Social Media and Social Networking Applications for Knowledge Sharing among Academics in Nigeria

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ABSTRACT

The usage of social media and social networking applications to communicate or share ideas among people is one of the trending areas in communication and new media research. This research sought to investigate the usage of Social Media and Social Networking applications as knowledge sharing technologies among lecturers, or with students. The study used convenient sample method to select respondents through a multi-stage sampling procedure to gather data from 1047 respondents across 13 academic faculties at Ahmadu Bello University (ABU) in Zaria, Nigeria, who responded to a survey questionnaire instrument. SPSS and NVivo data analysis programs were used for the analysis of both qualitative and quantitative data. Cross-sectional design within the action research framework was conducted using mixed-method; with structured questionnaires and in-depth interviews. Diffusion of innovation, unified theory of acceptance and use of technology theories formed the conceptual framework of the study. Key Findings reveal that, the greatest challenges faced by Nigerian academics in using social media and social networking applications include low interconnectivity and insufficient electricity supply. In addition, the academic staff of the Ahmadu Bello University Zaria were influenced to use the Social Media and Social Networking applications by the technological factor followed by the individual factor, and that there is no significant relationship between the participants' gender and the use of the technologies. The COVID 19 pandemic period according to the findings has increased the use of the social media and social Networking applications among the academics of Ahmadu Bello university Zaria. Three out of the four hypothesis were supported by the qualitative data of the findings while hypothesis 1 (H1) stands unsupported.

Keywords: Social Media; Social Networking Applications; Knowledge Sharing; Academics.

ÖZ

İnsanlar arasında iletişim kurmak veya fikir paylaşmak için sosyal medya ve sosyal ağ uygulamalarının kullanımı, iletişim ve yeni medya araştırmalarında yaygın çalışma alanlarından biri haline gelmiştir. Bu nedenle, bu araştırma, sosyal medya ve sosyal ağ uygulamalarının öğretim elemanlarının kendi meslektaşları ve öğrencileri arasında hangi oranda ve nasıl kullanıldığını araştırmayı amaçlamıştır. Çalışmanın evreni, çok aşamalı bir örnekleme prosedürü ile belirlenmiştir. Nijerya, ABU Zaria Üniversitesi'ndeki 13 fakültede anketi cevaplayan 1047 kişinin verileri temel alınmıştır. Nitel ve nicel verilerin analizi için SPSS ve NVivo programları kullanılmıştır. Çalışmada, anket ve derinlemesine görüşmelerle toplanan verilere dayanan karşılaştırmalı karma bir araştırma yöntemi izlenmiştir. Bu tezde argümanlar, Yeniliklerin Yayılması ve Teknoloji Kabul ve Bütünleşik Davranış Kuramları etrafında gelişmiştir. Analizler, veri enflasyonu, zayıf internet bağlantısı ve elektrik kesintilerinin akademisyenlerin sosyal medya ve sosyal ağ uygulamalarını kullanırken karşılaştıkları en büyük engeller olduğunu ortaya çıkarmıştır. Ayrıca bu akademisyenlerin bilgi paylaşım uygulamalarını kullanmalarında teknolojik faktörün yanı sıra bireysel faktörlerin de engeller arasında olduğu ama cinsiyet ile teknoloji kullanımı arasında anlamlı bir ilişki olmadığı da tespit edilmiştir. COVID 19 pandemi sürecinin bu uygulamaların akademisyenler arasında kullanımını olumlu yönde etkilediği de gözlemlenmiştir.

Anahtar Kelimeler: Sosyal Medya; Sosyal Ağ Uygulamaları; Bilgi Paylaşımı; Akademisyen

DEDICATION

This work is dedicated to my Family and late Brother Honourable Bello Dankande Gamji (Walin Bakura)

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INTRODUCTION

1.1 Background to the Study

Social media and Social networking applications are internet-based tools referred to as applications that can be used to communicate research works. The application tools are used with a view to supporting the research activities and their process within research-based institutions. This is a process where individuals communicate their implicit and explicit knowledge and jointly produce new ideas or knowledge, in which certain individual, organisational, technological and cultural factors can be used to facilitate the process, it is also an act of making knowledge available to others, (Hoff, Elving, Meeuwsen, & Dumoulin, 2003; Wangpipatwong, 2009; Vuori & Okkonen, 2012).

The three generations of knowledge sharing include:

a) First generation; which is the traditional way of sharing knowledge using codification and storage.
b) The second generation; that implies the use of social component, personalization and how individual communicate with other people, trough face-to-face and mentoring
c) The third generation; refers to social networks, where social media are being used by experts to search for knowledge and share it outside their organisation online, (Gaal, Szabol, Obermayer-Kovacs, & Csepregi, 2015)

The web platforms of social media and social networking applications includes; Facebook, twitter, WhatsApp, YouTube, ResearchGate, Academia Edu, Muse, Jstore, Scihub, Edutopia and Evernote. Other sharing platforms that a researcher can use to promote his work include sites that promote text, photos, videos, e-books which are created and shared freely in which video and photo sharing platforms as sharing technologies were among the most popular sites on the World Wide Web (Roger & David, 2016).

Another application for knowledge sharing includes social publishing, such as the Scribd, SlideShare, and TidyForms, these sites target content exchange of either text, audio or video and provide online content, (Roger & David, 2016). Of course, the main rationale behind the production of these technologies apart from socialization was for researchers and educationists to use them and communicate or share their research work with the world via internet.

The emergence of these applications in the academic environment has offered a new trend in the digital era and brought about new normal in the educational sector like research and projects globally. The fluctuations comprise the new replicas of study itself, development of research mobilization and establishment of electronic copies of research projects. In addition, communicating new ideas via the internet has transformed peoples' habit of understanding and perception of idea creation and its uses as well as broadens the sharing skills via the web (Roger & David, 2016; Yoo & Huang, 2011).

Social media, which is the future effective communication tool for all, also brought a number of profits attributed together with the additional accessibility and collaboration

among the society. As a vital part of peoples' life, the use of internet technologies facilitates the social interaction among people (Kwahk & Park, 2016; Gamji, Kara, Nasidi, & Ibrahim, 2021). In addition, these magical media tools or networking sites, connect all online, (Ridzuan, et al., 2012). These Social Networking applications, as online location or environment, enables users to create a "user profile". The user profiles establish a personal network in which the user will connect with other members of the society; network society. In the networking communities, not only ordinary exchange of ideas and knowledge sharing or social interaction will take place but also scholarly works/articles, bookmarks collections and many more scholarly activities will be exposed (Ridzuan, et al., 2012; Dwyer, Hiltz, & Passerini, 2007; Kao, Lin, & Sun, 2008).

The social networking applications include Blogs, Academia Edu LinkedIn, Research Gate, Wikipedia, Second Life and Wikis among others. These networking sites have been accepted and put in use by various public, politicians and media organizations and institutions for educational, and searching purposes, (Ellahi, 2017). These applications can be seen as another virtual community that has been developing tremendously over the past few years, and are beginning to attract academic researchers (Dwyer, Hiltz, & Passerini, 2007). Members of these networking sites make series of connections with new and existing members of the same sites in which friending someone within the same site gives access to each other's-profile, the main rationale behind friendship within these sites is communication and maintaining the relationships, (Dwyer, Hiltz, & Passerini, 2007).

Knowledge sharing applications have so far changed ways of communicating ideas, information and even research work by supporting sharing culture among academics.

This brought about technological revolution in the research trend with transformative changes that include new modes of research and research awareness as well as introducing online materials. However, the idea to investigate the additional uses of these technologies apart from its normal usage of socialization, as it relates to academics' behaviour within ABU Zaria, is worth researching. This is because web applications are still an innovation despite that the developed nations are facing rapid transformation from web up to web 4 .0.

This is because most of the academics within the university under study were among the digital immigrants, who are introduced to those technologies in their adult life period for the first time, thereby lacking more knowledge on the additional uses of the Social Networking Applications. Among the additional potentials of these applications for the academics are; supporting academic inquiry, boasting media or information literacy and, building a collaborative mind as well as enhancing their publishing culture online.

1.2 Motivation for the Study

Research on the use of Social Media and Social Networking applications is one of the sheering and influential ranges of research among communication scholars, many of which show that these platforms support energetic users especially in an electronic learning system (Venkatesh., Morris, Davis, & Davis, 2003) Social media provide promising new face for study in the area of media influence to communicate new ideas (Ahmad, Ahmad, Ahmad, & Zakaria, 2019).

Therefore, there is a need to investigate the opinion on the uses of these technologies, however, the usage for communicating ideas in the Nigerian higher institutions seems

to be novel, and attempts to study the issue is low. On the basis of the teaming of academics and research centres in the Nigeria Universities it is important to study how lecturers use the social media and social networking applications to meet the requirements of the Digital age in their respective institutions.

Looking at the situation in the higher institutions of learning in Nigeria particularly the first-generation institutions where some academics should accomplish their effort through the said communication technologies. These universities were established in two phases and include; University of Ibadan, University of Nigeria Nsukka, Obafemi Awolowo University, Ahmadu Bello University, University of Lagos, and University of Benin, the rest are University of Maiduguri and the University of Calabar. The adoption and uses of this innovation are a problem worth studying with a view to finding out the reasons behind knowledge sharing through web applications; Social Media and Social Networking, among the academics

Investigating the visibility of academics through knowledge sharing platforms is very important, whereas academic knowledge sharing platforms are insignificant. The insignificance of those platforms might be attributed to low interest and usage of these applications among them. This is reflected in the fact that adoption of the web technologies creates a number of tensions and challenges within academic communities, especially in Africa, (Crook, et al., 2008).

