasts use in various academic libraries and Mahmood and Richardson (2011) concluded that Podcasts and Vodcast are found to be widely adopted in academic libraries.

Sampson (2006:8) revealed “at the end of her journal documenting the creation and implementation of podcasts and video casts explaining that her requests are seeing increased usage monthly, patron created content is appreciated, and both MP3 and WMA format are used”. Ragon and Looney (2007) described their approach for creating lecture series podcasts at the Claude Moore Library in the University of Virginia and they recorded a success in usage. Barnes (2007) used podcasts to promote a specific section of the Mississippi State Library Collection. Worchester and Barker (2006) provided many examples of academic libraries that are using podcasts for bibliographic instruction and concluded that it is time consuming to create and continue podcasts. Bierman and Valentino (2011) found that almost 50% of American Research Libraries use podcast.

Ralph and Olsen (2007) analysing the tech-savvy Millennials advocate for podcasting to meet their varied studying patterns and advance the distant learning programs. Griffey (2007) maintained that the ubiquity of MPEG, MP3, and AVI formats, and mobile devices which are efficient handling these format, encourage the provision of audio content via Podcast. The 2009 survey by Arbitron and Edison Research revealed that 71% of respondents between 12-17 years’ and 64% between 18-24 years’ bracket possessed an iPod and other portable MP3 player. Balas (2005) explained the Online Programming for All Libraries (OPAL) project which is presenting its database web-based programs, such as manuscript, pedigree, and health related debates, as podcasts. This is supported by King and Brown (2009) who pointed out that, academic libraries can share events and instructions with their users effectively using podcast. Likewise, De Sarkar (2012) concluded that some academic libraries produce podcast in more than one language to cater to the needs of international students coming from across the world. For example, podcast guides to the Robinson Library of New Castle University are broadcasted in English, Arabic, Chinese, French, German, Japanese, Russian, and Spanish.

Lee (2006) reveals that the Lansing Public Library's podcasting efforts promotes its services to the society by attaching different set of people to a particular program. Ragon and Looney (2006) depicted the Claude Moore Health Sciences Library's podcasting project that offered admittance to the Health System's History Lecture Series at the University of Virginia. Murley (2007) equally indicated that Buffalo Law School's podcasts, a monthly legal news podcast from King County Law Library in Seattle, Washington is also very active. Griffey (2007) and Ralph and Olsen (2007) both enlightened that podcasting efforts by academic libraries' podcasting will influence it to expand instructional services to library clientele.

Faisal (2015) notes that Vodcasts are used in academic libraries to promote and publicise library resources and services and to provide library instruction. Library tours, story hours, recordings of library events, invited talks and debates can be distributed in the form of Vodcasts. Walia and Gupta (2012) observed that Library of Congress classifies its Vodcast into various categories such as Biography, History, Culture, Performing Arts, Education, Government, Poetry, Literature, Religion, Science, and Technology.

Tripathi and Kumar (2010:197) opined that "certain information, such as the physical layout of the library, general searching skills, and the self-issuing and returning of books can be explained effectively through visual clips. For example, the Library of University of Leicester provides video streams over Vodcast to explain the procedure for self-issuing and returning of books. Mount Allison University's Library provides video streams to demonstrate search strategy, plagiarism, and so forth". Tripathi and Kumar (2010:202) in their study revealed that "approximately 2% of the academic libraries use Vodcasts to provide guidance about gaining access to e-resources, databases and e-books and video instruction about how to use the library catalogue. About 1% use Vodcasts to convey instructions about how to access resources from outside of the campus and slightly more use Vodcasts to explain the procedure for the self-issuing and returning of books". Griffey (2007) opined that easy availability of audio files (MP3 format), video files (MPEG and AVI formats) and electronic devices that support those file formats together contributed to the increased delivery of content via podcasts.

De Sarkar (2012) argued that some libraries use both audio and video podcasts simultaneously and provide instruction in a more lively and attractive way. For example, RMIT University

Library, Bill Robertson Library of University of Otago, Kankakee Public Library, and New South Wales State Library that use video podcasts extensively. In addition, Sarawak State Library Webcast produces a combination of podcasts and Vodcasts while Boulder Public Library Teen Webcast produces video shows destined for the young members of the library. Cornell University Library's Libcast features audio and video recordings of the library events, lectures, conferences, exhibitions, research tips, and services. Yale University Library's Netcast archives episodic events since 2008 to the present. University of Sheffield Library Screencast provides library orientation training to the users, showing them how to access the reading lists online, and find books in the library.

The study of Tripathi and Kumar (2010:202) also revealed that “approximately 2% of the 277 academic libraries used Vodcasts to provide guidance about gaining access to e-resources, databases and e-books, and video instruction about how to use the library catalogue. About 1% used Vodcasts to convey instructions about how to access resources from outside of the campus and slightly more used Vodcasts to explain the procedure for the self-issuing and returning of books. The conclusion of the study revealed that the size of audio or video streams was large, downloading these resources over the internet takes a lot of time, and patrons needed high-speed internet connectivity to get audio/video streams. These may be the possible reasons for the low use of podcast and vodcast in academic libraries”.

### **3.2.1.5 Social Bookmarking and Tagging**

Redden (2010:219) described “social bookmarking as the practice of internet users identifying and labelling web pages for use later and has become a popular way for individuals to organise and share online resources”. Extant literature has indicated that academic librarians now use Delicious and Connotea to create e-references which has gone a long way in providing real-time services to library clientele (Barsky & Purdon, 2006). This corroborates the findings of Kim and Abbas (2010) which revealed that 22% of the surveyed academic libraries offered a bookmark function, and 42.5% of the users have utilised this functionality. Bookmark functions are highly utilised among undergraduate students, which support the idea that undergraduate students grow with technology and appreciate such services. The study also revealed that the utilisation of academic libraries by undergraduate students has long been one of the major concerns for



academia. Kim and Abbas (2010) further state that use of these tools for library outreach is an efficient way for academic libraries to engage with undergraduate students in order to inform them about services and resources provided by the library.

Walia and Gupta (2012) affirmed that social book marking tool has great potentials although only small numbers of the national libraries (39%) have adopted it. Some national libraries used it on blog site where users can tag blog entries. Some of these libraries used social bookmarking service to share news, events, and websites updates; also, some have a tag cloud which enabled users to search existing tags. The study of Mahmood and Richardson (2011) which surveyed a population of hundred academic libraries which are part of the Association of Research Libraries (USA) revealed that fifty-five libraries used social bookmarking or tagging. They used this technology in three ways. Some libraries offered user tagging in OPAC. Many developed subject guides using Springshare software, which provides keyword tagging for searching and a few academic libraries used the del.icio.us website for social bookmarking. When users tag in the library setting, they contribute keywords that characterise the resource(s) they are tagging. Their tags can relate to the subject content of the resources, their opinion of a specific book, or keywords to aid their memory trace (Binkowski, 2006).

Redden (2010) on the other hand maintain that social tagging is the method by which users classify or categorise bookmarked sites for retrievability. He posited that by wading through the glut of online information and by networking with other information professionals, academic librarians can use social tagging to point users to useful pages while demonstrating the value of information literacy. Kim and Abbas (2010) opined tagging or categorising, as a way to organise information which makes information readily available to clientele via Selective Dissemination of Information (SDI). For example, users create a tag (label) for articles and store the selected articles under the chosen category. Gooding (2009) claimed that social tagging can be used for generating a group of users with common interest and creating a range of related categorizations that is useful for a a particular studying group. Redden (2010) confirmed the foregoing by stating that many academic institutions have bravely ventured into this new social realm of information classification and have developed progressive ways to utilise social tagging sites to reach out to their users and provide these communities with personalised and institution-specific library services. Therefore, academic librarians are using these sites' features to organise and

disseminate information to their users as well as to discover useful web sites continually and to network with colleagues (Kim & Abbas, 2010).

Redden (2010) acknowledged that these tagging tools stand to potentially improve online learning experiences and outcomes, serve academic institutions economically and provide for ease of networking among academic librarians. Therefore, Farkas (2007) affirmed that academic and biotechnology organisations, such as the Pennsylvania State University Library, have begun developing their own institutional version of Connotea which is a social bookmarking site. Redden (2010) averred that academic librarians can use social tagging to point users to useful pages, while demonstrating the value of information literacy. He reiterated the fact that most social tagging sites can allow academic librarians to tag and organise electronic resources in “private” mode until they are ready to roll out their tagged pages for users to discover. Academic librarians can also use sites that allow them to make reference notes and give additional tips and guidance for students using particular links for their course-related research. On the same note, Ackerman, James and Getz, (2007) argued that social tagging is conducive for various languages and information formats, such as images and audio. That is, by utilising social bookmarking, academic librarians can identify a variety of relevant information in numerous formats that will support students' individual learning styles.

Xu, Ouyang and Chu (2009) revealed that tagging at present is implemented less widely in the academic libraries. This is in contrast with the findings of Golder and Huberman (2006) who examined the structure and dynamics of collaborative tagging systems, and discovered regularities in users tagging activities. This rich combination of shared knowledge in the form of tags results in a folksonomy, or a set of terms, that can then be used by the knowledge community to describe the resources in the library (Kim & Abbas, 2010). The study of Abbas, Chen and Lomax (2007) revealed 76% of academic library sites (13 out of 17 total academic library sites) provided users' tagging.

Kim and Abbas (2010) describe folksonomy as a collective set of tags developed by users. It offers advantage because it emerges from users and reflects practical usages (community of practice) rather than the ones that were planned, which can be distant from users (McAfee, 2006). Redden (2010) supported this by stating that folksonomies emerge naturally because users

provide their own vocabulary and meanings used within the community. Subsequently, the categorisation makes more sense to the users within the community. Spiteri (2007) affirmed that this functionality has been valuable as a knowledge sharing function initiated by users. Redden (2010) maintained that social tagging allows academic librarians to develop appropriate folksonomies which could be made identifiable with programs and courses, as opposed to a strict classification system such as LCC which could still be used as a basis for tags as some academic libraries have already begun. Pack (2007) argued that a well-developed folksonomy is ideally accessible as a shared vocabulary that is both originated by, and familiar to, its primary users. Abbas (2007:108) on the other hand contended, “Folksonomies are usually used for subject representation by the users within collaborative sharing communities.”

### **3.2.1.6 Really Simple Syndicate (RSS)**

King and Brown (2009:39) described Really Simple Syndicate (RSS) as feeds that “update users about the additions or changes which take place on websites of interest, providing updates from one source instead of accessing individual websites”. RSS feeds enable users to subscribe to specific Web sites to receive information regularly without visiting the actual Web page (Cong & Du, 2008). Therefore, in an academic library, users can subscribe to academic publishers' digital libraries that offer an RSS feed for each journal and reporting summaries of each new issue as it becomes available, thereby staying current with emerging knowledge in the field (Kim & Abbas, 2010). Thus, this service enables users to reduce any unnecessary steps it takes to access relevant databases in the library. Cornell University offers MyUpdates, which is a tool to help scholars stay informed of new resources provided by the library, which is a form of SDI (Cohen, Ferreira, Horne, Kibbee, Mistlebauer & Smith, 2000).

The study of Kim and Abbas (2010) revealed that RSS is widely adopted among academic libraries with 73% of the academic libraries having RSS feeds, but only 10% of the surveyed users utilised this functionality. In addition, the study of Cuong (2008:8) in 37 Australian university libraries revealed “that RSS was the most widely applied technology and instant messaging was the least used technology”. Furthermore, Cuong (2008:9) noted the important role of RSS is keeping users updated with the latest information to stay abreast of recent happenings in their field of research. Thus, clientele “can subscribe to those RSS feeds that

cater to their academic and research needs, just like the Library of University of Southampton provides news feed on RSS to inform students about activities and events held in the University (Tripathi & Kumar, 2010:196). In addition, the University of Tennessee at Knoxville Library uses this functionality to provide patrons a rare digital copy of a Union soldier's Civil War diary (Lankes, Silverstein & Nicholson, 2007).

Tripathi and Kumar (2010) observe that RSS is commonly used in 277 academic libraries in the U.S, U.K, Canada, and Australia. Stephens (2006b:38) “claims that the popularity of RSS may be due to its clear functions, simplicity, and ease of use”. Cuong (2008:16) “predicted that RSS would be the most powerful tool” among SMT that will go a long way in enhancing the provision of library and information services. Tripathi and Kumar (2010:200) in a study revealed that 19-62% of “academic libraries in Australia, Canada, USA and UK use RSS to provide general and university news. Seventeen to 62% of the libraries use RSS to convey news and events relevant to the library. Approximately, 10-19% of libraries use it for announcing schedules of workshops and exhibitions organised by the university; 11-54% use RSS for providing information about books added to the collection; 11-35% use RSS feeds to convey information about e-journals”.

The study of Mahmood and Richardson (2011) which surveyed 100-member academic libraries of the Association of Research Libraries (USA) revealed that RSS was found to be the most popular tool and that most of the academic libraries were using this technology to publish library news and announcements and sharing items published on library blogs. Tripathi and Kumar (2010:200) asserted “that 19.6% of the 277 academic libraries surveyed have provided instructions on how to use RSS and 19.5% have provided links to RSS from their homepage to download RSS feeds”. Approximately, 24% of the universities have classified the RSS feed to make the access of RSS convenient. Eighteen percent of libraries have made RSS feeds searchable so that patrons can have direct access to information of interest.

### **3.2.1.7 Instant Messaging (IM)**

Walia and Gupta (2012) described Instant messaging (IM) as virtual reference service through which academic librarians can handle user's enquiries instantly in a pre-defined time and answers user's questions without wastage of time from a remote location. Tripathi and Kumar (2010:196)

declared that IM “allows online communication between two or more people using text based short messages via the web at real time”. Therefore, academic libraries use IM to provide virtual reference services, improve access of other services, and provide the latest information to students (Stephens, 2006a:11).

“Instant messaging also acts as an additional medium to facilitate interactions with patrons was the findings of Tripathi and Kumar (2010:196) study and concluded that IM is used by libraries to provide a range of text-based and voice chat, advice about using the library, such as the acquisition of resources and interlibrary loan, photocopying facilities and many other library services”. As Steiner and Long (2007:3) stated in their article on instant messaging, “with the enrolment of internet-dependent millennial students, returning students who hold full-time jobs, and the rise of distance education, internet-based library services have become a necessity”. Therefore 21<sup>st</sup> century “academic libraries use various platforms to mediate the delivery of IM based services such as Meebo, AIM, MSN, and Yahoo” (Steiner & Long, 2007:2). Certain libraries make IM services available round the clock “using a consortium or providing collaborative reference” services (Mishra, 2008:2). This was corroborated by Kamel Boulos and Wheeler (2007) avowed that IM was harnessed for managing reference services and encourage in-house communication among staff. Foley (2002) also confirmed that IM is well suited to conducting reference interviews, clarifying questions, and receiving feedback.

### **3.2.1.8 Media Sharing**

Media sharing utilities, are receiving intense and growing interest across all sectors of the education industry (Alexander, 2006). They are seen to hold significant potential for speaking to the needs of today’s diverse students, enhancing their learning experiences through customisation, personalisation, and rich opportunities for networking and collaboration (Bryant, 2006). YouTube is an SMT which is meant for media and video sharing. Colburn and Haines (2012) affirmed that it has profoundly influenced the way academic librarians communicate online with their clientele in the provision of library services. Thus, academic libraries now have opportunities and in some instances obligations, to reach users through interactive SMT platforms which is not constrained by time, location and means due to the ubiquitous nature of this technology.

Similarly, Webb (2007:1) affirmed that YouTube could be a mechanism for “reaching a mass number of patrons with the least amount of effort” and that it “could radically change how we look at library instruction and training if academic librarians let it”. Likewise, Harsh and Mishra (2012) asserted that it is a major tool for the provision of library services. In addition, Walia and Gupta (2012) opined that six national libraries including national library of Trinidad and Tobago, Israel, France, Latvia, Switzerland, and Australia used YouTube for uploading video clips which mainly pertain to music, interviews, speeches, tutorials, and past events held in the library.

Equally, the findings of Chu and Du (2012) maintained that YouTube is primarily for content-sharing and training because it gives a didactic representation of library services which extant research has shown that clienteles prefer to use. The findings of Khan and Bhatti (2012) agreed that academic libraries use YouTube for sharing videos of many of the events held at the library. In addition, YouTube can be used to share video conferences, workshops and library events, libraries can promote services, collection, and events. Similarly, Khan and Bhatti (2012) asserted that academic libraries can also market their different programs conferences workshops by uploading their videos on the YouTube.

The vision and mission statement of an academic library should determine which SMT to adopt and use in the providing library services (Boyd & Ellison, 2007). SMT should not be chosen simply because others are adopting these technologies, but the clienteles’ needs should be focal point in determining which one to adopt in order to meet the clienteles needs effectively (Maness, 2006). Academic libraries must therefore take into consideration few things about what to post on these media that include (Burkhardt, 2010):

- a. Library news and events —The academic library must ensure that library news is well communicated via SMT medium which is great for updating people on happenings in the library.
- b. New additions to your collection—the new collections should be broadcasted on the library SMT accounts which can be helpful for informing patrons about new resources. This is because clienteles might not know about additions to the library collection unless you tell them.
- c. Links to articles, videos —An academic librarian must ensure that whenever he/she come across web content that would be relevant or helpful to patrons, such materials

should be posted on the library SMT accounts. This is a good form of SDI, which goes a long way in providing information for designated groups of clientele.

- d. Community information—an academic librarian can also pass along information of significance to the university community via the library’s SMT channels. The academic library is core to the university community and it is natural it should be a place where people go to get information about the community.
- e. Solicit feedback—SMT is built for conversations through which academic libraries can get feedback from clientele on the output of their services. Therefore, an enabling environment should therefore be created so that clientele can freely air their views about the services offered by the library.

### **3.3 Academic Library Services Provided via SMTs**

Extant literature has shown that SMT can be used to promote the user- centric library and information services from anywhere, anytime and in many ways within a cyberspace (Kwanya, Stillwell & Underwood, 2012). Okonedo, Azubuike and Adeyoyin (2013) add their voice by saying the use of SMT in libraries has increased in the areas of offering selective dissemination of information (SDI), collaboration services, reference services, information literacy, training services, marketing services, research services and library awareness services. Some academic librarians have recommended that SMT could be a reasonable avenue to provide library services and connect with library patrons (Charnigo & Barnett-Ellis, 2007). Steiner and Long (2007:33) opined, “With the enrolment of millennial students, SMT based library services have become a necessity”.

Sodt and Summey (2009) stated that SMT services offered by the library take into consideration users’ needs and desires which is the core of SMT library services. This corroborated the assertion by Casey (2006) that these services encourage constant and purposeful change, inviting user participation in the creation of virtual services and supported by consistently evaluating services. It also attempts to reach new users and better serve current ones through improved customer-driven offerings. These services include:

### 3.3.1 Reference Services

There is a transformation being experienced in libraries globally due to the introduction SMTs to library operations. Thus, reference services have metamorphosed from the face-to-face interaction between an academic librarian and students to an online platform which is pervasive and encourages real-time provision of this service. (Moyo, 2004). Kyrillidou (2000) avowed that decreasing statistics reported by reference librarians in academic libraries reflect the fact that fewer patrons are approaching the librarian at the reference or information desk in the library. This is corroborated by the Association of College and Research Libraries' statistics which showed an average 0.3% yearly decrease in reference transactions since 1991.

Chowdhury (2002) emphasised that reference services is taking a vital place in the library and SMTs are providing the means of personalising these services which can take place on any SMT platform without any intrusion.

The traditional reference librarian ensures that users' queries are answered as humanly as possible, but the bane of the traditional reference librarian is that he/she can only attend to a clientele at a time and always within the working hours of the library, which is usually between 8am to 4pm in most countries. In addition, answers to clienteles' queries are limited to library collections which most of the time is inadequate or outdated in most academic libraries in developing countries like Nigeria (Onuoha, 2013). Ryan (1996) noted that reference services has passed through different stages of teletype referencing, telephone referencing and e-mail referencing to now SMT virtual referencing services.

Nevertheless, with the advent of SMT, the role of the reference librarians has been enhanced due to their universal description which has strengthened the reference librarian to attend to clienteles' query anytime of the day. SMT enable Reference librarians to communicate, network, and share documents with many library clients regardless of location and at little or no expense. Reference librarian can build relationships and keep up-to-date with library clienteles, opens new forms of collaboration that are not so bounded by time, place and access funding. The use of SMT in providing reference service is called "digital reference services (DRS)" which entails the conventional function of an academic librarian to assist library users in locating information in the library; and also, that it is sacrosanct that academic library and academic librarians should



brace up and harness SMTs in meeting the information needs of their clientele (Janes, Carter & Memmott, 1999:145). Moyo (2004) called DRS another name which is Virtual Reference Services (VRS) which involves the transformation from the traditional reference services to cyberspace by using SMTs to provide these services to library patrons who has drifted to this environment. The growth of VRS is based on the premise that the need of library clientele ought to be met (Mandernack & Fritch, 2001).

Janes, Carter and Memmott (1999) found that less than 50% the academic libraries in their study provided digital reference services (DRS), and the service appeared more frequently in larger institutions. In the categories covering institutions that emphasised undergraduate and master's-level graduate education, only 33% and 29%, respectively, had DRS. Goetsch (1999) surveyed 122 ARL, which would be considered the larger institutions in Janes, Carter, and Memmott's study. She found that 96% of the ARL libraries provided DRS. However, the study by Chu and Meulemans (2008) and Cummings, Cummings, Frederiksen (2007) revealed that SMT has continued to transform library policy and practice in reference services.

Sodt and Summey (2009) observed that DRS may use a Wiki for a knowledge base to provide a place to store FAQs, hard-to-answer questions, library assignments, and possibly links to online reference resources. These could be made available to library users, especially those at a distance (Gordon and Stephens, 2007). This corroborated the findings of Lankes (2008) who observed that SMT is a significant tool in meeting the educational needs of distance learning and would be attended to with these technologies without any restraint on time, means and location.

Dickson and Holley (2010:6) and Ezeani and Igwesi (2012) affirmed that it is now a new thing for academic library to embed the feature to ask a librarian questions on SMT platforms like the library's Facebook page so as to incorporate reference services through these SMT medium. In the University of Michigan, the Harlan Hatcher Graduate Library created a "ask-a-librarian" feature on their Facebook page and also links to LibGuides, a WorldCat search was created. The basic goal of a library's Facebook page is to be able to have a personalised relationship with library clientele within the Facebook space instead of navigating to the website of the library. These SMT platforms like Meebo and Twitter are being harnessed well by students at "real-time" in accessing the reference services provided by academic libraries (Steiner, 2009:5) and

this is going a long way in making students approach the library in meeting their information needs.

Ezeani and Igwesi (2012:4) observed that SMTs like Instant Messaging (IM), Voice over Internet Protocol (VoIP) might be employed to realise a successful feat in providing reference services by relating with students in virtual communication. Farkas (2010) stated that in addition to multimedia based web sites, social games can also be harnessed for library outreach. An example is Second Life which is a virtual reality game that permits academic libraries to create libraries in cyberspace and at the same time provide reference services to these clientele in this virtual space. One fundamental advantage of using SNS for reference services is that it makes the relationship between a reference librarian and the library clientele a participatory one. Implying that academic librarian can meet the needs of these via different SMT platforms which all has its peculiarity. Thus, providing a variability of trustworthy, scholarly perspectives leading to an inspiring wealth of information content (Lankes, 2008; Maness, 2006).

Moyo (2004:224) stated the following advantages are provided by Virtual reference service:

- a. “services are available where there is no constraint on internet access;
- b. ability to reach library users globally;
- c. Widespread services;
- d. Gives academic librarians to attend to wide audience;
- e. provides real-time services to users;
- f. there is no need to visit the physical building to have access to library services;
- g. library services can be offered anytime of the day;
- h. library users are not restrained to face-to-face interaction;
- i. marketing of library product and services in the cyberspace; and
- j. Users expectations and information need are met adequately”.

Aharony (2009c) observed that Connotea is a great reference tool, allowing the reference librarian to save and organise reference links and share them with others. They can be accessed from any computer and offer integration with lots of other tools. Moyo (2004) revealed that Altarama provided a system called RefTracker which is a virtual platform for tracking all

queries from the online form being filled on the library website and this can be downloaded at real-time and answered accordingly. It also has the search features of knowing which question was asked and which one has been answered. Thus, virtual reference is playing a significant role in academic libraries in this epoch in which vital information is key in the space of information influx that are not trustworthy.

### **3.3.2 Outreach Services**

While some maintained that SNS offers an effective and modern method of providing outreach services to students. Current literature has revealed that the use of SNS by academic librarians delivers an effectual method of student outreach as long as academic librarians take into consideration the issues that might possibly arise. There are numerous outreach methods which aim to encourage library usage among faculty and students. These outreach programs are targeted at students so as to keep them abreast of happenings in their field of study and also targeted at faculty members so as to ensure that these students will give them assignments that will lead these students back to the library (Dickson & Holley, 2010).

Furthermore, other approaches of library outreach concentrate on student population which incorporates an academic librarian who collaborates with the student associations. Academic libraries encourage student-targeted outreach since they are less reliant upon the traditional library but are interested in real-time library services, which is extensive in nature (Kim & Abbas, 2010). Based on the emergence of online resources, these students might not see the need of consulting library materials in its physical space for their research. Consequently, there has been advocacy in the librarianship discipline that academic librarians should meet students in their safe haven so as to provide library services outside the conventional way. Farkas (2007:36) opined, "In as much as the library is not the first point of call by library patrons, then the chance of them seeing the marketing of library services on the library website is a slim one. Consequently, the library must go beyond these sites and therefore put these library contents where library users actually are". Chu and Du (2007) asserted that SNS offers such an opportunity to reach clientele in their own personal space.

Based on an analysis of the germane literature, the major SMT used today for social networking by academic libraries are the mainstream social networking web sites, blogs, wikis, and social

bookmarking web sites. Dickson and Holley (2010) professed that Blogs and wikis is a robust web platform to extend library services to university students. The platform encourages discourse and interaction via their comment box and allows students to deliver response regarding the information provided by the library (Aharony, 2009a).

Kaplan and Haelein (2010) affirmed that blogs are also used to create subject guides as they can be easily updated to reflect the most current sources for a class or department. Therefore, this allows students to comment on the information included in the blog by inviting user feedback regarding the library. Bradley (2007) stated that Twitter allows academic librarians to go where the students are already located. Academic libraries post hour changes, events, new resources available, search tips, deadlines, links to the library web sites, responses to clientele's comments, and news affecting them without the requirement that they visit the official library web site. Therefore, Milstein (2009) asserted that the advantage of a blog as a significant means of interaction between the library and library patrons, academic librarians need to be proactive in their discussions and respond adequately to students' questions without an iota of delay.

Faisal (2015) noted that within academic libraries, wikis are primarily used for the creation of collaborative subject guides. Academic libraries can create subject wikis with links to resources on a chosen topic or for a particular class, including information regarding relevant databases and search tips tailored to that subject (Kroski, 2007). Clientele's conducting research on a topic can use the resources provided as well as edit the wiki to include additional information. Thus, Dickson and Holley (2010) affirmed that a wiki-based subject guide is a veritable tool for teamwork between academic librarians and library patrons.

Chu (2009) study on academic librarians' use of wiki revealed that private wikis were the most widely used with 50%. These private wikis only allow authorised users to edit and also read the content only. While semi-private wikis with 31.8% permit any individual to read the content but restrain the editing to authorised users. The study concluded that academic librarians have embraced the idea of wikis but they are still being restrained about the manner in which it gives unlimited access to users and therefore seek to maintain some level of control.

Farkas (2007) stated that special library collections can be uploaded on Flickr account, though an analysis of Flickr showed that most academic libraries use this platform to post pictures of libraries only. Mathews (2006) postulated that these digital libraries provide a 3D setting which include subject guides, audio players, video tutorials, instructional sessions, database and catalogue searching, live assistance and meeting areas. Academic libraries can also cooperate with other libraries to offer uninterrupted service. Cyberspace games allow academic libraries to transcend from the traditional library services to an entirely innovative platform. Finally, SMT empower academic librarians to design multimedia profiles with the purpose of boosting interaction between library staff and patrons.

Resource list can be created by academic librarians for all the departments in the University and this is made accessible to students. And these reading list can be tagged with the department and class unique number (Kroski, 2007). Access point to these materials that are not adequately described by the existing Library of Congress Subject Headings are added to the library catalogue. Hence, content and tags from library's Delicious account can also be added to the library catalogue. This was practiced at the Ithaca College for film classes which broadened the search competencies of these students (Gilmour & Strickland, 2009).

### **3.3.3 Marketing Services**

Social Media Technologies (SMT) have been extensively studied in many fields and have had a sizeable impact on the way and manner institutions interact with their clients and market their products and services (Kaplan & Haenlein, 2010). In the field of librarianship, it is evident that understanding of clientele's needs is important to the success of library marketing (Jones & Harvey, 2016). Phillips (2011:513) therefore "encouraged academic libraries to use Facebook to market services and to make themselves more accessible to students" to render library services effectively. Thus, Khan and Bhatti (2012) asserted that the growing population of patrons and academic librarians harnessing SMT indicate that it is a perfect outlet for marketing library services to library clientele.

Academic libraries in developed countries are adopting latest trends to market their services and libraries of all types are increasingly using SMT applications to connect with library users and to make library programs and services user-friendly (Farkas, 2006). SMT affords academic

librarians the opportunity to move past the level of traditional way of providing library services, to an engaging and creative way of conversing with our clientele in real-time (Potter, 2012:91).

Khan and Bhatti (2012) asserted that Library of Congress is also utilising these technologies for marketing its services and to interact with online users. Burkhardt (2010) noted that Flickr is an outstanding SMT good for marketing and could be used by academic librarians to enlighten users on universal library services. In addition, McCallum (2015) supported that the principal use of Facebook by academic libraries is to market what the library has to offer by creating a library page which include information on libraries hours, location, and other information about the library. Farkas (2007) buttressed the aforesaid by stating that by linking library's web site, SMT acts as an opening to the library in the cyberspace which gives it an opportunity to have a global visibility.

Chu and Meulemans (2008) argued that academic libraries also produce event invites for programs to promote library services to patrons. And as these clientele frequently use search engines for academic research, even a basic Facebook page can serve as a reminder to use the resources available in an academic library (Farkas, 2007). According to Jestin and Parameswari (2002:1), academic libraries have started to see that marketing of information products and services is fundamental to improve "user gratification and encourage the use of library services by clientele". Chu and Du (2013) asserted that marketing is advantageous to university libraries since it will assist in refining the library's image and attract more users.

Phillips (2011:513) observed that when Facebook page was marketed to "undergraduate students at Penn State during an instructional session, the study revealed that 29% of the reference questions directed to the academic librarian" came through Facebook. Likewise, Mack, Behler, Roberts, Rimland (2007:1) at "the University of Alberta, Reichardt marketed a Facebook group called Engineering Information and Reference Services-U Alberta through instructional sessions" and according to Reichardt (2008:275) this resulted in students sending queries to the group's "wall" and the engineering librarians posted information to "Recent News" trying to engage students with topics on the "Discussion Board."

The findings of Phillips (2011:516) revealed that "academic libraries are taking advantage of the opportunity to market themselves and their services through Facebook. Thirteen of 17 Facebook

pages promote their libraries and/or libraries in general, with promotional messages representing 10% of all posts”. Similarly, Khan and Bhatti’s (2012:1) findings revealed that respondents’ attitude was positive about SMT usage in libraries as they opined that these technologies were an important medium “for marketing of library products and services among online information users”. Thus, respondents of the study agreed that SMT is very important for marketing and promoting library services.

Essentially, the Facebook page created by the library aim to offer marketing services available to students at their academic library (Boyd & Ellison, 2007). Studies conducted at international level show positive results regarding the use of SMT in libraries to market their products and services. According to the survey report conducted by the South Carolina State Library, it was observed that majority of respondents (92.2 %) considered these technologies important for marketing and promoting library services (Khan & Bhatti, 2012).

The study of Khan and Bhatti (2012) revealed positive behaviour towards the usefulness of SMT for marketing library resources and services; respondents agreed that SMT is integral to market library products and services among online users as it captures potential users of library. These technologies offer more than just traditional ways of marketing library services because it allows user to create, connect, converse, share information, and help libraries to get closer to the users. Adewale and Omolola (2012) observed the following services can be marketed by academic libraries which are online information searching, CD-ROM databases, referral services, selective dissemination of information (SDI), interlibrary loans, information analysis, document delivery services, bindery services, renewals, translation services, reprographic services, audio-visual services, online database, video coverage, e-mail services, internet services, compilation of bibliographies, compilation of reading list, CD-ROM literature searching, indexing and abstracting, inter-library loan services, e-mail services, current awareness services, access to other library catalogues and new arrivals.

Chu and Du (2013) discovered that Twitter and Facebook have been used for marketing of library services among respondents, while a previous study had stated that academic libraries were unresponsive towards marketing through these technologies (Charnigo & Barnett-Ellis, 2007). Hendrix, Chiarella, Hasman, Murphy and Zafron (2009) believe that with the help of

Facebook and other SMTS, academic libraries can advertise their different upcoming events which will go a long way in letting clientele know what the library has to offer them. Khan and Bhatti (2012) agreed that academic libraries can also market their different programs, conferences workshops by uploading their videos on the YouTube. Burkhardt (2009) stated that RSS and Blogs are used to market library services among distance learner by the use of RSS feeds which enables libraries to republish and syndicate the contents on the Web. Aharony (2010c) stated that academic libraries can promote services, collection, events and resources by using SMT. Additionally, Aharony (2010b) affirmed that Twitter and IM can be used by academic libraries to market library services, which could either be reference services or research services. Similarly, Khan and Bhatti (2012) opined that academic libraries can use blogs to keep their clientele up-to-date with happenings in the field of librarianship. So also, Boyd and Ellison (2007) acknowledged that professional SNS like LinkedIn can be used by academic libraries to create professional connections and to market library services among other professionals working in different libraries of the world.

#### **3.3.4 Selective Dissemination of Information (SDI) and Current Awareness Service (CAS)**

The emergence of SMT has changed the way and manner selective dissemination of information services and current awareness service are offered in academic libraries. According to Oluokun (2015:660), this “has radically influenced the way knowledge and information are generated, developed and transmitted”.

Uzohue and Yaya (2016) indicated that CAS is useful for informing the library clientele of current library acquisitions available as well as any other relevant resources of the library to the notice of its users. According to Saikia and Gohain (2013) citing Luhn (1961), who first gave the concept of SDI, defined it as that service within an organisation which concerns itself with the channelling of new items of information from whatever source to those points within the organisation where the probability of usefulness in connection with current works of interest is high. Hossain and Islam (2008) explained that CAS is the way of bringing to the notice of the users’ current information available or knowledge helpful to development in their area of specialisation and it is an information service rendered to and for everyone.



Shultz and De Groot (2003) posited SDI as a personalised service which research library renders to clientele who may not have time to visit the library because of the nature of their research. SDI is directed to a targeted group or individual user and its main purpose is to assist users by rendering information services that gives up to date and current literature in their subject of interest as well as helping users to overcome the information overload which results from information explosion emanating from books, journals, newspapers, seminars and workshop papers, theses and dissertation and electronic sources from the internet and WWW.

YouTube, LinkedIn, Facebook, Flickr and RSS are essential tools that has greatly facilitated SDI and CAS which are indispensable and dynamic services for gathering information for medical professionals. RSS Feeds gives up-to-date information from journals, books, blogs, and other electronic sources. Librarians could also conduct comprehensive online searches on regular basis, then locate, and copy current information from RSS feeds and then sent to their users. Libraries collate information and sources in anticipation of users need.

### **3.3.5 User Education Service and Information Literacy Service**

Lai (2011) stated that Information literacy (IL) is described as a set of skills displayed by an academic librarian to access, evaluate, organise, and use information from a variety of sources so as to meet the information need of library clientele. The prevalence of SMTs has made IL an essential necessity in the knowledge economy.

Smith (2013) study of SMT use in IL in public libraries in South Wales was prevalent in 99 Central Library services, and 275 branches within New South Wales, giving a total of 374 service points revealed Facebook was the clear preference for user education, with 20 respondents (86%) indicating classes for this social media application. Twitter was also ranked highly (52%), followed by blogging, Flickr, YouTube, RSS feeds, Skype and creating online content. Other SMT applications mentioned in the Comments box were Pinterest and apps.

Godwin (2009) suggested that SMTs are best used to teach information literacy concepts. An academic librarian might utilise the tagging feature of Flickr to “assist clientele comprehend subject searching, keywords and make comparisons among tags and ordered terminology” (Godwin, 2009:268); indeed, some librarians at the American University in Cairo experimented with Flickr in the university’s information literacy course (Bussert, Brown & Armstrong, 2008).

Sokoloff (2009) identified libraries all around the world, from the United Kingdom to Serbia, that have created Facebook groups and pages to share information and interact with patrons. Godwin (2008:168) affirmed that Wikipedia “is resourceful source of informational and a valid SMT platform to deliver IL messages”.

Charnigo and Barnett-Ellis (2007:25) asserted that “Facebook is useful to assist students take cognizance of privacy and ethical issues as they create their online profiles”, thus curbing the risk of revealing their individuality in the cyberspace. Hoffman and Polkinghorn (2008:117) “examined the use of tags in Flickr to aid students recognise subject searching, keywords make comparisons between tags and controlled vocabulary as used in Library of Congress subject headings”. Godwin (2009:269) stated that “Del.icio.us can be used for bookmarking web sites and sharing with a group of people by working on agreed tags”. Webber (2008:39) harnessed IL “to develop inquiry skills with first year students at the University of Sheffield in the UK in which they commenced incident interviews with residents and this had a positive impact on other parts of the course”. Click and Petit (2010) established in their study that the most compelling reasons for libraries to use SMTs are to ensure that users that are already using these technologies are well catered for. Also, by using these technologies, academic librarians better understand library users, their needs and how these needs can be met. Finally, academic librarians assist library patrons to be better users of these technologies by taking into cognizance the fact that they need to protect themselves in the virtual world.

### **3.3.6 Document Delivery Service and Inter-Library Loan**

Electronic Document Delivery (EDD) according to Siddiqui (2003) is a system that permits users to quickly identify needed items and conveniently put them in order. The goal is to create virtual collections of library materials that allow users to locate relevant materials and to order them electronically. Libraries can easily transmit the exact copy of documents requested via SMT.

Interlibrary loan (ILL, sometimes called inter-loan, inter-lending, document delivery, or document supply) is a service whereby a user of one library can borrow books or receive photocopies of documents that are owned by another library.

### **3.3.7 Benefits of Using SMT in Promoting Library and Information Services**

SMT has become a dependable platform for the dissemination of information, forum for feedback mechanism, for research and of course for promotion. It is therefore not surprising that libraries all over the world have embraced SMT for promoting their library services. SMTs like Facebook, Twitter, Flickr, YouTube, and Wiki are useful for providing library services and for the speedy collection of feedbacks from library patrons. Akporhonor and Olise (2015) highlighted the benefits of SMT for promoting library and information resources and services in university libraries as:

#### **3.3.7.1 Building Brand Loyalty**

The use of SMTs not just advocate the library services but also bring library users to become library advocates. SMT is a centre for engagement that would enhance two-way communication. Using SMT in academic libraries increase reliability on the library, thereby building brand loyalty. In line with this, Gall (2010) explained that in this age of SMT, libraries have created their own personal brands for years just like how celebrities and media commentators have done. Academic libraries generally do not have a direct sales function, but they do have a history of building lasting relationships with different stakeholders, including university administration researchers, instructors and students. Indeed, “one of the most important things that a good academic library can offer is a long-term relationship with the clientele who use library services” (Gall, 2010:633)

#### **3.3.7.2 Saves Time**

Social media in promoting library and information services saves time and library staff hours. Social media have helped libraries in providing quick updates to users and provide a forum for quick and speedy feedback from library patrons. More so, social media makes it easier to reach many library patrons in the most time effective manner. Although there is a wide perception that social media marketing takes a lot of time and energy for it to be worthwhile. Mata and Quesada (2014) have argued that the biggest benefit of SMT marketing is the simple fact that delivery online content can be the most cost effective and time-effective part of the marketing mix.

### **3.3.7.3 Enhances fast Two-Way Communication**

One of the most important tenets of customer service is to be responsive to users concerns or praise by recognising them and showing that the library is interested in and care about their opinion. There is no controlling of what is said about a library, but librarians can influence the message that comes back. This is where SMT come into play as it creates a forum for feedback in library promotion. Pierson and Heyman (2011) note that monitoring the comments and questions of library users give the library immerse power to offer clarification on issues and potentially make improvement; this form of promotion boosts the library's image. Therefore, Villoldo, Salom, Chaigneau, Rubio and Navarro (2012) affirmed that communication with the library user is the service that has most benefited from the implementation of social media. The creation of profits on social networking websites, the use of digital signage and thematic blogs are just some of the ways in which librarians are now communicating with patrons. Social networking sites have audio and visual capabilities consisting of web-blogs, wikis, social bookmarking, media sharing spaces, RSS Feeds, microblogging sites, Facebook, LinkedIn having capabilities to promote synchronous or asynchronous interactions and communication (Hussain, 2012).

### **3.3.7.4 Saves Costs and Increases Revenue**

Villoldo *et al*, (2012) categorically stated that many of these SMTs cost next to nothing. Using SMTs as marketing tools for library and information services allows for enormous scope but expenses incurred is at a low cost. Academic libraries can organise activities on SMT platforms like Facebook, blogs, twitter to display the various library about products and services exclusive of any substantial funds. The only thing the library need is creating profiles on these SMTs platforms and have ample time to populate them with contents. With this, library patrons can be followers of the library's profile pages on these platforms.