In addition, it seems like some of the academics were not aware of such applications that can aid them to exchange their knowledge online with their colleagues. In fact, this paradigm shift has forced universities to adopt new technologies such as sharing applications to enable social visibility online, (Atik & Simon, 2014).

However, knowledge sharing in academic institutions was not well recognised as a research area especially in literature. Only a few studies had addressed the issue of lecturers' perception and attitude. Most of those studies were conducted in Asia, Australia and the western world, hardly in Africa (Maha, 2009).

1.3 Aim and Objectives of the Research

The issue of knowledge sharing among academics through Social Media and Social Networking applications, include communicating ideas with colleagues or students as technology-enhanced teaching. This research sought to investigate the usage of Social Media and Social Networking applications, as knowledge sharing technologies among faculty and with their students.

The aim would be achieved through finding out the level of awareness amongst academics about the platforms to communicate their knowledge, investigating the type of social platforms they are using and how they use them. Whether the platforms influence the visibility of academics' work and their institutions on the net Also factors influencing the use of the platforms among the academics, and what challenges faced by academics while using the platforms would also be investigated.

In addition, the impact of COVID 19 pandemic on the use of social media and social networking applications for knowledge sharing would be investigated.. Thus, the more the usage of technology among the people the more knowledge gap exists between users especially educational institutions as confirmed by knowledge gap theory.

1.4 Research Questions

This study was guided by the following research questions:

1. What is the level of the lecturer's awareness of the Social Media and Social Networking applications as knowledge sharing avenues between 2019 to 2021?
2. What sort of Social Media and Social Networking applications are lecturers likely to use in sharing their knowledge between 2019 to 2021?
3. How do lecturers of Ahmadu Bello University Zaria, use Social Media and Social Networking applications, as knowledge sharing technologies between 2019 to 2021?
4. How does the use influence the visibility of their work and the Institution on the net between 2019 to 2021?
5. What factors influence the use of Social Media and Social Networking applications, among these academics between 2019 to 2021?
6. What challenges do academics face while using Social Media and Social Networking applications, to share their knowledge between 2019 to 2021?
7. How did COVID 19 period; during and after the lockdown impact the use of Social Media and Social Networking applications, for academic activities in 2020 and 2021?

1.5 Hypothesis of the Study

This study hypothesized that:

1- The lecturers are not fully aware of the Social Media and Social Networking applications as knowledge sharing avenues.

2- The academics will be interested in using Social Media and Social Networking applications as knowledge sharing avenues if the technical support is provided.

3- The lock down conditions of Covid 19 pandemic pushed the academic world to transform the education system from face to face to online education.

4- The technical barriers on the use of technology will create a gap between the education systems of the rich and the developing countries.

1.6 Significance of the Study

Knowledge sharing among academics through Social Media and Social Networking applications, include sharing of ideas with colleagues or with students. The rapid developments in the communication technologies and the efficient use of such applications influences the global validity and value of each university. Therefore, it is important to find out the use of such platforms in Nigerian Universities. This research which aimed at investigating the usage of web applications; Social Media and Social Networking applications for knowledge sharing among lecturers will be accomplished by investigating the level of academics' awareness of the platforms, and the use of them. It is important to find out whether the platforms influence the visibility of academics' work online, or not since the visibility of academic works increases the global visibility and popularity of the universities they belong to. Defining the existing barriers that influence the usage of those platforms among academics is another important factor.

This research is very important, since it will measure the extent to which lecturers of Ahmadu Bello University Zaria engaged in using the social media and social networking applications to communicate their ideas. It will enhance the lecturers' knowledge, attitude, and practice towards the use of these applications as well as establishing the baseline for use in future especially for social media researchers, communication scholars, and management of Higher learning in Nigeria particularly Ahmadu Bello University Zaria, in terms of sharing research projects and activities. This study might be important because the rich universities who provide effective

technical support free of additional charge for use to their staff may dominate the education system globally through online learning system The research will also encourage the culture of digital data and knowledge storage, sharing, and made it easily accessible online to users, thereby making their research work visible and increase more impact.

1.7 Scope and Limitations of the Research

This research titled "Social Media and Social Networking applications for knowledge sharing among academics in Nigeria" focused on the uses of the Social Media as well as the Social Networking applications and how these technologies influence the academics' research attitude and boost their visibility on the net.

The scope of the study is Ahmadu Bello University Zaria as an institution, and the participants were drawn from the academic staff of the 13 faculties of the university. Period of this research started when the proposal for the PhD qualifying exams was designed in the year 2019, and later upgraded after the qualifying exams to a full PhD research proposal. The survey data collection instrument was distributed with the approval of the supervisor in September 2019 where five research assistants were deployed for the distribution and retrieval, the exercise ended in December 2019. After the second monitoring held on 22nd of January 2020, the need to include the period of COVID 19 lockdown arose and an in-depth interview was conducted for ten participants who were willing to participate among the academic staff. The interview was conducted within a one-month period; March 2021.

The study being a cross-sectional research design under action research framework is limited to only academic staff within the selected faculties of the University under

study. The university shares some characteristics with other first-generation Universities. Thus, therefore, helps the researcher to have adequate data from a single University, since action research focuses on single institutions hardly conducted with multiple institutions, (Corey, 1953). The research is limited to social media and social networking applications with a view to globalising the local, even though the transition of the web reached web 4.0, this is because web 2.0 applications stands as an innovation among people within the University under study and fixes their reaction to it.

Thirteen faculties of Ahmadu Bello University Zaria, Nigeria that consists of the population of the research reserves a limitation and may suggest for further research to include more universities in the country. The researcher chooses to limit the population of the study only with one university which is ABU Zaria due to the high risk of facing violence and unsecure conditions. Nigeria is facing an increasing threat of banditry that includes kidnapping, armed robbery, murder, rape and harassment by Boko Haram beside other ethnic and religious crisis which makes traveling around some parts of the country very risky.

Operational Definition of Key terms

a. **Social Media**: Social media, as related to this study, refers to any social medium used by the academics under study to socialise or share their ideas with others online such as Facebook, WhatsApp twitter and the rest.
b. **Social Networking Applications**: SNA as related to this study refers to networking applications including academic resource sites, that academics used to share and communicate their ideas with students or colleagues online

such as the academia Edu. Research gate, google scholar, Zoom, Teams, and Wikis.

c. **Academics**: this refers to teaching staff of the Ahmadu Bello University Zaria who participated in the study.

d. **Knowledge sharing**: As relates to this study refers to communicating ideas with others online by using web applications.

Chapter 2

LITERATURE REVIEW

2.1 Use of Web Applications as Knowledge Sharing Technologies by Academics

2.1.1 Introduction

This chapter tends to look at the related variables (Web platforms; social media and Social Networking applications, knowledge sharing), as well as some relevant research work conducted on the use of Social Media and Social Networking applications, within the educational environment either for teaching or learning especially as they are being used by academics. Also, theories and methods used by these researchers will be considered in the review.

An overview of the World Wide Web transition from Web 1.0 to 4.0 and the future

World Wide Web is a system where hypertext documents available via internet are interlinked. Users can access and view different documents, pictures, video and other multimedia content to be navigated via hyperlinks, (Choudhury, 2014). A British computer scientist Tim Berners-Lee initiated the world wide web in 1989.He wrote a proposal for what he thought may become the www. In 1990 he joined hands with Belgian computer scientist Robert Cailian and suggested using hypertext to connect and admit ideas of many kinds in the name of the web of nodes. That was the first web service designed and tested for users, worldwide. It has been considered as a relatively new channel of communication transformed from a static worldwide communication

platform with short cycles but supported by the strong speed of the growth of technology, (Almeida, 2017; Choudhury, 2014; Ebner, Lienhardt, Rohs, & Meyer, 2010).

Web 1.0

This is the first phase of the World Wide Web, which lasted only as the first generation of an information space from 1989-2005 in which materials of interest are referred to as resources that can be identified by identifiers called "Uniform Resources Identifiers" URIs. The inventor of the WWW, Tim Berners-Lee termed Web 1.0 as information connection and read-only space that provide very little interaction in which consumers only exchange the information together without any interaction with the website since it was very passive in nature, (Choudhury, 2014; Almeida, 2017). This phase was characterised with technological web level protocol; HTML, HTTP and URI as read only and establish online presence with static web page. It is also limited only to human understanding without machine compatibility content because it purely responsible for updating users and managing its content, (Almeida, 2017).

Web 2.0

The term web 2.0 has been used to describe online platforms where user inputs and his interactions can create the output of the site, in terms of contents and value, O'Reilly who defined the term web 2.0 as online platforms also popularized it from the trivial to long end reach of the term. One of the major uses of web 2.0 platforms is for collaborative policy-making, as well as modern government activities, in which the terms collaborative production and co-production were used to describe the level of web 2.0, it is also a medium that allows users including those in the learning environment like universities, to communicate and share or publish their knowledge

or idea, (Taylor-Smith & Peter, 2010; Rollett, Lux, Strohmaier, Dosinger, & Tochtermann, 2007; Liu, Lu, Wu, & Tsai, 2016).