### **3.3.7.5 Increases in Library Use**

The online community is opened to all as long as there is internet connectivity. In Facebook, for instance, the activities of a friend or fan of a library page are known by friends connected to that

friend or fan. Hence, when a fan of a library page comments or likes a status/post put up by the library, others can come to the knowledge of the promotional activities carried out in a library. This can motivate a friend of a library fan to join the library. In addition, social media can increase library patron's satisfaction with the library. This is not to say that the services rendered in the library should not be effective, otherwise promotion of such services would not attract more library users. Apparently, SMT has become the catalyst in projecting library and ensure that there is an active interaction with library patrons. As librarians are yearning to remain relevant in a digital society, social media can be seen as the tool to help libraries entice and retain their users through promotion. Besides, the overall process of promoting libraries through social media becomes more understanding to both libraries and library users.

### **3.4 Awareness of SMTs by Academic Librarians**

Cuddy, Graham and Morton-Owens (2010) affirmed that academic librarians must be vast in the use of these technologies in order to display high level of awareness. Okonedo, Amusa, Bakare, Bamigboye, and Alawiye (2014:205) affirmed that academic libraries are the “core” of universities and mandatory that academic librarians move with the technological tide. Extant literature has shown that academic librarians in developed countries have embraced advances in “technology to the extent that academic libraries are constantly redefining their roles and service paradigms” (Moyo, 2004:229). Boyd and Ellison emphasised that gone are the days that academic librarians stick to traditional ways of providing library service but are now aware of SMT library services which is 21<sup>st</sup> century librarianship. Quadri and Idowu (2014) argued that academic librarians in developing countries are now being compelled to follow the new trends in web technology adoption for effective service delivery and for this to come to fore, they must be aware of SMTs.

The study of McCallum (2015) among 600 academic librarians based in USA, UK, and India indicated a high level of awareness. Findings were that 70% of academic libraries are using SMTs, 30% of academic librarians post entries on SMT platform on daily basis and 60% have had a SMT account for an average of three years or more. Rogers (2009) corroborated the findings of McCallum (2015) and noted that academic librarians in USA have showed a high level of SMT awareness which not only help conveys the corporation's message to existing and

prospective clienteles but also establishes their acceptance and influence within the university community.

This contrasts with the findings of Olajide and Oyeniran (2014) who surveyed the awareness, knowledge and use of SMT among academic librarians in Nigeria, establish that more than 50% of academic librarians were not aware of SMT and are not equipped with SMT knowledge. Furthermore, the study revealed that Facebook has the highest level of usage, which is followed by Skype, Twitter, and LinkedIn in that descending order. Academic librarians' offices were the usual place of accessing and using Facebook. While, the majority of them had two SMT accounts which they use for chatting, reading of blogs or postings and picture uploading. Quadri and Idowu (2014) corroborated the study of Olajide and Oyeniran (2014) by stating that Facebook was still the most common SNS used by academic librarians in Nigeria by 66.7%, while google+ had 50.5%, MySpace, Hi5, Flickr, LinkedIn, Skype, Academia.edu, YouTube and the blog were the least used SMTs. The study demonstrated that the level of awareness of SMT among academic librarians in Nigeria directly affected the level of adoption and usage of these technologies. However, there is need for more awareness programmes in form of conferences, workshops, and trainings for librarians.

Khan and Bhatti (2012) identified insufficient SMT awareness among academic librarians in Pakistan and respondents believed that use of SMTs in libraries will grow slowly. The study of Arif and Mahmood (2012) identified with Khan and Bhatti (2012) by concluding that the level of SMT awareness is low in Pakistan. Likewise, the study of Parveen (2011) also revealed low level of awareness among Library and Information Science Professionals with Facebook having 42%, Twitter was the second most used SNS with 28%, LinkedIn recite in third position having 12%, Orkut with 10%, and Yahoo was in fifth position with 8%. In addition, 30% LIS Professionals use Facebook to keep abreast of latest news, 23% used to interact professionally, 19% used to express their creativity, 16% used to participate in discussions and 12% used to get networked with new people and distant friends. Academic librarians in Iran are also not proactive in SMT awareness and this is shown in a survey that covered 17 libraries belonging to Shahid Bahonar University, Kerman Medical University, and Islamic Azad University, located in Iran. The study exposed one major difficulty identified in the adoption SMT for service delivery were IT illiterate academic librarians who are not even aware of SMTs (Mohsenzadeh & Isfandyari-

Moghaddam, 2009). Gupta, Gautam, and Khare (2015:323) conducted a survey using “structured questionnaire to identify the level of awareness among library staff about SNS and their application and the results found that 69% of library staff were aware of SNS. However, the majority of the staff were unaware of the usefulness of most types of SNS in the work place and therefore were not using any within the library”.

Moyo (2004) argued that the rapidity of technology revolution in academic libraries has accelerated in recent times and “despite concerns, academic librarians are continually exploring the latest in technologies, including MySpace/Facebook”. According to Murray (2006:1), “as of September 2006, eighty-one libraries had Facebook profiles, twenty academic libraries had MySpace profiles, and an unknown number of individual librarians had MySpace/Facebook profiles. Several librarian/library-related groups existed on both MySpace and Facebook (such as Librarians and Facebook group with 143 members in October 2006)” and Anderson (2013) listed 100 active libraries on Facebook, although he stated there are lots of academic library profiles on Facebook not active.

### **3.5 SMT use by Academic Librarians**

Mabweazara (2014) observed that with increased introduction of SMTs in academic libraries, scholars have become actively involved in investigating SMTs and its usage in the library. The exploratory study of Kai-Wah Chu and Du (2012) which investigated the use of SNS in academic libraries in North America, Europe and Asia showed a response rate of 38 libraries (27.1%) was received based on 140 web-based questionnaires that was initially sent out. Findings revealed that five (13.1%) were prospective users of SNS, while six (15.8%) was complacent about its usage and Twenty-seven libraries (71.1%) used it. Academic librarians were hesitant in using SNS in service delivery and users’ participation was also limited. While Twitter and Facebook were the most commonly adopted and used tools for service delivery in these university libraries. The forgoing was upheld in a study conducted by Nguyen (2008) by analysing 47 university library websites in Australia using content analysis to find out the level of familiarity and use of SMTs. The author found that there was low implementation of web tools since only RSS, Blogs, IM and Podcasts were being used. RSS was the most used tool because the study revealed that patrons use aggregators to read library updates. IM was the least

used because in order to use this application, it required academic librarians to stay online constantly to support users and due to inadequate staff, some academic libraries did not employ these SMTs.

The study of Tripathi and Kumar's (2010:195) survey indicated that on a global landscape most libraries are enjoying the profits of using SMTs, whilst just a minimal percentage has not adopted these tools. This study further revealed "RSS, IM, and Blogs are the most popular SMTs amongst academic librarians. The study concluded that academic librarians should utilise SMTs to enhance services in an innovative manner and address the information requirements of the techno-savvy patrons". In addition, Arif and Mahmood (2012) revealed that the most popular SMTs, which were adopted by academic librarians in their professional and personal lives, were IM, Blogs, and Wikis. In all these studies, it is evident that IM and Blogs are the most commonly adopted applications. The reason for increased adoption and use of IM applications may be because they offer on the spot communication. While Blogs are trendy in libraries because operating, it does not require learning HTML language and it is easy to create.

Zohoorian-Fooladi and Abrizah (2012:174) also used User and Gratification (U&G) theory to measure SMT use among academic librarians in Malaysia found that familiarity of SMTs is still low. The outcome of their study revealed that academic librarians' professional gratification of using SMT "was related to their obligation and their duty, not personal satisfaction". Similarly, Tella, Olorongbe, Akanbi-Ademolake, and Adisa (2013) in a study of the use of SNS among academic librarians in Nigeria found that the use and benefits derived from SNS had not been well documented and SMT familiarity is low. The result demonstrated that academic librarians mostly used Facebook and Twitter on a weekly basis and partially on a daily basis for personal use but not in the provision of library services to users.

Gerolimos and Konsta (2011) conducted a study on the use of SMTs by sending web-based research instruments to 32 academic librarians in Asia, 69 academic librarians in North America and 82 academic librarians in Europe. The analysed Blogs, Tags, RSS, IM, YouTube, Facebook, and Twitter. The results of the study show that Asian librarians had largely implemented Tags and Twitter and Facebook were the most conversant tools amongst the European academic librarians. Findings further revealed that academic librarians in Europe and Asia had lesser levels of SMT awareness and usage compared to the academic librarians in North America who had



two university libraries using a majority of SMTs. The study concluded that academic librarians in Europe and Asia were still deeply rooted in the use of Web 1.0 technologies which is usually a one-way form of communication with clientele but their counterparts in North America were actively using SMT.

Rogers (2009:6) “revealed that academic libraries are recognising the great benefits familiarising themselves with SNS. For example, 90.4% of his respondents agreed that SNS can be utilised in promoting and marketing library services. In addition, they indicated that they might be used to create book discussion groups, reach new audiences, and deliver quick updates to users”. Chu and Du (2013:64) “conducted a study examining the degree of use of SNS in academic libraries; library staff perception of the usefulness of using SNS within academic libraries; and the challenges that might influence decisions on using SNS. The study observed 140 academic libraries in North America, Asia and Europe. Only 38 academic libraries responded to a web-based questionnaire (27.1% response rate) and the results revealed that about 71.1% of the respondent libraries are using SNS for publicising and promotional services, and for enhancing reference services. Libraries appear to utilise different SNS for different purposes, for example Facebook and Twitter are used for advertising library services, while IM is used the most to handle consumers’ inquiries and for internal staff communication. Library staff appears to perceive SNS to be helpful in promoting libraries services, and in facilitating better internal staff communication”.

Phillips (2011:512) did a “content analysis of status messages posted by academic libraries on seventeen Facebook pages. The sample for the content analysis was drawn from the members of the Consortium of Academic and Research Libraries in Illinois (CARLI)”. “CARLI’s 151 member organisations include private and public colleges, research universities and community colleges, large and small institutions, representing 98% of Illinois higher education students, faculty and staff. The findings of the analysis revealed that academic libraries through status messages suggest the mission and vision of the library” (Phillips, 2011:513). Also, “Facebook offers a virtual environment for academic libraries to promote interactions with students. Coupled with Facebook being informational, academic libraries are attempting to establish relationship with students. The university setting not only creates a context mutual

understanding, but also offers a communal set of practises and values shared by libraries and students” (Booth, 2009:84).

Collins and Quan-Haase (2012) study was carried out over a period of a year to examine the adoption and usage patterns of SMT by academic libraries in Canada. The study examined 21 academic libraries which are members of the Ontario Council of the University Libraries (OCUL). The authors focused on Facebook, Twitter, YouTube, and Flickr as these were perceived as the most popular SMT in Canada. The findings revealed that adoption and use of SMTs were higher in South-Western Ontario, whilst in Eastern and Northern Ontario libraries adoption and use were low. The main reasons for limited use in these areas were identified as the absence of training and funding, lack of interest, low skills amongst the library staff and poor technological amenities.

Xu *et al.* (2009) surveyed the website of 81 academic libraries in New York State. Findings showed that they found that 34 (42%) libraries incorporated one or more SMTs for various purposes. The maximum usage of these technologies was blogs, while the least adopted technology was podcasting in the libraries. Based on the study’s findings, a conceptual model of Academic Library 2.0 which comprised of SMTs, User 2.0, Librarian 2.0, and Information 2.0 was developed. According to the model, library services can be provided to patrons in effective ways only if these users are considered essential part of libraries’ operations and services. Linh (2008:630) conducted a similar research in Australia surveying 47 Australian and New Zealand universities. Findings revealed that 32 university libraries of which 26 is in Australia and 6 in New Zealand are using these technologies. Furthermore, “at least two-thirds of Australasian university libraries deployed one or more SMTs, while only four were used for specific purposes”.

Reviewed literature above indicated that there is not much variance in the types SMTs used by academic libraries across the world. In addition, low usage was attributed to inadequate library staff, infrequent personal use of SMT by academic librarians; the preference for traditional methods of service delivery by some academic librarians; a mismatch in terms of what is offered by the library; and what is preferred by the patrons.

### 3.6 Challenges Encountered in Using SMT by Academic Librarians

While the benefits of using SMTs in libraries need not be emphasised, but the level of usage is still on the low side which is due to restraints faced by academic librarians in creating profiles and the time need to dedicate to populate content (Chu & Du, 2012). Aharony (2012) asserted that academic libraries are not sure whether using Facebook, as a major channel is the most appropriate way to reach their users for it raises some problems.

One of the challenges is the assumption that because Facebook is a SNS, the content and information uploaded to this platform are sometimes not reputable, not serious enough, and frequently even embarrassing. Another point to ponder is the tone of the content and the site, which academic librarians are finding difficult to come to terms with (Chu & Du, 2012). McCallum (2015) noted that the tone for the dissemination of information via SMT tends to be informal and less profession. Extant literature has shown that students are not always enthusiastic to relate with academic librarians on SNS but prefer to do so via email (Chu & Meulemans, 2008). This above is in consonance with the findings of Chu and Du (2013) who asserted that students affirmed that they are comfortable in using SNS for informal relationships with their friends but fell uncomfortable relating formally with academics on these platforms. The study of Connell (2009) revealed that university students have shown negative feelings about librarians using these technologies like Facebook for IL because they feel an infringement on their personal privacy. Based on Connell's (2009:26) survey results, the study surmised that academic librarians should be cautious in establishing communications and relationships with their student friends and avoid 'mass friending' if a library wanted to use SNS effectively,

Koerwer (2007) however have strongly advised against unsolicited friending to avoid annoying students. Some studies found that students want to keep social and educational communication separate, and that they are apathetic about using SNS for library questions (Burhanna *et al.*, 2009). Cahoy and Snavelly (2009:221) "found that over 50% of students surveyed would post their favorite library materials on their Facebook profile". The study of Connell (2009:221) at Valparaiso University indicated that "17.2% of students would actively friend the library and 57.7% would accept an invitation to friend the library".

Boyd (2007:129) noted that if “social status was a primary driver for Facebook connections, academic libraries might not expect to rank high enough on the coolness factor to experience widespread student Facebook fans”. On the other hand, both Booth (2009) “predicted that students would be more likely to interact with the library on Facebook and tell their friends”, if they thought it was ultimately relevant and useful (Donath & Boyd, 2004:67). The acknowledgement of IM as a medium for reference help (Radford, 2006) illustrate Booth's (2009:17) observation that, “overall student receptivity to emerging tools seems to increase in proportion to the extent of non-library adoption by the population at large”. As “Facebook exceeded over 500 million active members as of July 2010, it is no longer a student only haven, and this may increase the openness students have towards libraries on Facebook” (Philips, 2011:513).

Challenges of SMT use that McCallum (2015) see in academic libraries include the substantial time frame needed to maintain a lively SMT presence, populating online content, difficulty to respond immediately to queries, the requisite skills across library displayed by staff for using SMT effectively. Chu and Du (2012:12) identified challenges in using SNS in academic libraries and one fundamental limitation is lack of adequate time. Some respondents stated the technicality of these technologies; the inadequate time allocated to them to study, investigate, and implement SNS in the library. While, there are difficulty in SMT administration as well (Chu & Du, 2012). Conclusively, using SMT was observed to require extra time and technical manpower in the library.

Related with the inadequate time obtainable to learn how to use SMT, was insufficient mastery of the technology. Other challenges are “age bracket of staff which are quite elderly and reduction in staff strength and the complacent attitude of the academic librarians who are finding it difficult to follow the technological novelties of these technologies (Chu & Du, 2013:1). Furthermore, Chu & Nalani-Meulemans (2008) also highlighted some challenges which are difficulties in understanding SMTs, how to align it to fit it into library operations and understanding the choice of users to better serve them. The study concluded that there had also been limited engagement by academic librarians in SNS, primarily because they found these technologies too technical.

The unwillingness of academic librarians to use SMTs was also linked to the difficulty in determining who might the future users be (McCallum, 2015). On the other hand, attracting users to make use of SMT platforms offered by academic libraries was also reported to be difficult (Ayiah & Kumah, 2011). It was noted that students hardly contributed to SNS managed by libraries and level of their participation is low (Robin, 2008).

Ayiah and Kumah (2011:4) noted that challenges faced by “most of the African academic libraries in the use of SMT are the lack of skilled labour which can be attributed to the few schools available to train academic librarians coupled with the lack of incentives for them”. Akporhonor and Olise (2015) and Anunobi and Ogbonna (2012) highlighted challenges such as poor infrastructure and low bandwidth as hindrances to efficient use of SMT adoption and use in the library environment, particularly in developing countries like Nigeria. Baro and Asaba (2010) in their study of internet connectivity in university libraries in Nigeria revealed that only a few academic libraries (despite the laudable directives from the National Universities Commission (NUC)) have stable and reliable internet access in their libraries, which in essence pose a threat to the use of SMT for the provision of library services. The study of Amina and Nwanne (2015) disclosed that privacy concern is the significant challenge academic librarians’ encounter in the use of SMT for promoting library and information services. Other problems are a low level of technology penetration, network problem, lack of awareness, and lack of funds. Chawner (2008) identified another major challenge in the use of SMT in academic libraries as the complacent attitudes of academic librarians.

The use of SMTs raises a large number of information administrative issues, primarily in the areas of privacy, security, accuracy, and archiving, spanning major issues such as personally identifiable information, security of academic librarians and likewise users’ data and information, and the accuracy of publicly available data. This made Amina and Nwanne (2015) to surmise that academic librarians using SMT to promote library and information services should be very careful and mindful of what they post on these platforms because once content is shared online, it might be very difficult to take it offline again and it will remain there for everybody to see.

### **3.7 Current Debates about SMT Use in Academic Libraries**

Despite the vast advantages that SMTs have to offer, Mabweazara (2014) expresses some major well-founded concerns why some academic libraries have not bothered to implement them, some academic libraries have discontinued use of SMT, and some are not planning to do so in future. Some of these concerns are that SMT are for entrainment, SMT is time consuming, privacy, and security issues all form the present debate about SMT adoption and use in academic libraries (McCallum, 2015).

Collins and Quan-Haase (2012) suggested that academic libraries need to ensure they allocate personnel and technical resources to an ever-evolving group of technologies that are largely meant for entertainment purposes. Flanagin and Metzgen (2008) argued that SMTs are largely used for leisure and because of the credibility concerns of information posted on these platforms, it may be impossible to deploy these technologies in academic libraries. Gerolimos and Konsta (2011) asserted that these technologies were not developed to be used in academic libraries but they have been successfully incorporated and academic librarians should think about these tools as an extension to an automated library environment. Aharony (2009a) buttressed this assertion by stating that SMT goes beyond entertainment, and the advantages attached to it if integrated into the provision of library and information services cannot be measured in unequivocal terms. Hence, Mabweazara (2014) emphasised that it is crucial to socialise academic library services with great emphasis on committing time, energy and money to get the best out of these emerging technologies.

Researchers have investigated the potential threats to privacy associated with SMT (George, 2006; Kornblum & Marklein, 2006). Gross and Acquisti (2005) analysed 4,000 Carnegie Mellon University Facebook profiles and outlined the potential threats to privacy contained in the personal information included on the site by students. Mathews (2007) observed that most individuals fear identity theft or stalking because of the increased number of online predators. Some students have launched complaints on encroachment of their privacy (Mabweazara, 2014). This seems to echo Dickson and Holley (2010), and Collins and Quan-Haase's (2014) views that academic librarians are seen as authority figures within the university community, and students

resist friending the library because they fear that their personal information will be visible to university officials.

In addition, Dwyer, Hiltz and Passerini (2007) reasoned that trust and usage goals may affect what clienteles are willing to share and academic librarians should be mindful of this error. Chu and Meulemans (2008) corroborated the findings of Collins and Quan-Haase (2014). Their study found that students were uncomfortable using social media sites for academic purposes. Students indicated that they were more likely and more comfortable interacting with academic personnel, such as academic librarians and professors, via more professional forms of communication, such as e-mail. Mack *et al.*, (2007) stated that though academic librarians have been champions of privacy in the face of the Patriot Act and other potentially invasive laws, these are still issues that are paramount to using SMTs in academic libraries.

Chu and Du (2013) emphasised that SMTs takes ample time to provide library services. This was exhibited by academic librarians who considered that SMTs are too technical that library resources should not be wasted on them (De Rosa *et al.*, 2007). As such, they do not have adequate time to explore, learn and apply these tools for library services as they will be busy with their work demands. Management of academic libraries also noted that academic librarians criticised these technologies about the issue of regular updates as time consuming. Though SMTs have their benefits for academic libraries, their use has not been pervasive, partly due to academic librarians' perceived limitations in their abilities to set up profiles and the time dedicated for maintenance (Sharon Murphy, 2009). This is because it takes too much time to supervise and maintain too many SMTs as new one emerges almost every other day (Mabweazara, 2014). Ezeani and Igwesi (2012:5) stated that the internet can be frustratingly slow, which then makes the use of SMTs extremely time consuming especially in developing countries like Nigeria. The authors suggest that in such circumstances it is of no essence to adopt and implement these technologies.

Despite the challenges associated with use of social media Dickson and Holley (2010:472) maintained that these tools do not require any technical expertise as no HTML language is involved, hence they are easy to use. The authors go on to state that academic librarians should not hide behind bandwidth problems as such issues may be overcome through the installation of

satellite based connectivity. This has been achieved by some academic libraries in developing countries. Aharony (2013) supported this notion by recommending that library management should enlighten academic librarians on how to manage their time in using these technologies.

### **3.8 SMT User Policies in Academic Libraries**

Li (2010) asserted that as the adoption of SMT has moved beyond innovators and enthusiasts in business, just as in academic libraries, the need for a SMT policy is being debated. It is easy to say that it requires a clear vision of service which is innovative, collaborative and connects users.

In the survey by McCallum (2015) of 600 academic librarians, a significant majority of them stated that they currently had no policy or management framework in place for their SMT use, with 75% posting messages on an ad-hoc basis. A small minority of 28% had a policy already in place, with 30% planning to introduce one in the near future. Bell (2014) posits that this reaffirms the experimental stage at which social media is currently being applied in academic libraries. Furthermore, 30% of academic libraries that are planning to implement a policy in the future indicate that benefits to help monitor the impact of their social media activity.

Baro and Godfrey (2015) argued that there have been major concerns within the library community about the lack of coordinated responsibility toward SMT, particularly because many projects become abandoned and superseded as new technology emerges. Similarly, Farkas (2007) maintained the need for academic libraries to develop SMT policies due to the blurred boundaries that emerge between personal and professional realms. She surmised that SMT policies must be established with clear guiding principle for official content and use in order to protect the library's brand.

Fernandez (2009:192) maintained that academic libraries must understand the consequences of these technologies, especially with regard to user privacy and ethical considerations. Powers (2008) also accentuated the need to address the reality of ever-changing ethical issues in library work. Godwin (2016) also corroborated the forgoing that a clear SMT policy can be useful to guide staff in their uses of SMTs especially as the distinction between personal and professional use is becoming blurred. Olasina (2011) adduced that the dearth of SMT use in academic libraries in Nigeria is because most of these libraries have no policy or management framework



in place for SMT use in for service delivery. Therefore, Kroski (2009) recommended a number of areas that might need to be covered which are use of disclaimer, avoid sharing sensitive or proprietary information; do not be anonymous; respect copyright; avoid online battles and post accurate information.

### **3.9 Future of SMT in Academic Libraries**

McCallum (2015) opined that current usage of SMT by the library community generally remain ad-hoc and somewhat experimental, but the uptake of these technologies is accelerating, and they will play an increasingly important role in library service provision and outreach in the future. As Cullen (2008b) points, there is a new logic of service innovation, a new understanding of library services which transcends time, means, and location. Maness (2006) posited that SMTs have significant consequences for libraries, and identifies that while these implications keep very close to the history and mission of libraries, they still compel a new paradigm for academic libraries presently and in the nearest future. Hence, Collins and Quan-Haase (2012) affirm, it is a paradigm shift that requires a substantial re-evaluation of academic library operation, and philosophy that goes a long way in redefining academic librarians' role in this contemporary time. Oberhelman (2007) posited the future of SMT in academic libraries as that which creates a distributed form of authority in which the boundaries between academic librarians and library patrons are blurred.

Boyd and Ellison (2007) maintained that the future of academic libraries will be dominated by providing services and satisfying users' needs, rather than collection development. This implies that, academic libraries are now and will be user-focused than concentration on library holdings. However, Collins and Quan-Haase (2012) expressed fear for academic librarians by stating that despite the fact that nobody can predict the demise of academic libraries because of the entrance of emerging technology, but the power of the new technologies and their speed of implementation in spheres other than universities means that the choice of learning and exploring the new, the choice of taking on new roles in a rapidly transforming profession, versus a decision which will result in being bypassed and becoming obsolete, is a real one. The implication of this is a grave one for academic librarians who are not ready and willing to adopt SMT for the provision of library services. They would certainly be bypassed, become irrelevant and obsolete

(McCallum, 2015). This is more so for academic librarians in developing countries like Nigeria (Quadri & Idowu, 2016), who are technophobic (Ezeani & Igwesi, 2012) and are not willing to integrate SMT into the provision of library and information services (Onuoha, 2013; Olajide & Oyeniran, 2014).

Arya and Mishra (2012) affirmed that at present Web 1.0 tools are most popular in developing countries, but these countries are aware that by implementing SMT, information can be provided to the maximum number of people in the shortest possible time irrespective of location, education, and language. Anderson (2007) corroborated this view by highlighting six key concepts related to SMT which developing countries are failing to harness namely; individual creativity, user production, the power of the crowd, data in grand scale, community participation, interactivity and openness. In the same vein Barsky and Purdon (2006) established that with SMTs, academic libraries provide service, not a product; inspire user input; generate shared information; creativity; do-it-yourself syndrome; feeling of communal relationship; and a feel of authorisation and ownership.

Consequently, Miller and Jensen (2007:2) suggested that “academic libraries should strive to be relevant in the era of information glut and be able to meet the information needs of clientele”. This can only be achieved when SMT is embraced in the provision of library services which change the orientation of these library patrons who sees the library as obsolete and there is no significance for it at this period.

This implies that academic librarians have to develop adequate SMT skills that is required to provide services that will capture the attention of this technology savvy patrons (Jacobsen, 2011).

### **3.10 Summary of Literature Review**

Literatures reviewed in this chapter are studies that have been conducted in different places across the world. Most scholars emphasised that SMTs bring a wide range of benefits to academic libraries, hence the need to promote their integration and use in the provision of library and information services. Consequently, comprehensive literature has been reviewed on SMTs; Types of SMT; Awareness of SMTs by academic librarians; Challenges encountered in using

SMT by academic librarians; Current debates on SMT use in academic libraries; SMT user policies in academic libraries and Future of SMT in academic libraries. These themes from literature have influence on the use of SMT for the provision of library services in academic libraries in a broader sense. The literature reviewed addressed parts of research questions One, Two, and Three of the present study by taking into cognisance core variables in the study which are adoption of SMT and Use of SMT in academic libraries for the provision of library services to library patrons. Research questions four and five were addressed through empirical study and through structured questionnaire respectively.

In terms of theories used, the review of empirical literature shows that most existing studies on the use of SMT in libraries lack theoretical underpinning. This is corroborated by Obaseki, Ibrahim, and Momoh (2010) who asserted that research in librarianship makes lots of assumptions which are flawed because they lack theoretical basis and the testing of relationships between variables. Therefore, this study filled this gap by adopting three theoretical frameworks. The theories are Innovation Diffusion Theory (IDT) (Moore & Benbasat, 1991); (TAM) Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989); and (U&G) Uses and Gratification theory (Zohoorian-Fooladi & Abrizah, 2012). TAM addressed the SMT use behaviour of academic librarians; IDT discussed the innovation adoption rate of SMT among academic librarians, while U&G was used to measure motivation and gratification factors of SMT usage by academic librarians.

Regarding research methodology, the literature revealed that the commonly used method to determine the use of SMT in academic libraries was the survey method and this was employed for the present study. However, most of the studies reviewed employed a single approach which is predominantly quantitative. To address this gap, this study employed mixed method approach which comprised of both quantitative and qualitative methods of data collection and analysis. According to Creswell (1998), this method has the ability to elaborate on the findings of one method with another method thereby allowing for a better understanding of the research problem.

## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

This chapter is organized into nine thematic sections which include research paradigm; research approach; research design; population of study; sample and sampling procedures; data collection procedures; data analysis; ethical considerations and summary.

#### **4.2 Research Paradigm**

This study adopted post-positivism because the researcher opined that the perception and attitude towards a phenomenon, which in this study is the use of SMT in the provision of library services by academic libraries, would differ from one library to another based on their knowledge or interpretation of the phenomenon. This study, therefore, aims for neutrality by attempting to be non-manipulative and considering the collected views of academic librarians and students' in making conclusions about the problem of interest. In addition, the post-positivist paradigm allowed the combination of quantitative and qualitative approaches to gathering contextual data to enhance understanding of the use of SMT in the provision of library services in academic libraries in South-West, Nigeria.

The current study is underpinned by the IDT, TAM and U&G to gain a better understanding and solution to the research questions, which takes into cognisance the independent variables (Perceived ease of use, Perceived usefulness, Relative advantage, Image, Visibility, Result demonstrability, Gratification and Motivation) and dependent variables (adoption and use of SMT in the provision of library and information services) in order to understand the relationship that exists between these variables.

#### **4.3 Research Approach**

Research methods are commonly classified into qualitative and quantitative (Onwuegbuzie & Collins, 2007). This study therefore adopted the qualitative and quantitative research approach because Bryman (2008) argues that for a best of both worlds approach, and suggests that qualitative and quantitative approaches should be combined. Johnson, Onwuegbuzie and Turner

(2007) citing (Bouchard, 1976:268) argues that the convergence of findings stemming from two or more methods “enhances our beliefs that the results are valid and not a methodological artefact”. Buchanan (1992) and Pawson and Tilly (1997) opined that so far as research practice is concerned, combining quantitative and qualitative research has become exceptional and remarkable in recent years.

Mixed Method Research involves “combining qualitative and quantitative research methods, concepts, approaches or language into a study” (Johnson & Onwuegbuzie, 2007:17). Fiske and Campbell (1992) introduced the idea of triangulation, referring to multiple operationalism, in which more than one method is used as part of a validation process that ensures that the explained variance is the result of the underlying phenomenon or trait and not of the method (that is, quantitative or qualitative). Bryman (2006) observed that several writers have pointed out that quantitative and qualitative research can be combined at different stages of the research process, which could be a formulation of research questions; sampling; data collection; and data analysis.

The mixed method approach was originally an outgrowth of the triangulation of methods movement and the aim of triangulation is to confirm a study's results by using both quantitative and qualitative methods (Barbour, 1998:352). Extant literature has deliberated on methodologic triangulation about qualitative and quantitative methods, indicating a paradigmatic relationship (Greene & Caracelli, 1997). By using mixed methods, the researcher endeavours to decrease the “flaws and prejudices that stem from any single method” (Mitchell, 1986:19) creating “the potential for balancing the flaws or the weaknesses of one method with the strengths of another”.

A “mixed method approach, however, goes beyond the initial goal of triangulation using multiple methods to also gain a better understanding of results, discover new perspectives, or develop new measurement tools” (Teddlie & Tashakkori, 2009:75). Thus, “there are two broad goals of using mixed methods-confirmation and comprehension of results” (Thurmond, 2001:253). The logic of mixed methods includes the use of induction (or discovery of patterns), deduction (testing of theories and hypotheses), and abduction (uncovering and relying on the best of a set of explanations for understanding one's results). Many research questions and combinations of questions are best and most fully answered through mixed research solutions (Teddlie & Tashakkori, 2009). Therefore, the qualitative part of this study was the indept

interview sessions with the six University Librarians of the sampled Universities. While the quantitative aspect of the study was the administering of questionnaires to academic librarians and 4<sup>th</sup> year Computer Science students also from the sampled Universities.

Chu and Du (2013) carried out an exploratory study investigating the use of social networking tools in academic libraries, examining the extent of their use, library staff's perceptions of their usefulness and challenges, and factors influencing decisions to use or not to use such tools. A mixed-methods design was employed to investigate users' practices and perceptions of blogs and Facebook in online information management. The study found that users generally hold positive perceptions on using blogs and Facebook for online knowledge management.

Zohoorian-Fooladi and Abrizah (2014:159) in a study, observed how academic librarians use SMT in the provision of library services and “data were gathered via three focus study groups with 22 librarians from three research-intensive universities in Kuala Lumpur, Malaysia. The results indicated that at least four types of social media are deployed in libraries to reach out to the users: blogs, multimedia sharing sites, social bookmarking, and Social Networking Sites (SNS)”.

#### **4.4 Research Design**

This study adopted the survey design that comes under a descriptive type or method of research. In this type of research, data is collected after the fact; that is, after the occurrence of change that is noticeable and where variables of interest are not able to be manipulated (Kerlinger & Lee, 2000). This research design allows the researcher to examine how specific independent variables are related to the dependent variable, which allows generalisation to be made from the sample to the larger population.

The survey research design is an ideal method in social science research and a very valuable tool for assessing opinions and trends (Shuttleworth, 2008). It enabled the researcher to gather data through use of various instruments such as questionnaires and focus group discussions (Babbie, 2001). Several empirical studies in the field of library and information science have effectively applied the survey research design. These includes Kai-Wah Chu and Du (2012), Khan and

Bhatti (2012), Akporhonor and Olise (2015), Anunobi and Ogbonna (2012), Quadri and Idowu (2016), and Mabweazara (2014).

#### **4.5 Population of study**

The target population for the study comprised all academic librarians and 4<sup>th</sup>-year Computer Science students in the selected six universities in South-West, Nigeria. The choice of 4<sup>th</sup>-year computer science students was premised on the fact that this group of respondents are studying computer science as a discipline which is common to all the six selected universities and SMT development and use is sacrosanct to the discipline to make them better computer scientists (Schmitt & Jaschke, 2017). Thus, their knowledge of SMTs is a *causa sine qua non* to determining whether academic librarians are actually and appropriately using SMTs in the provision of library services to clientele. Secondly, because they were in the final year of study (4<sup>th</sup>-year) they were assumed to have attained a level of mastery in this subject area and could be established users of SMT services in the library.

#### **4.6 Sample and Sampling Procedures**

A multistage sampling technique was used in the selection of the target samples. The first stage involved the purposive selection of South-West Zone from the clustered six geo-political zones in Nigeria (North-Central, North-East, North-West, South-East, South-South, and South-West). The South-Western Zone was purposively selected for this study because the region is referred to as the pivot of educational enterprise in Nigeria and thus the most educationally progressive and because of their rating in research productivity (“South West Region”, 2016). The second stage involved the selection of the Universities. There are 33 universities in the South-West, zone. The universities are categorised into Federal Universities (6), State Universities (8) and Private Universities (19) respectively. Six universities were purposively selected and include University of Ekiti State University (EKSU) and (LASU) Lagos State University (State Universities); Ibadan (UI) and University of Lagos (UNILAG) (Federal Universities); Babcock University (BU) and (CU) Covenant University (Private Universities).

The six universities were selected because they are the top two universities in the categories of federal, state, and private institutions according to the webometric ranking of Nigerian Universities (“Webometrics Ranking”, 2017). The choice of academic libraries for this study was informed by the fact that they are generally well endowed with printed and electronic resources and staffing compared to public and other types of libraries. Six (6) University librarians who are heads of the university libraries were interviewed, while 107 academic librarians and 222 computer science students were asked to complete a survey questionnaire. Academic librarians were chosen because they are the core professional of the librarianship profession and great onus lies on them to provide library and information services to their clientele via SMT. Altogether the total number of respondents involved in the study was three hundred and thirty-five (335) respondents as shown in Tables 4.1 to 4.3.

**Table 4.1: Sample size at confidence level of 95% and P=0.5. (Source: Israel, 1992)**

Size of Population	Sample size (n) for precision (e) of:			
	±3%	±5%	±7%	±10%
500	A	222	145	83
600	a	240	152	86

The sampling error which is called precision in sampling contexts gives the researcher some idea relating to the accuracy of the statistical estimate. The level of precision, which also could be expressed in percentage such as  $\pm 3\%$ ,  $\pm 5\%$ ,  $\pm 7\%$ , or  $\pm 10\%$  (which are the commonly used values in humane studies), is the range of accuracy of estimating the true value of the parameter. Moreover, it implies that if the researcher finds that 80% of subjects in the sample have acquired a skill (or knowledge) under study with a precision level of  $\pm 10\%$ , the researcher might conclude that between 70% and 90% of subjects in the population have acquired the skill. The level of precision has a reverse relationship with the sample size. That is, the smaller the level of precision is predetermined, the greater sample size is needed. The reason for this is that the greater the sample size, the closer the sample is to the actual population itself. If the researcher takes a sample that contains the entire population, they actually have no sampling error (namely parameter = statistic).



**Table 4.2: The relative distribution of population of respondents in the selected Universities**

S/N	Name of University	Numbers of Academic Librarians	4 <sup>th</sup> Year Computer Science Students
1	University of Ibadan	31	81
2	University of Lagos	20	84
3	Ekiti State University	12	65
4	Lagos State University	14	54
5	Babcock University	17	100
6	Covenant University	19	84
	<b>Total</b>	<b>113</b>	<b>468</b>

The study adopted a complete enumeration (census) of academic librarians in the six selected universities because their population was less than 200 (Israel, 1992). While the formula recommended by Sarantakos (2012) was used to randomly select computer science students in the survey. Sarantakos (2012) formula is represented below:

$$\frac{N \times S}{TP}$$

Where, N is the population of computer science 4<sup>th</sup>-year students in each university; S is the total sample size, and TP is the total population. Based on this formula, the distribution of samples across the six universities is reflected in Table 4.3 and calculated as follows:

$$\text{University of Ibadan} = \frac{81}{468} \times 222 = 38$$

$$\text{Ekiti State University} = \frac{65}{468} \times 222 = 31$$

$$\text{Lagos State University} = \frac{54}{468} \times 222 = 26$$

$$\text{Babcock University} = \frac{100}{468} \times 222 = 47$$

Covenant University=  $\frac{84}{468} \times 222 = 40$

In this case, simple random sampling amongst the students is presented according to each university in Table 4.3

**Table 4.3: Sample size of 4th-year Computer Science Students in the six universities**

S/N	Name of University	4 <sup>th</sup> Year Computer Science Students
1	University of Ibadan	38
2	University of Lagos	40
3	Ekiti State University	31
4	Lagos State University	26
5	Babcock University	47
6	Covenant University	40
	<b>Total</b>	<b>222</b>

#### 4.7 Data Collection Procedures

This study gathered quantitative data on the use of SMT in the provision of library and information services from academic librarians and computer science students in their fourth year of study using a structured questionnaire. The questionnaires were self-administered by the researcher to academic librarians and computer science students. The survey questionnaires for academic librarians (see Appendix 2) contain the following sections:

**Section A:** Participants’ personal information which includes gender, age, level of qualification, years of experience, name of library of affiliation and service area where the academic librarian works.

**Section B:** Familiarity of academic librarians with SMT. This section elicited information from academic librarians about their knowledge of SMT, how long they have been using these technologies, place of accessing SMT, assessing their level of use and frequency of use.

**Section C:** Purpose of using SMT using Likert scale of 1-5 (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree).

**Section D:** Factors influencing the use of SMT by academic librarians. Respondents were expected to choose from the listed factors and state any other factors not listed on the Likert scale of 1-5 influencing use of SMT. Challenges encountered in using SMT were to be chosen on the same scale.

**Section E:** Measuring constructs from Technology Acceptance Model (TAM), which are the Perceived Usefulness and Perceived Ease of Use on a Likert scale of 1-5 (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree).

**Section F:** Testing constructs from Innovation Diffusion Theory (IDT) which are Relative Advantage, Image, Visibility and Result Demonstrability on a Likert scale of 1-5 (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree).

**Section G:** Testing constructs from User and Gratification Theory (U&G), which are Personal Gratification and Professional Gratification on a Likert scale of 1-5 (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree).

The survey questionnaires for computer science students (Appendix 1) contained the following sections:

**Section A:** Participants Personal Information including gender, age, name of institution, as well as how often the respondents use the library.

**Section B:** Services offered through Social Media Technologies (SMT) by Academic Librarians. This was meant to elicit response from respondents on a Likert scale 1-5 (1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree)

About services that are offered via SMT by academic librarians, whether their information needs are met by academic librarians and rating of academic librarians in their use of SMT to provide library and information services to respondents.

Qualitative data was collected through interview sessions with university librarians.

A semi-structured interview (Appendix 3) solicited information on demographic information of the six university librarians, which included age, affiliation, gender, work experience,

designation, and academic qualification. The interview also covered knowledge of SMT use in academic libraries, constraints of using SMT in the provision of library services policies guiding use of SMT in libraries, future of academic libraries using SMT and SMT use for professional development of academic librarians.

#### 4.7.1 Pilot Study and Psychometric Properties of the Research Instruments

Three research instruments were used for the collection of data in the study namely (i) the Students Social Media Technology (SMT) Usage Questionnaire (SSMUQ); Academic Librarians Questionnaire (ALQ); and an Interview Schedule for University Librarians (ISUL). Hill (1998) suggested 10 to 30 participants for pilots in survey research for pilot pre-testing of the instruments. Therefore, a minimum of 30, 4<sup>th</sup> computer science students and 30 academic librarians at the Obafemi Awolowo University formed respondents for the pilot study.

**Table 4.4: Sample Size for the Pilot Study**

S/N	Instrument	Nature of Respondents	No. of Respondents
1	Students Questionnaire	Students	30
2	Librarians Questionnaire	Academic Librarians	30

The first two instruments were questionnaires developed by the researcher, while the third instrument was an interview schedule. The questionnaires for the study were pilot-tested at the Obafemi Awolowo University Library (Hezekiah Oluwasanmi Library) and 4<sup>th</sup>-year Computer Science Students in order to ascertain their psychometric properties. The psychometric properties were determined using the Cronbach Alpha which is a measure of the internal consistency and reliability of the instrument, while the content validity of the instrument was established using the Lawshe Content Validity Index (CVI). The following formula, proposed by Lawshe (1975) was used to calculate the CVI which is a quantitative indicator of the content validity of an instrument:

$$\text{Content Validity Index (CVI)} = [(E - (N / 2)) / (N / 2)]$$

Where: (a) N is the total number of judges or experts; (b) E is the number of judges or experts who rated the item/instrument as essential or content valid.

The CVI ranges between the continuum -1.0 and 1.0. The closer to 1.0 the CVI is, the more essential or content valid the instrument is considered to be and conversely, the closer to -1.0 the CVI is, the more non-essential or non-content valid it is.

Table 4.5 depicts the summary of the psychometric properties of the instruments at a glance.

**Table 4.5: Summary of the psychometric properties of the instruments**

S/N	Instrument	Reliability Coefficient (Cronbach Alpha $\alpha$ )	Content Validity Coefficient (Lawshe Content Validity Ratio)
1	Students Social Media Technology (SMT) Usage Questionnaire (SSMUQ	0.84	0.73
2	Academic Librarians Questionnaire (ALQ	0.82	0.70
3	Interview Schedule for University Librarians (ISUL).	<i>The instrument was given to expert in the field of Library Studies and Practicing Librarians for critique in terms of the representativeness of the highlighted variables and underlying constructs inherent in the study. Alshenqeeti (2014) affirmed that talking to experts is the most effective method of ascertaining how reliable and valid the instrument is. This is because they have broader scope of the phenomenon being investigated. My supervisor was one of the experts and the final version was certified okay by him before administering it to the selected Head of Academic Libraries in the sampled universities.</i>	

## 4.8 Data Analysis

The data was analysed using the Statistical Package for Social Sciences (SPSS) version 20.0 and Microsoft Excel version 2017, while the qualitative data was thematically analysed. The following statistical procedures were used: Exploratory Data Analysis (EDA); Descriptive Statistics; Correlation and Multiple Regression. Correlation analyses were used to determine the strength and nature of the relationship between and among the variables, while Multiple Regression analysis was used to explain variance components in the model under consideration. The Exploratory Data Analysis (EDA) was the medium for data cleaning and basic categorisation through percentages and frequency distribution. Table 4.6 below summarises data sources and data analysis strategies.

**Table 4.6: Research Questions, Approach, Sources of Data and Data Analysis**

S/N	Research Questions	Approach	Source of Data	Method of Data Analysis
1.	What is the level of awareness, adoption and use of SMT by academic librarians for the provision of library and information services of South-West, Nigeria?	Quantitative and Qualitative	Survey Questionnaires, Interview, Literature Review,	Descriptive Analysis for Quantitative Data and thematic content analysis for qualitative data
2.	What are the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries?	Quantitative	Survey Questionnaires, Literature Review	Descriptive Analysis for Quantitative Data
3.	What are the factors influencing the adoption and use of SMT for the provision of library and information services by academic librarians?	Quantitative and Qualitative	Survey Questionnaires, Interview, Literature Review	Descriptive Analysis for Quantitative Data and thematic content analysis for qualitative data
4.	How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services?	Quantitative	Survey Questionnaires, Literature Review	Descriptive Analysis for Quantitative Data and Multiple regression analysis
5.	What institutional mechanisms	Qualitative	Interview, Literature	Thematic Content Analysis for

S/N	Research Questions	Approach	Source of Data	Method of Data Analysis
	are used to promote the use of SMT in the provision of library and information services by academic librarians?		Review	Qualitative Data

#### 4.9 Ethical Considerations

Walton (2016) asserts that research ethics is specifically interested in the analysis of ethical issues that are raised when people are involved as participants in research. Resnik (2015) also stated that ethical standards promote the values that are essential to collaborative work, such as trust, accountability, mutual respect, and fairness. This study employed a number of strategies to comply with ethical aspects of research. First, the University of KwaZulu-Natal Ethics Policy was complied with. In addition, permission was sought and granted by the six universities surveyed (see appendices 12 for ethical clearance permission). Participants were informed and briefed on the purpose of the study. The respondents were free to withdraw from the study if they saw wished at any stage of the research without any sanctions.

#### 4.10 Summary

This chapter presented the research methodology that was adopted for the study covering the following aspects: research approach; research paradigm; population of study; sample and sampling procedures; research design; data collection procedures; data analysis and ethical considerations. This study aimed at collecting data from academic librarians and students based on their varying experiences, knowledge and views on the use of SMT in providing library services. Mixed method approach was adopted for the study so that one method could complement the other. The survey research design was adopted, which is consistent with the post-positivist paradigm (Creswell, 2013b), to explore the use of SMT for the provision of library and information services in South West, Nigeria. The total population of the study was 335 comprising of 113 academic librarians and 222, 4<sup>th</sup> year Computer Science students.

Data was collected using survey questionnaire and in-depth interviews. SPSS version 20.0 was used to analyse the quantitative data to generate descriptive and inferential statistics such as

correlation and multiple regression. Interviews were also administered to the six university librarians of the selected university under study and thematic and content analysis was used to analyse the qualitative data. The ethical protocol of the University of KwaZulu-Natal was complied with and permissions from the surveyed universities were sought and granted before the study commenced.



## **CHAPTER FIVE**

### **DATA ANALYSIS AND PRESENTATION OF FINDINGS**

#### **5.1 Introduction**

This chapter presents the results derived from analysis of data obtained from the respondents who participated in this study. The purpose of the study was to investigate the use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria. The results are presented and discussed with respect to the stated research questions and research hypotheses. The research questions in this study are:

1. What is the level of awareness, adoption, and use of SMT by academic librarians for the provision of library and information services in South-West, Nigeria?
2. What are the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries?
3. What are the factors influencing the adoption and use of SMT for the provision of library and information services and professional development of academic librarians in South-West, Nigeria?
4. How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services?
5. What institutional mechanisms are used to promote the use of SMT in the provision of library and information services by academic librarians?

The following hypotheses were tested at a 0.05 significance level:

**H<sub>01</sub>:** There is no significant relationship between SMT awareness and use behaviour of academic librarians in providing library and information services.

**H<sub>02</sub>:** There is no significant relationship between (perceived and actual benefits) and use behaviour of SMT by academic librarians in providing library and information services.

**H<sub>03</sub>:** There is no significant relationship between SMT use behaviour of academic librarians and their professional development in South-West, Nigeria.

**H<sub>04</sub>:** There is no significant relationship between relative advantage, image, visibility, result demonstrability, and SMT use behaviour of academic librarians in providing library and information services.

**H<sub>05</sub>:** There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services.

**H<sub>06</sub>:** There is no significant relationship between specific motivation/gratification and SMT use behaviour of academic librarians in providing library and information services.

## **5.2 Response Rate**

Six (6) University librarians who are principal heads of the university libraries were interviewed, while 107 academic librarians and 222 computer science students were asked to complete a survey questionnaire. The total number of questionnaires distributed to the respondents in the sampled universities was Three hundred and thirty-five (335) out of which only Three hundred (309) were completed and returned giving a response rate of 92.2%. The response rate of the various categories of respondents is shown in Table 5.1(a) and (b) respectively.

**Table 5.1 (a): Students' Response Rate from the Survey (n = 222)**

S/N	University	No of copies of Questionnaire Administered	No of copies of Questionnaire returned	Response rate (%)
1	University of Ibadan	38	38	100
2	University of Lagos	40	37	92.5
3	Ekiti State University	31	30	96.8
4	Lagos State University	26	23	88.5
5	Babcock University	47	47	100
6	Covenant University	40	40	100
<b>Total</b>		<b>222</b>	<b>215</b>	<b>96.8</b>

Table 5.1(a) depicts the response rates for each of the universities in relation to the 4<sup>th</sup>-year computer science students. The table shows an average response rate of 96.8% with a high return-rate on the part of the respondents. Similar studies like Kolawole (2016) where a total of 240 academics and 353 undergraduate students were respondents, 195 academics and 331 students duly completed and returned the questionnaires, giving a response rate of 81.3% for academics and 93.8% for students respectively. Hargittai's (2010) quantitative study of undergraduate students' Internet use found 82% response rate from undergraduate students in a public research university in the USA.

**Table 5.1 (b): Academic Librarians' Response Rate (n = 113)**

S/N	University	No of copies of Questionnaire Administered	No of copies of Questionnaire returned	Response rate (%)
1	University of Ibadan	31	30	96.8
2	University of Lagos	20	14	70
3	Ekiti State University	12	9	75
4	Lagos State University	14	12	85.7
5	Babcock University	17	11	65
6	Covenant University	19	18	94.7
<b>Total</b>		<b>113</b>	<b>94</b>	<b>83.2</b>

Table 5.1(b) depicts the response rates for each of the universities in relation to academic librarians. The table shows an average response rate of 83.2%; this indicates a high return-rate of the questionnaires administered on this group of respondents. Rogelberg and Stanton (2007) affirmed that except the researcher coercively administers the questionnaires to the respondents, a 100% response rate (RR) is hardly achieved and response rate from 80% is acceptable for any study. Alabi (2016) in a related study administered 267 questionnaires to academics in the two universities, 215 were completed and returned, giving a response rate of 80.5%. In addition to the questionnaires administered to the respondents, an interview session was held with the University Librarians of the sampled universities.

### 5.3 Data Analysis

The data was analysed using the Statistical Package for Social Sciences (SPSS) version 20.0 and Microsoft Excel 2007 version. The following statistical procedures were used: Exploratory Data Analysis (EDA), and Correlation and Multiple Regression. Correlation analyses were used to determine the strength and nature of the relationship between and among the variables, while Multiple Regression analysis was used to explain variance components in the model under consideration. The Exploratory Data Analysis (EDA) was the medium for data cleaning and basic categorisation through percentages and frequency distribution. Research questions 1, 2, 3, 4, and 5 respectively were within the realm of EDA, while Multiple Regression analysis was used to

explain the variance components of the model under study. The results of the analyses are presented and discussed with respect to the stated research questions and hypotheses from sections 5.3.1 below.

### **5.3.1 Demographics of Respondents**

Respondents' demographics were presented in the following order: general cross-tabulation of the demographic variables and the institution of the respondents, respondents affiliated, gender, and age, level of education and year of working experience. All this information is presented for both 4<sup>th</sup>-year Computer Science students and academic librarians in Tables 5.2 to 5.15 and Figures 5.1 to 5.16 respectively.

**Table 5.2 (a): Cross-tabulation of Demographic Variables and Respondents' Institution (Students)**

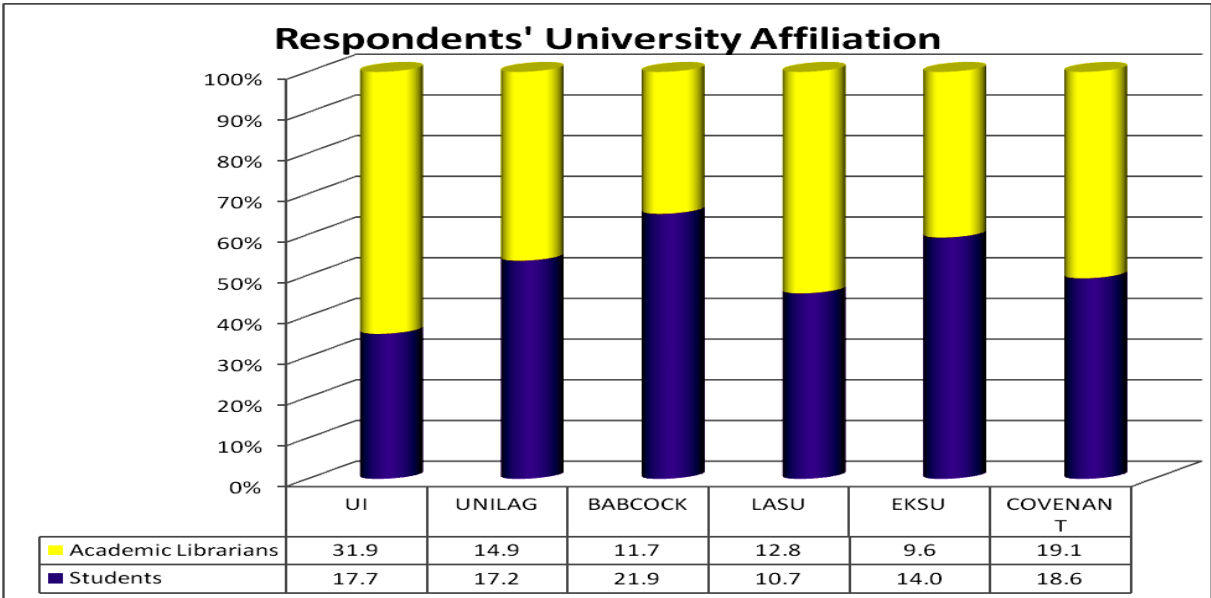
Demographic Variable	Cohort	Name of Institution of Respondent						Total
		UI	UNILAG	BU	LASU	EKSU	CU	
Gender of Respondent	MALE	3.7%	3.7%	7.4%	2.8%	6.0%	10.2%	34.0%
	FEMALE	14.0%	13.5%	14.4%	7.9%	7.9%	8.4%	66.0%
Age of Respondent	16-20 YEARS	4.7%	3.7%	11.2%	1.4%	0%	14.9%	35.8%
	21-25 YEARS	10.7%	13.0%	9.3%	8.4%	12.6%	3.7%	57.7%
	26-30 YEARS	2.3%	0.5%	1.4%	0.9%	1.4%	0%	6.5%
<b>Total</b>		<b>17.7%</b>	<b>17.2%</b>	<b>21.9%</b>	<b>10.7%</b>	<b>14.0%</b>	<b>18.6%</b>	<b>100.0%</b>

**Key:** UI - University of Ibadan; UNILAG - University of Lagos; EKSU - Ekiti State University; LASU - Lagos State University; BABCOCK - Babcock University and; COVENANT - Covenant University. (Source: Field Data, 2017)

**Table 5.2 (b): Cross-tabulation of Demographic Variables and Respondents' Institution (Academic Librarians)**

Demographic Variable	Cohort	Name of Institution of Respondent						Total
		UI	UNILAG	EKSU	LASU	BABCOCK	COVENANT	
Gender of Respondent	MALE	21.3%	10.6%	4.3%	3.2%	5.3%	12.8%	57.4%
	FEMALE	10.6%	4.3%	5.3%	9.6%	6.4%	6.4%	42.6%
Age of Respondent	25-35 YEARS	9.6%	1.1%	0%	0%	3.2%	3.2%	17.0%
	36-45 YEARS	14.9%	7.4%	3.2%	8.5%	5.3%	8.5%	47.9%
	46-55 YEARS	6.4%	5.3%	5.3%	4.3%	3.2%	6.4%	30.9%
	56-65 YEARS	1.1%	1.1%	1.1%	0%	0%	1.1%	4.3%
Level of Academic Qualification of Respondent	FIRST DEGREE	1.1%	0%	0%	0%	0%	0%	1.1%
	MASTERS	25.5%	13.8%	5.3%	12.8%	9.6%	17.0%	84.0%
	PHD	5.3%	1.1%	4.3%	0%	2.1%	2.1%	14.9%
Years of Teaching Experience	1-5 YEARS	9.6%	2.1%	0%	0%	4.3%	5.3%	21.3%
	6-10 YEARS	10.6%	5.3%	2.1%	6.4%	2.1%	7.4%	34.0%
	11-15 YEARS	6.4%	3.2%	5.3%	1.1%	2.1%	5.3%	23.4%
	16-20 YEARS	4.3%	2.1%		3.2%	2.1%	1.1%	12.8%
	21-25 YEARS	0%	1.1%	0%	0%	1.1%	0%	2.1%
	26-30 YEARS	0%	0%	1.1%	2.1%	0%	0%	3.2%
	30-35 YEARS	1.1%	1.1%	1.1%	0%	0%	0%	3.2%
<b>Total</b>		<b>31.9%</b>	<b>14.9%</b>	<b>9.6%</b>	<b>12.8%</b>	<b>11.7%</b>	<b>19.1%</b>	<b>100.0%</b>

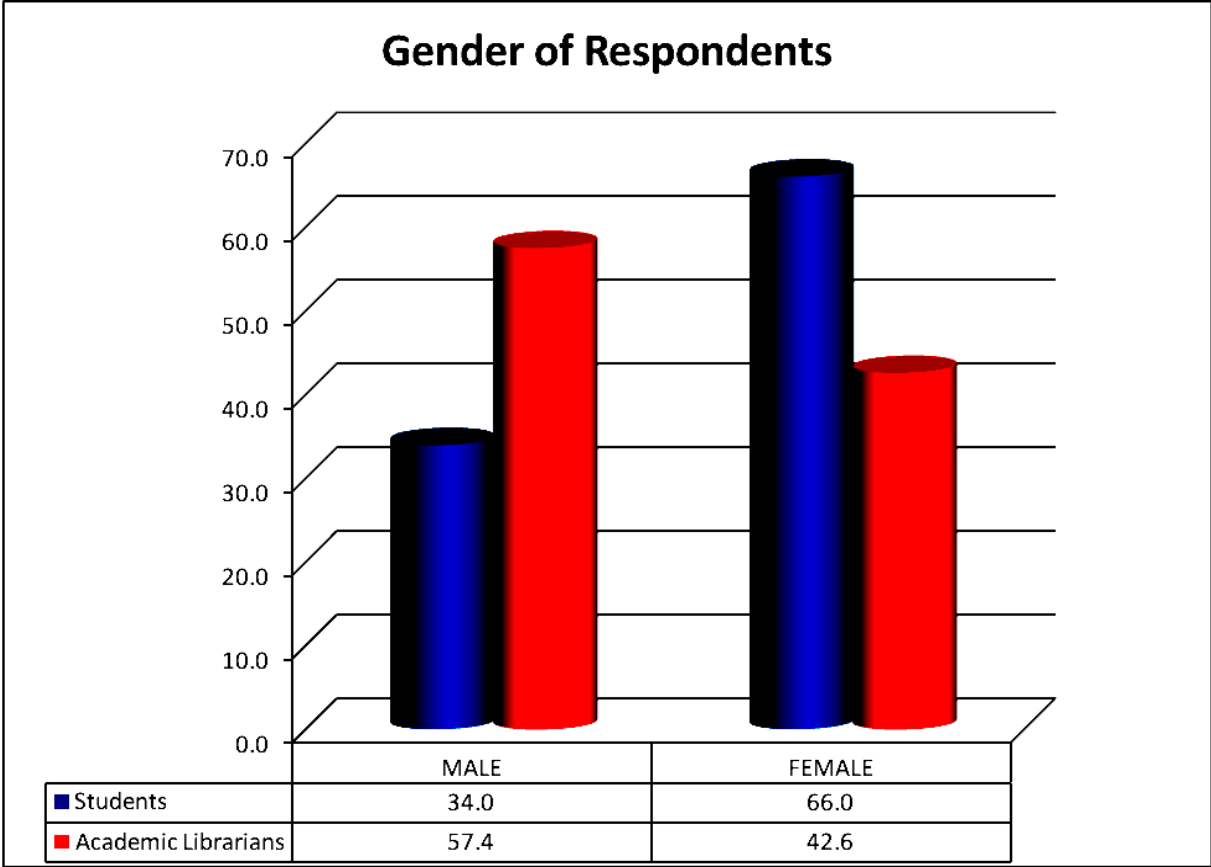
**Key:** UI - University of Ibadan; UNILAG - University of Lagos; EKSU - Ekiti State University; LASU - Lagos State University; BABCOCK - Babcock University and; COVENANT - Covenant University.



**Figure 5.1: Respondents' University of Affiliation**

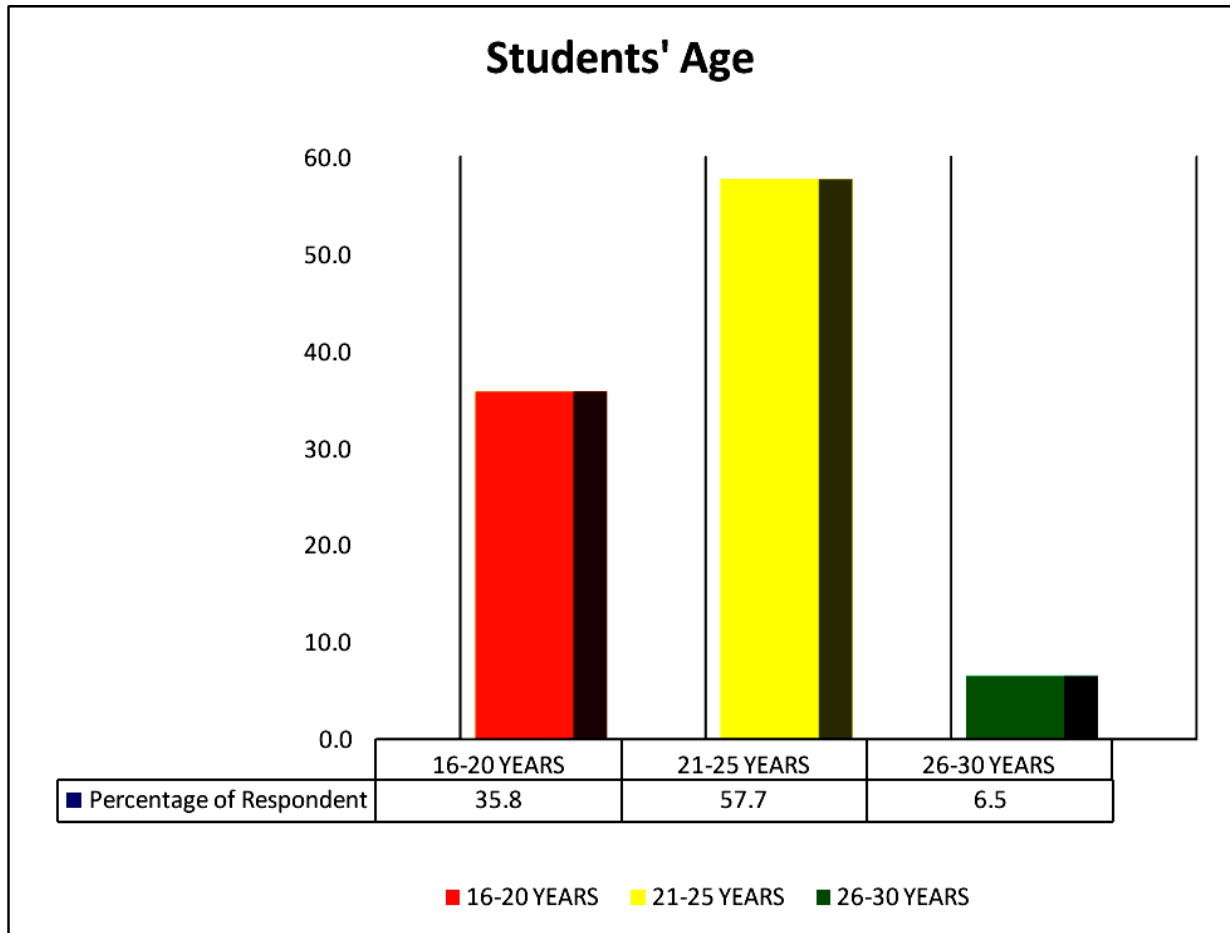
The result in Figure 5.1 depicts the respondents' university of affiliation. The university with highest affiliation for the academic librarians was University of Ibadan with 31.9%, while the university with lowest affiliation was the Ekiti State University. However, on the part of the students, the university with the highest number was Babcock University (21.9%), while the lowest (10.7%) was Lagos State University.





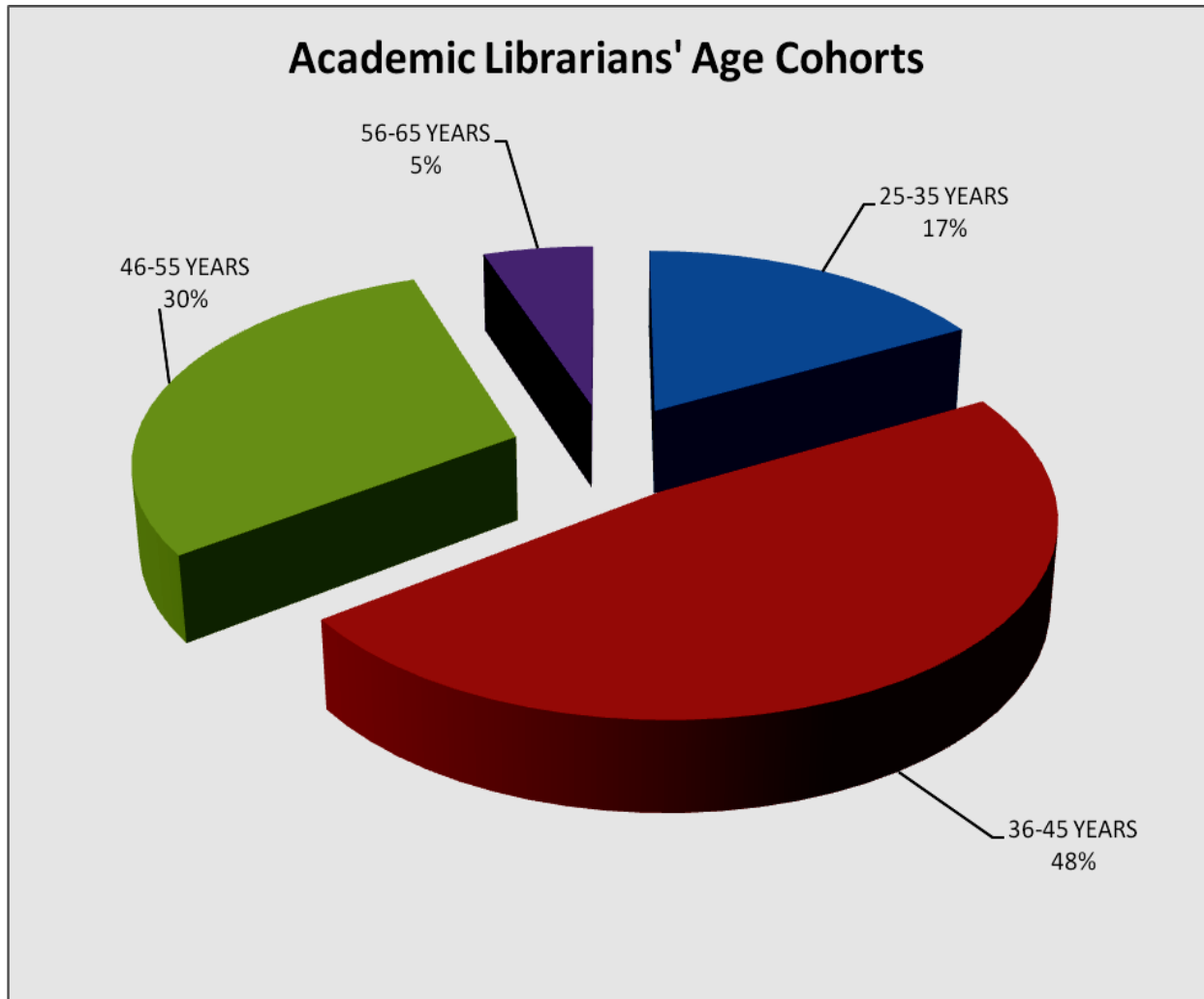
**Figure 5.2: Gender of Respondents**

The result in Figure 5.2 shows the gender disparity between the two categories of respondents in the study. The male respondents (57.4%) were more than the female respondents (42.6%) for the academic librarians, while the reverse was the case for the students' respondents where the female respondents (66%) were more than the male respondents (34%).



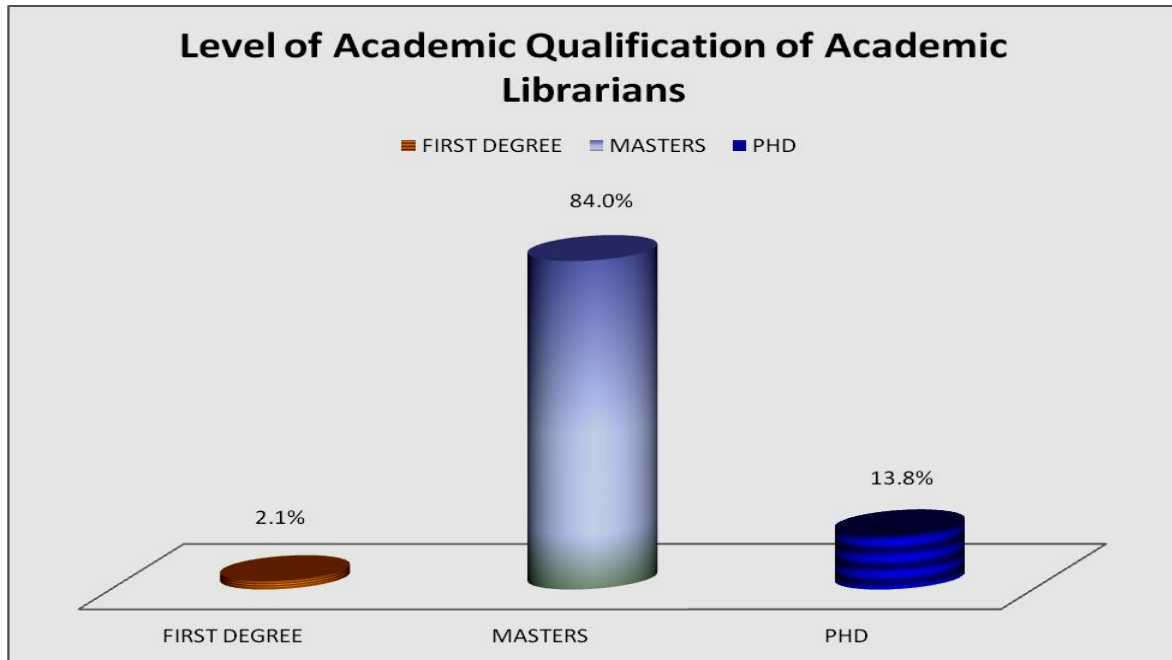
**Figure 5.3: Students' Age Cohorts**

The result in Figure 5.3 shows the age distribution of students' respondents in this study. A significant number of respondents (57.7%) were within the 21-25 years' age cohort, while the cohort with the least was 26-30 years with 6.5%.



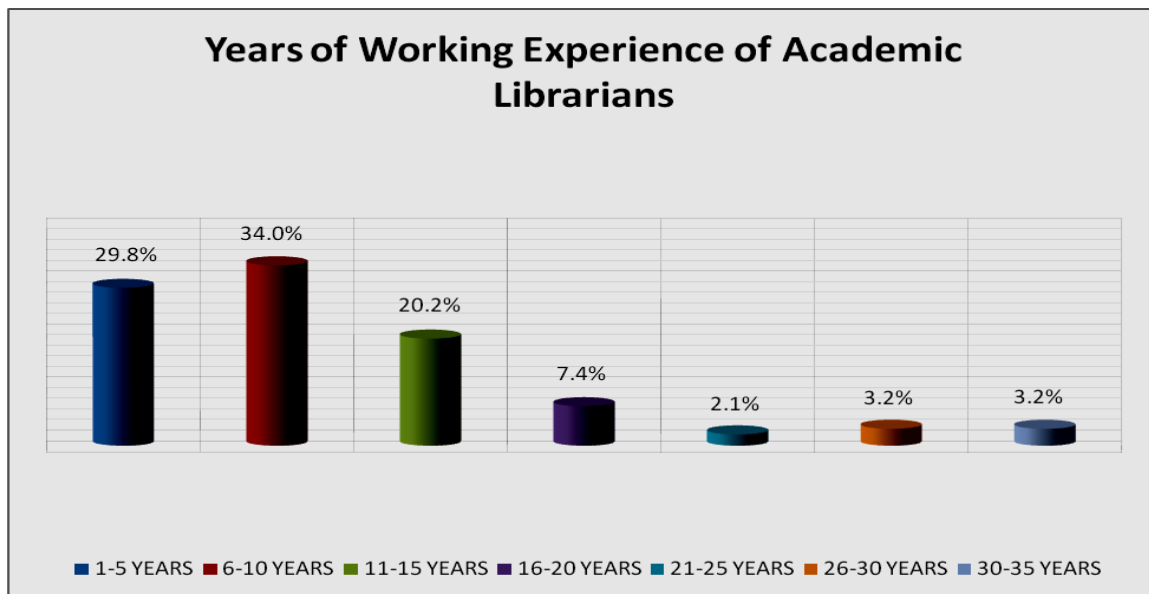
**Figure 5.4: Academic Librarians' Age Cohorts**

The result in Figure 5.4 shows the age distribution of the academic librarians. An average number of respondents (48%) belong to the 36-45 years' age range, followed by the 46-55 years' cohorts with 30%, and the least cohort, 55-56 years with 5%. The result is a reflection of the current reality on ground in most of the academic libraries in Nigerian universities. That is, the majority of the respondents were from the youngest age cohorts in all the sampled universities. The current trend shows that 65% of the academic librarians are below 45 years of age while the remaining 35% are above. What this trend portends is that unlike in time past when the field especially in Nigeria was meant for people who were too old, more of middle age folks are now picking interest in this field of work.



**Figure 5.5: Academic Librarians' Highest Qualification**

The result in Figure 5.5 shows the highest academic qualification of the academic librarians. The findings of the results revealed that majority of the respondents (84%) have acquired their Masters, while the least with 2.1% are already through with their first degree.



**Figure 5.6: Academic Librarians' Years of Working Experience**

The result in Figure 5.6 shows the distribution of the Years of Working Experience of academic librarians in the study. Majority of the respondents (34%) are within the 6-10 years working experience cohort and the least group is the 21-25 years with 2.1% of the entire sample population for the study. The result signified a trend in the right direction going by the policy formulation of the Nigerian government on age within the education system, where the statutory number of years of working experience in the civil service is 30. The current trend shows that 84% of the academic librarians are below 15 years in service, which leaves them with another 15 years to still contribute to knowledge building within the library world.

#### **5.4 Findings Based on Research Questions**

The results on each research question are presented in Tables 5.3 to 5.17 respectively.

##### **5.4.1 Research Questions 1:**

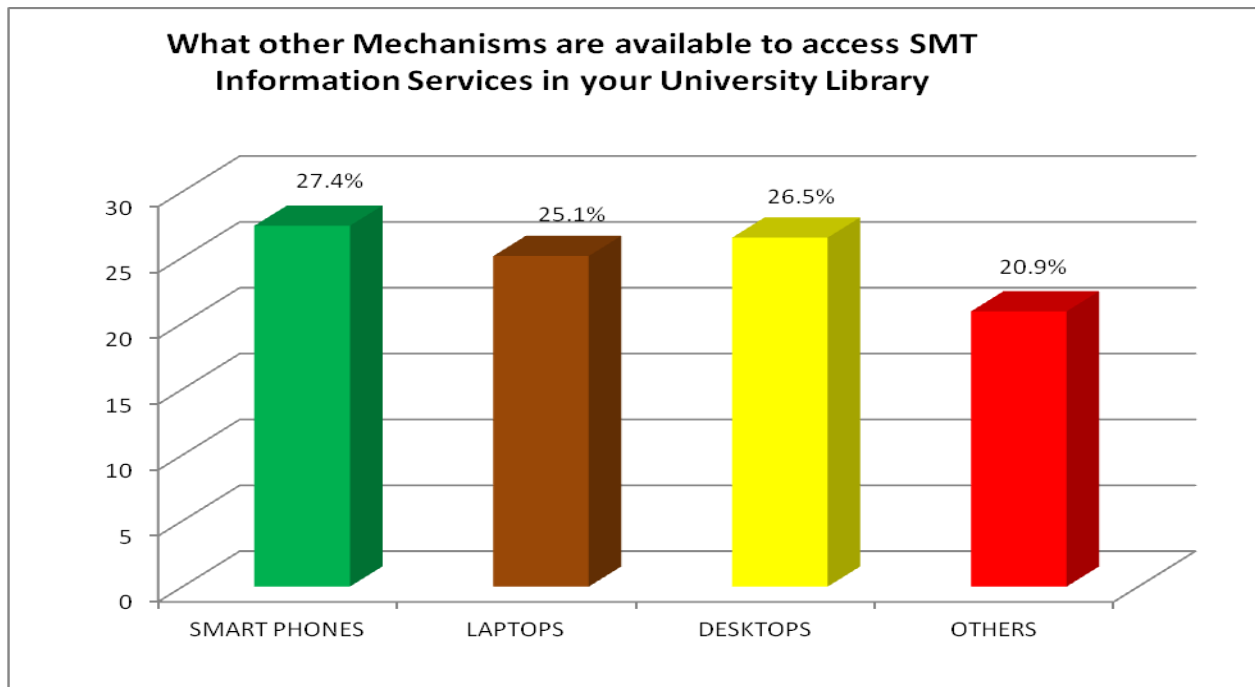
The first research question sought to ascertain the level of awareness, adoption and use of SMT by academic librarians for the provision of library and information services in the South-West, Nigeria. This research question was discussed under three headings: awareness, adoption, and use. The views of the two groups of respondents (academic librarians and 4<sup>th</sup>-year Computer Science students) in this study was sought to provide answers to this research question. Under awareness, contemporary Social Media Technologies (SMTs) were identified and respondents were asked to select the ones they are conversant or familiar with to ascertain the percentage degree of awareness of these SMT tools. Table 5.3 depicts the responses of the respondents in the study.

**Table 5.3: Level of Respondents' Awareness of Social Media Technologies (SMT)**

S/N	Item	Percentage Responses of the Respondents (%)		
		Respondents		Total n = 309
		Students n = 215	Academic Librarians n = 94	
a	Social networking such as Facebook, LinkedIn, Google+, Myspace	13.5%	12.8%	13.6%
b	Blogging such as WordPress, Blogger	10.2%	4.3%	8.4%
c	Micro blogging such as Twitter	11.2%)	9.6%	10.8%
d	Collaborative tool such as Google Docs, Wiki, Mendeley, Dropbox	5.0%	5.3%	4.9%
e	Social tagging and bookmarking such as Delicious, CiteULike, RSS	5.6%	2.1%	4.5%
F	Scheduling and meeting tools such as Doodle, Google calendar	6.0%	6.4%	6.1%
g	Conferencing tool such as Skype, Viber, Line, Imo, Google Duo	11.6%	14.9%	12.6%
h	Image and video sharing such as YouTube, SlideShare, Flickr	12.6%	18.1%	14.2%
i	Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	16.7%	23.4%	18.8%
j	Podcasts and Vodcast	7.4%	3.2%	6.1%

The result revealed that for each group of respondents in the study there is agreement in the order and degree of the level of awareness of SMT by students and academic librarians in relation to the provision of library and information services in the surveyed universities. Image and video sharing such as YouTube, SlideShare, Flickr; and chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, and MSN were the three major SMT tools that the respondents were aware of in their day-to-day interaction with the libraries in the participating universities. The results also show that the respondents are all aware of all the listed SMTs in Table 5.3.

Figure 5.7 shows the awareness of mechanisms in accessing Social Media Technologies (SMT) by Students.



**Figure 5.7: Awareness of means in accessing Social Media Technologies (SMT) by Students**

The result in in Figure 5.7 shows that 4<sup>th</sup>-year Computer Science Student-respondents attested to the fact that they are aware of mechanisms of using Social Media Technologies (SMT) in accessing library services provided in the library. Some of these are through smart-phones (27.4%), desktops (26.5%), laptops (25.1%) and other related means, which fall under the purview of others (20.9%). The implication of these revelation is that outside the listed means of accessing library services (see Figure 5.8), there are other mechanisms that are available to access SMT based library services.

Under adoption, contemporary Social Media Technologies (SMTs) were identified and respondents were asked to select the ones they have adopted. The degree of adoption was ascertained through access to the highlighted Social Media Technologies (SMTs). Table 5.4 depicts the responses of the respondents in the study. The question (What are the SMTs used by students to access the library and information services in your university library?) was used in eliciting responses from 4<sup>th</sup>-year Computer Science Students.