Web 2.0 faces danger of becoming a slogan just like that of e-learning, in which every software developed and used in school will be referred to as e-learning software, so goes to web 2.0 in which every web site with a fancy interface will term as web 2.0, (Ullrich, et al., 2008). More so a lot of web 2.0 tools have been initiated in order to empower and promote pro-activeness among the users. Those users can interact, communicate, and even collaborate with one another as producers of user-generated content within their community virtually. University lecturers and academics, started using the technologies such as wikis and blogs. All Social Networking applications are being applied consistently in peoples' daily activities with a view of developing free creative learning experiences through knowledge sharing within academic environments, (O'Reilly, 2005; Liu, Lu, Wu, & Tsai, 2016; Yoo & Huang, 2011).

These technologies therefore encourage users to uphold their critical and analytical thinking of their world, facilitate intuitive and collaborative thought, thereby becoming so flexible for users to access much information and provide room for interaction with different opinions and share the same criticisms with others, (Yoo & Huang, 2011). The web platforms help academics and learners through its three features; conversational interaction with colleagues, social feedback on social issues, and enhancing sharing habits through communities of practices, (Yoo & Huang, 2011). And its impact can be traced into four broad forms; inquiry, literacies, collaborations and publications. On the issue of cognitive tendency this platform invites the users to develop sureness in the digital ways of inquiry and kinds of knowledge in which ability

is needed to steer and cross-examine the knowledge as well as becoming literate in digital formats, (Crook, et al., 2008).

Many researches have been conducted within the trend of web platforms in education with a view to creating new learning model such as using learning management system, as well as communicating ideas within the platforms (Huang, Yang, Huang, & Hsiao, 2010), as the case for the research where information sharing culture can be integrated through the use of web technologies among the academics. Through the aid of social media and social networking applications, people may find it possible to collaborate and interact effectively with one another within certain community of practices, without being together physically, thereby providing ways in which computer-oriented social group like web platforms served as collaborative centres for academics and the rest of the sectors, (Butler, 2012; Huang, Yang, Huang, & Hsiao, 2010; Seng, 1997).

Moreover, this sharing process occurs after which the researcher tend to communicate the idea to others, using different sort of communication or sharing ways, such as basic sharing, communication with notification, communication with feedback, as well as sharing with interface, (Tsui, Sherry, Lauries, & Shenna, 2006; Kao, Lin, & Sun, 2008) and that the process is serious to the symbol of idea formation and regulating such idea for effective performance within the institutions, (Rhodes, Hung, Lok, Lien, & Wu, 2008; Gamji, Kara, Nasidi, & Ibrahim, 2021). Thus, can be achieved without considering the objective of the research by addressing some practical parts as well as the system itself (Elizabeth, 2016).

Web 3.0

Web 3.0 is the third-generation web which was coined first by John Markoff of the New York Times who suggested that the phase should be termed as the "third generation web" and others call it executable web which extend from 2010-2019 (Almeida, 2017). The main idea of this revolution is to define structured data with a view to linking them together for effective discovery, integration and reuse across various applications (Choudhury, 2014). Web 3.0 has the ability to improve the way users manage data, and support them to access mobile internet, as well as stimulate peoples' creativity and innovation. It also encourages that factor globalisation phenomenon as well as helping users to collaborate in social web, like Facebook and Instagram (Choudhury, 2014).

In this generation of the web, however, the concept of webpage disappears since data is not owned but shared, where services show different opinions for the same data, these services can be applications, devices and others (Choudhury, 2014; Fabre, 2016). With the development in the web transition issues can be found around the next step of the global technology, the web 3.0 coined as the semantic web (Gamji, Kara, Nasidi, & Ibrahim, 2021).

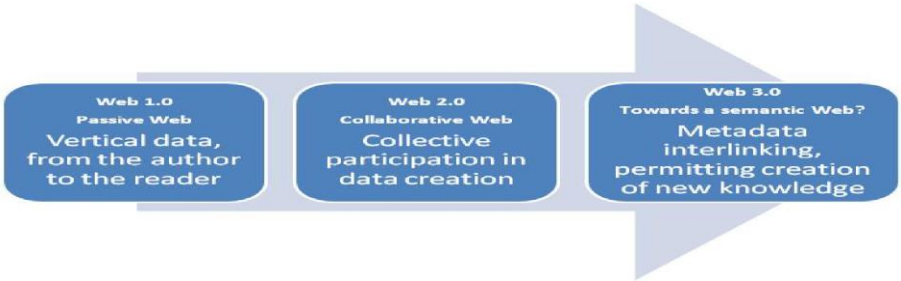

Figure 1: The Transition of the Web (Gunilla, 2007; Fabre, 2016)

The Semantic web encompasses linked data being developed by technology with a view to supporting the users within the network society to innovate ideas, and communicate with their members, (Fabre, 2016). This phase of the world wide web, support world database and web-oriented architecture which was described as web of papers, planned for the benefit of humans with main object of papers and connection between them, (Choudhury, 2014).

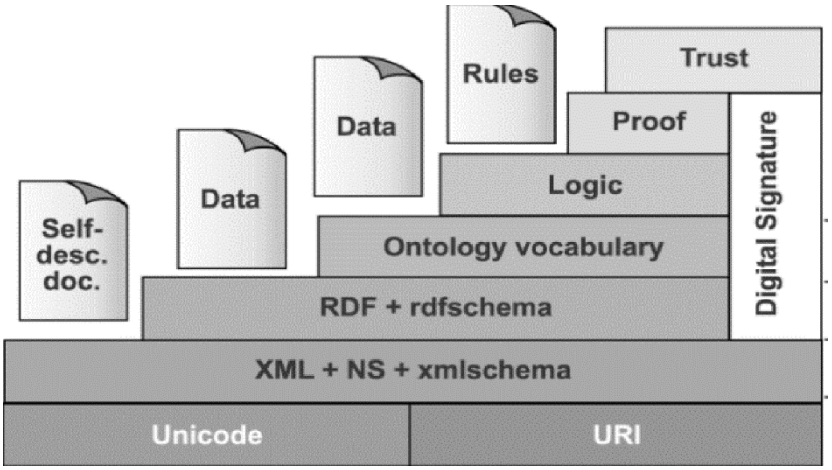

Figure 2: Semantic Web Layered Architecture (Greenberg, Sutton, & Campbell, 2003)

The transition of the semantic web was in step according the figure 2; Layer cake of web 3.0 or semantic web described how the layers work:

1. Unicode and URI layer, which is the first layer, the Unicode mainly used to represent any character uniquely written, while URI, Uniform Resources Identifiers are unique identifier foe all resources.
2. XML layer, this is the second of the layers which is a language that permits users to generate web-related documents with a user-defined terminology, it is normally good for document sharing globally.

3. RDF layer, the third layer, Resources Description Framework, is a basic data model that users use to write simple statements about web objects or resources, it also provides technology for exposing the meaning of concepts.
4. RDF Schema, this layer provides modelling primitives for organising web objects or resources into hierarchies, the schemas are classes, properties, subclasses, sub relationship, as well as the domain range and restriction.
5. The Ontology layer which explained the relationship between the properties and the difference of the properties, it can be considered as collection of terms used to explain a specific domain with the ability of interface.
6. Logic layer, which only enhanced the ontology of language and allow to write the application-specific directive knowledge.
7. The Proof layer, is a layer that consists of actual deduction process and representation of proofs in web languages and proof validation.
8. Trust layer, the last later of the semantic web, emerged through the use of digital signatures and other kinds of knowledge depending on recommendation by a trusted agents or certification and rating agencies (Choudhury, 2014).

Web 3.0 or semantic web, is not only limited to data publishing but also allows making links to connect related data. However, it faces challenges of vastness in which there is redundancy in data as yet has not been able to eliminate all semiotically duplicated terms, other challenges include; vagueness, inconsistency and deceit or misleading, (Almeida, 2017; Choudhury, 2014).

Web 4.0 and the future

Web 4.0 can be considered as fourth generation and the future of the World Wide Web which is termed as Ultra-Intelligent Electronic Agent, Symbiotic web, and Ubiquitous

web, (Choudhury, 2014). The main rationale behind the transition to this phase of the web is the interaction between humans and machines in symbiosis. The power of the human brain, progress in the telecommunication and adjustment in nanotechnology in the world, the interfaces were all controlled using the web 4.0. During this generation of the web, machines would be clever in reading the contents of the web as well as reacting on what to execute. This web will also be a read-write concurrency web and ensure transparency globally, governance, participation, distribution, and collaboration into key communities like politics and institutions (Almeida, 2017; Choudhury, 2014).

In the future therefore, Web of Symbiotic will be like a middleware which will start functioning like an operating system and will be parallel to the human brain with a massive web of highly intelligent interaction, (Choudhury, 2014; Farber, 2007).

Internet in Nigeria an overview

The Internet, as part of technology, can be described as a tool used in facilitating our social interaction of our values, beliefs and moralities, (Whitworth, 2009). The history of how and where the internet began is very difficult to trace, as it differs from other forms of history. Many historians attribute the starting point of the internet to the creation of the two computers connected to each other, of course, it might be the starting point but the point of contention is who will say exactly the date matters, (Banks, 2008).

Historically, the first computer network done was that of the Advanced Research Project Agency Network- ARPANET, the project which was designed by the pentagon with a view to servicing the nuclear strike, the project was later changed by the

Department of Defence-DoD, from the ARPANET to DAPANET, to limit it only for the defence and the researchers. Thus, the government after the general public demanded for the services then shared it for public use. This history has to do with period when the Soviet Union, launched its artificial satellite, the US decided to establish the ARPANET by 1957.However, the intent of the project was to creates network that could function whenever the links were taken out by the nuclear strike, (Barney, 2008; Randall, 1997).