**Table 5.4: Level of Respondents’ Adoption of Social Media Technologies**

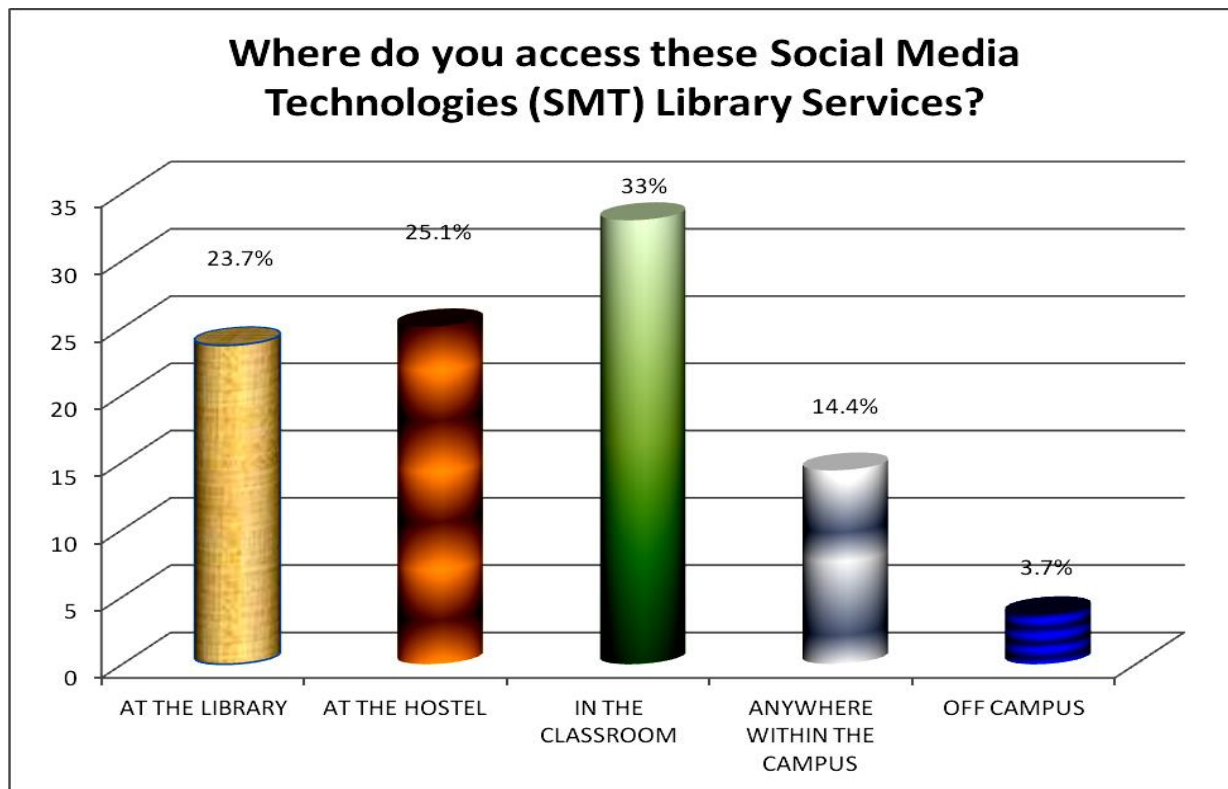
<b>S/N</b>	<b>Items</b>	<b>Percentage Degree of Adoption</b> n = 215
a	Social networking such as Facebook, Google+, Myspace	3.3%
b	Blogging such as WordPress, Blogger	1.0%
c	Micro blogging such as Twitter	6.4%
d	Collaborative tool such as Google Docs, Wiki, Mendeley, Dropbox	6.5%
e	Social tagging and bookmarking such as Delicious, CiteULike, RSS	5.1%
F	Scheduling and meeting tools such as Doodle, Google calendar	1.4%
g	Conferencing tool such as Skype, Viber, Line, Imo, Google Duo	14.9%
h	Image and video sharing such as YouTube, SlideShare, Flickr	25.6%
i	Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	33.5%
j	Podcasts and Vodcast	2.8%

The result in Table 5.4 shows the degree of respondents’ adoption of SMTs in the study. This was ascertained through access. The results revealed that Item “i” with 33.5% (Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN) was the



one with the highest level of adoption, while item “b” with 1.0% (Blogging such as WordPress, Blogger) is the one with the least adopted in all the libraries in the participating universities.

The students sampled in the study were further asked about the access points for these SMT Library Services. The result is as displayed in Figure 5.8.



**Figure 5.8: Access Points of Social Media Technologies (SMT) by Students**

The result in Figure 5.8 shows that majority (33%) of the students accessed these SMT Library Services right in their classrooms or lecture theaters, while the least in terms of access points of these services is Off-campus (3.7%). The most interesting revelation is that the point of accessibility of the SMT services were majorly (76.2%) within the library itself which was ranked third with (23.7%).

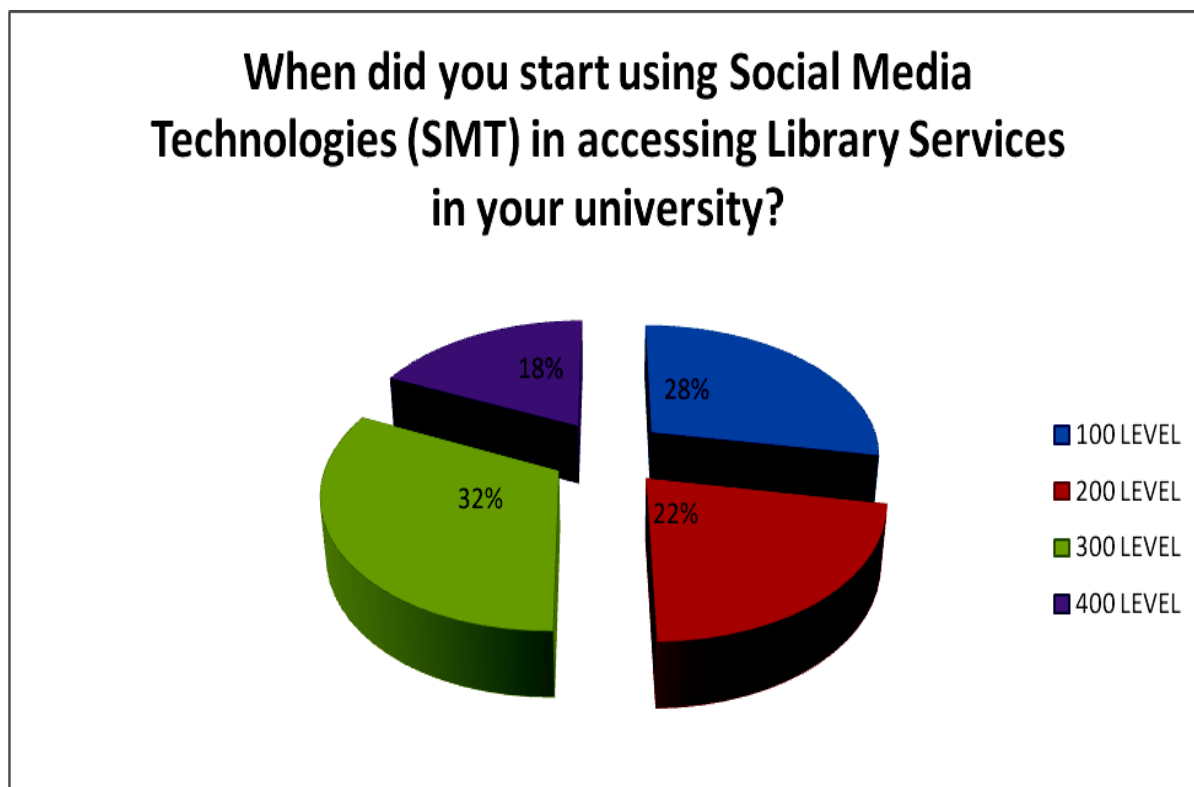
Respondents were asked to select the SMTs they have been using regularly. The degree of usage was ascertained through the frequency of use of the highlighted Social Media Technologies (SMTs). Table 5.5 depicts the responses of the academic librarians.

**Table 5 5: Level of Respondents’ Frequency of use of Social Media Technologies (SMT) in Providing Services by Academic Librarians (n=94)**

Frequency of use					
SMT	Many times, a day	Once a day	Once a week	Once a month	Never
Social networking	66%	16.0%	3.2%	4.3%	10.6%
Blogging	17.0%	8.5%	8.5%	11.7%	54.3%
Micro blogging	12.8%	8.5%	11.7%	11.7%	55.3%
Collaborative tool	16.0%	7.4%	11.7%	12.8%	52.1%
Social tagging and bookmarking	16.0%	9.6%	10.6%	10.6%	53.2%
Scheduling and meeting tools	13.8%	9.6%	10.6%	11.7%	54.3%
Conferencing tool	18.1%	7.4%	12.8%	11.7%	50.0%
Image and video sharing	26.6%)	9.6%	13.8%	8.5%	41.5%
Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	59.6%	11.7%	6.4%	4.3%	18.1%
Podcasts	4.3%	2.1%	9.6%	4.3%	79.8%

The result in Table 5.5, shows that social networking (66%), chatting tool such as Face-book messenger, Blackberry messenger, WhatsApp, Google Talk, MSN (59.6%) and image and video sharing (26.6%) were the first set of three most used Social Media Technology (SMT) tools by academic librarians in the universities surveyed. The aversion to the use of Podcasts was evident in the high number of academic librarians (79.8%) who claimed never to use it regularly.

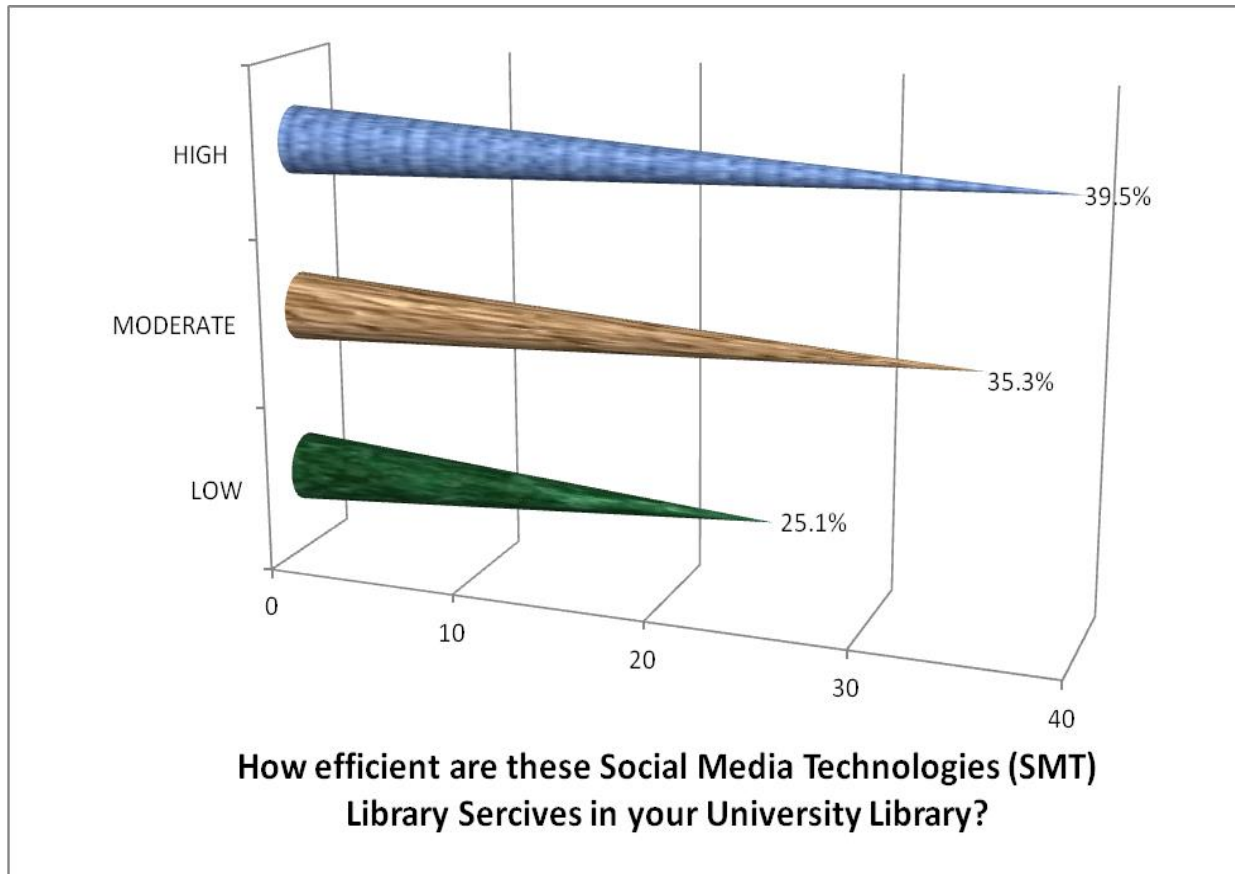
The sampled students were further prodded through the following questions on usage of SMTs.



**Figure 5.9: Starting Level of Usage of SMT by Students in accessing SMT services**

The result in Figure 5.9 shows the level of study sampled students started using SMT in accessing SMT library services. Figure 5.9 revealed that 32% at 300-level (3<sup>rd</sup>-year), 28% at 100-level (1<sup>st</sup>-year), 22% at 200-level (2<sup>nd</sup>-year) and 18% at 400-level (4<sup>th</sup>-year). A critical look at Figure 5.9 shows that majority (72%) of the sampled students started using SMT in accessing SMT library services when they were in their second year of study and above.

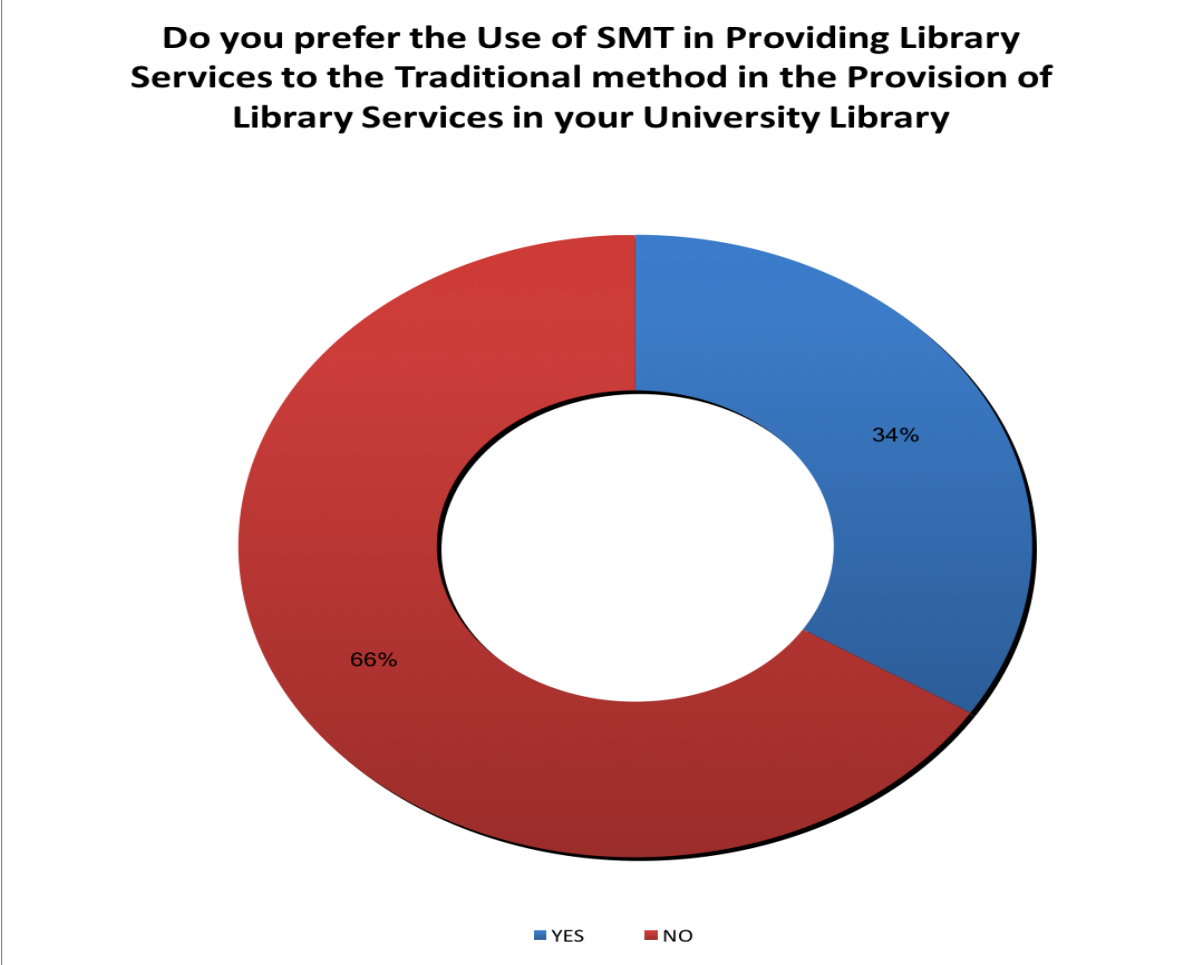
The views of the surveyed students were also sought on the efficiency of the Social Media Technology (SMT) library services provided by academic librarians. Their views are as depicted in Figure 5.10



**Figure 5.10: Efficiency of the SMT library services**

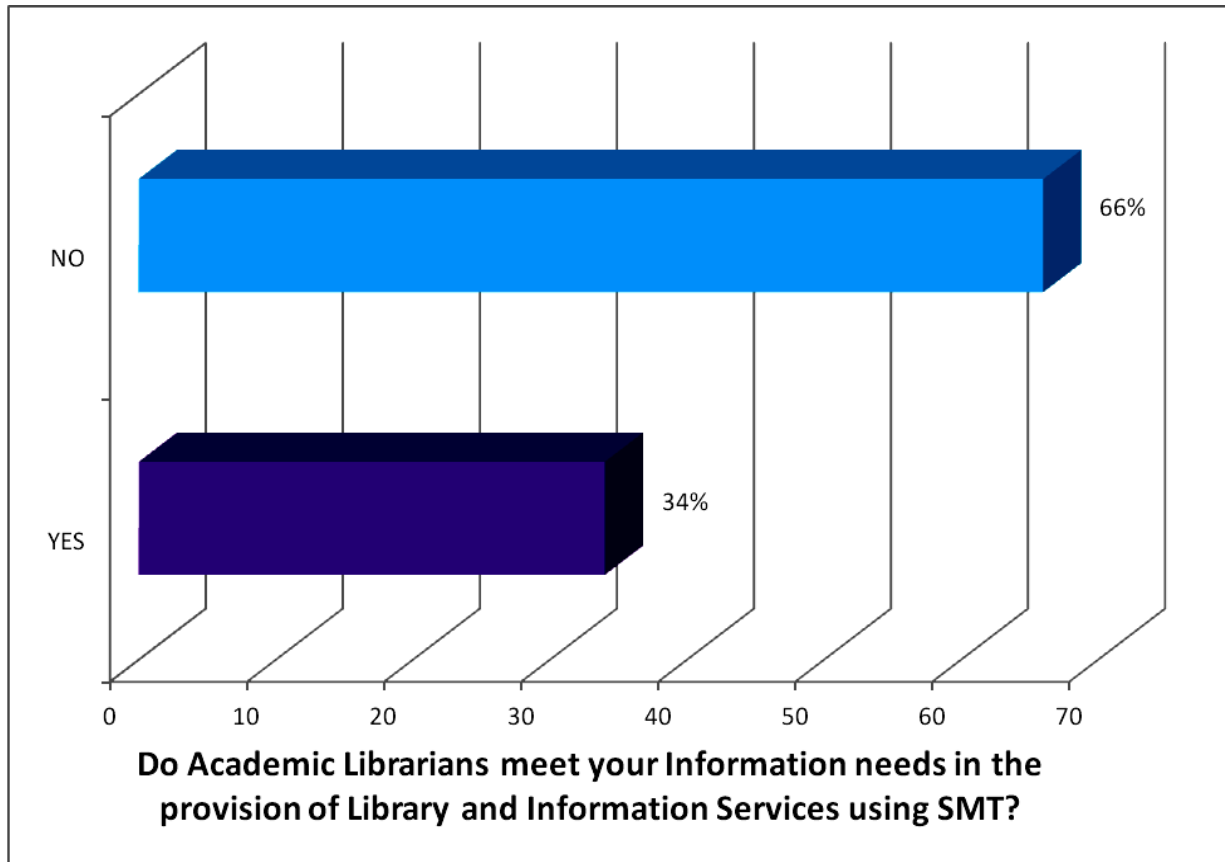
The result in Figure 5.10 shows 39.9% were of the views that the available SMT services are highly efficient, while 25.1% were of contrary opinion that SMT services were not efficient, 35.5% of the respondents were however of the belief that the efficiency of the deployed SMT services was moderate.

They were further asked whether they preferred the conventional mode of service delivery to using SMT in providing library services. Figure 5.11 shows the preference of the sampled students.



**Figure 5.11: Preference of Conventional to SMT in accessing library services by Students**

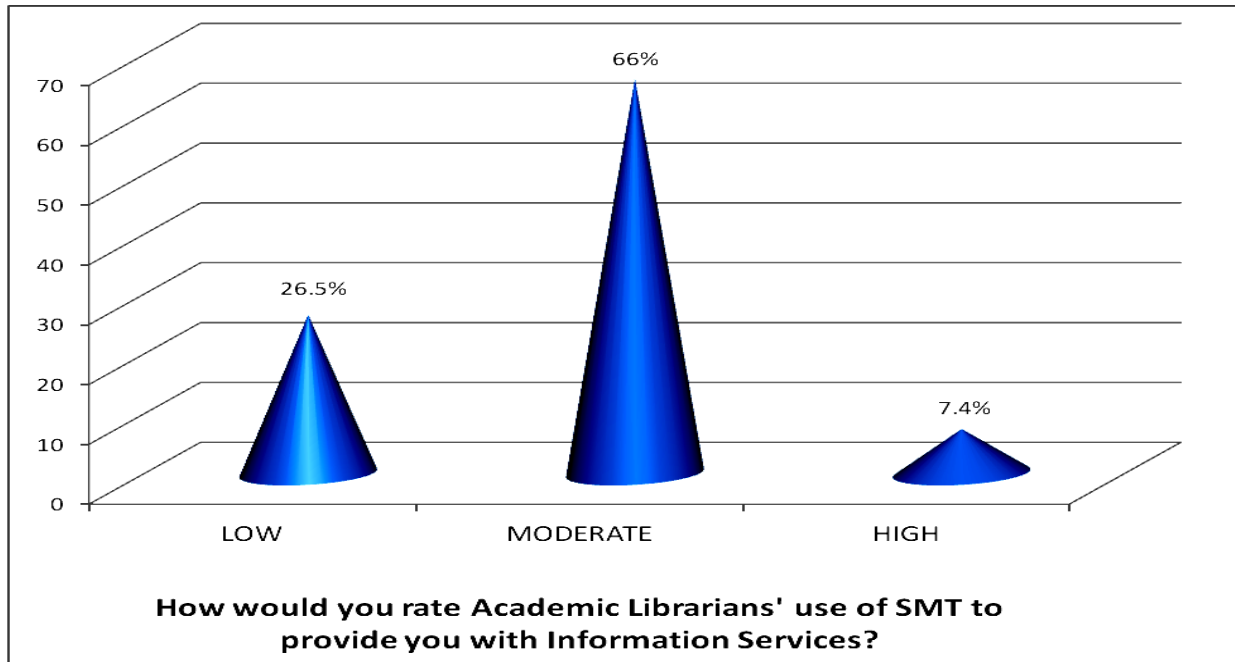
The result in Figure 5.11 shows that Majority (66%) of the sampled students (in this case those who are in the fourth year were of the view that the contemporary (modern) way of providing library services through SMT is better than the traditional method of kick-and-push approach. Also in terms of usage, the students were asked whether academic librarians are meeting their information needs through the use of SMT. Their response are as displayed in Figure 5.12.



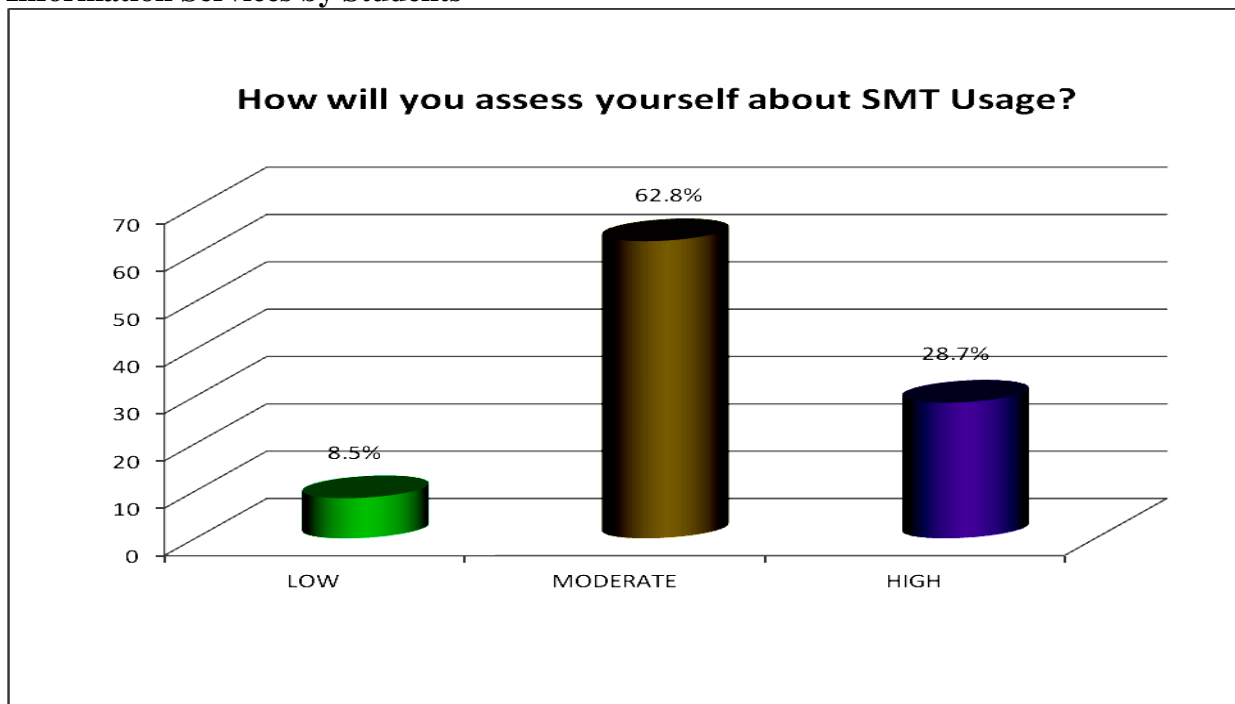
**Figure 5.12: Information Needs Satisfaction using SMT by Students**

The result in Figure 5.12, shows that majority of the student respondents (66%) were of the view that as at the time of the study, their information needs within the sampled university communities were not being met via SMT by academic librarians, while the remaining 34% believed otherwise. The reason for this may not be far-fetched, a cursory look at the results in table 5.5 on frequency of usage of SMT by academic librarians shows that majority of the current crop of academic librarians are not knowledgeable or versed in the use of majority of the SMT tools. Hence, the high percentage of those of them that are never using them at all on daily or regular basis.

The respondents in the study were also asked to rate the use of SMT in the provision of library services. Their views are as presented in Figures 5.13 (a) and (b).



**Figure 5.13 (a): Rating of Academic Librarians' use of SMT in the provision of Information Services by Students**



**Figure 5.13 (b): Rating of Academic Librarians' use of SMT in the provision of Information Services by themselves**

The results in Figures 5.13 (a) and (b) respectively show that majority of the students respondents (66%) rated the academic librarians' use of social media technologies (SMTs) in the provision of information services as moderate. This is in consonance with the views of the

academic librarians themselves on the same issue of usage as far as library services provision is concerned.

#### **5.4.2 Research Questions 2:**

The respondents (librarians) were asked to state the perceived and actual benefits of using SMT in the provision of library and information services. In order to answer this research, twenty-nine perceived and actual benefits of using SMT in the provision of library and information services were teased out from desk review and academic librarians' views were sought in terms of their importance. The results are depicted in table 5.6.



**Table 5.6: Purpose of Using Social Media Technologies (SMT) by Academic Librarians**

Purpose of using SMT in the library	1	2	3	4	5	Mean (X)	Rank
Announcing library news/events	17.0%	3.2%	7.4%	9.6%	62.8%	4.32	6 <sup>th</sup>
Reference services	12.8%	2.1%	10.6%	13.8%	60.6%	4.45	4 <sup>th</sup>
Information literacy programs	16.0%	3.2%	6.4%	12.8%	61.7%	4.27	9 <sup>th</sup>
New arrival alerts	23.4%	4.3%	10.6%	10.6%	51.1%	4.01	17 <sup>th</sup>
Collaboration with clientele	19.1%	3.2%	11.7%	11.7%	54.3%	4.05	16 <sup>th</sup>
Interacting with users	17.0%	3.2%	6.4%	14.9%	58.5%	4.34	5 <sup>th</sup>
Keeping track with professional trends	11.7%	3.2%	5.3%	11.7%	68.1%	4.62	1 <sup>st</sup>
Communicating with the faculty staff	14.9%	3.2%	4.3%	13.8%	63.8%	4.50	3 <sup>rd</sup>
Sharing work related ideas with colleagues	8.5%	5.3%	6.4%	11.7%	68.1%	4.60	2 <sup>nd</sup>
Collaborating with colleagues in other libraries	12.8%	7.4%	7.4%	16.0%	56.4%	4.30	7 <sup>th</sup>
Answering library users queries	18.1%	4.3%	9.6%	18.1%	50.0%	4.14	15 <sup>th</sup>
Interacting with users easily	16.0%	4.3%	7.4%	13.8%	58.5%	4.23	10 <sup>th</sup>
Receiving immediate feedback from users	22.3%	5.3%	5.3%	17.0%	50.0%	3.97	19 <sup>th</sup>
Marketing	17.0%	7.4%	7.4%	18.1%	50.0%	4.00	18 <sup>th</sup>
Bibliographic services	22.3%	5.3%	8.5%	9.6%	54.3%	3.93	21 <sup>st</sup>
Selective dissemination of Information	18.1%	3.2%	8.5%	13.8%	56.4%	4.19	12 <sup>th</sup>
Current Awareness Services	19.1%	6.4%	5.3%	9.6%	59.6%	4.20	11 <sup>th</sup>
Library orientation	22.3%	5.3%	8.5%	8.5%	55.3%	3.94	20 <sup>th</sup>
Inter-library loan service	29.8%	6.4%	6.4%	13.8%	4.3%	3.62	25 <sup>th</sup>
Charging and discharging of library materials	27.7%	6.4%	9.6%	18.1%	38.3%	3.63	24 <sup>th</sup>
Electronic document delivery services	26.6%	7.4%	6.4%	11.7%	47.9%	3.80	23 <sup>rd</sup>
Indexing and abstracting services	27.7%	10.6%	11.7%	10.6%	39.4%	3.50	27 <sup>th</sup>
News clipping services	26.6%	11.7%	7.4%	10.6%	43.6%	3.60	26 <sup>th</sup>
Overdue fines	28.7%	9.6%	5.3%	13.8%	42.6%	3.60	26 <sup>th</sup>
Reminders	26.6%	6.4%	4.3%	11.7%	51.1%	3.90	22 <sup>nd</sup>
Online chat	19.1%	4.3%	8.5%	11.7%	56.4%	4.17	14 <sup>th</sup>
Library membership	18.1%	(4.3%	9.6%	9.6%	58.5%	4.18	13 <sup>th</sup>
Collaboration with colleagues	18.1%	3.2%	7.4%	10.6%	60.6%	4.30	8 <sup>th</sup>
Conference call	19.1%	7.4%	9.6%	10.6%	53.2%	4.05	16 <sup>th</sup>

**Key: 1=Strongly Disagree; 2= Disagree;3=Neutral; 4=Agree; 5=Strongly Agree.**

The mean-ranking shows that out of the twenty-nine (29) listed items, the ten (10) most important in terms of their ranking as perceived and actual benefits of using SMT in the provision of library and information services are; keeping track with professional trends, sharing work related ideas with colleagues, communicating with the faculty staff, reference services, interacting with users, announcing library news/events, collaborating with colleagues in other libraries, collaboration with colleagues, Information literacy programs and Interacting with users easily.

### **5.4.3 Research Questions 3:**

The respondents were asked to state the the factors influencing the adoption and use of SMT for the provision of library and information services. In order to answer this research question, twelve (12) factors influencing the adoption and use of SMT for the provision of library and information services and professional development of academic librarians were teased out from desk review and academic librarians' views were also sought in terms of their importance. The results are shown in Table 5.7.

**Table 5.7: Factors influencing use of Social Media Technologies (SMT) by Academic Librarians**

Factors influencing use of SMT	1	2	3	4	5	Mean (X)	Rank
Management support	6.4%	4.3%	7.4%	14.9%	67.0%	4.31	3 <sup>rd</sup>
Personal knowledge and skills	4.3%	2.1%	3.2%	14.9%	75.5%	4.55	1 <sup>st</sup>
Good equipment and infrastructure	8.5%	2.1%	5.3%	19.1%	64.9%	4.30	4 <sup>th</sup>
Staff willingness to change	88.5%	2.1%	6.4%	13.8%	69.1%	4.32	2 <sup>nd</sup>
Financial support	13.8%	5.3%	10.6%	9.6%	60.6%	3.98	10 <sup>th</sup>
Patron demand	14.9%	4.3%	6.4%	17.0%	57.4%	3.98	10 <sup>th</sup>
Flexible Institutional policy	14.9%	5.3%	11.7%	14.9%	53.2%	3.86	11 <sup>th</sup>
Staff commitment and cooperation	13.8%	5.3%	3.2%	17.0%	60.6%	4.05	8 <sup>th</sup>
Good internet access	11.7%	5.3%)	1.1%	16.0%	66.0%	4.19	5 <sup>th</sup>
Tools are easy to use	13.8%	3.2%	5.3%	14.9%)	62.8%	4.10	6 <sup>th</sup>
Tools are easy for personal and work purposes	14.9%	4.3%	3.2%	12.8%	64.9%	4.09	7 <sup>th</sup>
Flexible SMT policies	17.0%	2.1%	3.2%	20.2%	57.4%	3.99	9 <sup>th</sup>

**Key: 1=Strongly Disagree; 2= Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree**

The results in Table 5.7 shows that personal knowledge and skills, staff willingness to change and Management support were the three (3) most important factors ranked as first, second and third by the academic librarians.

**5.4.4 Research Questions 4a:**

The research sought to establish how perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services.

In this study, the linear regression, using the enter method where the independent variables were all input and run together at once against the dependent variable to see the level of contribution at a glance or at once in SPSS was used to analyse the data. This is because research questions 4 (a) and (b) centred on ascertaining the influence of a set of 8 predictor or independent variables (i.e. perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) on the criterion variables (i.e. SMT use behaviour of academic librarians and students) in academic libraries.

The generated regression models for the two categories of respondents are stated as equation 1 and 2 respectively.

$$Y_{M,1, \text{ Academic Librarian}} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \epsilon \dots \dots \dots (1.1)$$

*Where:*

*M<sub>1</sub>*- Model 1; *Y<sub>Academic Librarian</sub>* - Use Behaviour; *X<sub>1</sub>* – Perceived Usefulness; *X<sub>2</sub>* – Perceived ease of use; *X<sub>3</sub>* -, Relative Advantage; *X<sub>4</sub>* - Image; *X<sub>5</sub>* - Visibility; *X<sub>6</sub>* - Result Demonstrability; *X<sub>7</sub>* – Gratification; *X<sub>8</sub>* – Motivation and  $\epsilon$  is the error term.

$$Y_{M,2, \text{ Student}} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \epsilon \dots \dots \dots (1.2)$$

*Where:*

*M<sub>2</sub>*- Model 1; *Y<sub>Student</sub>* - Use Behaviour; *X<sub>1</sub>* – Perceived Usefulness; *X<sub>2</sub>* – Perceived Ease of Use; *X<sub>3</sub>* -, Relative Advantage; *X<sub>4</sub>* - Image; *X<sub>5</sub>* - Visibility; *X<sub>6</sub>* - Result Demonstrability; *X<sub>7</sub>* – Professional Gratification; *X<sub>8</sub>* – Professional Motivation and  $\epsilon$  is the error term.

To have a better understanding of the influence of these 8 predictor variables using regression analysis, the following subsumed questions needed to be answered using the responses from the academic librarians and 4<sup>th</sup>-year computer science students: What type of correlation exists among the predictors (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) and the criterion variables (SMT use behaviour of academic librarians)?

In order to answer this question, the original correlations among the eight variables were produced. Table 5.8 presents the correlation matrix of the bivariate relationships among the variables. Table 5.9 presents the intercorrelation matrices of the correlation coefficients of the predictors or the independent (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) and the criterion or dependent variables the SMT use behaviour of academic librarians and students.

**Table 5.8: Inter-correlation matrix of the predictor variables and the criterion variable (Academic Librarians)**

VARIABLE	<i>USB</i>	<i>PEU</i>	<i>RA</i>	<i>IM</i>	<i>VI</i>	<i>RD</i>	<i>PM</i>	<i>PG</i>	<i>PU</i>
<i>USB</i>	1.000								
<i>PEU</i>	0.381*	1.000							
<i>RA</i>	0.708*	0.400*	1.000						
<i>IM</i>	0.340*	0.233*	0.317*	1.000					
<i>VI</i>	0.129*	0.087*	0.108*	0.241*	1.000				
<i>RD</i>	0.224*	0.292*	0.210*	0.403*	0.881*	1.000			
<i>PM</i>	0.569*	0.154*	0.570*	0.135*	0.174*	0.132*	1.000		
<i>PG</i>	0.691*	0.423*	0.721*	0.297*	0.160*	0.252	0.657	1.000	
<i>PU</i>	-0.096	-0.202	-0.064	-0.207*	-0.241*	-0.267	-0.005*	-0.143*	1.000
MEAN	31.329	34.500	41.308	20.628	10.181	18.755	36.617	35.872	33.57
SD	5.45	10.980	6.965	7.086	7.837	9.205	9.374	6.829	10.576

**Key: USB – Use Behaviour; RA – Relative Advantage; PEU – Perceived Ease of Use; RD – Result Demonstrability; PM – Professional Motivation; IM – Image; VI – Visibility; PG – Professional Gratification; PU – Perceived Usefulness; SD - Standard Deviation.**

**\* Significant @  $p < .05$ ;  $n = 94$**

**Table 5.9: Inter-correlation matrix of the predictor variables and the criterion variable (Students)**

<b>VARIABLE</b>	USB	PU	RA	IM	VI	RD	PM	PG	PEU
USB	1.000	.491	.422	.309	.090	.328	.351	.281	-.054
PU	.491	1.000	.774	.418	.200	.396	.713	.666	-.056
RA	.422	.774	1.000	.430	.189	.341	.731	.684	.026
IM	.309	.418	.430	1.000	.337	.620	.353	.286	-.010
VI	.090	.200	.189	.337	1.000	.297	.204	.171	.016
RD	.328	.396	.341	.620	.297	1.000	.419	.358	-.008
PM	.351	.713	.731	.353	.204	.419	1.000	.821	-.048
PG	.281	.666	.684	.286	.171	.358	.821	1.000	-.050
PEU	-.054	-.056	.026	-.010	.016	-.008	-.048	-.050	1.000
<b>MEAN</b>	31.897	23.469	37.446	20.195	9.2186	16.651	37.209	37.516	9.083
<b>SD</b>	8.8512	2.9651	4.683	5.0222	7.3251	4.2054	5.0082	5.1635	2.001

**Key: USB – Use Behaviour; RA – Relative Advantage; PEU – Perceived Ease of Use; RD – Result Demonstrability; PM – Personal Motivation; IM – Image; VI – Visibility; PG – Personal Gratification; PU – Perceived Use; SD - Standard Deviation.**

**\* Significant @  $p < .05$ ; n =215**

It is observed from Table 5.8 and 5.9 respectively that at  $p < .05$ , there are no multicollinearities between or among the variables of study. The intercorrelation matrix of the correlation coefficients of the predictors and the criterion variable are mostly significant though some are positive while others are negative. The results in Table 5.7 of the librarians’ perspective, shows that, there is a positive relationship between relative advantage, professional gratification, professional motivation, and academic librarians’ use

behaviour. The deduction from this is that as the relative advantage, professional gratification, and professional motivation of academic librarians' increases their use behaviors also increase. Generally, relative advantage has the strongest relationship with use behaviour of academic librarians. On the part of the students, personal gratification and motivation has the highest correlation value of 0.82, while the least of the relationship was between perceived ease of use and all the other remaining variables.

Multicollinearity is detected by examining the tolerance for each independent variable. Tolerance is the amount of variability in one independent variable that is not explained by the other independent variables. Tolerance values less than 0.10 indicate collinearity. The detection of collinearity in the regression output means the rejection of the interpretation of the relationships as false (Bakare, 2015). A critical inspection of the results in tables 5.8 and 5.9 shows that there is no multicollinearity between the predictors and the criterion variables. This is because none of the values of the correlation coefficients are highly correlated with each other (*i.e.*  $r > 0.85$ ). The implication of this is that all the predictor variables in the study are good enough to be part of the models in ascertaining the influence of perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation on SMT use behaviour of academic librarians and 4<sup>th</sup>-year computer science students in academic libraries in the South-West, Nigeria.

This is a clear indication of non-violation of one of the major assumptions required for running a regression analysis. This is in agreement with Tabachnick and Fidell (2007) cited in Bakare (2015) views that multicollinearity amongst the variables of interest must be resolved before proceeding with regression analysis. The results also revealed that the intercorrelation matrix of the correlation coefficients of the predictors and the criterion variables are mostly significant; though some are positive while others are negative. Furthermore, it was discovered from the results of this study that Relative Advantage, Professional Gratification, Professional Motivation has a positive-significant relationship with Academic Librarian and Students Use Behaviour.



Generally, the significance of the values of the correlation coefficients points to the fact that irrespective of the numerical values; there is a degree of relationship that is not due to chance between the predictor and criterion variables.

- (i) Does the obtained regression equation resulting from a set of eight (8) predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) allow reliable prediction of SMT use behaviour of academic librarians in the provision of library and information services in academic libraries in the South-West, Nigeria?

This question which is subsumed under research question four (a) and (b) was to ascertain whether the influence to be determined was due to chance or truly to the predictor variables under study.

The *F*-ratio in the **ANOVA** table as depicted in Table 5.10 tests whether the overall regression model is a good fit for the data (i.e. does it examine the degree to which the relationship between the Dependent Variable and the Independent Variables are linear?). The results in the table show that the independent variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) statistically and significantly predict the dependent variable (i.e. SMT use behaviour of academic librarians) in the provision of library and information services in academic libraries in South-West, Nigeria.

**Table 5.10: Regression ANOVA in relation to Use Behaviour of Academic Librarians**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1644.407	8	205.551	15.651	.000 <sup>b</sup>
	Residual	1116.370	85	13.134		
	Total	2760.777	93			
a. Dependent Variable: USEBEHAVIOUR						
b. Predictors: (Constant), PERCIEVEDUSE, PROFESIONALMOTIVATION, IMAGE, PERCEIVEDEASEUSE, VISIBILITY, RELATIVEADVANTAGE, PROFESIONALGRATIFICATION, RESULTDEMONSTRABILITY						

From the results in Table 5.10, the specified model; Model – 1:  $F(1, 85) = 15.651, p < .05$  show that the regression model is a good fit for the data, which implies that the relationship is linear and model significantly predict the Dependent Variable. This is an indication that the test of significance of the model using an ANOVA is not by chance but due to the predictor variables. There are 93 (N-1) total degrees of freedom. With eight predictors, the Regression effect has 8 degrees of freedom. The Regression effect is statistically significant, indicating that prediction of the dependent variable is not by chance but due to the aforementioned predictor variables.

(ii) How much of the total variance in SMT use behaviour of academic librarians in the provision of library and information services in academic libraries in the South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation? The result is depicted in Table 5.11.

**Table 5.11: Regression Model Summary in relation to Use Behaviour of Academic Librarians**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.772 <sup>a</sup>	.596	.558	3.62405	.596	15.651	8	85	.000
a. Predictors: (Constant), PERCIEVEDUSE, PROFESIONALMOTIVATION, IMAGE, PERCEIVEDEASEUSE, VISIBILITY, RELATIVEADVANTAGE, PROFESIONALGRATIFICATION, RESULTDEMONSTRABILITY									
b. Dependent Variable: USEBEHAVIOUR									

The result in Table 5.11 shows the Model Summary of the regression analysis. The "R" column represents the value of *R*, the *Multiple Correlation Coefficient*. *R* is considered one measure of the quality of the prediction of the dependent variable which in this case, is SMT use behaviour of academic librarians. A value of 0.772 from this research study indicates a good level of prediction.

The "R Square" column represents the  $R^2$  value (also called the Coefficient of Determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). The value of 0.596 shows that all the independent or predictor variables in this study, explained 59.6% of the variability of the dependent variable. Which means that 59.6% of the total variance in the SMT use behaviour of academic librarians in the provision of library and information services in academic libraries in South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation.

How well can the full model predict scores of a different sample of data from the same population or generalise to other samples of academic librarians? To answer this question, a cross-validation was carried out on the model. This is the assessment of the accuracy of a model across different samples of academic librarians. If a model can be generalised, then it is capable of accurately predicting the same outcome variable from the same set of predictors in a different group of academic librarians. If the model is applied to a different sample of academic librarians and there is a severe drop in its predictive power, then the model clearly does *not* generalise.

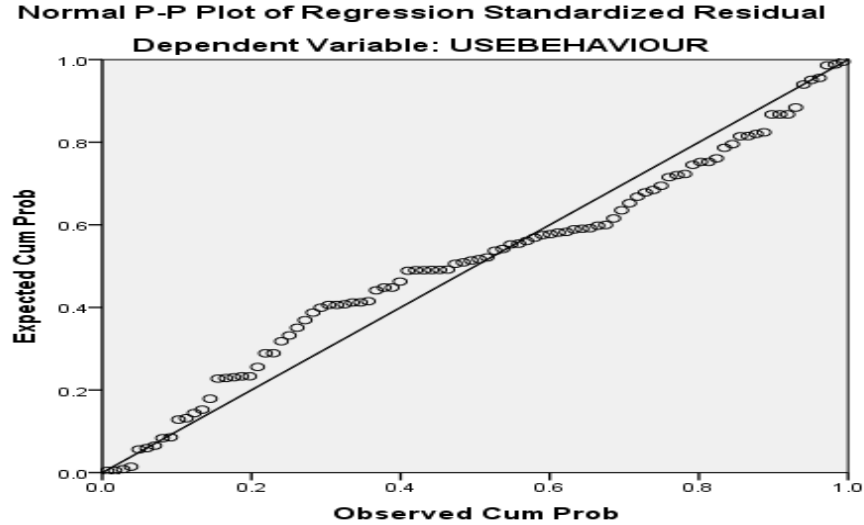
Bakare (2015) suggested that once there is a regression model, there are two main methods of cross-validation: (i) adjusted  $R^2$  and (ii) Data Splitting. Using the adjusted  $R^2$  Method; in SPSS, we have the calculations for the values of  $R$  and  $R^2$ , but also an adjusted  $R^2$ . This adjusted value indicates the loss of predictive power or shrinkage. Whereas  $R^2$  tells how much of the variance in  $Y$  is accounted for by the regression model from the sample, the adjusted value tells how much variance in  $Y$  would be accounted for if the model had been derived from the population from which the sample was taken from (*see Table 5.11*). SPSS derives the adjusted  $R^2$  using *Wherry's equation*. However, this equation has been criticised because it tells nothing about how well the regression model would predict an entirely different set of data (i.e. how well can the model predict scores of a different sample of data from the same population?). One version of  $R^2$  that does tell us how well the models cross-validate using Stein's

formula which is shown in equation (4.1) (Stevens, 2002): In *Stein's equation*,  $R^2$  is the unadjusted value,  $n$  is the number of participants (94) and  $k$  (8) is the number of predictors in the model. For this research study, the value is as calculated using equation (4.1).

$$\text{adjusted } R^2 = 1 - \left[ \left( \frac{n-1}{n-k-1} \right) \left( \frac{n-2}{n-k-2} \right) \left( \frac{n+1}{n} \right) \right] (1 - R^2) \quad (1.3)$$

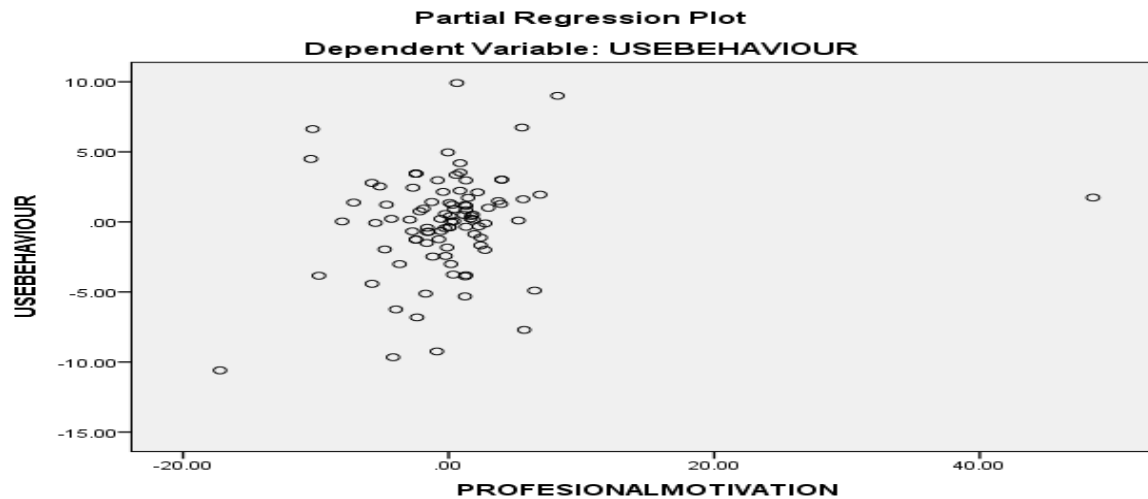
$$\begin{aligned} \text{Adjusted } R^2 &= 1 - [(1.09412)(1.09524)(1.01064)(0.404)] \\ &= 1 - 0.48927 \\ &= 0.5107 \end{aligned}$$

This Stein's value (0.5107) is very similar to the observed value of  $R^2$  (0.5960) indicating that the cross-validity of this model is very good. In addition, the adjusted  $R^2$  gives us some idea of how well the model in this study generalises and ideally, we would like its value to be the same or very close to the value of  $R^2$ . In this study, the difference for the final model is minute (in fact it is the difference between the values  $0.5960 - 0.5107 = 0.085$  (just about 0.1%)). This shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 0.1% less variance in the outcome. This means that the full model can predict scores of a different sample of data from the same population or the full model accurately represents the entire population. Hence the generalisation from the sample population to the entire population is logical. The implication of this is that the selection process was thoroughly and systematically done and it has produced a sample that is an exact representation of the general population of all the universities in South-West, Nigeria. Hence, any deduction or inference made from the sample can be generalised to the entire population.



**Figure 5.14: The Normal P-P Plot of Regression Standardized Residual**

The Normal Probability Plot (P-P) of the Regression Standardised Residual for this study shows that all the points lay in a reasonably straight diagonal line from bottom left to top right. The closeness of the plotted points to the straight line shows the predictive nature of the models under consideration.



**Figure 5.15: The Scatterplot of the Standardized Predicted Value**

The rectangular distribution of the points in the scatter plot of the residuals, with most of the scores concentrated in the center shows that there are no outliers. The range of dispersion is from -2 to +3 which is reasonable and good for the data. This range of values is supported by the assertion of Tabachnick and Fidell (2007) that standardised residuals range of more than 3.3 or less than -3.3 is not suitable to support reasonable prediction.

- (iii) Which of the eight (8) predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) are most influential in predicting SMT use behaviour of academic librarians in the provision of library and information services in academic libraries in the South-West, Nigeria?

**Table 5.12: Coefficients in relation to SMT in relation to Use Behaviour of Academic Librarians**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	5.747	2.860		2.009	.048	.060	11.434					
	PERCEIVED EASE OF USE	.034	.042	.069	.813	.419	-.050	.119	.381	.088	.056	.652	1.533
	RELATIVE ADVANTAGE	.283	.082	.362	3.438	.001	.119	.447	.708	.349	.237	.430	2.326
	IMAGE	.080	.062	.105	1.290	.201	-.044	.205	.340	.139	.089	.722	1.384
	VISIBILITY	-.037	.117	-.053	-.312	.756	-.269	.196	.129	-.034	-.022	.168	5.961
	RESULT DEMONSTRABILITY	.027	.107	.045	.251	.802	-.185	.239	.224	.027	.017	.146	6.838
	PROFESIONAL MOTIVATION	.103	.058	.176	1.779	.079	-.012	.217	.569	.189	.123	.484	2.067
	PROFESIONAL GRATIFICATION	.200	.093	.251	2.144	.035	.015	.386	.691	.226	.148	.347	2.881

	PERCIEVED USE	-.001	.038	-.001	-.017	.987	-.076	.075	-.096	-.002	-.001	.879	1.138
a. Dependent Variable: USEBEHAVIOUR													

The regression weight,  $\beta$ , is the amount of change in the dependent variable resulting from a one-unit change in the independent variable when all other independent variables are held constant. However, according to Bakare (2015), the size of  $\beta$  is related to the scale used to measure the independent variable; this is achieved by looking at the standardised coefficients or beta values. These can vary from  $-1$  to  $+1$ .

Table 5.11 shows that Relative Advantage ( $\beta_3 = 0.362$ ;  $t = 3.438$ ,  $p < 0.05$ ) and Professional Gratification ( $\beta_7 = 0.251$ ;  $t = 2.144$ ,  $p < 0.05$ ) are the most influential predictors of SMT use behaviour of academic librarians in the provision of library and information services in academic libraries in the South-West, Nigeria?

(iv) Are there any predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) that do not contribute significantly to the prediction model?



The results in Table 5.12 show that perceived usefulness, perceived ease of use, image, visibility, result demonstrability, and professional motivation did not contribute significantly to the prediction of model 1.

Research Question 4(b) is an extension of Research Question 4(a). Research Question 4(b) is however, premised on the aforementioned factors as it affects the students sampled population.

#### 5.4.5 Research Questions 4b:

How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation influence SMT use behaviour of 4th-year Computer Science Students in academic libraries in South-West, Nigeria?

- (i) Does the obtained regression equation resulting from a set of eight (8) predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) allow reliable prediction of SMT use behaviour of 4<sup>th</sup>-year Computer Science Students in South-West, Nigeria?

The *F*-ratio in the ANOVA table as depicted in Table 5.13, shows that the independent variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) statistically significantly predict the dependent variable (i.e. SMT use behaviour of students) in academic libraries in South-West, Nigeria.

**Table 5.13: Regression ANOVA in relation to Use Behaviour of Students**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4732.564	8	591.570	10.127	.000 <sup>b</sup>
	Residual	12033.185	206	58.414		
	Total	16765.749	214			
a. Dependent Variable: USEBEHAVIOUR						
b. Predictors: (Constant), PERCIVEDEASEOFUSE, RESULTDEMONSTRABILITY, VISIBILITY, RELATIVEADVANTAGE, IMAGE, PERSONALGRATIFICATION, PERCEIVEDUSEFULNESS, PERSONALMOTIVATION						

From the result in Table 5.13, the specified model; Model – 1:  $F(1, 206) = 10.127, p < .05$  shows that the regression model is a good fit for the data, which implies that the relationship is linear and model significantly predicts the Dependent Variable. This is also an indication that the test of significance of the model using an ANOVA is not by chance but due to the predictor variables. The Regression effect is also statistically significant, indicating that prediction of the dependent variable is not by chance but due to the aforementioned predictor variables.

- (ii) How much of the total variance in SMT use behaviour of students in academic libraries in South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation? The results are presented in table 5.14.

**Table 5.14: Regression Model Summary in relation to Use Behaviour of Students**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.531 <sup>a</sup>	.282	.254	7.64287	.282	10.127	8	206	.000
a. Predictors: (Constant), PERCIVEDEASEOFUSE, RESULTDEMONSTRABILITY, VISIBILITY, RELATIVEADVANTAGE, IMAGE, PERSONALGRATIFICATION, PERCEIVEDUSEFULNESS, PERSONALMOTIVATION									

The results in Table 5.14 show the Model Summary of the regression analysis. The "R" column represents the value of *R*, the *Multiple Correlation Coefficient*. *R* is considered one measure of the quality of the prediction of the dependent variable, which in this case, is SMT use behaviour of students. A value of 0.531, from this research study indicates a good level of prediction.

The "R Square" column represents the  $R^2$  value (also called the Coefficient of Determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). The value of 0.282 suggests that all the independent or predictor variables in this study, explained 28.2% of the variability of the

dependent variable. Which means that 28.2% of the total variance in the SMT use behaviour of student in accessing SMT library services in academic libraries in South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation.

(iii) How well can the full model predict scores of a different sample of data from the same population or generalise to other samples of students?

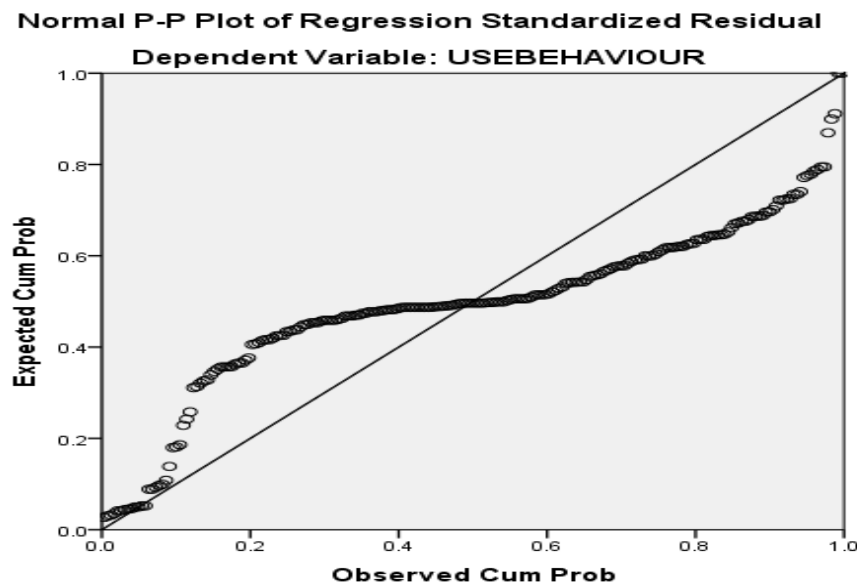
To answer this question, a cross-validation was carried out on the model. This is the assessment of the accuracy of a model across different samples of students. If a model can be generalised, then it is capable of accurately predicting the same outcome variable from the same set of predictors in a different group of students. If the model is applied to a different sample of students and there is a severe drop in its predictive power, then the model clearly does *not* generalise.

Bakare (2015), suggested that once there is a regression model, there are two main methods of cross-validation: (i) adjusted  $R^2$  and (ii) Data Splitting. Using the adjusted  $R^2$  Method; in SPSS, we have the calculations for the values of  $R$  and  $R^2$ , but also an adjusted  $R^2$ . This adjusted value indicates the loss of predictive power or shrinkage. Whereas  $R^2$  tells how much of the variance in  $Y$  is accounted for by the regression model from the sample, the adjusted value tells how much variance in  $Y$  would be accounted for if the model had been derived from the population from which the sample was taken. SPSS derives the adjusted  $R^2$  using *Wherry's equation*. However, this equation has been criticised because it tells nothing about how well the regression model would predict an entirely different set of data (i.e. how well can the model predict scores of a different sample of data from the same population?). One version of  $R^2$  that does tell us how well the models cross-validate, uses Stein's formula which is shown in equation (1.4) (Stevens, 2002): In *Stein's equation*,  $R^2$  is the unadjusted value,  $n$  is the number of participants (215) and  $k$  (8) is the number of predictors in the model. For this research study, the value is as calculated using equation (1.4).

$$\text{adjusted } R^2 = 1 - \left[ \left( \frac{n-1}{n-k-1} \right) \left( \frac{n-2}{n-k-2} \right) \left( \frac{n+1}{n} \right) \right] (1 - R^2) \quad (1.4)$$

$$\begin{aligned} \text{Adjusted } R^2 &= 1 - [(1.0388)(1.0390)(1.0047)(0.718)] \\ &= 1 - 0.7786 \\ &= 0.221 \end{aligned}$$

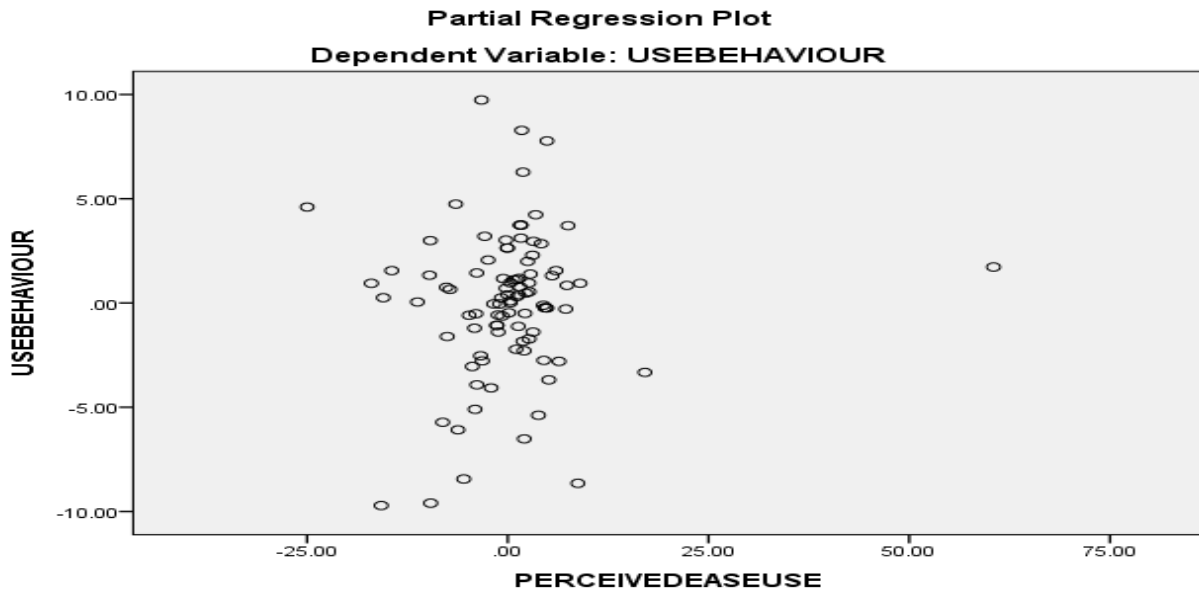
This Stein's value (0.221) is very similar to the observed value of  $R^2$  (0.282) indicating that the cross-validity of this model is very good. In addition, the adjusted  $R^2$  gives us some idea of how well our model generalises and ideally, we would like its value to be the same or very close to the value of  $R^2$ . In this study, the difference for the final model is minute (in fact it is the difference between the values  $0.282 - 0.221 = 0.006$  (about 0.1%)). This shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 0.1% less variance in the outcome. This means that the full model is capable of predicting scores of a different sample of data from the same population or the full model accurately represent the entire population.



**Figure 5.16: The Normal P-P Plot of Regression Standardised Residual – Use Behaviour of Students**

The Normal Probability Plot (P-P) of the Regression Standardised Residual for this study shows that all the points lay in a reasonably straight diagonal line from bottom left to top right. The

closeness of the plotted points to the straight line also shows the predictive nature of the model under consideration.



**Figure 5.17: The Scatterplot of the Standardized Predicted Value – Use Behaviour of Students**

The rectangular distribution of the points in the scatter plot of the residuals, with most of the scores concentrated in the center shows that there are no outliers. The range of dispersion is from -2 to +3 which is reasonable and good for the data. This range of value is supported by the assertion of Tabachnick and Fidell (2007) that Standardised residuals range of more than 3.3 or less than -3.3 is not suitable to support reasonable prediction.

- (iv) Which of the eight (8) predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) are most influential in predicting SMT use behaviour of students in academic libraries in the South-West, Nigeria? The results are depicted in Table 5.15.

**Table 5.15: Coefficients in relation to Use Behaviour of Students in relation to Use Behaviour of Students**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error				Beta	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1 (Constant)	-2.203	5.222		-.422	.674	-12.499	8.093					
PERCEIVED USEFULNESS	1.184	.303	.397	3.911	.000	.587	1.781	.491	.263	.231	.339	2.952
RELATIVE ADVANTAGE	.296	.201	.157	1.472	.142	-.100	.693	.422	.102	.087	.308	3.249
IMAGE	.056	.143	.032	.388	.698	-.227	.338	.309	.027	.023	.528	1.895
VISIBILITY	-.065	.077	-.054	-.850	.396	-.216	.086	.090	-.059	-.050	.869	1.151
RESULT DEMONSTRABILITY	.348	.167	.165	2.082	.039	.018	.678	.328	.144	.123	.551	1.813
PERSONAL MOTIVATION	.038	.207	.021	.183	.855	-.371	.447	.351	.013	.011	.253	3.952
PERSONAL GRATIFICATION	-.290	.183	-.169	-1.581	.115	-.651	.072	.281	-.110	-.093	.304	3.284
PERCIVEDEASEOFUSE	-.180	.264	-.041	-.680	.497	-.700	.341	-.054	-.047	-.040	.979	1.022

a. Dependent Variable: USEBEHAVIOUR

The results in Table 5.15 show that Perceived Usefulness ( $\beta_1 = 0.397$ ;  $t = 3.911$ ,  $p < 0.05$ ) and result demonstrability ( $\beta_5 = 0.165$ ;  $t = 2.082$ ,  $p < 0.05$ ) are the most influential predictors of SMT use behaviour of students in libraries in the South-West, Nigeria.

- (v) Are there any predictor variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) that do not contribute significantly to the prediction model?

The results in Table 5.15 show that relative advantage, image, visibility, personal motivation, personal gratification, and perceived ease of use did not contribute significantly to the prediction of model 2.

The Multiple  $R$  is the correlation between the observed values of  $Y$  and the values of  $Y$  predicted by the multiple regression models. Therefore, large values of the multiple  $R$  represent a large correlation between the predicted and observed values of the outcome. A multiple  $R$  of 1 represents a situation in which the model perfectly predicts the observed data. As such, multiple  $R$  is a gauge of how well the model predicts the observed data. The result for this study revealed that the Multiple Correlation Coefficient,  $R$  which is a measure of the quality of the prediction of the dependent variable; in this case, SMT use behaviour of students and academic librarians indicated good levels of prediction. This is buttressed by Gibson and Dembo (1984) in whose view, the quality of prediction is premised on the numerical value assigned to the multiple correlation coefficients in a study involving many predictor variables.

The results showed that the tests of whether the overall regression model is a good fit for the data (i.e. examines the degree to which the relationship between the Dependent Variable and the Independent Variables are linear) testifies to the predictability and linearity of the variables of study. Since the relationship is linear it means all the two models significantly predict the Dependent Variable. This result tells us that there is less than a 0.05% chance that an  $F$ -ratio this large would happen if the null hypothesis were true. Therefore, it can be concluded that the regression model results are a significantly better prediction of SMT use behaviour of students and academic librarians. Generally, the regression model overall, predicts the SMT use behaviour of students and academic librarians significantly well. This is in consonance with

Tabachnick and Fidell (2007) who posit that the regression model results are a better prediction of the predictor from the outcome or criterion variable. Overall, the inspection of the structure coefficients suggests that, with the possible exception of six of the variables, all the others were significant predictors. This is a strong indication of the predictiveness of the underlying (latent) variable described by the model.

The *b* values (i.e. the raw - unstandardised and standardised regression weights) represent the gradient of the regression line. It is the outcome of the regression of SMT use behaviour of students and academic librarians on all the predictor variables in this study. The results from the coefficients show that at least only two out of the eight predictor variables of interest in this study were significant in influencing SMT use behaviour of students and academic librarians. This finding aligns with Field's (2009) view of it is not all predictor variables in a study that are capable of influencing the criterion variable.

The results showed that the  $R^2$  value (also called the Coefficient of Determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables in this study is 0.596 and 0.282 respectively for academic librarians and students. This implies that 59.6% and 28.2% of the total variance in SMT use behaviour of students and academic librarians are accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation. This supports Field's (2009) view that the  $R^2$  value is a better index of how much variation in the criterion variable is accounted for by the response variable than the adjusted  $R^2$ .

Generalisation is a critical additional step and if it is discovered that the model is not generalisable, and then one must restrict any conclusions based on the models to the sample used. However, the models in this study are generalisable, which means the results of this study can be used in making inferences about the larger population of the study.

The Zero-order Correlations lists the Pearson *r*-values of the criterion or dependent variable (SMT use behaviour of students and academic librarians) with each of the predictors. These values are the same as those shown in the correlation matrix. The Partial column under Correlations lists the partial correlations for each predictor as it was evaluated for its weighting



in the model (the correlation between the predictor and the dependent variable when the other predictors are treated as covariates). The Part column under Correlations lists the semi-partial correlations for each predictor once the model is finalised; squaring these values informs us of the percentage of variance each predictor uniquely explains.

#### **5.4.6 Research Question 5:**

What institutional mechanisms are used to promote the use of SMT in the provision of library and information services and professional development of academic librarians in South-West, Nigeria?

Three questions as listed in Table 5.16 were raised to address the issue of institutional mechanisms that are used in promoting the use of SMT. The summary of the responses is as listed in Table 5.16.

**Table 5.16: Summary of the Responses from the Interview Schedule by the University Librarians on the mechanisms that are used to promote the use of SMT in the provision of library and information services in academic libraries.**

S/N	Respondent Affiliated University	Questions		
		<i>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</i>	<i>What support is available to integrate SMT in the library and information services in your library?</i>	<i>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</i>
1	<b>BABCOCK</b>	<i>Computers, Internet Connectivity, Bandwidth, Consistent power supply.</i>	<i>Employing more capable hands, Training of academic librarians, attending seminars and conferences to improve their knowledge of SMT.</i>	<i>None yet, what we have now as a policy is on the use of SMT in the university is centralized. That is, an academic librarian is not meant to attend to users queries on his/her own personal account.</i>
2	<b>EKSU</b>	<i>Computers</i>	<i>Training of academic librarians, attending seminars and conferences to improve their</i>	<i>None yet, university management is working presently on it.</i>

S/N	Respondent <i>Affiliated University</i>	Questions		
		<b>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</b>	<b>What support is available to integrate SMT in the library and information services in your library?</b>	<b>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</b>
			<i>knowledge of SMT and Encouraging academic librarians to harness the technological innovation brought to fore by SMT.</i>	
3	<b>UNILAG</b>	<i>Computers, Internet Connectivity and Consistent power supply</i>	<i>Training of academic librarians and Attending seminars and conferences to improve their knowledge of SMT</i>	<i>This policy was just enacted by the management of the University which reiterates the fact that academic librarians must be vast in the use of SMT in the provision of library services to clientele.</i>

S/N	Respondent <i>Affiliated University</i>	<i>Questions</i>		
		<b><i>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</i></b>	<b><i>What support is available to integrate SMT in the library and information services in your library?</i></b>	<b><i>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</i></b>
4	<b><i>CONVENANT</i></b>	<i>Computers and laptops, Internet Connectivity with enough bandwidth to avoid buffering and Uninterrupted power supply</i>	<i>There is a paradigm shift with how academic librarians relate with clientele and know whether their needs are being met because they are better exposed to SMT, Creating awareness about the importance of using SMT for the provision of library services to academic librarians, internal and external</i>	<i>None</i>

S/N	Respondent <i>Affiliated University</i>	<i>Questions</i>		
		<b><i>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</i></b>	<b><i>What support is available to integrate SMT in the library and information services in your library?</i></b>	<b><i>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</i></b>
			<i>trainings of academic librarians by attending seminars and conferences to improve their knowledge of SMT and provision of enabling environment for academic librarians to be able to use SMT for the provision of library and information services to clientele.</i>	

S/N	Respondent <i>Affiliated University</i>	<i>Questions</i>		
		<b><i>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</i></b>	<b><i>What support is available to integrate SMT in the library and information services in your library?</i></b>	<b><i>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</i></b>
5	<b><i>UI</i></b>	<i>Computers and Internet Connectivity</i>	<i>Creating awareness about the importance of using SMT for the provision of library services to academic librarians, Training of academic librarians, and Providing an enabling environment for academic librarians to be able to use SMT for the provision of library and</i>	<i>There is no policy because SMT is the trend now and an academic librarian does not have a choice than just to key into the trend if they do not want to be left behind. So, the library does not have any requisite policy for now but expects all academic librarians to embrace these technologies to better serve their clientele.</i>

S/N	Respondent Affiliated University	Questions		
		<i>What infrastructure is available to the librarians and users in your institution to facilitate provision of library and information services through SMT?</i>	<i>What support is available to integrate SMT in the library and information services in your library?</i>	<i>What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?</i>
			<i>information services to clientele.</i>	
6	<b>LASU</b>	<i>Computers and Internet Connectivity</i>	<i>Training of academic librarians and Attending seminars and conferences to improve their knowledge of SMT</i>	<i>None.  This is a decision that the LRCN can take. LRCN should have a policy which ensures standardization so that there can be a synergy of these various SMT platforms. There is no nexus among academic librarians on the use of SMT in the provision of library services.</i>

**Key:** UI - University of Ibadan; UNILAG - University of Lagos; EKSU - Ekiti State University; LASU - Lagos State University; BABCOCK - Babcock University and; COVENANT - Covenant University.

The results in Table 5.16 revealed that in relation to what infrastructures, all the sampled respondents attested to the fact that there is one form of such or the other ranging from computers, internet facilities and uninterrupted power supply among others. In relation to the support that is available for the integration of SMT in the library and information services, their responses ranged from employment of more capable hands, training of academic librarians, regular attendance of internal and external trainings through seminars, and conferences to improve their knowledge of SMTs among many others were cited. However, it is sad that only University of Lagos (UNILAG) has a confirmed policy or guidelines to facilitate the provision and use of SMT in providing information; other sampled universities are at different stages of coming up with one.

### 5.5 Research Hypotheses

This section presents the results of the hypotheses to establish how the independent variables in this study influence the use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria. The study had six hypotheses, as outlined below.

The following hypotheses were tested at 0.05 significant levels:

**5.5.1 H<sub>01</sub>: There is no significant relationship between SMT awareness and use behaviour of academic librarians in providing library and information services in South-West, Nigeria.**

**Table 5.17: Inter-correlation matrix of Use Behaviour and SMT Awareness (Academic Librarians).**

		SMT AWARENESS	USE BEHAVIOUR
<b>SMT AWARENESS</b>	Pearson Correlation	1	.102
	Sig. (2-tailed)		.907
	N	94	94
<b>USE BEHAVIOUR</b>	Pearson Correlation	.102	1
	Sig. (2-tailed)	.907	

Significant @ p<0.05



The results in Table 5.17, show that, the correlation coefficient  $r$  is close to zero (i.e.  $r_{\text{SMT Awareness \& Use behaviour}} = 0.1$ ), this means that there is a weak relationship between SMT Awareness and use behaviours of academic librarians. This implies that changes in one variable are not correlated with changes in the second variable. Since,  $P > 0.05$ , which is the non-rejection of the null hypothesis, then it also means increases or decreases in SMT Awareness do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria. This result, lend credence to the views of respondents in Tables 5.3 and 5.5, where in relation to the awareness and frequency of usage, a small percentage that is not up to 50% lay claim to their awareness of the SMT tools; majority of them attested to the fact that they have never used some of the contemporary SMT tools before. The implication of this is that if a smaller percentage of the sampled population are aware and the majority have not used some of the SMT tools before, then the question of the use does not even arise.

**5.5.2 Ho2: There is no significant relationship between (perceived and actual benefits) and use behaviour of SMT by academic librarians in providing library and information services.**

**Table 5.18: Inter-correlation matrix of Use Behaviour and Perceived and Actual Benefits (Academic Librarians).**

		ACTUAL BENEFIT	PERCEIVED BENEFIT	USEBEHAVIOUR
ACTUAL BENEFIT	Pearson Correlation	1	.942**	.038
	Sig. (2-tailed)		.000	.713
	N	94	94	94
PERCEIVED BENEFIT	Pearson Correlation	.942**	1	.011
	Sig. (2-tailed)	.000		.916
	N	94	94	94
USEBEHAVIOUR	Pearson Correlation	.038	.011	1
	Sig. (2-tailed)	.713	.916	
	N	94	94	94

Significant @  $p < 0.05$

The results in Table 5.18, show that, the correlation coefficients  $r$  is close to zero (i.e.  $r_{\text{perceivedbenefits}\&\text{Usebehaviour}} = 0.1$  and  $r_{\text{actualbenefits}\&\text{Usebehaviour}} = 0.1$ ), this means that there is a weak relationship between (perceived and actual benefits) and use behaviours of academic librarians. This implies that changes in one variable are not correlated with changes in the second variable. Since,  $P > 0.05$ , which is the non-rejection of the null hypothesis; then it also means increases or decreases in perceived and actual benefits of SMT do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria. This result is in tandem with the views expressed by the academic librarians and students in Figure 5.10 and Figure 5.11 where both groups agreed that in the assessment of the academic librarian in terms of SMT usage for service delivery, the rating was below average. This might have contributed to the ratings of the inherent benefits as the way it is, because of the respondents are not satisfied with what is on ground.

**5.5.3 Ho3: There is no significant relationship between SMT use behaviour of academic librarians and their professional development.**

**Table 5.19: Inter-correlation matrix of Use Behaviour and Professional Development**

		<b>PROFESSIONAL DEVELOPMENT</b>	<b>USEBEHAVIOUR</b>
<b>PROFESSIONAL DEVELOPMENT</b>	Pearson Correlation	1	-.106
	Sig. (2-tailed)		.308
	N	94	94
<b>USE BEHAVIOUR</b>	Pearson Correlation	-.106	1
	Sig. (2-tailed)	.308	
	N	94	94

Significant @  $p < 0.05$

The result in Table 5.19, shows that, the correlation coefficient  $r$  is close to zero and negative (i.e.  $r_{\text{professionalDevelopment}\&\text{Usebehaviour}} = 0.1$ ), this indicates that there is a weak relationship between professional development and use behaviours of academic librarians. This implies that changes in one variable are not correlated with changes in the second variable. Since,  $P > 0.05$ , which is the non-rejection of the null hypothesis, then it also means increases or decreases in

professional development do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria. The reason for this may not be far-fetched; this is because majority of the academic librarians interviewed were of the view that there is no standard policy guiding SMT implementation and usage in most of the sample universities. Their belief is that this has not helped the proper implementation of a sound SMT culture in the area of its provision and training in the universities sampled.

**5.5.4 Ho4: There is no significant relationship between relative advantage, image, visibility, result demonstrability, and SMT use behaviour of academic librarians in providing library and information services.**

**Table 5.20: Inter-correlation matrix of Use Behaviour and Relative Advantage, Image, Visibility and Result Demonstrability (Academic Librarians).**

		RELATIVE ADVANTAGE	IMAGE	VISIBILITY	RESULT DEMONSTRABILITY	USE BEHAVIOUR
<b>RELATIVE ADVANTAGE</b>	Pearson Correlation	1	.317*	.108	.210*	.708*
	Sig. (2-tailed)		.002	.301	.042	.000
	N	94	94	94	94	94
<b>IMAGE</b>	Pearson Correlation	.317*	1	.241*	.403*	.340*
	Sig. (2-tailed)	.002		.019	.000	.001
	N	94	94	94	94	94
<b>VISIBILITY</b>	Pearson Correlation	.108	.241*	1	.881*	.129
	Sig. (2-tailed)	.301	.019		.000	.216
	N	94	94	94	94	94
<b>RESULT DEMONSTRABILIT Y</b>	Pearson Correlation	.210*	.403*	.881**	1	.224*
	Sig. (2-tailed)	.042	.000	.000		.030
	N	94	94	94	94	94
<b>USE BEHAVIOUR</b>	Pearson Correlation	.708*	.340*	.129	.224*	1
	Sig. (2-tailed)	.000	.001	.216	.030	
	N	94	94	94	94	94

\*Significant @ p<0.05

The result in Table 5.20 shows that, there is a positive correlation between relative advantage, image, visibility, result demonstrability, and SMT use behaviour of academic librarians. The correlation coefficients for the four variables (i.e. relative advantage, image, visibility and result demonstrability) were positive (i.e.  $r_{\text{relativeadvantage\&usebehaviour}} = 0.7$ ,  $r_{\text{image\&usebehaviour}} = 0.3$ ,  $r_{\text{visibility\&usebehaviour}} = 0.1$  and  $r_{\text{resultdemonstrability\&usebehaviour}} = 0.2$ ) and only three (relative advantage, image and result demonstrability) were statistically significant. This means the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the three variables and SMT use behavior of academic librarians, while the reverse is the case for visibility ( $r_{\text{visibility\&usebehaviour}} = 0.1$ ,  $p > 0.05$ ). Thus, it can be concluded that there is a statistical significant correlation between relative advantage, image, result demonstrability, and SMT use behaviour of academic librarians in providing library and information services.

**5.5.5 Ho5: There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services.**

**Table 5.21: Inter-correlation matrix of Use Behaviour and Perceived Use and Perceived Ease of Use (Academic Librarians).**

		<b>PERCIEVED USE</b>	<b>PERCEIVED EASE OF USE</b>	<b>USE BEHAVIOUR</b>
<b>PERCIEVED USE</b>	Pearson Correlation	1	-.202	<b>-.096</b>
	Sig. (2-tailed)		.051	.355
	N	94	94	94
<b>PERCEIVED EASE OF USE</b>	Pearson Correlation	-.202	1	.381*
	Sig. (2-tailed)	.051		.000
	N	94	94	94
<b>USE BEHAVIOUR</b>	Pearson Correlation	-.096	<b>.381*</b>	1
	Sig. (2-tailed)	.355	.000	
	N	94	94	94

Significant @  $p < 0.05$

The result in Table 5.21 shows that, there is a negative correlation ( $r_{\text{perceiveduse\&usebehaviour}} = -0.1$ ) between perceived usefulness and use behaviours of academic librarians, while the reverse was the case for perceived ease of use and use behaviours of academic librarians, where the correlation coefficient ( $r_{\text{perceivedeaseofuse\&usebehaviour}} = 0.4$ ) was positive. The negative correlation between perceived use and use behaviours of academic librarians shows that, the two variables are not moving in the same direction, while one is increasing the other is decreasing. However, the reverse is the case for perceived ease of use and use behaviours of academic librarians, where the correlation coefficient is positive indicating that the two variables are moving together in the same direction (i.e. as perceived ease of use increases, the use behaviours of academic librarians in providing library and information services in the South-West, Nigeria also increase). It can be concluded that there is a statistical significant correlation between perceived ease of use and use behaviours of academic librarians in providing library and information services in the South-West, Nigeria, while the reverse is the case for perceived and use behaviours of academic librarians.

**5.5.6 Ho6: There is no significant relationship between professional motivation/gratification and SMT use behaviour of academic librarians in providing library and information services.**

**Table 5.22: Inter-correlation matrix of Use Behaviour and Professional Motivation (Academic Librarians).**

		PROFESIONAL MOTIVATION	USE BEHAVIOUR
PROFESIONAL MOTIVATION	Pearson Correlation	1	.569*
	Sig. (2-tailed)		.000
	N	94	94
USE BEHAVIOUR	Pearson Correlation	.569*	1
	Sig. (2-tailed)	.000	
	N	94	94
**. Correlation is significant at the 0.01 level (2-tailed).			

Significant @  $p < 0.05$

**Table 5.23: Inter-correlation matrix of Use Behaviour and Professional Gratification (Academic Librarians).**

		USE BEHAVIOUR	PROFESIONALGRATIFICA TION
USEBEHAVIOUR	Pearson Correlation	1	.691*
	Sig. (2-tailed)		.000
	N	94	94
PROFESIONALGRAT IFICATION	Pearson Correlation	.691*	1
	Sig. (2-tailed)	.000	
	N	94	94
**. Correlation is significant at the 0.01 level (2-tailed).			