What is today called internet was established based on Kleinrock research in the year 1964 when he addressed the routing, distributed control, message "packetization" and other element of internet, this PhD research was later published as a book titled “communication Nets” , but others were of the opinion that Larry Robert claim to be the primary mover and shaker of the Net initiative which was built for the purpose of communication, (Randall, 1997). To improve Kleinrock’s initiative a Psychologist Licklider J, introduced a concept then called “galactic network” to serve as a worldwide network of computers that people can use to interact with and share information, using human-computer symbiosis to ease and facilitate social interaction among people.

The history of the internet started developing when Kleinrock later sold his idea of computer communication to Robert, one of his office mates, with a view to developing it for future users. Barney (2008) quoted Kleinrock the ARPANET founder as saying “on the 2nd September 1969, data bites started moving back and forth between the two machines... that was the first breath of life the internet ever took”. On the Nigerian part, the internet or what is known as Web became available in 1996 thereby having full internet access across the country by the year 1998. By the year 2001 Nigeria had

over 150 ISPs licensed by the regulatory agency called Nigerian Communication Commission, (NCC) (Adomi, 2005).

The number of internet users in Nigeria according to the Nigerian Communication Commission increased by 19 million (22%) between 2020 and 2021. Whereby the internet penetration in Nigeria stands at 50% in January 2021, (NCC, 2021). On the use of the internet in the Nigerian university system, despite the added advantages and benefits of the internet tools in learning, teaching, research and knowledge sharing, many issues exist in terms of internet connectivity and usage in the Nigerian University system. A research conducted on Internet usage in Nigerian Universities, a study of Awolowo University Ile-Ife Nigeria, the findings of the research indicates that the usage of internet for academic activities would have improved through the provision of more access points within the universities, (Jagboro, 2003). Thus, means that internet usage in the Nigerian University system is low due to the small number of access points within the universities.

The study also recommends that there is a need for Nigerian universities' libraries to provide guaranteed access to the internet as a way of enhancing their materials collections. In addition, the need for the universities to subscribe more to educational web sites and international online libraries has been raised by the researcher, Jagboro K (2003). There are thousands of internet home page that serve as information sources for institutions of higher learning globally, but the must use internet tool in the Nigerian universities is the email which has helped in removing the barriers of geographical location and distance in terms of communication, as well as reducing the burdens of using old paper and post system (Jagboro, 2003).

2.2 Social Media and Social Networking Applications as an Academic Discussion Platforms

With technological advancement people live in a digital world within a digital media environment in which virtually everybody becomes media literate. Within this era; digital era, it is not only that people should be able to find relevant media content and make meaning out of these contents, but people also engage in the content production process by providing information. In fact, the majority of people today use social media platforms to communicate or to socialize with their relatives, friends and well-wishers. On the other side users of these technologies should be socially comfortable with collaborative modes of engagement and welcoming new opportunities for publication on the internet. The affordance and access of web 2.0 platforms seem to be harmonised with 21st century thinking on educational practice, especially of the tertiary level. Thereby promising both learners and teachers with new opportunities to make them independent in their study and research, (Crook, et al., 2008).

Social media therefore, comprises human activities and interactions with the digital communication technologies such as the software and hardware tools including the communication media to send pictures, documents and videos with a view to connect with other users online, (Ridzuan, et al., 2012; Kwahk & Park, 2016; Gamji, Kara, Nasidi, & Ibrahim, 2021). The web platforms simplify things for individuals and organisations to interact and communicate ideas and information with other users globally, thereby making academic work so easy using the technologies to increase their richness and visibility of both their work and the institutions they belong to, (Gaal, Szabol, Obermayer-Kovacs, & Csepregi, 2015).

Social media has a productive part to play within the society in which it gives members of the society chances to explore various issues related to their society more openly, and also contribute actively in educating, training, guiding and even entertaining people as well as bring more awareness about new issues like policies and programmes to the general public, (Ridzuan, et al., 2012). In addition, the use of internet platforms, permits people to socialise, share opinion and ideas of the same interest, (Al-Hawamdeh & Hart, 2002). These platforms therefore consist of social networking applications like Facebook, twitter, YouTube, WhatsApp, Badoo, Tik Tok and flicker among others.

A research conducted by Owusu-Ansah, et al. (2015), on the application of social media for research support in African universities, indicates that the use of social media in some universities is not encouraging, in which the academics or librarians use the social media for communication and interaction with colleagues (Owusu-Ansah, Gontshi, Mutibwa, & Ukwoma, 2015). According to the researchers, there were no social media strategies in all the academic institutions under study, based on which they recommended for the effective implementation of the social media strategy as well as appointing social media librarians to keep abreast with the current trends.

The research initially aimed at ascertaining the uses of social media in academic institutions, identifying that trials attributed to social media uses for research tenacities, as well as providing experiences of social media application in the institutions under study (Owusu-Ansah, Gontshi, Mutibwa, & Ukwoma, 2015). The researchers used literature analysis in combination with personal and professional

experiences on the use of social media from librarians in four African countries namely; Ghana. South Africa, Uganda and Nigeria.

A study conducted on trust and privacy within Social Networking applications, finds that the presence of hope and readiness to communicate ideas do not interpret into modern social interface. The research demonstrated that web relationships develop pages where supposed hope and confidentiality protections weakened, (Dwyer, Hiltz, & Passerini, 2007). The researchers used an online survey of two social media platforms; Facebook and Myspace using comparative analysis to correlate the two with a view to comparing the perceptions of trust and privacy concern among the users of the platforms (Dwyer, Hiltz, & Passerini, 2007).

In another research conducted by Subrahmanyam, et al., (2008) on the use of Social Networking applications by emerging adults among students of Urban University in Los Angeles, show that participants used the applications to communicate and relink with their colleagues and society members. According to the researchers, information obtained from the study is relevant to concerns about young peoples' online issues. (Subrahmanyam, Reich, Waechter, & Espinoza, 2008).

Social media has been contributing in the academia in which academics engage in socializing with each other, and it encourages academic works such as communicating ideas and information as well as managing the existing works, (Qiao & Shih, 2018; Gamji, et al., 2021). This research on the use of web platforms for academic activities in China, indicate that, even though social media support academics in sharing their work as well as helping them to obtain information and track research trends, it is not

a suitable channel for academics to get necessary information to boast research collaboration because of the issue of privacy and trust on the net, (Qiao & Shih, 2018).

Social media has positively transformed the academia by enhancing joint effort and collaborate to create more learning prospects (Kara, Cubukcu, & Elci, 2020), self-engagement for less coast research activities, (Feng, Tang, & Han, 2014). Social media encouraged official academic works such as online conferences and seminars, online paper submission and publications, as well as sharing of new ideas, hence it is quicker than traditional means because of the merging between the two in content distribution, (Qiao & Shih, 2018).

In an attempt to justify the role of technology in knowledge management within educational institutions like universities, Teo Timothy, et al. (2019), conducted research on factors that influence university students' use of Moodle as technology. The result of the research indicates that simplicity of usage has a substantial impact on students' use of technology, adding that other issues like attitude, also contributed, (Teo, Zhou, Fan, & Huang, 2019).

The research, which aimed at investigating the factors that influence students' intentions to adopt the use of Moodle for learning issues, has a total of 564 participants from nine departments of the university of Macau. The research was conducted based on diffusion of innovation theory and technology acceptance model, (Teo, Zhou, Fan, & Huang, 2019).

Moreover, the result also revealed that, usefulness factor was significantly related with ease of use, output quality of the input, trialability and the subjective norms, whereby

the factor of students' perception on the flexibility in use was inclined by the complexity of the technology, (Teo, Zhou, Fan, & Huang, 2019).

Meanwhile, a study conducted by Abida Ellahi (2017) provides a room for the increase in the impact of new communication technologies by bringing an understanding on how the different networking technology tools and learning process can be integrated within higher education like universities. The study which was conducted on the web platforms as an official learning system in business education, aimed at investigating the level at which Social Networking applications affect learning efficiency and at what level these applications can serve as additional pedagogy for developing nations, (Ellahi, 2017).

According to the researcher, the study used a case study method with Edmodo social networking site, to investigate the effect of Social Networking Applications' uses on learning outcome among the university students in Pakistan with total number of 150 students' participants purposively selected for the study, using a strong hypothesis that; using Social Networking Applications in higher education enhance students' interest.

Therefore, the result of the study which was analyzed using statistical software SPSS confirmed that Social Networking Applications occupied a place in teaching and learning within higher institutions like universities, (Ellahi, 2017). The result of this study has been confirmed by a study conducted by Chu and Du (2013) who found that Social Networking Applications has been used by schools' libraries, for academic work like referencing, research and even making publicity, (Chu & Du, 2013).

In their effort to explore the impact of web 2.0 applications for the development of learning especially on adult learners, Gyeng mi Heo and Romee Lee (2013) conducted a study on Blogs and Social Networking Applications as activity systems within a learning environment. The study explores adult users' activities and informal learning process as shown in their private blogs and Social Networking Applications, (Heo & Lee, 2013).

The data of the study which was obtained for the individual users of a blog called Naver and a Social Networking Applications called Cyworld, were analyzed at individual level and proceeded to social level, found that cohesions and variances between blog and social networking applications activities were deliberated and diverse kind of the separation of duty between the activities were also mentioned (Heo & Lee, 2013).