Significant @  $p < 0.05$

The result in Table 5.23 shows that, there is a positive correlation between professional motivation and gratification and use behaviours of academic librarians. The two tables revealed that the correlation coefficient for both variables (i.e. professional motivation and gratification) are positive, significant and moderately high ( $r_{\text{motivation\&usebehaviour}} = 0.6$  and  $r_{\text{gratification\&usebehaviour}} = 0.7$ ). This means the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the variable. It can be concluded that there is a statistical significant correlation between professional motivation and gratification and use behaviours of academic librarians. The implication of this is that as professional motivation and gratification increases, so are the use behaviours of academic librarians in providing library and information services in South-West, Nigeria.

## 5.6 Summary

This Chapter presented the results from the analyses of the data. The demographic analysis shows that for each category of respondents, there are variations between the listed cohorts. In terms of the University of Affiliation, the highest affiliated university in relation to the academic librarians was University of Ibadan while the lowest affiliation was linked to the Ekiti State

University. However, on the part of the student respondents, the highest affiliated university was Babcock University, while the lowest was Lagos State University. Gender-wise, there was gender disparity between the two categories of respondents in the study. The male respondents were more than the female respondents for the academic librarians, while the reverse was the case for the students' respondents where the female respondents were more than the male respondents.

In relation to respondents' age distribution, for the sampled students' majority of them were within the 21-25 years' age cohort, while the least cohort was 26-30 years. For the academic librarians, majority of the respondents belong to the 36-45 years' age range, while the least cohort was 55-56 years. For the highest academic qualification of the academic librarians, the findings revealed that majority of the respondents have acquired their Masters, while the least cohort is already through with their first degree. In addition, the distribution of the years of working experience of academic librarians in the study shows that majority of the respondents are within the 6-10 years working experience cohort and the least group is the 21-25 years.

The triangulation of the views of the academic librarians and the student respondents in the study revealed that for each group of respondents in the study there is agreement in the order and degree of the level of awareness of SMT by students and academic librarians in the provision of library and information services in the sampled universities in South-West, Nigeria. Items "g" (i.e. Conferencing tool such as Skype, Viber, Line, Imo, Google Duo), "h" (i.e. Image and video sharing such as YouTube, SlideShare, Flickr) and "i" (Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN) were the three major SMT tools that the respondents were aware of in their day-to-day interaction with the academic libraries in the participating universities. However, students-respondents are aware of other accessible mechanisms in accessing SMT library services. Some of these are through smartphones, computer desktops, computer laptops, and other related means.

In relation to the degree of respondents' adoption of the highlighted SMT in the study, the results revealed that Item "i" (Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN) was the one with the highest level of accessibility, hence its highest adoption, while item "b" (Blogging such as WordPress, Blogger) with the least access, is



also the least adopted in all the academic libraries in the participating universities. Majority of the student respondents access these SMT Library Services right in their classrooms or lecture theatres, while the least in terms of access points of these services are from Off-campus sources.

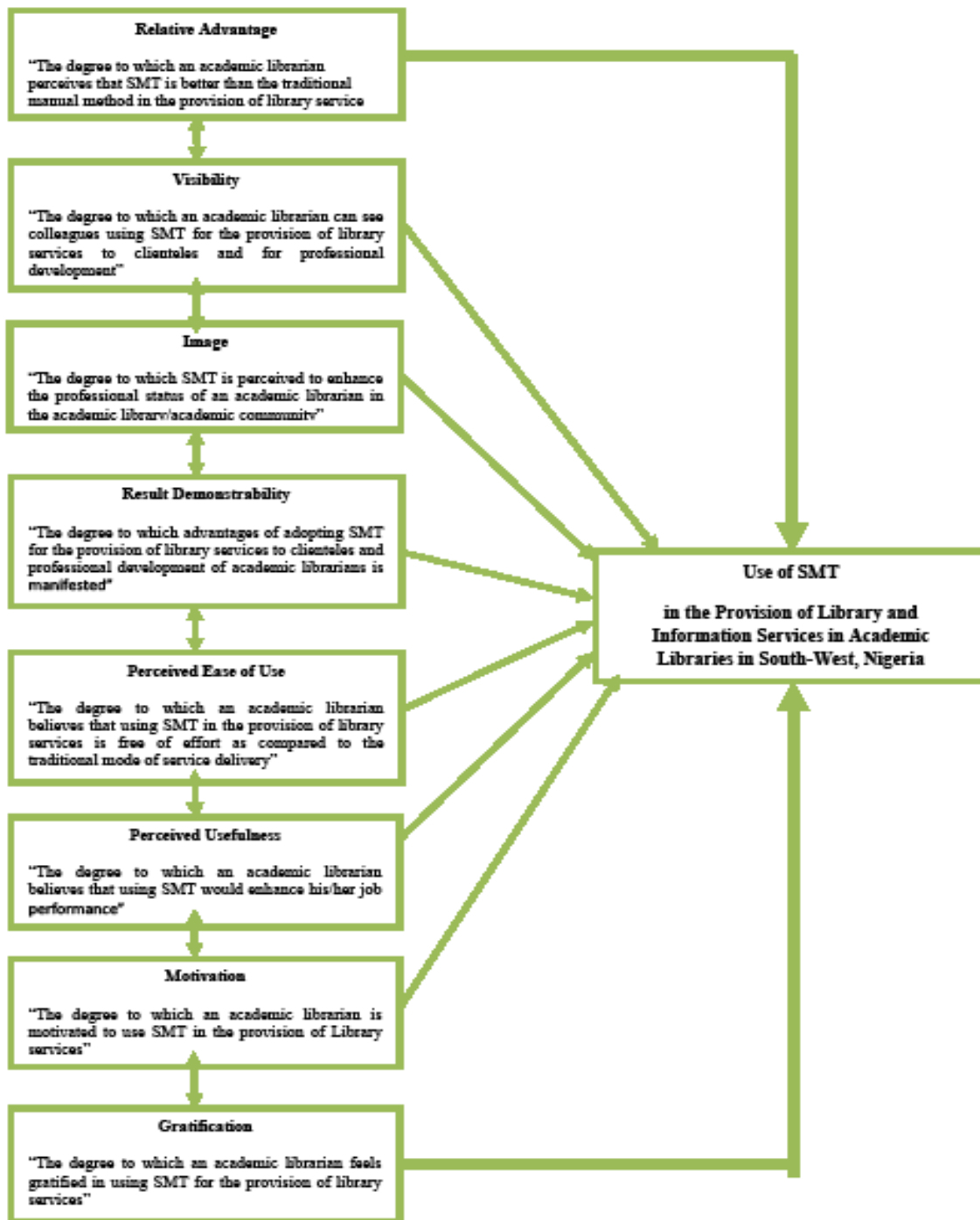
For the degree of use, social networking, chatting tool such as Face-book messenger, Blackberry messenger, WhatsApp, Google Talk, MSN, image, and video sharing were the first set of three most rated Social Media Technology (SMT) tools used by Academic Librarians. It was also discovered that majority of the sampled students started using SMT very late in their academic pursuit. In relation to the views of the student respondents on the extent of efficacy of the Social Media Technologies (SMT), majority were of the view that SMT tools are moderately efficacious. In terms of their preference, in relation to the traditional or contemporary (modern) way of the provision of the Social Media Technologies (SMTs), the results revealed that majority of the sampled students (in this case those who are in 400-level computer science department) are of the view that the contemporary (modern) way of providing library services through SMT is better than the traditional method.

In terms of information needs assessment, majority of the student respondents were of the view that as at the time of the study, their information needs within the sampled university communities were not being met. In the area of the use of SMT in the provision of library services by academic librarians, the expressed views of the sampled students is the same as that of the academic librarians themselves. Majority of the students respondents rated the academic librarians' use of social media technologies (SMT) in the provision of information services as moderate. This is in consonance with the views of the academic librarians themselves on the same issue. Also, in relation to the question on the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries in South-West, Nigeria, it was discovered that the ten (10) most important in terms of their ranking as perceived and actual benefits of using SMT in the provision of library and information services are; keeping track with professional trends, sharing work related ideas with colleagues, communicating with the faculty staff, reference services, interacting with users, announcing library news/events, collaborating with colleagues in other libraries, collaboration with colleagues, Information literacy programs and Interacting with users easily.

It was also revealed that personal knowledge and skills, staff willingness to change and Management support were the three (3) most important factors ranked as first, second and third by the academic librarians. The result further revealed that the Multiple Correlation Coefficient, R which is a measure of the quality of the prediction of the dependent variable; in this case, SMT use behaviour of students and academic librarians indicated good levels of prediction. The results also showed that the tests of whether the overall regression model is a good fit for the data (i.e. examines the degree to which the relationship between the Dependent Variable and the Independent Variables are linear) testifies to the predictability and linearity of the variables of study. Therefore, it can be concluded that the regression model results are a significantly better prediction of SMT use behaviour of students and academic librarians.

The  $R^2$  value (also called the Coefficient of Determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables in this study is 0.596 and 0.282 respectively for academic librarians and students. This implies that 59.6% and 28.2% of the total variance in SMT use behaviour of students and academic librarians are accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation. Generalisation is a critical additional step and if it is discovered that the model is not generalisable then one must restrict any conclusions based on the models to the sample used. However, the models in this study are generalisable, which means the results of this study can be used in making inferences about the larger population of the study.

Based on the results of the hypotheses tested, the research framework resulted in the model presented in Figure 5.18.



**Figure 5.18: The schematic diagram of the variables in this study (i.e. the conceptual framework); showing the relationships between the variables: Source – Designed by the researcher; Bakare (2017)**

## **CHAPTER SIX**

### **DISCUSSION OF FINDINGS**

#### **6.1 Introduction**

This chapter interprets and discusses the findings of the study presented in Chapter Five. The study sought to determine the use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria. The respondents were academic librarians and 4<sup>th</sup>-year Computer Science Students in six selected Universities in South-West, Nigeria. The Universities surveyed include University of Ibadan, University of Lagos, Ekiti State University, Lagos State University, Babcock University and Covenant University. The study was underpinned by three theories namely Innovation Diffusion Theory (IDT); Technology Acceptance Model (TAM) and Uses and Gratification Theory (U&G). The study addressed the research questions presented in Section 1.3.2. Hypotheses were also tested to examine if there were significant relationships between the independent variables in the study (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) and the dependent variable which is the Use Behaviour of academic librarians (see Section 1.3.3).

Extant literature has shown that interpretation of data is a very important step in research and it is meant to depict relations and processes that underlie the findings of a study. Kothari (2004) stated that interpretation of data in research connotes the task of making inferences from the gathered facts after an investigative or experimental study which gives broader meaning of the research findings. Emory and Cooper (1991:336) cited in Kothari (2004) affirmed, “Interpretation of the research process is concerned with establishing the connections between the results of the research questions, hypotheses and the theory”. Thus, it is the means which the observation of the researcher in the process of the study can be better comprehended and provides a basis for further research. The interpretation and discussion of findings in this chapter are organised around the research questions, research hypotheses, theoretical constructs, and the broader issues around the research problem.

## **6.2 Response Rate**

The researcher administered 335 questionnaires to both academic librarians and 4th-year Computer Science students in six selected Universities. Out of these 335 questionnaires, 309 were duly completed and returned. For 4th-year Computer Science Students, the average response rate of 96.8% was realised, while for academic librarians, there was an average response rate of 83.2%. In addition, for the 6 University Librarians of the selected Universities that were interviewed 100% response rate was achieved. This contrasts with Rogelberg and Stanton's (2007) opinions that, except the researcher coercively administers the questionnaires to the respondents, a 100% response rate (RR) is hardly achieved. The researcher believed this high response rate was achieved because it was self-administered to students during their classes with permission from lecturers. Also, the researcher administered the questionnaires to academic librarians in their various offices and personally interviewed the six University Librarians. Dooley and Lindner (2003) stated that the standard response rate is 75-85%.

The high response rate of respondents in this study was expected to enhance greater credibility of the results. Luong and Rogelberg (1998) cited in Rogelberg and Stanton (2007) who asserted that low response rate undermines the observed credibility of the collected data while a high response rate increases the integrity of the data collected. Alabi (2016) in a related study administered 267 questionnaires to academics in the two universities, 215 were completed and returned, giving a response rate of 80.5%. Likewise, in the study of Kolawole (2016) where a total of 240 academics and 353 undergraduate students were respondents, 195 academics and 331 students duly completed and returned the questionnaires, giving a response rate of 81.3% for academics and 93.8% for students respectively. In the same study, 14 academics out of 16 were interviewed giving a response rate of 87.5%.

## **6.3 Demographics of Respondents**

Wyse (2012) stated that demographics are features of respondents in a study which could be race, ethnicity, gender, age, education, profession, occupation, income level, and marital status. Academic Librarians were asked to provide gender, age, highest qualification, years of work experience and work affiliation for their demographic characteristics. While 4<sup>th</sup>-Year Computer Science Students were required to provide gender, age, and university of affiliation.

### **6.3.1 Distribution of Respondents by University**

The findings from the study revealed that Babcock University and Covenant University which are both Private Universities had more students in 4<sup>th</sup>-Year Computer Science Department than their counterparts in University of Ibadan and University of Lagos which are Federal Universities. Similarly, in Private Universities they were more 4<sup>th</sup> year computer science students than those in Lagos State University and Ekiti State University which are both State Universities. Federal and State Universities are reported as persistently inefficient because incessant strike action compared to Private Universities which have internal efficiency in service delivery thus, attracting greater enrolment to these universities (Ajadi, 2010).

On the other hand, findings revealed that academic librarians in the University of Ibadan library (Kenneth Dike Library) and University of Lagos Library (Fatiu Ademola Akesode Library) have the highest number of respondents. This is expected because according to Saint, Hartnett, and Strassner (2003), these Universities are among the first-generation Universities based on their dates of establishment. Therefore, it is expected that they should have more academic librarians than any of the State and Private Universities. The low numbers of academic librarians in Private Universities substantiate the assertion of Ajadi (2010:22) that “many of the private universities in Nigeria are comparatively new and function with a limited number of academic and other staffs”. The low staffing in the state universities is in part attributed to salary erosion during the past decade which have prompted substantial “brain-drain” of academic staff and impeded new staff recruitment (Akindutire, 2004).

### **6.3.2 Distribution of Respondents by Gender**

The results of the study shown that male respondents (57.4%) were more than the female respondents (42.6%) for the academic librarians. The result affirms the dominance of male academics in the surveyed universities which indicates a gender imbalance. This finding was also substantiated by Okonedo, Azubuike and Adeyoyin (2013) who in their study on use of Web 2.0 technologies by library and information professionals in South-West Nigeria found that the population of male respondents (53.3%, 120) surpassed that of their female counterparts (46.7%, 105). Similarly, the study of Tella, Ayeni and Popoola (2007) among library personnel in

academic and research libraries in Oyo State, Nigeria indicated 82 (41%) females, while 118 (59%) were males. This contrasts with the findings of Okite-Amugboro (2017) whose study on use of Web 2.0 in academic libraries in South-South, Nigeria, revealed 56% of female librarians compared to 44% male librarians. Simpson (2004:350) affirmed that librarianship could be seen as “women’s work” and as such men in this profession are assumed to be occupying a “female role”. Mpoeleng, Totolo and Jibril (2015) also observed that female librarians dominated the workforce in the University of Botswana library with 73.3% (22) female and 26.7% (8) male staff. Lambert and Newman (2012) maintained that there are more women in librarianship than male, while the ratio in Jamaica is four females to one male in librarianship. Likewise, in the United States, research has revealed there are 83% women librarians (Beveridge, Weber & Beveridge, 2011; Lee, Oh & Burnett, 2016) compared to male librarians. However, Simpson (2004) asserted that issues concerning men and masculinity from mainstream academic research are on the rise in recent years, which has been focusing on the dynamics of masculinity in a female dominated profession of which librarianship is core.

The findings of the current study indicated that female student respondents (66%) were more than the male respondents (34%). This implies that there are more female in the 4<sup>th</sup>-year Computer Science Department in the six surveyed Universities. This is in contrast with the enrolments in the federal universities (34% female, 59% in sciences) which grew at the rapid rate of 12% annually during the 1990s and realised 325,299 students by 2000 (NUC, 2002). Likewise, Adegun (2012) maintained that sciences and technology-related disciplines were intended for males and the outstanding female students. Adeyemi and Akpotu (2004) found that there is lower female enrolment in all aspects of the Nigerian Universities. Particularly, there was a wide gap in the sciences and science-based disciplines and between the Northern and Southern zones with higher female enrolment in the South than the Northern part of the country. This is due to the sex stereotype in that part of the country but the United Nations (UN) is making frantic efforts to promote the rights of women to equal educational opportunities and formulate policies that would close the gaps in education (Adeyemi & Akpotu, 2004).

### **6.3.3 Distribution of Respondents by Age, Educational Qualification, Years of Working Experience and Educational Qualification**

Majority of the 4<sup>th</sup>-year Computer Science respondents (57.7%) were within the 21-25 years' age cohort while the least cohort was 26-30 years with 6.5%. The result revealed the dominance of the age cohort within 21-25 years. The result is in tandem with the expected age cohorts' reality within the university community. Holistically, 93.5% of the students' respondents are still within the expected age range for majority of the programmes being run in the universities, while the remaining 6.5% are the likely ones overshooting the expected age range for acquiring university education. This may be due to the benchmark on minimum age of 18 years for entry into Nigerian universities as set by the National University Commission (NUC, 2002).

The findings also revealed that majority of academic librarians (48%) belong to the 36-45 years' age range, followed by the 46-55 years' cohorts with 30%, and the least cohort 55-56 years with 5%. This implies that the age cohort of 36-45 years is the one dominating academic libraries as librarians. This validates the findings of Quadri and Idowu (2016) in South-West, Nigeria where a majority of respondents (librarians) age cohort was 23 (38.3%) falling within the age range of 36-45 years, and the few, between 50 years of age and above. The result is a reflection of the current reality on ground in most of the academic libraries in Nigerian universities. The current trend shows that 65% of the academic librarians are below 45 years of age, while the remaining 35% are above this age. This result suggests that unlike in time past when the field of librarianship especially in Nigeria was meant for old people, more middle age folks are now picking interest in this field of work. Burke (2002) called this the dynamism of change that librarianship as a discipline is experiencing in this 21<sup>st</sup> century.

Academic Librarians work experience in this study showed that majority of the respondents (34%) are within the 6-10 years working experience cohort and the least group is the 21-25 years with 2.1% of the entire sample population for the study. This result corroborates with the findings of Arif and Mahmood (2012) which indicated that majority of academic librarians in Pakistani libraries had 6-10 years of working experience. This supports the findings of Okite-Amugboro (2016) study on Web 2.0 for effective marketing in academic libraries, which found that majority of librarians in academic libraries in South-South, Nigeria had 1-10 years working



experience. Similarly, Ahmad, Hashim and Harun (2016) study on criteria for effective authentic personal branding for academic librarians in Universiti Sains Malaysia found 23.9% of librarian respondents had 6-15 years' work experience.

On the highest academic qualification of the academic librarians, the findings of the results revealed that majority of the respondents (84%) have acquired their Masters, (13.8%) had their Ph.D., while the least with 2.1% are already through with their first degree. The findings of the study support the submission of the report of Librarian Registration Council of Nigeria (LRCN) on the Minimum Standards and Guidelines for Academic Libraries in Nigeria. The report stated that the minimum qualification for an academic librarian is the Masters degree which had 84%. The 13.8% which signifies Ph.D. holders in the academic libraries surveyed, implied that this level of qualification is new among academic librarians in Nigeria. This upholds the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) on awareness and use of Web 2.0 tools by librarians in university libraries in Nigeria among the 176 respondents, 52 (29.5%) hold bachelor's degree, 106 (60.2%) hold Masters degrees, while 18 (10.2%) are PhD degree holders in library and information science. Similarly, Baro, Joyce Ebiagbe, and Zaccheaus Godfrey's (2013) study on the comparative study of the use of Web 2.0 among academic librarians in Nigeria and South Africa revealed that majority of the respondents are MLIS with 62.7%, while 51.7% are BLIS, and only 7.7% hold a PhD in Library and Information Science. This contradicts the employment criteria set by the National University Commission (NUC) which is Ph.D. for academics of which academic librarians are part (Salaam & Aderibigbe, 2010).

#### **6.4 Research Question 1: Level of Awareness, Adoption and Use of SMT by Academic Librarians**

These technologies are used in providing library services for clientele as indicated in Section of Chapter 3 (Okonedo, Azubuike & Adeyoyin, 2013). Specific technologies used by academic librarians in providing library services were considered in this study (Quadri & Idowu, 2016). The discussion of findings on the research question 1 is presented and discussed under three headings: awareness, adoption, and use.

#### **6.4.1 Level of Awareness of SMT by Respondents**

Findings on awareness of SMT by academic librarians in the provision of library services showed that they are aware of all the under listed SMT but the degree of awareness varies. This finding is in line with previous studies (Mabweazara, 2014; Quadri and Idowu, 2016; Okonedo, Azubuike and Adeyoyin, 2013) which found that academic librarians are aware of various SMT in varying degrees. Results showed that Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN have the highest level of awareness among academic librarians. The result implies these SMTs are most used in the provision of library services. Moreover, the findings revealed that 23.4% of respondents are aware of chatting tools, 18.1% are aware of image and video sharing (YouTube, SlideShare, Flickr), 14.9% are aware of conferencing tools (Skype, Viber, Line, Imo, Google Duo) and 12.8% are aware of Social Networking (Facebook, LinkedIn, Google+, Myspace).

Baro, Idiodi and Zaccheaus Godfrey (2013) examined the awareness of Web 2.0 technologies in Nigeria and Mabweazara (2014) investigated the awareness of SMT among academic librarians in South-Africa and Zimbabwe. The findings of the foregoing studies agree with the present study on the high level of awareness of SMT with chatting tools having a high awareness rate of 77.3% and 100% respectively. However, the results are in contradiction with the findings of Arif and Mahmood (2012) who found low level of SMT awareness among academic librarians in Pakistan. The present study indicated that academic librarians are 18.1% aware of image and video sharing site in contrast with the study of Okonedo, Azubuike and Adedoyin (2013) who found that library professionals are not aware of these technologies. They concluded that about half of the Librarians are yet to have in-depth knowledge of SMTs. Findings from the current study indicated that Skype, Twitter, and LinkedIn were not very popular among the librarians. The level of awareness about conferencing tools like Skype was found high, Twitter awareness was average, while the level of awareness about LinkedIn was high. Mohsenzadeh and Isfandyari-Moghaddam (2009) findings of the study in Iran revealed that academic librarians lacked digital literacy. Olasina's (2006) study on the use of Web 2.0 tools and social networking sites by librarians found that the use of SMTs by Nigerian library professionals was not very popular and level of awareness was low.

Likewise, Quadri and Idowu (2016) conducted an empirical study on the Social Media use by librarians for information dissemination in three Federal Universities in South-West, Nigeria. The universities were University of Ibadan, Obafemi Awolowo University and Federal University of Agriculture, Abeokuta with 82 professional librarians. The study revealed a high level of social media use among these respondents for information dissemination only. Quadri and Idowu's (2016) study was limited to data obtained from 131 academic librarians in the three federal universities.

The findings from the current study indicated the least SMTs that academic librarians were aware of are Social Tagging and Bookmarking with 2.1%, Podcasts and Vodcast with 3.2%, Blogging (WordPress, Blogger) with 4.3% and Collaborative tools (Google Docs, Wiki, Mendeley, Dropbox) with 5.3%. This corroborates the findings of Okonedo, Azubuike and Adeyoyin (2013) that Podcast, Webcasts and Vodcasts, 76 (33.8%); RSS feeds, 81(36.0%); Social Bookmarking, del.icio.us dig, 72(32.0%) are not used by library professionals in Nigeria. Additionally, the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) on the level of awareness of Web 2.0 among librarians indicated that RSS feeds and Social Bookmarking sites were the least known Web 2.0 tools with 42% and 44.9% of the respondents agreeing that they knew about these services respectively. Additionally, the study of Baro, Idiodi and Zaccheaus Godfrey (2013) on the use of Web 2.0 by librarians in South Africa and Nigeria found that 47.3% of the librarians in South Africa indicated that they have used RSS feeds frequently and very frequently, while, only 9.5% of the librarians in Nigeria indicated to have used RSS feeds frequently. The preceding indicates a low level of awareness of RSS feeds and social bookmarking which is in line with the findings of the present study.

Nonetheless, Baro, Idiodi and Zaccheaus Godfrey (2013) revealed that Podcast and Vodcast are among the least SMT used by academic librarians in Nigeria. Bierman and Valentino (2011) on their part discovered that virtually one-third of American Research Libraries have a Podcasting initiative which includes Podcast on library publications, library arts, library news, oral library histories, interviews, tours, library events and library tutorials. Harinarayana and Raju (2010) revealed that Podcasts and Vodcasts have been used successfully in delivering library web-based services. The findings of De Sarkar (2012) in four geographical regions (North America, Europe, Asia and Australia) discovered that awareness of Podcast in libraries vary along the

geographical regions. This corroborates the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) on the level of awareness of Podcast, and Vodcast among academic librarians in Nigeria and South Africa revealed that this is the least used SMT in both countries.

The findings of the current study revealed that the level of awareness of Blogs and Twitter among academic librarians is 4.3% and 9.6% respectively. This suggests that the level of awareness among the academic librarians sampled for this study is low. This is in contrast with the findings of (Aharony, 2009; Mannes, 2006; Shrager, 2009) who acknowledged that Blogs are a real tool and play a vital role in the provision of library products and services. Chua and Goh (2010) studied 120 public and academic library websites from North America, Europe, and Asia and found that Blogs were the most popular among SMT. Baro, Idiodi and Zaccheaus Godfrey (2013) found that only 29.8% of the librarians in Nigeria were using Twitter, while 44.5% of the librarians in South Africa use it frequently. This result corroborates the study of Olajide and Oyeniran (2014) that Twitter awareness among librarians were just 7% in Nigeria.

The findings of Kim and Abbas (2010) supported the findings of this study that for the 230 academic libraries sampled worldwide, wiki had 20% level of awareness of the sampled population which is quite low. Likewise, Harinarayana and Raju (2010) selected 100 universities from the lists of world university rankings and found a low level of awareness among these academic libraries. Furthermore, Chua and Goh (2010) examined 120 public and academic library websites from North America, Europe, and Asia and found low level of awareness of the Wiki.

On awareness of mechanisms for accessing SMT in libraries, the 4<sup>th</sup>-year Computer Science Student-respondents attested to the fact that they were aware of the SMT mechanisms of library services provided in the library. Some of these mechanisms included smart-phones (27.4%), desktops (26.5%), laptops (25.1%) and others (20.9%). Williams and Pence (2011) asserted that Smart phones are not just drastically changing the way people communicate but they are powerful computers that are small enough to be carried in the pocket. This implies that, with these smartphones, it makes library services easily accessible to these students. This is substantiated by the findings of Katz and Aakhus (2002) who affirmed that this present

generation of university students are using smart phones and appear to be using them almost regularly because of its pervasive nature.

Though results from both respondents in this study indicated a high level of awareness of SMT, the level of awareness of these SMTs by 4<sup>th</sup>-year Computer Science Students far outweighed that of academic librarians. The result signified that majority of the students are aware of Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN (16.7); Social networking such as Facebook, LinkedIn, Google+, Myspace (13.5%); Image and video sharing such as YouTube, SlideShare, Flickr (12.6%); Conferencing tool such as Skype, Viber, Line, Imo, Google Duo (11.6%). Kolawole (2016) asserted that SMTs such as SNS (99.7%), Wikis (85.2%), YouTube (81%), Instant Messaging (80%), Blogs (66%), Skype (59%) and newsgroups/online forums (53%) were popularly used among students. The least known SMT among 4<sup>th</sup>-year Computer Science students were Podcast and Vodcast (3.2%) and Collaborative tool such as Google Docs, Wiki, Mendeley, and Dropbox (5.0%).

The findings of Sandars and Schroter (2007) who conducted a semi-structured online questionnaire survey on 637 medical students and 601 qualified doctors on the British Medical Association's membership database indicated a high level of awareness of SMT among these students. Likewise, the study of Echenique, Molías, and Bullen (2015) indicated SNS and WhatsApp had a high level of awareness among students. Additionally, Garoufallou and Charitopoulou (2011) in a study on the use of Web 2.0 technologies by students in Greece found a high level of awareness on Facebook, YouTube, and Flickr. This is in contrast with the findings of Aramide and Akinade (2012) who investigated the extent of awareness of SMT among 210 university undergraduates and postgraduate students in Nigeria and the findings of the study revealed a low level of awareness of these technologies.

#### **6.4.2 Level of Respondents' Adoption of SMT**

Under adoption, contemporary SMTs were identified and respondents were asked to select the ones they have adopted. The findings indicated that the mostly adopted SMT for accessing library services are Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN 72 (33.5%); Image and video sharing such as YouTube,

SlideShare, Flickr 55 (25.6%); Conferencing tool such as Skype, Viber, Line, Imo, Google Duo 32 (14.9%). While the least adopted SMT is Blogging such as WordPress, Blogger 2 (1.0%), Scheduling and meeting tools such as Doodle, Google calendar 3 (1.4%) and Podcast and Vodcast 6 (2.8%). The findings indicate that chatting tools is the most adopted tool that students use in accessing library services. This could be because according to Walia and Gupta (2012) IM use by academic librarians can handle clientele's inquiries instantly in a pre-defined period and answering questions without wastage of time from any location. This is corroborated by Stephens (2006) who maintained that academic libraries use IM to provide virtual reference services, improve access to other services and provide the latest information to students. This is substantiated by the findings of Shrager (2009) who in his study focused on common SMT applications found in library settings, and the result indicated that the most widely used application was IM. Six of the nine libraries offered virtual reference using Meebo, LivePerson or directly from services such as Google Talk, Yahoo Messenger, or AOL instant messenger. Mishra (2008) validates the findings about Chatting tools when he maintained that some libraries make IM services available 24/7 by using a consortium or providing collaborative reference services. This confirms the findings of Tripathi and Kumar (2010) which revealed that IM is the second most popular SMT and libraries were providing reference and information services to distant users through live chatting mostly using Meebo software.

Image sharing technologies like YouTube according to Bryant (2006) hold significant potential for academic librarians in speaking to the needs of contemporary students, improving their studying practises through customising it to meet their varied needs, ample opportunities for networking and collaboration. Likewise, conferencing tools like Skype with high level of adoption is in line with the findings of Hill, Hill and Sherman (2007), and Hillyer and Parker (2006) who asserted that academic librarians are recognising the potential impact of new telephony methods and have begun to explore the utility of Web calling in reference services, hence the high level of adoption. Rogers (2009) also affirmed that libraries in the United States were using YouTube to promote and document library services and events which in turn led to speedy collection of feedbacks from library patrons. This is in contrast with the findings of Olajide and Oyeniran (2014) who posited that YouTube was the least adopted by respondents in academic libraries in Nigeria.

The findings of the study further revealed that Podcast and Vodcast is one of the least adopted SMT by respondents in accessing library services. This is validated by the findings of Xu *et al.* (2009) who surveyed the website of 81 academic libraries in New York State and found that Podcast and Vodcast were the least adopted SMTs. This is supported by Harinarayana and Raju (2010) whose findings of selected 100 universities from the lists of world university rankings revealed that podcast and Vodcast were among the minimum used technologies. However, Linh (2008) concluded that although two-thirds of academic libraries used such technologies, generally their use is low. Baro, Idiodi and Zaccheaus Godfrey (2013), and Olajide and Oyeniran (2014) found that Blogs adoption was low in academic libraries in Nigeria.

The students sampled in the study were further asked about the access points for using SMT Library Services. The findings of the study show that majority (33%) of the students sampled, accessed SMT Library Services right in their classrooms or lecture theatres, while the minority accessed these services from off-campus (3.7%).

Redden (2010) noted that many academic libraries have bravely ventured into this new social realm of information tagging, classification and have developed ways to utilise social tagging sites to reach out to their clientele and provide these communities with personalised and institution-specific library services. Miller (2005) also confirmed that SMT offers academic libraries the opportunity to serve users better beyond the four walls of the library and websites with choices to view online, borrow locally or internationally, request from afar, acquire library collections as appropriate to their necessities and circumstances.

#### **6.4.3 Level of Respondents' Frequency of use of SMT in Providing Services by Academic Librarians**

Social Media Technologies (SMTs) were teased out from the literature reviewed and respondents were asked to select the ones they have been using regularly. The degree of usage was ascertained through the frequency of use of the highlighted Social Media Technologies (SMTs). Findings showed that social networking (66%), chatting tools such as Face-book messenger, Blackberry messenger, WhatsApp, Google Talk, MSN (59.6%) and image and video sharing (26.6%) were the first set of three most Social Media Technologies (SMTs) tools used by academic librarians within the sampled universities.

Respondents were examined to reveal the frequency of using SMT in the provision of library services presented in Table 5.5 based on many times a day, once a day, once a week, once a month and never. Social networking 62 (66%) and Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN 56 (59.6%) were the most used SMT in providing services to clientele. Harinarayana and Raju (2010) affirmed that Facebook was the most popular and was being used in three libraries in their investigation of university library web sites in India. Blummer and Kenton (2014) also reported in their finding on the availability of SMT in community college libraries websites that SNS constituted the second most popular application among community college libraries and established Facebook to be the most used tool. Gerolimos and Konsta's (2011) findings on the use of SMT through a web-based research instrument to 32 academic librarians in Asia, 69 academic librarians in North America and 82 academic librarians in Europe showed that Facebook was the most used tool among the European academic librarians, while Asian librarians had largely implemented Tags.

The findings of the study indicated high frequency of use of Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN with 56 (59.6%). One of the most revealing facts, about the frequency of usage, is the high percentage of respondents who lay claim to the fact that they never used the SMT presented in Table 5.5 frequently with Podcast and Vodcast having the highest percentage with 75 (79.8). Related studies among academic librarians in Nigeria indicated low frequency of use of Podcast and vodcast in the provision of library services (Baro, Idiodi & Zaccheaus Godfrey, 2013; Okonedo, Azubuike & Adedoyin, 2013; Olajide & Oyeniran, 2014). Okite-Amugboro (2017) also affirmed that academic librarians indicate that they rarely use Podcast and Vodcast when asked to indicate how frequent they used these tools. The finding concurs with Tripathi and Kumar (2010) who found that the utilisation of podcast in academic libraries was low.

The study of Baro, Idiodi and Zaccheaus Godfrey (2013) revealed that social bookmarking, Flickr, and RSS feeds were indicated by the librarians in Nigerian university libraries to be the least used SMT. This is supported by the findings of Okite-Amugboro (2017) who found that academic libraries rarely used in three universities surveyed in Nigeria respectively. This is in contrast with the findings of Nguyen (2008) who found that among these technologies



utilised by Australasian university libraries, RSS was the most widely applied technology. In a survey, conducted by Chew (2009) in the South-East Asian region comprising Singapore, People's Republic of China, India, Japan, Malaysia, Hong Kong, Philippines, Indonesia and Taiwan, found that academic libraries were using more of blogs, RSS feeds, wikis, or the use of SMTs like Flickr, YouTube, delicious, compared to public libraries. Gichora and Kwanya (2015) found most of the academic libraries in Kenya used RSS to announce new books in specific fields or subjects, new e-journals, and library news and events.

### **6.5 Research Question 2: Purpose of Using SMT by Academic Librarians**

To answer this research question Twenty-nine items of using SMT in the provision of library and information services were teased out from desk review and academic librarians' views. Results revealed that out of the twenty-nine (29) listed, ten (10) most important in terms of their ranking were; keeping track with professional trends, sharing work related ideas with colleagues, communicating with the faculty staff, reference services, interacting with users, announcing library news/events, collaborating with colleagues in other libraries, collaboration with colleagues, Information literacy programs and Interacting with users easily.

Okite-Amugboro (2017) found that a total of 59 (54.6%) of the respondents affirmed providing reference services online, which was one of the purposes the library used SMTs. Results also revealed that 50 (46.3%) of respondents indicated Web 2.0 tools were used to modernise the library image as well as spread library news and service alerts, 34 (31.5%) for training, while 32 (29.5%) indicated collaborating with colleagues in other libraries. Baro, and Godfrey (2013) findings showed that 86.1% of the librarians in South Africa used the Web 2.0 tools for announcing library news/events to users. Only 28.4% of the librarians in Nigeria used the Web 2.0 tools for library news/events, while 44.6% of the librarians in Nigeria engaged users in online reference services. In the case of Coastal Carolina University, the Kimbel Library showed that Facebook has been used to provide library tours, to promote library services and reference assistance (Graham et al., 2009). Chu and Du (2012) study revealed that SNS was used for advertising and publicity, enriching reference services and knowledge sharing among staff. It was found that Twitter and Facebook have been used for marketing among the respondents, while an initial study had reported that libraries were unresponsive towards

publicizing through Facebook (Charnigo and Barnett-Ellis, 2007). Instant messaging was allegedly used for managing enquiry-related services and in-house staff communication.

Wikis were also reportedly used to handle enquiries and frequently asked questions (FAQs), which is consistent with earlier findings by Chu (2009), that wikis have enabled communication between academic librarians and users. Wikis have also been used to create, capture, share and transfer knowledge (Chu, 2008). It was also reported that Twitter was useful in maintaining updates for students who were active Twitter users, and little time was required to do so. Florida State University Library, for example, provides a searchable catalogue and displays messages posted by both librarians and users on their Facebook page. Among the uses of SNS, photo sharing and providing links to library home pages were the most popular with all 100 libraries utilising SNS for such purposes, while a few academic libraries (21%) offered reference services from their social networking sites (Boateng & Quan Liu, 2014). Hamad, Tbaishat, Al-Fadel (2016) maintained that different types of SNS can be used within academic libraries, other than Facebook, for instance blogs can be used as a communication tool between libraries and their users, which can lead to social networking. Draper and Turnage (2008) in a survey of 265 academic libraries found that blogs were best used to market library services. Belden (2008) found that other websites such as MySpace could be used to promote the digital collections in a small academic library in Texas. Similarly, Blogs also allow students to be updated with the new collections. Suraweera, Razali, Chouhan, Tamang, Hubilla, Ratnayake, and Mahesar, (2010) found that blogs are a good source of information for libraries, while Draper and Turnage (2008) stated that blogs are the best tool to market library services. One interesting result indicated that some library staff agreed that SNS contribute positively in a better exchange of experience and interest between local, Arab and foreign library communities, which helps in supporting the library international outreach.

Furthermore, the findings on this study validate the result in Rogers (2009) that SMT can be used to share their work with colleagues and work collaboratively in more efficient ways, which leads to knowledge sharing (Beard, 2016). The results of Hamad, Tbaishat and Al-Fadel (2016) which investigated how academic librarians perceive the role of SNS noted SMTs can be used to promote library services and library staff professional development. Social networks appear to be useful tools for communication to build better connections with colleagues (Chu & Du, 2013;

Daluba & Maxwell, 2013; Gerolimos, 2010; Parveen, 2011). Jill (2008) stated that SNS can be useful in building professional relationships and as a way to identify publication opportunities or begin a collaborative project with colleagues at other institutions or within a given consortium. The findings of Chu and Du (2012) revealed that SNS were also reported to aid library staff in keeping up-to-date with resources and activities in their profession and in finding opportunities to learn new technology. The respondents also noted that SNS helped solve everyday problems and enabled sharing experiences with colleagues from inside and outside the institution.

### **6.6 Research Question 3: What are the factors influencing the adoption and use of SMT?**

Twelve (12) factors influencing the adoption and use of SMT for the provision of library and information services and professional development of academic librarians were also teased out from desk review and academic librarians' views were sought about their importance. Findings revealed that personal knowledge and skills, staff willingness to change and Management support were the three (3) most important factors respectively by the academic librarians. The findings of Baro, Idiodi and Godfrey (2013) confirmed the preceding that academic librarians in Nigeria lack requisite SMT skills and man power in the use of these technologies for the provision of library and information services. Training for library staff may alleviate the sense of inadequate mastery of technology (Chu & Nalani-Meulemans, 2008). However, most of the respondents in the study of Chu and Du (2012) signified (16/26, 62%) they did not offer training, while only a few decided that training was necessary (10/26, 38%). Out of the 10 libraries that offered training, nine indicated that training was mandatory for all library staff, while one other library offered training on a need basis. The respondent from this library further reported that so far, the staff users learned to use the tools intuitively.

Fulk, Schmitz and Steinfield (1990) pointed out that whether one will use information and communication technologies is largely dependent on the attitude, comments and behaviours of academic librarians. The findings of Baro, Edewor and Sunday (2013) corroborated the above when they identified lack of interest among academic librarians in the use of SMT as a major factor influencing SMT use. Chawner (2008) categorised academic librarians into four roles based on their use of SMT; these roles are content consumer (passive), content commenter

(reactive), content creator (proactive) and content collector (current awareness). The study revealed that academic librarians were more comfortable in the role of content consumer and collector than in the proactive and reactive roles. Baro and Godfrey (2015) affirmed that academic libraries in Nigeria have not fully embraced SMT in the provision of library and information services due to lack of awareness and training. Equally, Chu and Du (2013) findings exposed that academic librarians find it difficult to follow the technological innovations because personal knowledge and skills is low. This is supported by the study of Chu and Meulemans (2008) which discovered that some difficulties were experienced understanding how each of these technologies worked and how to align it to their specific library services.

On the issue of management support Aharony (2013) observed that management of the libraries are not enlightening academic librarians on how to use SMT in the provision of library services. Lowe (2008) affirmed that Facebook use in academic libraries has not been welcome by management decisions that ban its use. McCallum (2015) study of 600 academic librarians in the UK, USA, and India discovered that there is no management framework in place for their SMT use, with 75% posting messages on an ad hoc basis. However, Chan and Auster (2003) concluded that support from management is important as well as a policy for development and rewards.

**6.7 Research Question 4a: How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services?**

Research questions 4 (a) and (b) centred on ascertaining the influence of a set of 8 predictor or independent variables (i.e. perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) on the criterion variables (i.e. SMT use behaviour of academic librarians and students) in academic libraries in South-West, Nigeria. In order to achieve this, two models were generated for both groups of respondents (i.e. students and academic librarians) in the study. The following were the findings from the result of the analyses:

(1) The intercorrelation matrixes for both groups of respondents show that at  $p < .05$ , there are no multicollinearities between or among the variables of study. This means the variables in the study are not highly correlated leading to response measurement (a case where two variables are measuring the same thing). Hence, all the predictor variables in the study are good enough to be part of the models in ascertaining the influence of perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation on SMT use behaviour of academic librarians and students in academic libraries. These independent variables are operationalised in the study as relative advantage (the degree to which an academic librarian perceived that SMT is better than the traditional manual method in the provision of library services to clientele); image (the degree to which SMT is perceived to enhance the professional status of an academic librarian in the academic library/academic community), visibility (the degree to which an academic librarian can see colleagues using SMT in the provision of library services to clientele and for professional development) and result demonstrability constructs (the degree to which advantages of adopting SMT in the provision of library services to clientele and professional development of academic librarians is manifested). TAM postulates that two beliefs (perceived ease of use and perceived usefulness) predict the attitudinal component of intention to use (Davis, 1989). Specifically, perceived ease of use (the degree of ease associates with the use of SMT by academic librarians in the provision of library services and for professional development of academic librarians); while perceived usefulness is defined (the degree to which an academic librarian believes that using SMT will help him/her in the provision of library services and for professional development of academic librarians); Motivation (degree to which an academic librarian is motivated to use SMT in the provision of Library services) and Gratification (The degree to which an academic librarian feels gratified in using SMT for the provision of library services).

(2) Majority of the relationships were positive and significant. This is supported by the findings of Green and Pearson (2011) that discovered Perceived Ease of Use is found to have significant positive impact on consumer perceptions and attitudes toward ecommerce websites. Jayasingh and Eze (2010) affirmed that Perceived Ease of Use have a significant positive role in the adoption of mobile coupons and the adoption and use of

cellular phones (Kwon & Chidambaram, 2000). Likewise, Sago's (2013) findings revealed Perceived Usefulness has a significant variable of user adoption and satisfaction across a range of technologies. Equally, Green and Pearson (2011) found Perceived Usefulness to be a significant predictor of user satisfaction of an ecommerce website. Lin (1999) identified the relationship between Internet usage motivations and the likelihood of on-line service adoption. The study revealed that surveillance motivation shows the strongest effects for visiting both information and infotainment Web sites, whereas shopping sites are most strongly affected by entertainment and surveillance motivations. Lin *et al.*, (2005) discovered that the perceived gratifications of online news were entertainment, interpersonal communication, information seeking, and information learning. Dunne *et al.* (2010) discovered several gratifications, such as entertainment, information search, peer acceptance, and relationship maintenance, were related to use of SNS. Lai and Chen (2011) found which factors can significantly influence teacher decisions regarding their teaching blog adoption and the relative importance of these influences. The results revealed that secondary school teachers' decisions to adopt teaching blogs are strongly associated with eight factors which are perceived enjoyment, codification effort, compatibility, perceived ease of use, personal innovativeness, enjoyment in helping others, school support and perceived usefulness, ordered by their relative importance. Venkatesh and Davis (2000) asserted that image was found to mediate the effect of subjective norm on user acceptance of new information technology strongly. Likewise, Mauro and Afonso's (2007) findings on the study of adoption of Internet Banking (IB) showed that there is a positive sign before the Visibility coefficient of the internet/non-IB users (INIB) group (0.36), which means that respondents in this group have a higher perception of the IB visibility than IB users themselves. The study further revealed that "at a confidence level of 1 percent, the significant coefficients corresponded to the following constructs: relative advantage of control, compatibility with lifestyle, image, subjective norm and self-efficacy; at a confidence level of 5 percent, the significant coefficients corresponded to the following constructs: relative advantage of security and privacy, results demonstrability, and trialability" (Mauro & Afonso, 2007:83), while the hypotheses that cannot be rejected refer to the constructs of Results Demonstrability.

(3) The independent variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) statistically and significantly predict the dependent variable (i.e. SMT use behaviour of academic librarians) in the provision of library and information services in academic libraries in the South-West, Nigeria. This means that the influence noticed in the dependent or criterion variable (i.e. SMT use behaviour of academic librarians), was not due to chance, but to all the independent or predictor variables in the study. This is in line with the findings of Kurnia, Smith and Lee (2006) in respect to consumers in Australia who found that perceived usefulness, perceived ease of use and social influence positively impact on consumers' attitudes towards the mobile internet, which in turn influences their intention to use. This is corroborated by Thong, Hong and Tam (2002) who used TAM in understanding user acceptance of digital libraries in Hong Kong. Their findings exposed that both perceived usefulness and perceived ease of use are determinants of user acceptance of digital libraries. In addition, interface characteristics and individual differences affected perceived ease of use, while organisational context influences both perceived ease of use and perceived usefulness of digital libraries.

This is in contrast with the findings of Chung (2010) which did not find the effect on Perceived Ease of Use on Wikipedia which could be because using Wikipedia is not especially difficult for students who have the technical prowess of using the internet. Related studies (Soenens & Vansteenkiste, 2005; Lemos & Veríssimo, 2014) have found a strong effect of motivation on academic performance, school competence, and students' well-being. David, Song, Hayes and Fredin (2007:174) revealed that motivation encourages information seeking in electronic environments as "the environment is more conducive for unexpected innovation through increased interest, exploration and play". Thus, Chung (2010:492) affirmed that individuals with a high level of motivation are prone to use Wikipedia to learn about the subjects because they find pleasure and satisfaction in the process of information seeking and this is not because they think the quality of Wikipedia contents are high. These individuals will afterwards engage in extensive information seeking, as it would furnish them more gratification. But the conclusion of the study revealed that motivation was not significant which could be because many search engines such as Google yield Wikipedia in the top ten of their

results, which requires no effort on the part of the student. Folorunso *et al.*, (2010) tested the attributes of the IDT using SNS as the innovative practice among over 100 students of the University of Agriculture, Abeokuta, Nigeria. Findings from the study revealed that the constructs of relative advantage, complexity, and observability of SNS do not positively correlate with attitude towards using the technology. While on the other hand, compatibility and trialability of SNS positively correlate with the attitude towards using the technology. Hsu, Lu and Hsu (2007) study on the mobile internet revealed that innovators and early-adopters have more positive perceptions of using MMS than other adopters. This is because visibility considerations are important for the late-majority group and this indicates that this group needs information to evaluate before deciding. Van Slyke, Hao and Day (2002) found that relative advantage and result demonstrability were significantly related to intention.

- (4) The value of the coefficients of determination (0.596 and 0.282), shows that all the independent or predictor variables in this study explained 59.6% and 28.2% of the variabilities of the dependent variable. Which means that 59.6% and 28.2% of the total variances in the SMT use behaviour of students and academic librarians in academic libraries in the South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation.
- (5) The two models can be generalised into the larger population. This means that the selection process was thoroughly and systematically done, and it has produced a sample that is an exact representation of the general population of all the universities in South-West, Nigeria, hence any deduction or inference made from the sample can be generalised to the entire population.
- (6) Only that Relative Advantage and Professional Gratification coupled with Perceived Usefulness and result demonstrability are the most influential predictors of SMT use behaviour of students and academic librarians in libraries in the South-West, Nigeria. This suggests that there are other variables in the study, but only these four from the group were significantly influencing the independent variables. The outcome of



Venkatesh, Morris, Davis, and Davis (2003) study was that the expectancy of Perceived Usefulness of a technology was stronger for men and younger workers. This is supported by Kim (2011) whose findings revealed that the continued user's usage intention of social networking services has been shown to be predicted by user PU and perceived enjoyment. The result of Sago (2013) research indicated a strong relationship between the perceived usefulness of the social media services and the frequency of use among 18 to 23-year-old university students. Thirty three of 36 (92%) correlations among both females and males between the three variables of user reactions of perceived ease of use, enjoyment, and perceived usefulness of the social media services tested to the frequency of use were at a medium correlation or higher. Among these, however, the strength of relationship between perceived usefulness and frequency of use presented the highest correlations of the three user reactions. These results indicate that social media services can increase user frequency of use by increasing the perception of usefulness of the service by users.

Stafford *et al.*'s (2004:260) study on data from the internet found 45 motivations for internet use and the most common motivational items for using the Internet were "information", "e-mail", and "research" followed by "chatting", "entertainment", "communication", and "fun". Dunne, Lawlor and Rowley's (2010) study on SNS revealed that gratifications such as entertainment, information searching and seeking, socialising, and establishing status and reputation are important in the usage of SMT to facilitate social interaction and group discussion. Lou, Luo and Strong (2000) reported that in Japan, young people consider new generation of mobile phone as new fashion items to show off in public. Likewise, Nysveen, Pedersen and Thorbjørnsen (2005a, 2005b) found expressiveness (which is considered similar to image) has direct effect on intentions to use mobile services. Agarwal and Prasad's (1997) findings revealed that relative advantage and result demonstrability were relevant in explaining acceptance of the World Wide Web and the two variables together explained 46% of the variance in future-use intentions.

## **6.8 Research Question 5: What institutional mechanisms are used to promote the use of SMT in the provision of library and information services and Professional development of academic librarians in South-West, Nigeria?**

As stated in the methodology chapter, the mixed method combining both quantitative and qualitative approaches was utilised in the study. The quantitative method was the dominant approach which underpinned research question 1-4. However, the qualitative method was used to complement the quantitative method. University Librarians of the six selected Universities were asked open ended questions during an interview session to ascertain their views on research question 5. Three questions were raised to address the issue of institutional mechanisms that are used in promoting the use of SMT. These questions are: What infrastructure is available to the librarians and also users in your institution to facilitate provision of library and information services through SMT; What support is available to integrate SMT in the library and information services in your library; What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?

### **6.8.1 Research Question 5a: What infrastructure is available to the librarians and also users in your institution to facilitate provision of library and information Services through SMT?**

The six University librarians indicated that there are infrastructures available to academic librarians in facilitating the provision of library services to clientele. This is contradictory with the findings of Baro, Idioidi and Zaccheaus Godfrey (2013) where majority of the librarians sampled (76.7%) indicated lack of facilities such as modern computers with internet access. Similarly, some studies (Anunobi & Ogbonna, 2012; Okonedo, Azubuike & Adeyoyin, 2014; Quadri & Idowu, 2016; Akporhonor & Olise, 2015) identified lack of needed facilities in accessing these technologies. This is supported by Shafique and Rehman (2011) that lack of computer literacy, unavailability of computers and internet facilities were the main hindrances toward the adoption of these technologies in Pakistani libraries. Only one University librarian (EKSU) did not indicate internet connectivity as an available infrastructure in accessing SMT in the provision of library services. This is in line with the findings of the study of Baro and Oyinnuah Asaba (2010) on internet connectivity in

university libraries in Nigeria, which revealed that only a few university libraries (despite the laudable directives from the National Universities Commission (NUC)), have stable and reliable internet access in their libraries. This finding validated Ezeani and Igwesi (2012) who identified bandwidth problems, unreliable power supply, lack of awareness, and others as challenges of using these technologies in academic libraries in Nigeria. Related studies (Akintunde, 2014; Tella, Olarongbe, Akanbi-Ademolake & Adisa (2013) revealed that the problem of internet connectivity is peculiar with some developing countries of which Nigeria is inclusive and this is no problem at all in the provision of SMT library services to clientele in developed countries.

### **6.8.2 Research Question 5b: What support is available to integrate SMT in the library and Information services in your library?**

The responses of the six University librarians in relation to support that are available to integrate SMT in the provision of library and information services is contradictory to the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) which revealed that almost three quarters (70.5%) of the librarians sampled indicated a lack of skills to their effective use of SMT which is due to lack of awareness and training on the use of these technologies. Shafique and Rehman (2011) reiterated that lack of training opportunities was mentioned by the interviewees that there is no good and effective infrastructure of training available in Pakistan to teach the usage of these technologies to academic librarians. Kwanya (2011) also echoed lack of technical skills amongst academic librarians in Kenya due to non-support in attending training and conferences. This reinforces the findings of (Olajide & Oyeniran, 2014; Okonedo, Azubuike & Adeyoyin, 2013) that there is lack of training and technical know-how on the use of SMT in the provision of library services for academic librarians in Nigeria. McCallum's (2015) findings also revealed that there are limited funds to support more advanced SMT use and the training that would be required to enable this.

### **6.8.3 Research Question 5c: What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?**

Responses from the University of Lagos (UNILAG) confirmed policy or guidelines to facilitate the provision and use of SMT in accessing information, other sampled universities are at

different stages of coming up with one. This is supported by the findings of Olasina (2011) who adduced that the dearth of SMT use in academic libraries in Nigeria is because most of these libraries have no policy or management framework in place for SMT use in the provision of library and information services. Also, Kwanya (2011) revealed that lack of supportive policies, strategies, and plans are fundamental in the use of SMT in the provision of library services in Kenya. Similarly, Okite-Amugboro (2017), Ezeani and Igwesi (2012) reiterated lack of SMT policies in academic libraries in Nigeria. In the survey of McCallum (2015) of 600 academic librarians, a significant majority of them stated that they currently had no policy or management framework in place for their SMT output, with 75% posting messages on an adhoc basis. A small minority of 28% had a policy in place, with 30% planning to introduce one in the near future. The need for SMT policy is sacrosanct for the efficient and effective use of SMT to guide matters regarding privacy, time, online credibility, coordinated activities towards SMT and content.

## **6.9 Discussion of Hypothesis**

In the bid to investigate the hypotheses that underpinned this study in ascertaining the use of SMT in the provision of library and information services in academic libraries in South-West, Nigeria, the six hypotheses were formulated as presented in Section 1.4.3. A set of 8 predictor or independent variables (i.e. perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) on the criterion variables (i.e. SMT use behaviour of academic librarians and students) in academic libraries in the South-West, Nigeria. These independent variables were highlighted from the theories (that is, TAM, IDT, and U&G) that guided the study. Discussion of the findings from academic librarians to the various hypothetical statements as stated in Section 1.4.3 are presented in this section.

### **6.9.1 H<sub>01</sub>: There is no significant relationship between SMT awareness and Use behaviour of academic librarians in providing library and information services.**

The findings from the result show that the correlation coefficient  $r$  is close to zero (i.e.  $r_{\text{SMT Awareness \& Use behaviour}} = 0.1$ ), this suggests that there is a weak relationship between SMT Awareness and use behaviours of academic librarians. The implication of this is that changes in

SMT awareness is not correlated with changes in use behaviour of academic librarians. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis, suggests increases or decreases in SMT Awareness do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in the South-West, Nigeria.

**6.9.2 Ho2: There is no significant relationship between (perceived and actual benefits) and use behaviour of SMT by academic librarians in providing library and Information services.**

The findings from the result show that the correlation coefficient  $r$  is close to zero (i.e.  $r_{\text{perceivedbenefits\&Usebehaviour}} = 0.1$  and  $r_{\text{actualbenefits\&Usebehaviour}} = 0.1$ ), this means that there is a weak relationship between (perceived and actual benefits) and use behaviours of academic librarians. The implication of this is that a change in (perceived and actual benefits) is not correlated with changes in use behaviour of academic librarians. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis, means, increases or decreases in perceived and actual benefits do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria.

**6.9.3 Ho3: There is no significant relationship between SMT use behaviour of academic librarians and their professional development in South-West, Nigeria.**

The findings from the result show that the correlation coefficient  $r$  is close to zero and negative (i.e.  $r_{\text{professionalDevelopment\&Usebehaviour}} = 0.1$ ), this suggests that there is a weak relationship between professional development and use behaviours of academic librarians. The implication of this is that a change in the professional development of academic librarians is not correlated with changes in their use behaviour. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis suggests increases or decreases in professional development do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in the South-West, Nigeria.

**6.9.4 Ho4: There is no significant relationship between relative advantage, image, visibility, result demonstrability and SMT use behaviour of academic librarians in providing library and information services.**

The findings from the result show that there is a positive correlation between relative advantage, image, visibility, result demonstrability and SMT use behaviour of academic librarians (i.e.  $r_{\text{relativeadvantage\&usebehaviour}} = 0.7$ ,  $r_{\text{image\&usebehaviour}} = 0.3$ ,  $r_{\text{visibility\&usebehaviour}} = 0.1$  and  $r_{\text{resultdemonstrability\&usebehaviour}} = 0.2$ ) and only three (relative advantage, image and result demonstrability) were statistically significant. The implication of this is the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the three variables and SMT use behaviour of academic librarians. However, the reverse was the case for visibility ( $r_{\text{visibility\&usebehaviour}} = 0.1$ ,  $p > 0.05$ ). This suggests increases or decreases in relative advantage, image and result demonstrability significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services, except for visibility.

**6.9.5 Ho5: There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services.**

The findings from the result show that there is a negative correlation ( $r_{\text{perceiveduse\&usebehaviour}} = -0.1$ ) between perceived use and use behaviours of academic librarians, while the reverse was the case for perceived ease of use and use behaviours of academic librarians ( $r_{\text{perceivedeaseofuse\&usebehaviour}} = 0.4$ ) which was positive. The negative correlation between perceived use and use behaviours of academic librarians shows that, the two variables are not moving in the same direction, while one is increasing the other is decreasing. However, the reverse is the case for perceived ease of use and use behaviours of academic librarians, where the correlation coefficient is positive indicating that the two variables are moving together in the same direction (i.e. as perceived ease of use increases, the use behaviours of academic librarians in providing library and information services also increases).

**6.9.6 Ho6: There is no significant relationship between specific motivation/gratification and SMT use behaviour of academic librarians in providing library and information services.**

The findings from the result show that there is a positive correlation between professional motivation and gratification and use behaviours of academic librarians (i.e. professional motivation and gratification -  $r_{\text{motivation\&usebehaviour}} = 0.6$  and  $r_{\text{gratification\&usebehaviour}} = 0.7$ ). This suggests the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the variable. The implication of this is that there is a statistically significant correlation between professional motivation and gratification and use behaviours of academic librarians, that is as professional motivation and gratification increases so do the use behaviours of academic librarians in providing library and information services.

## **6.10 Summary**

This chapter discussed and interpreted the findings presented in Chapter 5 on the Use of SMT in the Provision of library and Information Services in Academic Libraries in South-West, Nigeria. The discussion of findings was based on the research questions and hypothesis defined for the study. Findings from the demographics of respondents revealed that the highest affiliated university in relation to the academic librarians was University of Ibadan with 31.9%, while the lowest affiliation was linked to the Ekiti State University. However, on the part of the students' respondents, the highest affiliated university (21.9%) was Babcock University, while the lowest (10.7%) was Lagos State University. In addition, the male respondents (57.4%) were more than the female respondents (42.6%) for the academic librarians, while the reverse was the case for the student respondents where the female respondents (66%) were more than the male respondents (34%).

The result also showed that majority of the student respondents (57.7%) were within the 21-25 years' age cohort, while the least cohort was 26-30 years with 6.5%. Majority of the academic librarians (48%) belonged to the 36-45 years' age range, followed by the 46-55 years' cohorts with 30%, and the least cohort 55-56 years with 5%. The result reflects the current reality on ground in most of the academic libraries in Nigerian universities (Quadri & Idowu, 2016). Additionally, results revealed that majority of the academic librarians (84%) have acquired their

Masters, while the least (2.1%) are already through with their first degree and (34%) are within the 6-10 years working experience cohort. The least group is the 21-25 years with 2.1% of the entire sample population for the study.

Furthermore, the study revealed that for each group of respondents in the study there is agreement in the order and degree of the level of awareness of SMT by students and academic librarians in relation to the provision of library and information services in the appraised universities. Items “g” with 12.6% (i.e. Conferencing tool such as Skype, Viber, Line, Imo, Google Duo), “h” with 14.2% (i.e. Image and video sharing such as YouTube, SlideShare, Flickr) and “i” with 18.8% (Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN) in Table 5.3 were the three major SMT tools that the respondents were aware of in their day-to-day interaction with the libraries in the participating universities. The 4<sup>th</sup>-year Computer Science Student-respondents attested to the fact that they are aware of mechanisms for accessing SMT for library services provided by the library. Some of these are smart-phones (27.4%), desktops (26.5%), laptops (25.1%) and others (20.9%). Moreover, the results revealed that Item “i” with 33.5% (Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN) was the one with the highest level of accessibility, hence its highest adoption, while item “b” with 1.0% (Blogging such as WordPress, Blogger) is the one with least access, which invariably means it is the least adopted in all the libraries in the participating universities.

Besides, majority (33%) of the students sampled, accessed these SMT Library Services right in their classrooms or lecture theatres, while the minority accessed services from Off-campus (3.7%). Likewise, findings showed that social networking (66%), chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN (59.6%) and image and video sharing (26.6%) were the first set of three most Social Media Technology (SMT) tools used by academic librarians within the sampled universities. Podcast and Vodcast (79.8%) were the least used. This implies that Podcast and Vodcast are not common in the sampled academic libraries for the provision of library services. In addition, findings about the student respondents’ view on the extent of efficacy of the Social Media in the provision of library services showed that 39.9% were of the views that the available SMT services are highly efficient, while 25.1% were of contrary opinion that SMT services were not efficient. Student respondents were also of



the view that the contemporary (modern) way of providing library services through SMT was better than the traditional method of kick-and-push approach. Similarly, student respondents (66%) were of the view that their information needs were not being met via SMT by academic librarians, while the remaining 34% believed otherwise. However, majority of the students respondents (66%) rated the academic librarians' use of SMT in the provision of information services as moderate.

The discussion of findings also revealed that perceived and actual benefits of using SMT in the provision of library and information services were keeping track with professional trends, sharing work related ideas with colleagues, communicating with the faculty staff, reference services, interacting with users, announcing library news/events, collaborating with colleagues in other libraries, collaboration with colleagues, Information literacy programs and Interacting with users easily. While factors affecting the use of SMT included personal knowledge and skills, staff willingness to change and Management support were the three (3) most important factors respectively.

On the institutional mechanisms used to promote the use of SMT in the provision of library and information services among academic librarians. The interview session with the university librarians revealed that there are infrastructures available in the sampled libraries to facilitate provision of library and information services through SMT in varying degrees. Similarly, that support was available to integrate SMT in the library and information services in your library. The discussion of findings further revealed that there is no policy or management framework in place for SMT use in the provision of library and information services.

On the influence of a set of 8 predictor or independent variables (i.e. perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation) on the criterion variables (i.e. SMT use behaviour of academic librarians and students) in academic libraries in South-West, Nigeria, majority of the relationships were positive and significant. The independent variables statistically and significantly predicted the dependent variable. The implication of this is that the influence noticed in the dependent or criterion variable (i.e. SMT use behaviour of academic librarians), was not due to chance, but to all the independent or predictor variables in the study. Similarly, the value of the coefficients of

determination (0.596 and 0.282), showed that all the independent or predictor variables in this study explained 59.6% and 28.2% of the variabilities of the dependent variables. This indicated that 59.6% and 28.2% of the total variances in the SMT use behaviour of students and academic librarians in academic libraries in the South-West, Nigeria was accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation. Thus, the two models can be generalised into the larger population. This is evident in the Stein's values of (0.511 and 0.221) which are very similar to the observed value of  $R^2$  (0.5960 and 0.282) indicating that the cross-validities of the models were very good.

## **CHAPTER SEVEN**

### **FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **7.1 Introduction**

This chapter presents the summary of findings, conclusion, and recommendations of the study based on the discussion and interpretation of findings given in Chapter 5. Furthermore, this chapter presents the contributions of the study to policy, practice, theory, and suggestions for future research.

The study investigated five research questions namely: what is the level of awareness, adoption, and use of SMT by academic librarians for the provision of library and information services in South-West, Nigeria? What are the perceived and actual benefits of using SMT in the provision of library and information services in academic libraries? What are the factors influencing the adoption and use of SMT for the provision of library and information services among academic librarians? How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of academic librarians in the provision of library and information services in academic libraries? What institutional mechanisms are used to promote the use of SMT in the provision of library and information services among academic librarians?

The following four hypotheses was tested at 0.05 significant levels in this study: 1) There is no significant relationship between SMT awareness and use behaviour of academic librarians in providing library and information services in South-West, Nigeria; 2) There is no significant relationship between (perceived and actual benefits) and use behaviour of SMT by academic librarians in providing library and information services; 3) There is no significant relationship between SMT use behaviour of academic librarians and their professional development; 4) There is no significant relationship between relative advantage, image, visibility, result demonstrability and SMT use behaviour of academic librarians in providing library and information services; 5) There is no significant relationship between perceived usefulness, perceived ease of use and SMT use behaviour of academic librarians in providing library and information services; 6)

There is no significant relationship between specific motivation/gratification and SMT use behaviour of academic librarians in providing library and information services.

## **7.2 Summary of Research Findings**

The summary of findings covered the following themes around the research questions: Demographic information of respondents; awareness, adoption and use of SMT by academic librarians for the provision of library and information services; Purpose of using Social Media Technologies (SMT) by academic librarians; Factors influencing the adoption and use of SMT for the provision of library and information services among academic librarians; and Institutional mechanisms used to promote the use of SMT in the provision of library and information services among academic librarians.

### **7.2.1 Summary of Demographic Information of Respondents**

The study established that Babcock University and Covenant University which were both Private Universities have more students in 4<sup>th</sup> year Computer Science Department than their counterparts in Federal and States Universities that were examined in the study. This finding corroborates existing literature that there is a swift fall in the quality of university education and research in universities managed by both the Federal and State Government in Nigeria (Dabalén, Oni & Adekola, 2001; Okebukola, 2002; Aina, 2007). However, academic librarians are more in number in the two Federal Universities sampled than in both Private and State Universities. Similarly, the findings validated the result of Ajadi (2010:22) who asserted, “Many of the private universities in Nigeria are comparatively new and function with a limited number of academic and other sundry staffs”. The findings of Akindutire (2004) also supported the result of this study that the low staffing in the state universities was attributed to institutional deterioration and salary erosion during the past decade which prompted substantial “brain-drain” of academic staff and impeded new staff recruitment. This is also confirmed by Tella, Ayeni and Popoola (2007) that low wages, lack of status and social security affect motivation in State libraries in Nigeria leading to high staff turnover.

### **7.2.1.1 Distribution of Respondents by Gender**

The study established that there are more male academic librarians than female in the six surveyed universities. This implies that there is gender imbalance among academic librarians. This is in line with the findings of (Tella, Ayeni & Popoola, 2007; Okonedo, Azubuike & Adeyoyin, 2013) whose studies also showed this disparity in gender among academic librarians. Nevertheless, on the gender of students, the study established that the number of females outweighed the males in the six surveyed Universities. This corroborated the findings of Adegun (2012) who asserted that sciences and technology-related disciplines were intended for males and the outstanding female students.

### **7.2.1.2 Distribution of Respondents by Age, Educational Qualification**

The study revealed that majority of the 4<sup>th</sup>-year Computer Science respondents were within the 21-25 years' age cohort, while the minority cohort was 26-30 years. This is in line with the benchmark on minimum age of 18 years for entry into Nigerian universities as set by the National University Commission (NUC, 2002). The study also established majority of academic librarians belong to the 36-45 years' age range, followed by the 46-55 years' cohort, and the minority cohort was 55-56 years. This implies that the age cohort of 36-45 years is the dominant group. This validates the findings of Quadri and Idowu (2016) which reflect the current reality on ground in most of the academic libraries in Nigerian universities.

Similarly, the study established that majority of the academic librarians are within the 6-10 years working experience cohort and the minority group is the 21-25 years. This is in synergy with the findings of Arif and Mahmood (2012) which indicated that majority of academic librarians in Pakistani libraries had 6-10 years of working experience. Okite-Amugboro's (2016) study revealed that majority of librarians in academic libraries in South-South, Nigeria had 1-10 years working experience. Furthermore, the study proved that academic qualification of the academic librarians revealed that majority of the respondents have acquired their Masters, while the minority had their first degree. The findings of the study conform to Librarian Registration Council of Nigeria (LRCN) on the Minimum Standards and Guidelines for Academic Libraries in Nigeria. The Council stated that the minimum qualification for an academic librarian is the Masters degree.

## **7.2.2 Summary of Research Question 1:**

### **Level of Awareness, Adoption of SMT by Academic Librarians**

The first research question sought to explore the level of awareness, adoption, and use of SMT by academic librarians. The summary of findings on the research Question 1 is presented under three themes: awareness, adoption and use.

The study established that academic librarians are aware of diversity of SMTs (Table 5.2) but the degree of awareness varies. This is consistent with previous studies of (Mabweazara, 2014; Quadri & Idowu, 2016; Azubuiké & Adeyoyin, 2013) whose studies also showed that academic librarians are aware of various SMTs in varying degrees. In addition, the study established that librarians had the highest level of awareness with Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN which have the highest level of awareness among academic librarians. This implies that since these SMTs were the most used technologies in the provision of library services. Similarly, the study also established that awareness among librarians was highest with image and video sharing (YouTube, SlideShare, Flickr), conferencing tools (Skype, Viber, Line, Imo, Google Duo) and Social Networking (Facebook, LinkedIn, Google+, Myspace). Equally, findings showed that librarians had low awareness of Social Tagging and Bookmarking, Podcasts and Vodcast, Blogging (WordPress, Blogger) and Collaborative tools (Google Docs, Wiki, Mendeley, Dropbox).

Among the students, the study revealed that the level of awareness of SMTs by 4<sup>th</sup>-year Computer Science Students far outweighed that of academic librarians. The study established that students had the highest awareness with Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN; SNS such as Facebook, LinkedIn, Google+, Myspace; Image and video sharing such as YouTube, SlideShare, Flickr; Conferencing tools such as Skype, Viber, Line, Imo, and Google Duo. This result is attributed to this group that Kim and Abass (2007) refer to as internet generation. The result showed that students were least aware of Podcast, Vodcast, and Collaborative tools such as Google Docs, Wiki, Mendeley, and Dropbox. Diyaolu and Rifqah (2015) revealed that Podcast and Vodcast level of awareness is average among students.

For adoption, the findings established that Chatting tools such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN; Image and video sharing such as YouTube, SlideShare, Flickr; Conferencing tools such as Skype, Viber, Line, Imo, Google Duo were the most adopted SMTs for accessing library services. Stephens (2006) maintained that academic libraries used IM to provide virtual reference services, improve access to other services, and provide the latest information to students. On the other hand, the least adopted SMT is Blogging (WordPress, Blogger; Scheduling and meeting tools such as Doodle, Google calendar and Podcast and Vodcast).

The study revealed that SNS, chatting tools such as Face-book messenger, Blackberry messenger, WhatsApp, Google Talk, MSN and image and video sharing were the first set of three most used SMTs by academic librarians in providing services.

### **7.2.3 Summary of Research Question 2:**

#### **What are the perceived and actual benefits of using SMT in the Academic Libraries?**

Twenty-nine perceived and actual benefits of using SMT in the provision of library and information services were teased out from desk review and academic librarians' views. The study established that out of the twenty-nine (29) listed perceived and actual benefits of SMTs in the provision of library and information services, the mean-ranking showed that ten (10) most important in ranking included; keeping track with professional trends, sharing work related ideas with colleagues, communicating with the faculty staff, reference services, interacting with users, announcing library news/events, collaborating with colleagues in other libraries, collaboration with colleagues, Information literacy programs and Interacting with users easily.

### **7.2.4 Summary of Research Question 3:**

#### **What are the factors influencing the adoption and use of SMT for the Provision of library and information services?**

In order to answer this research question Twelve (12) factors influencing the adoption and use of SMT for the provision of library and information services were teased out from desk review and academic librarians' views sought. The study found that personal knowledge and skills, staff

willingness to change and Management support were the three (3) most important factors respectively. The findings of Baro, Idiodi and Godfrey (2013) noted that academic librarians in Nigeria lacked requisite SMT skills and man power in the use of these technologies for the provision of library and information services. Similarly, the study revealed that staff willingness to change was linked to attitude, which (Chawner, 2008; Chu and Du, 2013) were identified contributing to complacency towards SMTs. The findings of Baro, Edewor and Sunday (2013) corroborated the above when they identified lack of interest among academic librarians in the use of SMT as a major factor influencing SMT use.

On management support, the study established that this was not quite forthcoming from management of the libraries especially with regard to the use of SMT in the provision of library services. This is corroborated by the findings of Dalsgaard (2006) which affirmed that Facebook use in academic libraries has not been welcome by management decisions that has often banned its use.

#### **7.2.5 Summary of Research Questions 4:**

**How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT Use Behaviour of academic librarians in the provision of library and information Services?**

The study established that the intercorrelation matrixes for both groups of respondents show that at  $p < .05$ , there are no multicollinearities between or among the variables of study. This means the variables in the study are not highly correlated leading to response measurement (a case where two variables are measuring the same thing). Hence, all the predictor variables in the study are good enough to be part of the models in ascertaining the influence of perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation on SMT use behaviour of academic librarians and students in academic libraries in the South-West, Nigeria. In addition, findings revealed that majority of the relationships were positive and significant. Similarly, the independent variables (perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation) statistically and significantly predicted the dependent variable (i.e. SMT use behaviour of academic librarians) in the provision of library and information services



in academic libraries in South-West, Nigeria. This means that the influence noticed in the dependent or criterion variable (i.e. SMT use behaviour of academic librarians), was not due to chance, but to all the independent or predictor variables in the study.

Equally, the value of the coefficients of determination (0.596 and 0.282), showed that all the independent or predictor variables in this study explained 59.6% and 28.2% of the variabilities of the dependent variable. Which means that 59.6% and 28.2% of the total variances in the SMT use behaviour of students and academic librarians in academic libraries in South-West, Nigeria is accounted for by perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation. The results showed that relative advantage and professional gratification coupled with perceived usefulness and result demonstrability are the most influential predictors of SMT use behaviour of students and academic librarians in libraries in South-West, Nigeria.

#### **7.2.6 Summary of Research Questions 5:**

##### **What institutional mechanisms are used to promote the use of SMT in the Provision of library and information services?**

Through the interview session with university librarians, it was established that there are infrastructures available to academic librarians to facilitate the provision of library services to clientele. This result was in contrast to the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) where majority of the librarians indicated lack of facilities such as modern computers with internet access. (Anunobi & Ogbonna, 2012; Okonedo, Azubuike & Adeyoyin, 2014; Quadri & Idowu, 2016; Akporhonor & Olise, 2015) on their part identified lack of needed facilities in accessing SMTs.

The interview sessions with the university librarians also established that support was available to academic librarians for integrating SMT into the provision of library and information services. This support included training of academic librarians, funding for attending seminars, and conferences to improve the knowledge of librarians of SMTs. This result contradicts the findings of Baro, Idiodi and Zaccheaus Godfrey (2013) that almost three quarters of the librarians sampled in a related study in South-West Nigeria indicated lack of skills as hampering use of SMTs.

With regard, to institutional policy or guidelines to facilitate provision and use of SMT to access information, the study established that University of Lagos (UNILAG) had a confirmed policy or guidelines to facilitate the provision and use of SMT in accessing information, while other sampled universities were at different stages of policy formulation and implementation. This result is consistent with the findings of Olasina (2011) that there is a dearth of SMT use in academic libraries in Nigeria because most of these libraries have no policy or management framework for SMT use in the provision of library and information services. Similarly, Okite-Amugboro, 2017; Ezeani and Igwesi (2012) reiterated lack of SMT policies in academic libraries in Nigeria.

### **7.2.7 Summary of the Research Hypotheses**

This section sets to explain how the hypotheses established how the independent variables in this study influence the use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria.

**H<sub>01</sub>: There is no significant relationship between SMT awareness and Use behaviour of academic librarians in providing library and information Services.**

The study established that there is a weak relationship between SMT Awareness and use behaviours of academic librarians. The implication of this is that changes in SMT awareness is not correlated with changes in use behaviour of academic librarians. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis, means, increases or decreases in SMT Awareness do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in the South-West, Nigeria. This is in line with the findings of Gupta *et al.* (2014) who found out that library staff were aware of SNS. However, the majority of the staff were unaware of the usefulness of most types of SNS in the work place and therefore were not using any within the library.

**H<sub>02</sub>: There is no significant relationship between (perceived and actual benefits) and Use behaviour of SMT by Academic Librarians.**

The study established that there was a weak relationship between perceived and actual benefits and use behaviours of academic librarians. The implication of this is that a change in (perceived

and actual benefits) is not correlated with changes in use behaviour of academic librarians. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis, means, increases or decreases in perceived and actual benefits do not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria.

**H<sub>03</sub>: There is no significant relationship between SMT use behaviour of Academic librarians.**

The study established that there was a weak relationship between professional development and use behaviours of academic librarians. The implication of this is that a change in the professional development of academic librarians is not correlated with changes in their use behaviour. The value of  $P > 0.05$ , which is the non-rejection of the null hypothesis means, increases or decreases in professional development does not significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services. The study revealed that majority of the University Librarians interviewed, were of the view that there is no standardised policy guiding SMT implementation and usage in most of the sample universities.

**H<sub>04</sub>: There is no significant relationship between relative advantage, image, Visibility, result demonstrability, and SMT use behaviour of Academic Librarians**

The study established that there was a positive correlation between relative advantage, image, visibility, result demonstrability and SMT use behaviour of academic librarians (i.e.  $r_{\text{relativeadvantage\&usebehaviour}} = 0.7$ ,  $r_{\text{image\&usebehaviour}} = 0.3$ ,  $r_{\text{visibility\&usebehaviour}} = 0.1$  and  $r_{\text{resultdemonstrability\&usebehaviour}} = 0.2$ ) and only three (relative advantage, image and result demonstrability) were statistically significant. The implication of this is the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the three variables and SMT use behaviour of academic librarians. However, the reverse was the case for visibility ( $r_{\text{visibility\&usebehaviour}} = 0.1$ ,  $p > 0.05$ ). This indicates that increases or decreases in relative advantage, image and result demonstrability significantly relate to increases or decreases in use behaviours of academic librarians in providing library and information services in South-West, Nigeria, except for visibility.

**Ho5:** There is no significant relationship between perceived usefulness, perceived ease of Use and SMT use behaviour of academic librarians in providing library and Information services,

The study established that there is a negative correlation ( $r_{\text{perceiveduse\&usebehaviour}} = -0.1$ ) between perceived usefulness and use behaviours of academic librarians, while the reverse was the case for perceived ease of use and use behaviours of academic librarians ( $r_{\text{perceivedeaseofuse\&usebehaviour}} = 0.4$ ) which was positive. The negative correlation between perceived use and use behaviours of academic librarians shows that, the two variables are not moving in the same direction, while one is increasing the other is decreasing, however, the reverse is the case for perceived ease of use and use behaviours of academic librarians, where the correlation coefficient is positive indicating that the two variables are moving together in the same direction. As perceived ease of use increases, the use behaviours of academic librarians in providing library and information services also increases. The implication of this is that SMT can be useful but may not have a positive effect on the use behaviour of academic librarians, while the ease of using SMT in the provision of library services goes a long way in determining the SMT use behaviour of academic librarians.

**Ho6: There is no significant relationship between specific motivation/gratification and SMT use behaviour of Academic Librarians**

The study established that there was a positive correlation between professional motivation and gratification and use behaviours of academic librarians (i.e. professional motivation and gratification -  $r_{\text{motivation\&usebehaviour}} = 0.6$  and  $r_{\text{gratification\&usebehaviour}} = 0.7$ ). This suggests the rejection of the null hypothesis and acceptance of the alternative hypothesis of significant correlation between the variable. The implication of this is that there is a statistically significant correlation between professional motivation and gratification and use behaviours of academic librarians; that is, as professional motivation and gratification increases so are the use behaviours of academic librarians in providing library and information services.

### **7.3 Overall Conclusion**

Generally, the study revealed that academic librarians were aware of SMT and they used these technologies in providing real-time library services to clientele. In addition, the study revealed

that SNS, image and video sharing were the most used SMTs among academic librarians in the provision of library and information services to library patrons. Similarly, students also displayed a high level of SMT awareness which outweighed the level of awareness of academic librarians. The findings of the study revealed that these students accessed various library services in their class rooms and hostels without necessarily visiting the four walls of the library. Therefore, students preferred the SMT library services to the traditional way of providing library services which is cumbersome and time consuming. The study further identified attitude of academic librarians as an important determinant in whether they would use SMT in the provision of library services. The study similarly identified lack of requisite policy and management framework as a fundamental problem affecting academic librarians in adopting and using SMTs in the provision of library and information services.

The findings revealed that the variables in the study were not highly correlated leading to response measurement (a case where two variables are measuring the same thing). Hence, all the predictor variables in the study were found good enough to be part of the models in ascertaining the influence of perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation on SMT use behaviour of academic librarians and students in academic libraries in South-West, Nigeria. The findings also revealed that majority of the relationships were positive and significant. The null hypotheses of hypotheses 1-3 indicated a non-rejection of the null hypothesis, while hypotheses 4 and 6 indicated a rejection of the null hypotheses and acceptance of the alternative hypotheses. Moreover, hypothesis 5 showed a negative correlation.

The study concluded that the provision of library services via SMT is the trend now in academic libraries globally; therefore, academic librarians should ensure that they harness these technologies largely in meeting the needs of their clientele. Moreover, this can only be achieved when the management of these University libraries provide the needed infrastructure and support.

## **7.4 Recommendations**

Based on the results of the empirical study, the underpinning theories, reviewed literature and conclusion of the study, the researcher provides a number of recommendations discussed in sections 7.5.1 – 7.5.5 respectively.