However, the researchers, suggested based on the findings, that there are three dimensions to be taken in terms of using web 2.0 platforms as learning activity environment, these dimensions are; a) it should be as an acquisition process, b) as a reflection process and c) as a practice-based community process, (Heo & Lee, 2013). To ascertain the role of web 2.0 applications in sharing activities, Gloria, Sunny, and Chuen (2008) conducted research on BeyondShare, an online learning sharing platform. The result of the study indicates that students perceived BeyondShare as a very easy-to-use learning platform, which encouraged them towards having comprehensive knowledge integration through sharing with their colleagues, (Kao, Lin, & Sun, 2008). The study, which has 34 participants, also used questionnaires as an additional instrument of data collection, and most of the participants (75.1%) agreed

that they were motivated by the Networking site in generating better personal construction products (idea), (Kao, Lin, & Sun, 2008).

Of course, use of web applications in learning environments attracts researchers from all angles of education and technologists; to justify this, a study was conducted on the impact of peer review on web 2.0 learning activities. The study which was aimed at leveraging web 2.0 learning activities and classroom teaching indicates that those who experienced the peer review using a set of storytelling rubrics produced very excellent stories compared to those who do not have such experience, (Liu, Lu, Wu, & Tsai, 2016).

The researchers gathered and analyzed stories developed by the 53 students in web 2.0 storytelling activity, and the result didn't produce any negative impact of the activity on the student's creative self-efficacy activities. In addition, the study indicates that the experiment group's creative self-efficacy reflects consistency on their academic performance, while those in the control group didn't. At the end therefore, the study supports that the peer review process using web 2.0 activities encourage students to build their creative self-efficacy that develop their sharing behaviour, (Liu, Lu, Wu, & Tsai, 2016).

The above-mentioned research draws its participants from Taiwanese elementary school students with two classes having 53 students who were randomly selected. To confirm the result of this study, Aragon et al (2009) found that students use web 2.0 creative platforms to create and share their work, or knowledge, This of course, justified the notion that web 2.0 technologies enhances academics and learners to produce, reproduce, share and re-share their ideas, knowledge within their

communities of practice, (Aragon, Poon, Monroy-Hernandez, & Aragon , 2009; Liu, Liu, Chen, Lin, & Chen, 2011).

In their effort to investigate the impact of technology integration in higher education, Yoo and Huang (2011) conducted a study and found that there were significant differences in the level of uses and anxiety of utilizing the technology among the participants in many of the web applications. The study was conducted with a view to comparing web technology acceptance level between American and Korean college students, looking at cultural differences as variables, (Yoo & Huang, 2011). Data collected was analyzed based on five categories of technology acceptance as enshrined in the Unified Theory of Acceptance and Use of Technology (UTAUT), the categories are; performance expectancy, effort expectancy, attitude towards using web 2.0 application, social influence and anxiety, (Yoo & Huang, 2011).

Of course, web applications have been considered as the best and wider applications used within educational environments like universities. In an effort to justify this, Huang, Jeng and Huang (2009) conducted research on the use of blogs as mobile learning technology. The study aimed at finding easy ways of publishing academic or learning thoughts via blogs, in which the researchers designed a mobile blogging system which enables mobile bloggers to publish their comments in an official way anytime anywhere, (Huang, Jeng, & Huang, 2009).

According to Huang, Jeng, & Huang, with the help of mobile blogging, it will be easy to have collaborative learning within learners and teachers, adding that the result of the study reveals that the mobile learning blogs are effective since they have collaborative features that support sharing of ideas (2009). The research which

investigates the application of mobile blogging systems to facilitate the learning activities in a collaborative environment, looks at the use of the technology by learners from the collaborative perspective of learning activities. Participants of the study were drawn from National Kung University Taiwan with 40 students majoring in engineering sciences, (Huang, Jeng, & Huang, 2009).

In their study to investigate the use of blogs and wikis as constructive and collaborative tools for teachers, Avci and Askar, (2012) found that students were positive to blogs and wiki uses in the teaching-learning process. This study tends to look at the usefulness, flexibility, intent, self-efficacy and nervousness while using the technology, with Ninety-two participating students who were enrolled in teacher education programmes, and the data was collected using two stages; the validity and reliability stage and that of research group survey. According to Avci and Askar (2012) these participants were asked to use blogs and wikis in the teaching-learning process, after which questionnaires were administered for them, (Avci & Askar, 2012).

These web applications; blogs and wikis were among the Social Networking applications that inspire technology users to contribute in many societies of practice in idea creation and communication, (Avci & Askar, 2012). The researchers based their study on the Unified Theory of Acceptance and Use of Technology, (UTAUT) (Venkatesh., Morris, Davis, & Davis, 2003), since the theory tend to point out the behavioural intention citing factors such as gender, age, experience and voluntariness of use among the major variables of performance expectancy, effort expectancy, social influence and the facilitating conditions, which affect user acceptance and uses of technologies, (Avci & Askar, 2012, p. 195; Venkatesh, Morris, Davis, & Davis, 2003).

In a research to investigate the effectiveness of technology integration, particularly the web technologies, Zdravkova, Ivanovic and Putink, (2012), revealed that web 2.0 technologies are the alternative approach for traditional e-learning with collaborative features. The study, according to the researchers, was on self-effort towards embedding the concept of web 2.0 in their computer related courses jointly conducted by two universities, (Zdravkova, Ivanovic, & Putnik, 2012).

According to the researcher web 2.0 has been used within the two universities, and for web classes which are predominantly for those who cannot afford being in the school physically they use interactive classes online.

Facebook being part of the social media as web 2.0 platform has been seen as an effective contributor in transforming learning. In a research aimed at reviewing Facebook as an educational environment, Aydin (2012) finds that there was relatively low research conducted on Facebook as an educational environment, thereby recommending that there is need for researchers and educators to put into practice the use of Facebook as an educational environment, (Aydin, 2012). The research which compares the use of Facebook in Cyprus with its global uses scale, was conducted using six categories; Facebook users, reasons for using Facebook, harmful effect of Facebook, Facebook as an educational environment, Facebook effect on culture, language, and education, then the relationship between Facebook and subject variables, (Kara, Cubukcu, & Elci, 2020).

Research on the organisational role in managing knowledge sharing among academics in high Institutions, Al-Kurdi Osama, El-Haddadeh Ramzi and Eldabi Tillal (2020) reveal that organisational climate has a very strong influence on academics'

knowledge sharing practice. The research which was conducted using 257 surveyed academics from higher Institutions indicate that there is need to consider organisational elements and their interactions in order to foster knowledge sharing practice among academics, (Al-Kurdi, El-Haddadeh, & Eldabi, 2020).

In their effort to investigate the role of social media in knowledge sharing, Gaal, Szabol, Obermayer-Kovacs and Csepregi (2015) find that organisations or management don't allow the use of external social media but in a situation where the employees have access to the social media, a number of them used the external social media. The research which was conducted using online survey for 299 respondents from some Hungarian organisations aimed at investigating whether organisations allow external or internal social media for knowledge sharing among employees during work or for professional development, (Gaal, Szabol, Obermayer-Kovacs, & Csepregi, 2015). The research recommends that organisations should motivate the use of social media for knowledge sharing.

In an attempt to examining a better understanding of professionals' perceptions of web applications for knowledge sharing, David I, Poissant L, and Rochette A (2012) found that, the observed no time of health professionals has influenced the perceived behavioural intention to use it, even though there is positive perception of the usefulness of the web 2.0 platform. This research was conducted using in-depth interviews with clinicians and managers in Quebec, Canada, aged 28-66 as participants, (David, Poissant, & Rochette, 2012).

According to the research most of the participants indicated that knowledge sharing is the most useful outcome of the web platforms. Some of them also identified the need

for a user-friendly platform for the profession. The finding also reveals that accessibility to computers and internet, features of the web platform, user support, technology skills were all part of factors that influenced perceived ease of use and usefulness. Female respondents among them believed that web applications may be a useful mechanism for knowledge sharing, (David, Poissant, & Rochette, 2012).

The idea sharing issues has an active situation in which informative procedure disclosed, approved, change and hardens because it engages the users working as a team in the name of network society in which meaningful information is welcomed as shared idea or information, (Gunilla, 2007). The issue with research on knowledge sharing is that people don't separate information and knowledge when they talk about interaction and information seeking and uses.

In fact, with technological advancement idea sharing will transform the education system thereby supporting in solving the issue of knowledge gap or digital divide in the developing nations like Nigeria. Developing countries like Nigeria, experience socio-economic and environmental challenges which resulted in slowing the sustainability of using technology for learning and other social activities, (Mowla, Ahmad, Habibi, & Phung, 2017). The issue of insufficiency of properties ranging from software and hardware of computers for online education systems, internet connection and scarcity of learning devices were part of the digital divide and knowledge gap challenges in the education system.

Besides the basic skills on the use of emails, some online facilities and collaborative applications were neglected by academics in some African states, where knowledge gaps on the importance of communicating new ideas online exist. This has to do with

lack of formal online mobilization, appreciation, backing and lack of training for lecturers on the benefit of sharing new ideas, (Pena-Lopez, 2010).

2.3 Factors Influencing the Use of Social Media or Social Networking Applications as Academic Discussion Platforms

Knowledge sharing is an intellectual labour and process where individuals mutually share their thoughts with a view to having new knowledge for the benefit of others. This sharing process can be achieved by the support and influence of certain factors that includes: individual, organisational or management, technological, cultural or social factors, (Hoff, Elving, Meeuwsen, & Dumoulin, 2003; Wangpipatwong, 2009; Riege, 2005; Yu, Lu, & Liu, 2010).

Individual factor

Of course, individual members of learning institutions like universities do contribute their ideas by sharing as in intellectual capital of the academic community, in which the capital can be perceived as either a public or collective material, since the production process involves a number of the community members. Indeed, individual behaviour has a significant role in influencing knowledge sharing and supporting one to create value for the organisation, (Hoff, Elving, Meeuwsen, & Dumoulin, 2003; Killingsworht, Xue, & Liu, 2016).

Obviously, for an individual to engage in knowledge sharing as a member of the academic environment particularly within a virtual community, it is needed for that member to have the ability to communicate both verbal and written. And indeed it is important for one with the communication skills as individual to share the knowledge acquired with other colleagues in order to promote useful knowledge, and these kind

of individuals are highly motivated to share the knowledge, since their ability and willingness to share will positively influence sharing behaviour of the knowledge among academics, (Hoff, Elving, Meeuwsen, & Dumoulin, 2003; Wangpipatwong, 2009; Cho, Li, & Su, 2007).

There is need for a member of any online community or community of practice to have trust, or exhibit trustworthiness while communicating knowledge within their community, since trust of knowledge or information is very important factor that affect knowledge sharing. Many online members use to obtain information from a web platform intend to share such information with others, thereby believing in trust of the source of the idea, (Chai, Das, & Rao, 2011, p. 314). In addition, "reciprocity"; the degree at which an individual believes to "improve mutual relationship" with members of his online community or community of practice by knowledge sharing is another element that support individual factor in influencing knowledge sharing, (Chai, Das, & Rao, 2011, p. 315).

Researched on the influencing factors of knowledge sharing in virtual communities, Yujuan, and Guangqiu (2014) reveal that affiliation confidence has positively impacted the sharing of ideas in virtual communities, self-efficacy relates to the sharing of idea positively and result expectation has positive connection on the sharing of ideas virtually, (Yunjuan & Guangqiu, 2014). The research which was conducted using structural equation model promote incentive mechanism for knowledge sharing in virtual communities.

In their effort to investigate factors influencing knowledge sharing among global virtual teams, Killingsworth, Xue and Liu (2016) found that trust, which is an element

of individual factor, and enjoyment are significantly related to positive attitude towards knowledge sharing, whereby, positive attitude, enjoyment, age, nationality and computer experience are positively related to knowledge sharing behaviour. According to the research gender is not related to knowledge sharing behaviour among global virtual team, (Killingsworth, Xue, & Liu, Factors Influencing Knowledge Sharing Among Global Virtual Teams, 2016). The research was conducted involving 115 students who were assigned into global virtual team from three universities in the USA, China and Peru.

Socialization and communication purpose are some of the motivational elements from the individual factor since these sharing tools of the web 2.0 are already in use by the academics, (Sadaf, Newby, & Ertmer, 2012).

Organisational or management factor

Every institution or organisation has its own unique features that make it distinct from others, especially in the area of organisational management, in which strategy, culture structure and technology have a crucial role in the effective performance of such organisation, (Rhodes, Hung, Lok, Lien, & Wu, 2008). Issues within organisational factor such as culture, control, training and education, activities and processes, leadership and human resources management policies as well as networks within the organisation, have their role in influencing knowledge sharing and they are considered to be very crucial, (Rhodes, Hung, Lok, Lien, & Wu, 2008; Turner & Makhija, 2006).

However, for an effective ability to share or transfer knowledge, there is need for that organisation to enhance structured information and communication technology network which will enable the individuals to credit or share their knowledge (Al-

Kurdi, El-Haddadeh, & Eldabi, 2020), there is also need for a structure with less bureaucracy, as well as having trust in which sharing among individuals will be transparent, (Rhodes, Hung, Lok, Lien, & Wu, 2008). In addition, the organisation should also have a learning strategy which will enable transfer of knowledge to be supported by knowledge management framework, and indeed the key organisational factors that influence knowledge sharing are: information technology system, learning strategy, trust culture, and organisational structure and design, (Bukowitz & Williams, 1999; Rhodes, Hung, Lok, Lien, & Wu, 2008).

A research on the factors influencing knowledge sharing behaviour via web 2.0 applications, reveals that, fairness from the managers of the online community or organisation, has influenced the use of weblogs in communicating knowledge, (Yu, Lu, & Liu, 2010). The researchers found that some online community members are willing to share with others because of their perceived knowledge that there is fairness among the managers of the community. The research was aimed to determine the specific factors that influence knowledge sharing behaviour within weblogs, using online and interview surveys and gathered the data from members of three professional virtual communities, (Yu, Lu, & Liu, 2010).

Certainly, organisations of the digital age consider technology as infrastructure that has very important role and significant component towards the success of such organisation, in which many have to focus on when it comes to the issue of knowledge management system, (Chai, Das, & Rao, 2011). Knowledge sharing is being influence by organisational culture, that is to say how a person within an organisation works and how the value, belief and practice of that member affect the organisation. When personal advantage is giving priority than collective effort, the chances to have a very

effective organisational culture will be defeated thereby affecting the habit of knowledge sharing within the organisation like the university, (Vuori & Okkonen, 2012).

Researched on factors influencing knowledge sharing among academics in higher institutions, Akosile Adedolapo and Wole Olatokun (2019) find that university policy as organisational factor has significantly influenced knowledge sharing than individual factor. According to the study which was conducted using survey research method with questionnaire as data collection instrument with the sample of 151 respondents from Bowen University in Nigeria, there is none of technological factors that influence knowledge sharing among the academics of the university.

The researchers recommend that there should be an organisational policy on knowledge sharing to be accompanied by reward for motivation towards academic use of technology in knowledge sharing, (Adedolapo & Wole, 2019).

Technological factor

Despite the fact that there are many factors influencing the use of web 2.0 applications for either academic discussion or knowledge sharing, still the presence of technology-mediated environment like universities is another important aspect to consider, (Yu, Lu, & Liu, 2010). In fact, technological advancement shaped how developers improve the service of the web applications, where users can have access and ability to use it as knowledge transfer applications.

Moreover, it has been observed that technology provides the basis and mechanical elements for individuals or users to communicate share and interact with their online

community members or community of practice as in the academic environment, (Yu, Lu, & Liu, 2010; Ma & Agarwal, 2007).

Technological factor has an effective influence on the use of web applications for academic discussion as well as knowledge sharing, since a study conducted by Sadaf, Newby and Ertmer (2015) reveals that due to facilitative factor some of the participants remained impotent to use web applications because of digital divide issue on technological facilities, (Sadaf, Newby, & Ertmer, 2015).

The research which was aimed precisely on the new employed teachers' intention to access the technology with a view to enable collective, meeting and communication abilities, used double phase mixed method consecutive descriptive design. Some of the applications examine according to the researchers include; wikis, blogs, Social Networking applications video editing and sharing applications, (Sadaf, Newby, & Ertmer, 2015).

It has also been found that teachers use web platforms to improve their interactivity, collaborative learning as well as improve their knowledge sharing habit. Thus, therefore, was found by a research conducted aiming at exploring factors that influence teacher's intention to use web applications through survey of 286 respondents and 7 interviewees and grounded on theory of planned behaviour framework, (Sadaf, Newby, & Ertmer, 2012).

Cultural or social factor

Obviously, individual learners or academics should consider the connection between cultural differences and uses and acceptance of a certain technology to facilitate

knowledge sharing with one another. In fact, cultural differences sometimes influence the way technology users accept and use it for learning especially sharing behaviour.

Thus, many educational institutions like universities tend to use web technologies in their daily activities like library, information services and management; however, utilizing the technologies became inevitable and important topic for researchers. Despite the fact that technology is very useful and important tool for learners it is paramount for instructors and even designers to consider that cultural differences has a role in the uses and acceptance of these technologies, (Yoo & Huang, 2011).

In a study conducted by Chen, Yen and Hwang (2012) on factors influencing the use of web 2.0, reveals that, user satisfaction with the web 2.0 applications has significantly affect the intention to use it as electronic word-of-mouth, (Chen, Yen, & Hwang, 2012). The study which was aimed at investigating four social factors; subjective norm, image, critical mass, and electronic word-of-mouth, how they influence the intention of using web 2.0 application, also finds that subjective norm, image and critical mass, have also significant impact onto user's satisfaction in which there is influence on the uses.

According to the researchers all social factors have significant impact on continuance intention, (Chen, Yen, & Hwang, 2012). The research was conducted using online survey since most of the web tools users are internet surfers, with the total of 433 distributed surveys, retrieving 409 as valid ones. The result of the study was analysed using descriptive analysis, (Chen, Yen, & Hwang, 2012).

Indeed, the term word-of-mouth as one of the social factors that influence the use of web 2.0, refers to as “online customers seeking information on a product or companies and share that knowledge, experiences and opinion, both in a positive and negative manner”, (Chen, Yen, & Hwang, 2012, p. 934).

Thus, help customers factor that make their own decision on companies and that also support the corporates to re-examine their policies as they received from the customers perspective with a view to reviewing their marketing strategy. Moreover, satisfaction and continuance intention are another cultural or social factors that influence the use of web 2.0 technologies, either for academic or non-academic issues. This factor has to do with purchase decision and confirmation of satisfaction, in which the user may believe if the product met their satisfaction, and depends on confirmation, (Chen, Yen, & Hwang, 2012).