### **7.4.1 Recommendation 1: Awareness, Adoption and Use of SMT by Academic Librarians**

The study established a high level of awareness of all SMTs in varying degrees among academic librarians except for Podcast, Vodcast, Social tagging, and bookmarking. The level of students' awareness of SMTs far outweighed that of academic librarians. Therefore, the University management and the management of the library should work together to create awareness about the different SMTs to enhance the provision of library and information services. The library management should also develop a sensitisation program on SMT and its application in the provision of real-time library services.

### **7.4.2 Recommendation 2: Purpose of Using Social Media Technologies (SMT) by Academic Librarians**

The study established that out of the Twenty-nine perceived and actual benefits of using SMT in the provision of library and information service, only ten (10) were most ranked as the most important. The researcher therefore recommends that academic librarians should have a broader perspective about purposes of using SMT in academic libraries. This can be achieved when librarians are exposed to the numerous ways of using SMT in the provision of library services like their counterparts in the developed world who use it in all arears of the library services.

### **7.4.3 Recommendation 3: Factors influencing the adoption and use of SMT for the provision of library and Information services by Academic Librarians**

The study established twelve (12) factors influencing the adoption and use of SMT for the provision of library and information services by academic librarians. Based on these findings, the first three factors chosen by academic librarians are personal knowledge and skills; staff willingness to change and management support. The researcher therefore recommends that

academic librarians should endeavour to improve their knowledge and skills about SMT using various strategies including workshops, seminars, conferences, and specialised training programmes. In addition, library management should ensure that an enabling environment is created for academic librarians to know about SMT and use it in the provision of library services. The management should make sure that SMT is integrated into library routines in academic libraries in Nigeria.

#### **7.4.4 Recommendation 4: How does perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification and motivation influence SMT use behaviour of Academic Librarians?**

The study established that all the predictor variables in the study are good enough to be part of the models in ascertaining the influence of perceived usefulness, perceived ease of use, relative advantage, image, visibility, result demonstrability, gratification, and motivation on SMT use behaviour of academic librarians and students in academic libraries in South-West, Nigeria. Therefore, it is recommended that SMT should be adopted and used in the provision of library services. The Librarians Registration Council (LRCN), Nigerian Library Association (NLA) and all library management should develop strategies and take affirmative action in the integration of SMTs into the various library routines to ensure the provision of effective library services through SMT.

#### **7.4.5 Recommendation 5: Institutional mechanisms used to promote the use of SMT in the provision of Library and information services and professional development of Academic Librarians**

The study has established that requisite policy framework to enhance adoption and use of SMTs in the provision of library and information services was weak or lacking all together. Therefore, it is recommended that the Librarian Registration Council (LRCN) and National Library Association (NLA) should formulate policy for all academic libraries in Nigeria to adopt and use SMT in the provision of library services. This will go a long way in influencing individual libraries to formulate their own internal policies to guide the the adoption and use of SMTs.

## **7.5 Contribution and Originality of the Study**

The originality of the study is revealed in various ways. The study sought to examine the use of SMT for the provision of library and information services in academic libraries in South-West, Nigeria. Although some empirical studies have been conducted on SMT in academic libraries in Nigeria (Olajide & Oyeniran, 2014; Baro, Idiodi & Zaccheaus, 2013; Onuoha, 2013; Quadri & Idowu, 2016; Anyaoku, Orakpor & Ezejiofor, 2012), the current study uniquely explored the adoption and use of SMT in the provision of library services in academic libraries and professional development of academic librarians in South-West, Nigeria.

The findings from the study on academic librarians and students contribute to the body of literature that establishes how academic libraries from a developing country context such as Nigeria use SMT in the provision of real-time library services. In addition, the study is also distinctively different from past studies because it takes into cognisance the clientele's perspective about the services offered to them by academic librarians via SMT. This study is also distinctive in that it explored a wide range of SMTs not covered in previous studies in academic libraries. Furthermore, the study covered universities (federal university, state university and private university) in Nigeria, to have a holistic and all-inclusive view about the use of SMT in the provision of library services in the three different academic settings. The strengths of this study also lie in the use of the three theories (TAM, IDT, and U&G) to investigate the problem of adoption, and use of SMTs by academic librarians. Moreover, previous studies conducted in Nigeria to examine technology adoption and use have predominantly used largely quantitative method (Olajide & Oyeniran, 2014; Baro, Idiodi & Zaccheaus, 2013; Onuoha, 2013; Quadri & Idowu, 2016; Anyaoku, Orakpor & Ezejiofor, 2012) at the expense of qualitative method or both (mixed method). The mixed method approach enabled the researcher to conduct an in-depth investigation into the use of SMT in the provision of library and information services. The study also generated an empirical model for SMT adoption and use from a developing country context.

In relation to practice, the study contributes to help academic libraries to understand and embrace the new technological innovation such as SMT in the provision of library and information services. The study provides a roadmap for academic libraries as well as library schools and the digital library community to work together in integrating SMT into the curriculum.



Regarding importance to society, the study contributes towards improving scholarly and learning environment in the Universities by creating awareness about the use of SMTs to provide information services for teaching, learning, and research. Besides, the importance of timely access to information using SMTs at any time from anywhere without visiting the physical library has been demonstrated. The study will also assist in creating a national policy framework for the integration of SMTs in the information infrastructure of universities.

## **7.6 Suggestions for further Study**

The current study examined the use of SMTs in the provision of library and information services in academic libraries of South-West, Nigeria. The study also investigated the factors influencing use of SMT for service delivery and for the professional development of academic librarians. The study was limited to six universities - two federal universities, two state universities and two private universities in South-West, Nigeria. Future research could also include polytechnics and colleges of Education so that there can be a baseline in the provision of SMT library services to the different class of clientele.

The study was also limited to academic librarians and 4<sup>th</sup>-year Computer Science students in the six selected universities. Future research could extend the scope to cover undergraduate and postgraduate students as well as academic staff.

Furthermore, Nigeria has six geopolitical zones and it is therefore recommended that future studies should be conducted in other geopolitical zones in Nigeria. The study is also limited to academic libraries only and future study should cover all types of libraries.

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## APPENDIX 1

### Students Social Media Technology (SMT) Usage Questionnaire (SSMUQ)

Thank you for agreeing to participate in this survey for the completion of a PhD study on The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria. All information provided will be used only for educational purpose and will be kept anonymous and confidential. It will take you approximately 15 minutes to complete the questionnaire.

#### Section A: Personal Data of Respondents

*Please tick as appropriate*

1. Please state your gender: Female {  } Male {  }

2. Please state your age category

16-20 {  } 21-25 {  } 26-30 {  } 31yrs+{  }

3. Name of your University

University of Ibadan {  } University of Lagos {  } Babcock University {  }

Lagos State University {  } Ekiti State University {  } Covenant University {  }

4. How often do you use the library?

Daily {  } Once a week {  } Once a month {  } Never {  }

5. What SMTs are used to provide library and information services in your university library?

a	Social networking such as Facebook, Google+, Myspace	<input type="checkbox"/>
b	Blogging such as WordPress, Blogger	<input type="checkbox"/>
c	Micro blogging such as Twitter	<input type="checkbox"/>
d	Collaborative tool such as Google Docs, Wiki, Mendeley, Dropbox	<input type="checkbox"/>
e	Social tagging and bookmarking such as Delicious, CiteULike, RSS	<input type="checkbox"/>
F	Scheduling and meeting tools such as Doodle, Google calendar	<input type="checkbox"/>
g	Conferencing tool such as Skype, Viber, Line, Imo, Google Duo	<input type="checkbox"/>

h	Image and video sharing such as YouTube, SlideShare, Flickr	
i	Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	
j	Podcasts and Vodcast	

**Section B: This section elicits information from students about services offered by Academic Librarians via SMT on a 5 point Likert Scale**

*1= strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= strongly agree*

6. Indicate (by ticking the appropriate box) services being rendered by the academic library in your institution?

<b>REFERENCE</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
SMT document delivery service					
Web-based reference tools					
SMT current awareness service					
SMT research guides					
SMT current awareness bulletins					
SMT Selective Dissemination of Information services					
CREDO reference (X-refer plus)					
SMT reference desk/Ask-a-librarian					
<b>ACQUISITION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
SMT list of new arrivals					
SMT alert services like new additions					
Electronic index					
Electronic reserves					
Finding aids (other than Online Public Access Catalogue)	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>CIRCULATION</b>					
Knowing circulation data (issue/return) via SMT					
Knowing availability of particular document via SMT					
Reservation of documents via SMT					

Status of reserved documents via SMT					
Canceling of reservation online via SMT					
Request for renewal of loan via SMT					
User account status via SMT					
Posting of overdue details via SMT					
<b>Cataloguing</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Searching Web Online Public Access Catalogue					
Accessing e-journals via SMT					
Accessing online databases via SMT					
Accessing digital collections via SMT					
Searching multiple catalogues with single command					
<b>PERIODICAL SECTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
SMT article delivery					
SMT article alert service					
Open J-gate					
Pro-active web-based Table of Content					
<b>ILL/DOCUMENT DELIVERY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
SMT document delivery					
Inter-Library Loan based services /ILL request web form					
SMT inter library loan service					
<b>MISCELLANEOUS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
E-mail based services					
Online staff list					
Online feedback form					
Online library news via SMT					
Online subject gateways					
Online contact addresses via SMT					
Online library holidays list via SMT					
Web-based Frequently Asked Questions					
Online general library policies via SMT					

Online integrated push-based-services (e-mail based)					
Web-based library tutorials via SMT					
Information about speech exhibitions via SMT					
Web-based user education/virtual-library tour via SMT					
Online in-house library bulletins via SMT					
Library blogs					
Online mailboxes for user-comments or suggestions					
Online map of the library					
Change password online					
Online library chat					
Library wiki					

7. What are the SMT used by students to access the library and information services in your university library?

a	Social networking such as Facebook, Google+, Myspace	
b	Blogging such as WordPress, Blogger	
c	Micro blogging such as Twitter	
d	Collaborative tool such as Google Docs, Wiki, Mendeley, Dropbox	
e	Social tagging and bookmarking such as Delicious, CiteULike, RSS	
F	Scheduling and meeting tools such as Doodle, Google calendar	
g	Conferencing tool such as Skype, Viber, Line, Imo, Google Duo	
h	Image and video sharing such as YouTube, SlideShare, Flickr	
i	Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	
j	Podcasts and Vodcast	

8. Where do you access these SMT library services?

At the library { }                      At the hostel { }                      In the classroom { }

Anywhere within the campus { }                      Off campus { }

9. When did you start using SMT in accessing library services in your university?



100 level { }      200 level { }      300 level { }      400 level { }

10. How efficient are these SMT library services in your university library?

Low { }      Moderate { }      High { }

11. Do you prefer the traditional way of providing library services to using SMT in the provision of library services in your university library?

Yes { }      No { }

12. Why?.....

13. Do academic librarians meet your information needs in the provision of library and information services using SMTs?

Yes { }      No { }

14. What other mechanisms is available to access SMT information services in your university library?

Smart phones { }      Laptops { }      Desktops { }      Others.....

14. How would you rate academic librarians' use of SMT to provide you with information services?

Low { }      Moderate { }      High { }

**Section C: Measuring constructs from Technology Acceptance Model (TAM)**

16. The following questions are measures on a 5-point Likert scale where:

1=Strongly Disagree    2= Disagree    3=Neutral    4=Agree    5. Strongly Agree

*Please tick as appropriate*

Item	1	2	3	4	5
<b>Perceived Usefulness</b>					
Accessing SMT services provided by the library would enable me to accomplish					

academic success					
Accessing SMT services provided by the library would improve my academic performance					
Accessing SMT services provided by the library would increase my research productivity					
Accessing SMT services provided by the library would enhance my academic values					
Accessing SMT services provided by the library would make library and information services easy readily available					
I would find SMT services provided by the library useful in answering all my queries					
<b>Perceived Ease of Use</b>					
Learning to operate SMT in order to access library services would be easy for me					
I would find it easy to access library and information services offered via SMT in the library					
My interaction with SMT services offered by the library would be clear and understandable					
I would find library services offered via SMT flexible to interact with					
It would be easy for me to become skillful in harnessing library services offered via SMT					
I would find library services offered via SMT easy to use					
Library services offered via SMT would be easy for my academic development					

**Section D: Testing constructs from Innovation Diffusion Theory (IDT)**

17. The following questions are measures on a 5-point Likert scale where:

1=Strongly Disagree 2= Disagree 3=Neutral 4= Agree 5= Strongly Agree

*Please tick as appropriate*

Item	1	2	3	4	5
<b>Relative Advantage</b>					
Accessing SMT services provided by the library would enable me to perform					

maximally in my studies					
Accessing SMT services provided by the library would improve my academic performance					
Accessing SMT services provided by the library would increase my research productivity and academic development					
Accessing SMT services provided by the library would enhance my academic success					
Accessing SMT services provided by the library would make it easy for me to have a clearer picture of what I am being taught in class					
I would find SMT services provided by the library useful in in my academic pursuit					
Accessing SMT services provided by the library gives me greater control over my research work					
Overall, I find accessing SMT services provided by the library to be advantageous in my school work					
<b>Image</b>					
Students who access SMT services provided by the library have more academic success than those who do not					
Students who access SMT services provided by the library in my university have a high academic profile					
Accessing SMT services provided by the library is a status symbol in my university					
Accessing SMT services provided by the library in my research work is an indicator of my advanced knowledge of Information Technology					
Because of my accessing SMT services provided by the library in my research activities, my peers see me as a more respected student than those who do not harness these services					
<b>Visibility</b>					

Accessing SMT services provided by the library is very common in my university for academic development					
It is easy for me to observe others accessing SMT services provided by the library					
<b>Result Demonstrability</b>					
I would have no difficulty telling others about the results of accessing SMT services provided by the library					
I believe I could communicate to others the impact of accessing SMT services provided by the library					
The results of accessing SMT services provided by the library are apparent to me					
I would have difficulty explaining why accessing SMT services provided by the library may or may not be beneficial					

**Section E: Testing construct from Uses and Gratification Theory (U&G)**

This section will elicit information on Students Motivation and Gratification derived from accessing SMT library services provided by the academic library in their institution on a 5-point Likert scale where:

1=Strongly Disagree 2= Disagree 3=Neutral 4= Agree 5= Strongly Agree

*Please {√} tick as appropriate*

18. What are the personal motivation and gratifications derived by students’ in accessing library and information services provided via SMT in the library

Item	1	2	3	4	5
<b>Personal Motivation</b>					
Library service can be access any where					
Library services can be access anytime					
Information are readily available					
Queries are answered at the click of a button					

Library services are not constraint by time					
Library services are not constraint by location					
Library services are not constraint by means but multifaceted					
Improves users' services					
<b>Personal Gratification</b>					
Sharing information					
Easy way to communicate					
Fast way to communicate					
Having lots of friends					
Relaxation and releasing academic stress					
Chatting					
Having fun					
Receiving information					

## APPENDIX 2

### Academic Librarians Questionnaire (ALQ)

Thank you for agreeing to participate in this survey for the completion of a PhD study on the Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in South-West, Nigeria. All information provided will be used only for educational purpose and will be kept anonymous and confidential. It will take you approximately 15 minutes to complete the questionnaire.

#### Section A: Personal Data of Respondents

Please  tick as appropriate

1. Please state your gender: Female  Male

2. Please state your age:

25-35  36-45  46-55  56-65

3. Please state your highest qualification:

First Degree  Masters  PhD  Other

4. Please state your year of work experience

1-5years  6-10years  11-15years  16-20years   
21-25years  26-30years  30-35years

5. Please state your institution of affiliation.....

6. In which section and unit of the library do you work? (Please tick as appropriate)

<b>Technical Section</b>	
Cataloguing Unit	
Serial's Unit	
Reprography and Bindery Unit	

<b>Readers' Service Section</b>	
Circulation Unit	
Reference Unit	
<b>Collection development</b>	
Acquisition Unit	
<b>Systems' Section</b>	
Digitization Unit	
E-resources	

**Section B: Familiarity of Academic librarians with SMT**

**Please {√} tick as appropriate**

7. Which SMTs are you familiar with? (You can choose more than one)

a	Social networking such as Facebook, LinkedIn, Google+, Myspace	
b	Blogging such as WordPress, Blogger	
c	Micro blogging such as Twitter	
d	Collaborative tool such as Google Docs, Wiki, Mendeley, Dropbox	
e	Social tagging and bookmarking such as Delicious, CiteULike, RSS	
F	Scheduling and meeting tools such as Doodle, Google calendar	
g	Conferencing tool such as Skype, Viber, Line, Imo, Google Duo	
h	Image and video sharing such as YouTube, SlideShare, Flickr	
i	Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN	
j	Podcasts and Vodcast	

8. How long have you been using each of the following SMT to provide library and information services?

Item One SMT	Frequency of use				
	For a week	For a month	For a year	For many years	Never
Social networking					
Blogging					
Micro blogging					
Collaborative tool					
Social tagging and bookmarking					
Scheduling and meeting tools					
Conferencing tool					
Image and video sharing					
Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN					
Podcasts and Vodcast					

9. Where do you access SMT? (You may select more than one)

At home { }

At the library { }

In an Internet Café { }

At work/office { }

Other (please specify):.....

10. How do you assess your competency in using SMT?

Low { }

moderate { }

High { }



11. How frequently do you use each of the following SMT to provide information services?

Item Two	Frequency of use				
	Many times, a day	Once a day	Once a week	Once a month	Never
SMT					
Social networking					
Blogging					
Micro blogging					
Collaborative tool					
Social tagging and bookmarking					
Scheduling and meeting tools					
Conferencing tool					
Image and video sharing					
Chatting tool such as Facebook messenger, Blackberry messenger, WhatsApp, Google Talk, MSN					
Podcasts					

### Section C: Purpose of using SMT by Academic Librarians

12a. On the Likert scale provided below, state the purpose for using SMT?

1=Strongly Disagree 2= Disagree 3=Neutral 4=Agree 5. Strongly Agree

Please {√} tick as appropriate

Purpose of using SMT in the library	1	2	3	4	5
Announcing library news/events					
Reference services					
Information literacy programs					
New arrival alerts					
Collaboration with clientele					
Interacting with users					
Keeping track with professional trends					

Communicating with the faculty staff					
Sharing work related ideas with colleagues					
Collaborating with colleagues in other libraries					
Answering library users queries					
Interacting with users easily					
Receiving immediate feedback from users					
Marketing					
Bibliographic services					
Selective dissemination of Information					
Current Awareness Services					
Library orientation					
Inter-library loan service					
Charging and discharging of library materials					
Electronic document delivery services					
Indexing and abstracting services					
News clipping services					
Overdue fines					
Reminders					
Online chat					
Library membership					
Collaboration with colleagues					
Conference call					

12b. Specify any other purpose over and above those listed of using SMT:

.....

**Section D: Factors influencing use of SMT by Academic Librarians**

13a. what factors influence your use of SMT?

1=Strongly Disagree 2= Disagree 3=Neutral 4=Agree 5. Strongly Agree

**Please {√} tick as appropriate**

<b>Factors influencing use of SMT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Management support					
Personal knowledge and skills					
Good equipment and infrastructure					
Staff willingness to change					
Financial support					
Patron demand					
Flexible Institutional policy					
Staff commitment and cooperation					
Good internet access					
Tools are easy to use					
Tools are easy for personal and work purposes					
Flexible SMT policies					

14. What are the challenges encountered in using SMT to provide library and information services?

1=Strongly Disagree 2= Disagree 3=Neutral 4=Agree 5. Strongly Agree

<b>Challenges of SMT use in the library</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Lack of management support					
Lack of knowledge and skills of staff					
Lack of equipment and infrastructure					
Staff unwillingness to change					
Limited budget					
Lack of response from users					
Lack of staff commitment and cooperation					
Poor internet access					
Tools are not easy to use					
Tools are useless in personal and work spaces					
Restrictive organizational policies					
Absence of SMT policies					

**Section E: Measuring constructs from Technology Acceptance Model (TAM)**

15. The following questions are measures on 5-point Likert scale where:

1=Strongly Disagree 2= Disagree 3=Neutral 4=Agree 5. Strongly Agree

**Please {√} tick as appropriate**

Item	1	2	3	4	5
<b>Perceived Usefulness</b>					
Using SMT would enable me to accomplish provision of library and information services to clientele					
Using SMT would improve my job performance					
Using SMT in my job would increase my productivity					
Using SMT would enhance my effectiveness in the provision of library and information services					
Using SMT would make provision of library and information services easy					
I would find SMT useful in the provision of library and information services					
<b>Perceived Ease of Use</b>					
Learning to operate SMT in the provision of library and information services would be easy for me					
I would find it easy to use SMT in providing library and information services					
My interaction with SMT would be clear and understandable					
I would find SMT to be flexible to interact with					
It would be easy for me to become skillful at using SMT in the provision of library and information services					
I would find SMT easy to use					
SMT would be easy for professional development					

**Section F: Testing constructs from Innovation Diffusion Theory (IDT)**

16. The following questions are measures on 5-point Likert scale where:

1=Strongly Disagree 2= Disagree 3=Neutral 4= Agree 5= Strongly Agree

**Please {√} tick as appropriate**

<b>Item</b>	1	2	3	4	5
<b>Relative Advantage</b>					
Using SMT would enable me in providing of library and information services					
Using SMT would improve my job performance					
Using SMT in my job would increase my productivity and professional development					
Using SMT would enhance my effectiveness in the provision of library and information services					
Using SMT would make it easy for me to provide library and information services					
I would find SMT useful in providing library and information services					
Using SMT in the provision of library and information services gives me greater control over my work					
Overall, I find using SMT in the provision of library and information services to be advantageous in my job					
<b>Image</b>					
People in my library who use SMT have more prestige than those who do not					
People in my library who use SMT have a high profile					
Having SMT account is a status symbol in my organization					
Using SMT in the provision of library and information services is an indicator of advanced level of Information Technology					
Because of my use of SMT in the provision of library and information services, others in my library see me as a more valuable staff than those who do not use SMT					
<b>Visibility</b>					

SMT is very commonly used in my library in the provision of library and information services and for professional development					
It is easy for me to observe others using SMT in the provision of library and information services in my library					
<b>Result Demonstrability</b>					
I would have no difficulty telling others about the results of using SMT in the provision of library and information services					
I believe I could communicate to others the impact of using SMT in the provision of library and information services					
The results of using SMT in the provision of library and information services are apparent to me					
I would have difficulty explaining why using a SMT in the provision of library and information services may or may not be beneficial					

### Section G: Testing construct from Uses and Gratification Theory (U&G)

This section will elicit information on SMT Fulfillment of Librarians' Professional and Personal Gratification on 5-point Likert scale where:

1=Strongly Disagree 2= Disagree 3=Neutral 4= Agree 5= Strongly Agree

**Please {√} tick as appropriate**

17. What are the personal and professional gratifications/motivation in using SMT in the provision of library and information services?

Item	1	2	3	4	5
<b>Professional Gratification</b>					
Current trend					
Professional appearance					
Communication with users					
Discovering users need					
Immediate feedback					

Educate users					
Marketing					
<b>Personal Gratification</b>					
Sharing information					
Easy way to communicate					
Fast way to communicate					
Having lots of friends					
Relaxation and releasing job stress					
Chatting					
Having fun					
Receiving information					

## APPENDIX 3

### University Librarians Interview Schedule (ULIS)

Thank you for agreeing to participate in this survey for the completion of a PhD study on The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria. All information provided will be used only for educational purpose and will be kept anonymous and confidential. It will take you approximately 15 minutes to provide answers to questions on this interview schedule.

**Demographic Information:**

**University of affiliation:** \_\_\_\_\_

**Gender:** Female [ ] Male [ ]

**Age category:** 31-40 [ ] 41-50 [ ] 51-60 [ ] 61-70 [ ]

**Qualification:** Masters [ ] PhD [ ] Others [ ]

1. What do you understand by Social Media Technologies (SMT)?

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

2. What types of SMT are used within your library?.....

.....

3. To what extent has SMT been introduced into the provision of library services in your library?

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

4. What opportunities and challenges has SMT brought in the provision of information services in the academic libraries?



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

5. For the challenges identified in 4 above, how have you attempted to address them?.....  
.....

6. What support is available to integrate SMT in the library and information services in your library?  
.....  
.....  
.....

7. What infrastructure is available to the librarians and also users in your institution to facilitate provision of library and information services through SMT?  
.....  
.....  
.....

8. For the infrastructure identified in 5 above, how efficient is it?.....  
.....

9. What is the attitude of academic librarians towards usage of SMT to provide library and information services to the users?  
.....  
.....  
.....

10. What institutional policy or guidelines do you have in place to facilitate provision and use of SMT to access information?

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

11. How is SMT likely to impact the provision of information services in academic libraries in Nigeria?

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

12. In your opinion how is SMT likely to impact professional development of academic librarians?

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

13. How is use of SMT in providing information services integrated in your vision, mission and goals of the library?

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

14. What is the scope of SMT integration into library routines?

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

.....  
.....  
15. As a member of University Librarians in Nigeria (AULNU), what is the association doing in ensuring that SMT is integrated in the provision of library and information services in Nigeria Universities?  
.....  
.....  
.....

16. How has your library blended SMT and other technologies in providing information services?.....  
.....

17. Please provide any suggestions on how SMT may be deployed in the library work to improve its services as well as image  
.....  
.....  
.....

**Thank You**



**Bakare, Oluwabunmin Dorcas**

**APPENDIX 4  
INFORMED CONSCENT I**



University of KwaZulu-Natal  
School of Social Sciences  
Private Bag X01  
Scottsville  
3209  
Telephone: 033 -260-5007  
13th August, 2017

Dear Respondent

Informed Consent Letter for Questionnaire

INVITATION TO PARTICIPATE IN A SURVEY

I, Bakare Oluwabunmi Dorcas of the department of Information Sciences, University of KwaZulu-Natal, kindly invite you to participate in the research project entitled “The Use of Social Media Technologies (SMTs) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria”.

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Department.

The aim of this study is to investigate the use of SMT in the provision of library and information services in academic libraries in south-west, Nigeria. The outcome of the research is expected to inform practice, theory, society and policy which will go a long way in incorporating emerging technologies into the provision of library services in academic libraries in Nigeria.

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself or my supervisor at the numbers indicated above.

It should take you about 15 minutes to complete the questionnaire.

Thank you for participating in this research project.

**Researcher:** Bakare Oluwabunmi Dorcas  
Institution; University of KwaZulu-Natal  
Telephone number: 073 5653 614  
Email address: [darasimi4jessie@gmail.com](mailto:darasimi4jessie@gmail.com)

**Supervisor:** Prof Mutula  
Institution: University of KwaZulu-Natal  
Telephone number: 071 2750 109  
Email address: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)

**HSSREC Research Office:** Ms P Ximba  
Institution: University of KwaZulu-Natal  
Telephone number: +27 (0) 31 260 3587  
Email address: [ximbap@ukzn.ac.za](mailto:ximbap@ukzn.ac.za)

**Informed Consent form for survey participants**

**Please complete this form**

**Title of the Study: The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria.**

I, ....., hereby consent to participate in the study as outlined in the document about the study/ as explained to me by the researcher.

I acknowledge that I have been informed of the purpose of this survey. I am aware that participation in the study is voluntary and I may refuse to participate or withdraw from the study at any stage and for any reason without any form of disadvantage. I acknowledge that I understand the contents of this form and freely consented to participating in the study.

**Participant**

Signed.....Date: .....

**Researcher**



Signed ..... Date: ...13<sup>th</sup> August 2017.....

**APPENDIX 5  
INFORMED CONSCENT II**



University of KwaZulu-Natal  
School of Social Sciences  
Private Bag X01  
Scottsville  
3209  
Telephone: 033 -260-5007  
13th August, 2017

Dear Respondent

Informed Consent Letter for Interview

**INVITATION TO PARTICIPATE IN AN INTERVIEW**

I, Bakare Oluwabunmi Dorcas of the department of Information Sciences, University of KwaZulu-Natal, kindly invite you to participate in the research project entitled “The Use of Social Media Technologies (SMTs) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria”.

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Department.

The aim of this study is to investigate the use of SMT in the provision of library and information services in academic libraries in south-west, Nigeria. The outcome of the research is expected to inform practice, theory, society and policy which will go a long way in incorporating emerging technologies into the provision of library services in academic libraries in Nigeria.

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself or my supervisor at the numbers indicated above.

It should take you about 15 minutes to complete the questionnaire.

Thank you for participating in this research project.

**Researcher:** Bakare Oluwabunmi Dorcas  
Institution; University of KwaZulu-Natal  
Telephone number: 073 5653 614  
Email address: [darasimi4jessie@gmail.com](mailto:darasimi4jessie@gmail.com)

**Supervisor:** Prof Mutula  
Institution: University of KwaZulu-Natal  
Telephone number: 071 2750 109  
Email address: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)

**HSSREC Research Office:** Ms P Ximba



Institution: University of KwaZulu-Natal  
Telephone number: +27 (0) 31 260 3587  
Email address: [ximbap@ukzn.ac.za](mailto:ximbap@ukzn.ac.za)

**Informed Consent form for Interview Participants**

**Please complete this form**

**Title of the Study: The Use of Social Media Technologies (SMTs) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria.**

I, ....., hereby consent to participate in the study as outlined in the document about the study/ as explained to me by the researcher.

I acknowledge that I have been informed of the purpose of this interview. I am aware that participation in the study is voluntary and I may refuse to participate or withdraw from the study at any stage and for any reason without any form of disadvantage. I acknowledge that I understand the contents of this form and freely consented to participating in the study.

**Participant**

Signed.....Date: .....

**Researcher**



Signed ..... Date: .....13<sup>th</sup> August 2017

## APPENDIX 6

### APPENDIX 6: LETTER OF INTRODUCTION (UI)



21/02/2016

The University Librarian,  
Kenneth Dike Library,  
University of Ibadan (UI),  
Ibadan,  
Oyo State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

#### School of Social Sciences

Postal Address: Private Bag X01, Scottsville, 3209, South Africa

Telephone: +27 (0) 33 260 5320/5007

Facsimile: +27 (0) 33 260 5092

Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



04/08/2016

The Head of Department,  
Computer Science,  
University of Ibadan (UI),  
Ibadan,  
Oyo State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

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We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your department. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

**School of Social Sciences**

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Facsimile: +27 (0) 33 260 5092

Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 7

### APPENDIX 7: LETTER OF INTRODUCTION (UNILAG)



23/03/2016

The University Librarian,  
University of Lagos,  
Akoka,  
Lagos State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences




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Facsimile: +27 (0) 33 260 5092

Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



19/07/2016

The Head of Department,  
Computer Science,  
University of Lagos,  
Akoka,  
Lagos State,  
Nigeria

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your department. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

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Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 8

### APPENDIX 8: LETTER OF INTRODUCTION (EKSU)



07/05/2016

The University Librarian,  
Ekiti State University (EKSU),  
Ekiti State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

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Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



23/07/2016

The Head of Department,  
Computer Science,  
Ekiti State University,  
Ekiti State,  
Nigeria

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your department. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

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Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 9

### APPENDIX 9: LETTER OF INTRODUCTION (LASU)



07/03/2016

The University Librarian,  
Lagos State University (LASU),  
Ojoo,  
Lagos State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

**School of Social Sciences**

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Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville





The Head of Department,  
Computer Science,  
Lagos State University (LASU),  
Ojoo,  
Lagos State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your department. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

**School of Social Sciences**

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Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 10

### APPENDIX 10: LETTER OF INTRODUCTION (BABCOCK)



23/02/2016

The University Librarian,  
Babcock University,  
Ileshan Remo,  
Ogun State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

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Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



UNIVERSITY OF  
KWAZULU-NATAL  
INYUVESI  
YAKWAZULU-NATALI

12/07/2016

The Head of Department,  
Computer Science,  
Babcock University,  
Ileshan Remo,  
Ogun State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your department. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula

PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

**School of Social Sciences**

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Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 11

### APPENDIX 11: LETTER OF INTRODUCTION (COVENANT)



21/04/2016

The University Librarian,  
Covenant University (COVENANT),  
Ogun State,  
Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Miss Oluwabunmi Bakare to carry out research in your University Library. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula



PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences

#### School of Social Sciences

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Email: [socialsciences@ukzn.ac.za](mailto:socialsciences@ukzn.ac.za)

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



17/07/2016

The Head of Department,  
Computer Science,  
Covenant University,  
Ogun State Nigeria.

RE: Introducing Miss Oluwabunmi Bakare a PhD Student at University of KwaZulu- Natal

This letter serves to introduce and confirm that Miss Oluwabunmi Bakare is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is "The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria."

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Thank you in advance for your understanding

Prof Stephen Mutula

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Dean & Head: School of Social Sciences

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Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## APPENDIX 12

### UKZN Ethical Clearance Approval



2 February 2017

Ms Oluwabunmi Dorcas Bakare 216019511  
School of Social Sciences  
Pietermaritzburg Campus

Dear Ms Bakare

Protocol Reference Number: HSS/0042/017D

Project title: The Use of Social Media Technologies (SMT) in the Provision of Library and Information Services In Academic Libraries in South-West, Nigeria

#### Full Approval – Expedited Application

In response to your application received 23 December 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

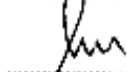
Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

**PLEASE NOTE:** Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....  
Dr Shreenuka Singh (Chair)  
Humanities & Social Sciences Research Ethics Committee

/pm

## APPENDIX 13

### Approval from the University of Ibadan

## UNIVERSITY OF IBADAN, IBADAN, NIGERIA

Office of the University Librarian  
KENNETH DIKE LIBRARY



Telephone: IBADAN (02) 8101100-8101119  
Mobile: 08033487015,  
Direct Lines: (02) 8103118  
Fax: (02) 8103118  
E-mail: librarian@mail.ui.edu.ng

University Librarian:  
B.A. OLADELE, BLS (ABU), MLS; Ph.D. (Ib.)

17 March, 2016.

Ref.: KDL/ADM/57

Miss Bakare, Oluwabunmi Dorcas  
Information Studies  
University of KwaZulu-Natal  
South Africa.

Dear Miss Bakare,

**Re: Introducing Miss Oluwabumi Bakare a Ph.D Student at the University of KwaZulu-Natal**

Your letter dated 15 March, 2016 on the above subject matter refers please.

I write to convey to you approval to conduct your research in our Library (Kenneth Dike Library) which is the hub of the University of Ibadan Library System.  
May I also add that it will be appreciated if you will be kind enough to avail us of the grace of a feedback at the end of your research.

On behalf of the Management and staff of the Library I wish you the best of luck in your research endeavours.

Yours sincerely,

  
Dr. B. A. Oladete



**Our Vision:**  
To be a world-class institution for academic excellence geared towards meeting societal needs.

**Our Mission:**  
To expand the frontiers of knowledge through provision of excellent conditions for learning and research  
To produce graduates who are worthy in character and sound judgement.  
To contribute to the transformation of society through creativity and innovation.  
To serve as a dynamic custodian of society's salutary values and thus sustain its integrity.

## APPENDIX 14

### Approval from the University of Lagos

# UNIVERSITY OF LAGOS LIBRARY

## AKOKA, YABA, LAGOS, NIGERIA



Our Ref:

Your Ref:

P.M.B. 1012  
Tel.: 01-7346348  
01-7347162  
E-mail: [library@unilag.edu.ng](mailto:library@unilag.edu.ng)  
29<sup>th</sup> April, 2016  
Date: .....

**Bakare, Oluwabunmi Dorcas**  
School of Social Science,  
University of Kwa-Zulu Natal,  
South Africa

Dear Bakare, Oluwabunmi Dorcas,

### ACCEPTANCE TO UNDERTAKE RESEARCH STUDY AT THE UNIVERSITY OF LAGOS

I write to inform you that approval has been granted in respect of your request to use the University of Lagos Library as one of the Institutional Libraries to undertake research for your PhD degree.

The University Library is ready to provide the needed assistance and support throughout the period of the research.

We look forward to receiving you at the University of Lagos.

Good luck in your endeavours.

**Dr. (Mrs) O. A. Fadehan**  
University Librarian



## APPENDIX 15

### Approval from Ekiti State University

# EKITI STATE UNIVERSITY, ADO-EKITI

## OFFICE OF THE UNIVERSITY LIBRARIAN

University Librarian:

**N. A. AJAYI**  
RN, BScN, MLSc



P. M. B. 5363, Ado-Ekiti, Nigeria

☎ 08034187563

E-mail: librarian@eksuedu.ng.com

nathajayi@yahoo.co.uk

Your Ref: \_\_\_\_\_

Our Ref: LIB. 801/VOL.I/20

Date: 24<sup>th</sup> June, 2016

Miss Bakare, Oluwabunmi Dorcas  
Information Studies  
University of Kwazulu-Natal  
South Africa.

Dear Miss Bakare,

**Re: Introducing Miss Oluwabunmi Bakare a Ph.D Student at University of Kwazulu-Natal**

Please refer to your letter dated 21<sup>st</sup> April 2016 on the above subject matter.

I write to convey the approval of the Management Library University to enable you conduct your research in Ekiti State University Library as requested. We do hope you will make maximum use of the facilities available in our Library.

We wish you tremendous success in your research endeavours.

Yours sincerely,

  
Dr A. A. Osunrinde  
Head, Readers' Services

## APPENDIX 16

### Approval from Lagos State University



## LAGOS STATE UNIVERSITY

OFFICE OF THE UNIVERSITY LIBRARIAN

BADAGRY EXPRESSWAY, OJO P.M.B. 1087, APAP, LAGOS-NIGERIA

TEL: 08033199322

www.lasunigeria.edu.ng E-mail: bambose26@yahoo.com

University Librarian: DR. ADEBAMBO A. ODUWOLE, B.Sc, PGDE, MLS, Dip. Comp. PhD (Ibadan)

13<sup>th</sup> May, 2016

**MS. OLUWABUNMI BAKARE  
SCHOOL OF SOCIAL SCIENCES  
UNIVERSITY OF KWAZULU-NATAL  
SOUTH AFRICA.**

*Dear Ms. Bakare,*

**ACCEPTANCE TO UNDERTAKE RESEARCH STUDY AT THE  
LAGOS STATE UNIVERSITY**

I write to inform you that approval has been granted in respect of your request to the Library as one of the Institutional Libraries to undertake research for your Ph.D Degree.

The University Library is ready to provide the needed assistance and support throughout the period of the research.

We therefore look forward to receiving you at the Lagos State University.

Good luck in your endeavours.

**DR. ADEBAMBO ODUWOLE (CLN)**  
(University Librarian)

## APPENDIX 17

### Approval from Babcock University



21st March, 2016

Ref: RU/LIB/025/66

Prof Stephen Mutula,  
Information Studies Prog. Coordinator  
Dean & Head: School of Social Sciences  
University of KWAZULU-NATAL

Dear Sir,


**RE: Acceptance Letter of Miss BAKARE, Oluwabunmi**

I write to inform you that your request to accept the above mentioned Ph.D student of your University, to undertake her research work in Babcock University Library, is hereby granted.

The Library Administration is therefore willing to assist her in the research titled:

"Adoption and Use of Social Media Technologies (SMT) in the Provision of Library and Information Services in Academic Libraries in South-West, Nigeria"

Thanks.

  
Clara C. Oloro, Ph.D  
Prof. of Library & Info Science  
Archives & Records Mgt.  
University Librarian



## APPENDIX 18

### Approval from Covenant University



# Covenant University

Canaan Land, Km 10, Idiroko Road, Ota, Ogun State, Nigeria.  
E-mail: [dclr@covenantuniversity.edu.ng](mailto:dclr@covenantuniversity.edu.ng)  
Website: [www.covenantuniversity.edu.ng](http://www.covenantuniversity.edu.ng)  
Tel: 01-4542070

OFFICE OF THE DIRECTOR, CENTRE FOR LEARNING RESOURCES

*Dr. Christopher Nkiko*

May 20, 2016

Professor Stephen Mutula  
PhD (Information Studies Programme Coordinator)  
Dean & Head: School of Social Sciences  
University of KWAZULU-NATAL  
Private Bag X01, Scottville, 3209  
South Africa.

Dear Sir,

**RE: Introducing Ms Oluwabunmi Bakare, a PhD Student at University of KwaZulu-Natal**

Your letter dated April 20, 2016 in respect of the above captioned subject matter refers. I write to confirm our preparedness to allow Ms Bakare's permission to carry out research in Covenant University Library. The Library is ICT-driven and deploys electronic security systems in its operations. We look forward to receiving Ms Bakare to our context.

Kind regards,

Nkiko Christopher (Ph.D)  
Director, Centre for Learning Resources

*Raising A New Generation of Leaders*

Vice-Chancellor:  
Professor Charles K. Ayo

Registrar:  
Pastor Olamide O. Olusegun

## APPENDIX 19

### Editor's Letter



**Barbara Mutula**  
Associate Member

Membership number: MUT001  
Membership year: March 2017 to February 2018

078 643 9029  
kabangebarbara@gmail.com

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[www.editors.org.za](http://www.editors.org.za)

**03 March 2018**

### TO WHOM IT MAY CONCERN

This is to confirm that the dissertation written by Oluwabunmi Dorcas Bakare, titled **‘The Use of Social Media Technologies (SMTs) in the Provision of Library and Information Services in Academic Libraries of South-West, Nigeria’** was copy edited for layout (including numbering, pagination, heading format, justification of figures and tables), grammar, spelling and punctuation by the undersigned. The document was subsequently proofread and a number of additional corrections were advised.

The undersigned takes no responsibility for corrections/amendments not carried out in the final copy submitted for examination purposes.

A handwritten signature in blue ink, appearing to read "Barbara L. Mutula-Kabange", written over a horizontal line.

---

Mrs. Barbara L. Mutula-Kabange

Copy Editor, Proof reader  
*BEd (UBotswana), BSSc Hons Psychology,  
MEd Educational Psychology (UKZN)*