The social or cultural factor of individuals’ image also influence how that person uses certain product like web applications. Thus, therefore, affect users, perception that the use of certain application changes or boost person’s image, that person or group of people will constantly be using that application, (Chen, Yen, & Hwang, 2012).

2.4 The Impact of COVID 19 Pandemic

The spread of the Covit19 pandemic at the beginning of 2020 had a big influence on the wide use of social platforms around the Globe. Almost two years of lock down forced all countries to provide almost all forms of their services online. Education system became one of the most critical areas since it has been turned into an online system rapidly. The World Health Organization in its bid to fight the COVID 19 pandemic directed that social distancing should be observed (WHO, 2020). Thereby

resulting in the closure of all schools in some countries including Nigeria. Remote working environments were introduced inevitably. This promoted investigating how academics in Nigeria managed to continue producing and sharing knowledge among their colleagues and the students during the COVID-19 period.

Distancing, therefore, from each other while socialising as a result of the Coronavirus does not translate to the dissolution of the social relations but radically being reorganised. Thus, humans were pushed to avoid face-to-face social relations with a substitute of the mediated social relations, with the help of technology such as smartphones, social media, video conferencing software like zoom, Teams, skype, Blackboard collaboratives etc (Fuchs, 2020a; Fuchs, 2020c).

Social distance therefore, is not that humans avoid communicating with each other but a kind of communication and sociality at a distance space. With the spread of the Coronavirus the world experienced another new normal, a radical reorganisation of social life with a social distancing as a measure to prevent the wide and rapid spread of the virus. Fuchs, (2020a) mentioned the key social systems that were affected by the radical socialisation of distancing as, “the home, the workplace and the educational organisations” apart from the other public spheres where human meet and commute from one place to another during the leisure time such as the Café centres, buses, trains and gyms etc, (Fuchs, 2020a).

Research on the impact of COVID 19 on higher education across the world indicates that most of the respondents have infrastructures in place to communicate between the staff and students, with some emerging challenges generated by the lockdown in ensuring clear and effective sharing of ideas with staff and students. According to this

study, Asia and Pacific have 99%, the Americas 97% and Europe 97% have infrastructure in place to communicate ideas, but Africa the percentage is low at 66%, and one third of the African Higher education institutions have no communication or sharing facilities in place (Marinoni, vant Land, & Jensen, 2020).

Unfortunately, for African, 87% of those Institutions that responded they don't have communication facilities in place for knowledge sharing, previously responded that their campuses are closed, (Marinoni, vant Land, & Jensen, 2020) as the case of Nigerian Universities. The main challenge here is the issue of how to plan and manage clear sharing streams to provide guidance in emergency learning situations in which some institutions' staff and students explore more potential of the social media to maintain contact and share ideas with others.

Some of the institutions that faced closure progressively re-opened and continue operating under online learning models, with a view to keeping on with their academic activities. While simultaneously looking at the possible ways of reducing the impact of the healthcare crisis in the education system. Therefore, as a result of the pandemic some rich or developed nations transitioned to technology-based distance learning. In fact, there is no strong rationale to support the effectiveness of full closure of schools in controlling the spread of the pandemic, but there is economic downfall as a result of the response in which many academic institutions opted for the less drastic measures of transition to online learning, (Talib, Bettayeb, & Omer, 2021).

Since the pandemic is relatively in stages, there is lack of enough research in literature that discusses the direct effect of the digital transformation in higher education caused by the pandemic, its problems and future implications. This pandemic may stay and

set changes in education system for the next millennia, it is therefore imperative for researchers to study the direct impact of the COVID !9 pandemic on education system with a very good understanding of the role it played in transforming the way people think about education in their respective countries, as the case of this research having a specific research question on the impact of the pandemic on sharing of ideas among the academics during the pandemic from the early 2020 to early 2021.

In a study on the impact of technology in higher education during the age of COVID 19 pandemic Talib et, al, (2021) examine ways at which the pre- to post COVID 19 pandemic has impacted on the academic activities including the students' performance, as well as the expected outcome it may cause in the education system. The study found that some institutions that migrated to onlin or technology-based learning employed the use of video conferencing, E-portal, webinars, video recordings, radio programmes, simulations and online quiz. (Talib, Bettayeb, & Omer, 2021).

Talib et al (2021) also found that, there is gap in students' access to the online learning which was attributed to their parents' income. This confirmed the existence of knowledge and skills gap in usage and accessibility. The gap or disparity extends to the educational institutions in the developing nations who have less equipped system. In support of the research questions of this study, on the impact of COVID 19 pandemic on the use of social media and social networking applications, as well as the challenges academic face while using these applications, a study by Zalat et al (2021) on the experiences, challenges and acceptance of e-learning during the COVID 19 Pandemic among academics, found that majority of the academics of the Zagazig university Egypt, agreed that the technological skills of delivering online content

increase the educational value of the experience of the academics, (Zalat, Hamid, & Bolbol, 2021).

The study finds that, the highest barrier to e-learning includes; insufficient internet connectivity, inadequate computer laboratories, lack of computers laptop for the academics as well as technical problems. In addition, the study finds that younger age under 40 years, teaching experience less than 10 years and male gender are the most important indicators affecting e-learning acceptance among the academics, that is to say young staff are already using technology in general than the old staff (Zalat, Hamid, & Bolbol, 2021).

2.5 Theoretical Framework

This study is theoretically a diffusion-based research which is rooted into communication aspect of web applications (Social Media and Social Networking applications) in which scholars recognised that, research in communication usually investigates a specific kind of communication process, (Rogers, 2003) like knowledge sharing through Social Media and Social Networking applications, among academics in Nigeria. After reviewing several related theories, the research is based on two theories; the Diffusion of Innovation DoI, and Unified Theory of Acceptance and Use of technology UTAUT.

2.5.1 Diffusion of Innovation Theory

Adaptations of information and the use of facilitating technology for this purpose is one of the core concerns of universities. In this regard, Diffusion of Innovation theory is found relevant to this study since the research focused on organisation and knowledge management issues like sharing culture, the theory therefore looks at the individual and institutional diffusion of innovation such as the use of social media for

knowledge sharing among the academics (Pemberton, 1936). The concept of Diffusion of Innovation was initially identified by a French sociologist Gabriel Tarde in the early 19th century, but as theory it was founded by Rogers Everett in 1962 as enshrined in his book entitled "Diffusion of Innovation". This theory has been in used into different fields of research ranging from medical sociology, communication, marketing, development studies, health promotion, organisational studies, knowledge management and complexity studies, based on the researchers area of specification (Kinnunen, 1996; Spier, 1929; Greenhalgh, et al., 2005; Rogers, 2003) Before the advent of the internet social network through the wide spread of computer network had a crucial role in the diffusion of innovation, (Andrews, 1984). This theory is one of the popular models of adoption as described by Rogers Everett (2003), it is therefore, relevant theory to be used for a research that investigates the adoption of technology in higher education and educational environments like university. (Sahin, 2006). Social media and social networking applications are some of the technological innovations that people adopt as part of their daily activities, but the issue is some users adopt it based on their personal use and others might be influenced by their friends and work places. However, the divide still exists between the users, that is to say those with access to the technology have the possibility of having higher usage and benefit of the technology compared to those without access. Thus, digital divide and the knowledge gap among the users still play a huge role in the use of technology among Nigerian academics.

Diffusion according to Rogers Everett (2003) is a decision by an individual to fully use an innovation as the available course of action. This process relies solely on human capital in which an innovation is communicated to another place through certain

channels among the community or society in a social system in which it is a process of convergence where individuals exchange information with a view to moving towards each other or be apart (Rogers, 2003). Peres, Muller and Mahgan, described diffusion as the process of sales penetration of a new products or services that is driven by social influence, (Peres, 2010), while Eveland, looks at it from the phenomenological view that technology is information and exist only to the degree that people can put it into practice and use it to achieve values (Eveland, 1986).

Diffusion can also be seen by others as another type of social change which is a process in which alteration occurs in the structure and function of social system, therefore, when new ideas are invented, diffused and adopted or rejected which leads to certain consequences, social change occurs, (Rogers, 2003). Of course, adoption of innovations like social media and social networking applications among the academics changes their socialization especially idea sharing. However, some technology users found it difficult to use it because the innovation is not appropriate for them either economically or otherwise. Therefore, those with appropriate technology will have a speedy social change than those with inappropriate technology, for example people with disabilities.

The consequences of adoption or diffusion may either be positive; desirable, direct or anticipated or negative; undesirable, indirect or unanticipated, as the outcome especially when an individual chooses to adopt a particular innovation such as social media for knowledge sharing (Rogers, 2003). This is one of the rationales for using this theory as a framework for this study, since some of the richest universities will have more positive results for adopting the innovation than the poor ones, and among the academics the rich will take the advantage of the usage. However, the rate of

adoption usually identifies the level at which individual members of the social system spent to adopt an innovation which can be determined by the individual's adopters' category in which first adopters require a short period of time to adopt an innovation compared to late adopters (Andrews, 1984).

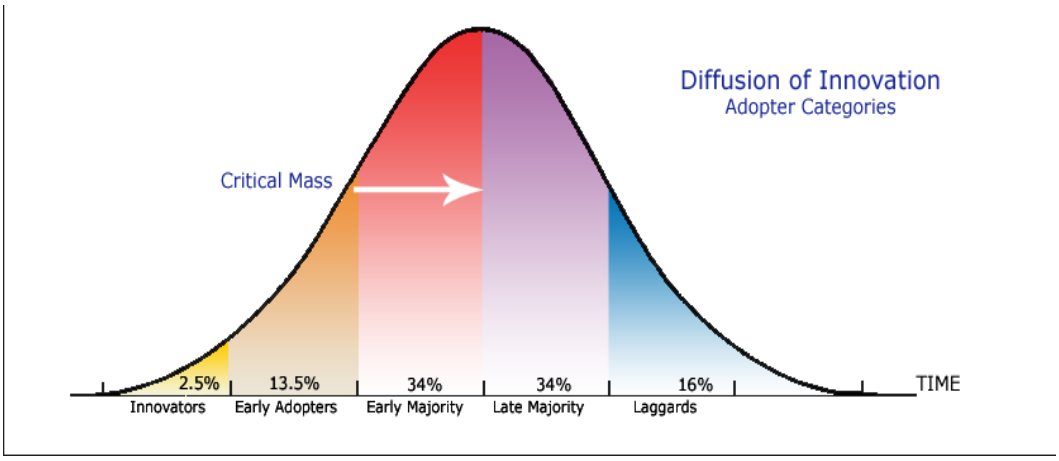

Figure 3: Adoption Categorization (Rogers, 2003)

- *Innovators*: Venturesome with interest in new ideas
- *Early adopter*: Respect with degree of opinion leadership
- *Early Majority*: Deliberately interact with their peers
- *Late majority*: Sceptical with pressure from peers
- *Laggards*: Traditional possessing no opinion leadership.

This is part of the rationale for using this theory, since Nigerian academics or technology users can be seen in any of the above listed degrees of adoption. Among the academics you find members saying they will use social media but waiting for someone to test so that he will avoid being frauded, especially anything that has to do with online shopping. However, there are others who are ready to be the first adopters, such as the young academics.

This process of adoption has five steps according to Rogers Everett (2003) which may result in for an individual to reject innovation at any given time during or after the adoption process, the steps are: knowledge, persuasion, decision, implementation and confirmation.

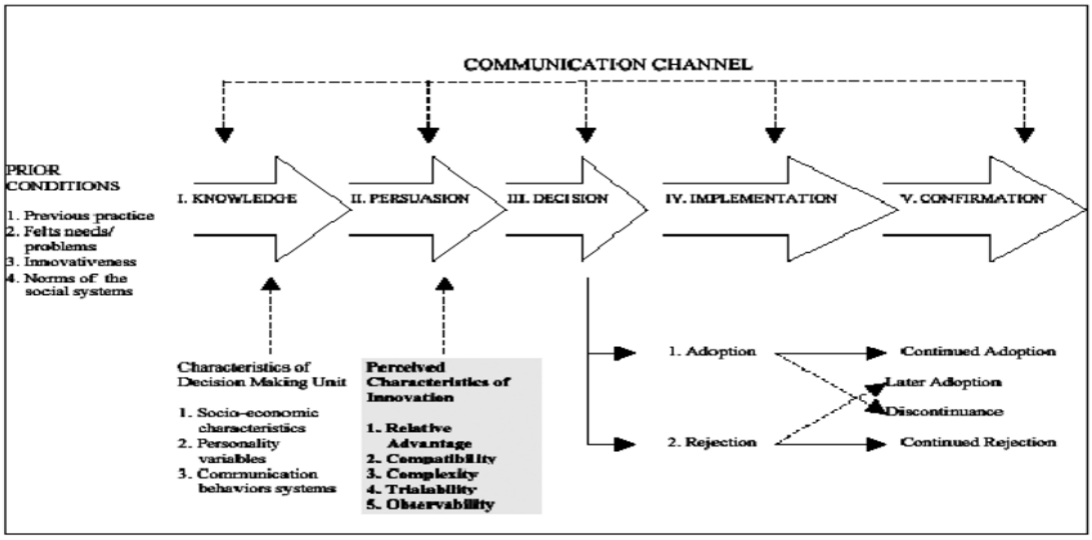

Figure 4: Five Steps in the Decision Innovation Process (Rogers 1995), (Rogers, 2003)

The diffusion of innovation theory has four main elements; innovation, communication channel, time and social system (Sahin, 2006). Thus, described diffusion as a procedure in which an innovation is communicated through confident channels over time among associates of a social system, and these elements should be identified in every diffusion research study or campaign, (Rogers, 2003, p. 47).

Innovation

This is a practice, idea or project that is being understood by an individual or unit of adopters as new, it may be invented for long period but may still be new to those who view it as new as the case of this study in which some academics may perceived the web 2.0 applications as new to them which make it a research worthy. Individuals or units of adopters however, should be aware of the advantages and disadvantages of

adopting the innovation in order to avoid consequences. The perceived newness of the idea or object for an individual determined his or her reaction to it, as the case of this research on the use of web technologies, web1.0-4.0, and this newness of an innovation may be explained in terms of knowledge, persuasion or a decision to adopt, (Rogers, 2003). Most of the users of technology face the issue of knowledge gap of innovations therefore, those with the knowledge might have the higher frate of usage among the society.

The same innovation however, may be a desirable one for an adopter in a situation but undesirable for another adopter with a different situation. This is why some scholars view innovation as technology (hardware, software or information) which is a strategy for active achievement that diminishes the doubt in an affiliation involving obtaining a desired goal, (Rogers, 2003). Determining boundaries therefore, around technological innovation like world wide web, is another important issue in the area of conceptualization and methodology for diffusion research in which question on how to find out the end of an innovation and where another one starts, as the case of Web 1.0-4.0 however, this question of boundaries should only be answered by adaptors of the innovation who perceived the new idea, (Rogers, 2003) as the case of the participants of this study who will answer it through an in-depth interview.

Different individual perception of the characteristics of innovation helps to sketch the rate of the individual adoption of the innovation, these characteristics are:

1. Relative Advantage: This is the degree at which a new idea is being understood as the best then the one it supersedes, this degree can be using economic terms, however, social status factors, convenience and satisfaction also are very important factors used to measure the degree of relative advantage.

2. Compatibility: It is a degree to which new idea is understood as consistent one using the present value, past experience and also the need of new adopters
3. Complexity: This is the degree to which an innovation is perceived as difficult to comprehend and make use of, because some innovations are much more complicated than the others within the social system thereby making the adoption process very slow.
4. Trialability: It is a degree to which a new idea or object will be put under trial in a limited basis time, since new ideas on trial partly are very easy to adopt within time then those that can be used at once.
5. Observability: This is a situation in which the result of usage of innovation are visible to others, since making it easy for others to see the result of an innovation is likely for others to adopt it, (Rogers, 2003).

Communication Channel

According to Rogers, communication is a process in which an individual or unit of adopters or members of a community of practice or network society, form to share information with one another with a view to reaching a mutual understanding of certain issues, just like knowledge sharing among academics (Rogers, 2003). Diffusion, therefore, is a communication that includes innovation, two individuals or units of adopters like academics and communication channels which includes mass media, social media and interpersonal communication. This kind of relationship or information exchange between the pair of members of a certain community of practice determines the situation of which a source of an information will or will not disseminate the innovation to the receiver, and the effect of such sharing. The channels of communicating innovation include mass media, interpersonal communication

channels, interactive media such as the internet which has more impact for diffusion of new ideas in the digital age.

Based on those channels therefore, community members depend on a subjective assessment of an innovation that is brought by an individual of their class who have already adopted it, in which the diffusion is based on modelling and imitation by prospective adopters of their co-workers who have adopted it earlier, (Rogers, 2003).

The diffusion of innovation however, requires a degree to which two or more individuals who interact are of different in certain attributes, or similar; homophily or heterophily. Homophily is a degree at which two or more community members who interact are similar in certain attributes such as education, belief or socioeconomic status. This degree is more effective to be rewarding participants of the diffusion process of new idea as the case in sharing research work among academics, because when they share common feelings and meaning and are alike in personal and cultural characteristics, the transfer of new idea is likely to have greater effect in view of knowledge gain, attitude formation and change. While heterophily is a state of having two or more individuals who share new ideas or knowledge are of different attributes such as level of their education as the case in the academia between the senior and junior academics, or belief. (Rogers, 2003). In an ideal situation member of a community of practice or social system would be homophilous on all the variables; education, belief, and socioeconomic among others, even if they are heterophilous regarding the new idea.

Time

The aspect of timing is being neglected in most of the research especially the behavioural study, and the issue of time dimension is involved in diffusion in the area of the innovation decision process whereby an individual passes from his understanding of a new idea through its adoption or rejection. The dimension also involved the innovativeness of a member of a community of practice compared with others within the system, and rate of adopting the innovation is another issue to consider in time dimension, this can be measured by number of members of the system adopting the new idea or knowledge in a given time (Sahin, 2006; Rogers, 2003).

Social System

This is the last element in the diffusion process, and it is a set of interrelated units who engaged in a joint effort to solve a certain problem with a view to achieving a common goal, because the diffusion process takes place with the social system in which it requires the influence of social structure of the social system which reflect individual's innovativeness. (Sahin, 2006). This reflect the education system particularly the academics where people join hands as team to work for a certain problem with a view to finding the solution to that problem, thereby inventing new ways or idea as innovation, for example the adoption of technology into education system during the COVID 19 lockdown by some developing countries even though there are barriers between the rich and the poor nations in terms of technology accessibility.

2.5.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

This theory has some features of information technology acceptance research theories, used to study the technology acceptance of an individual user. The core, dependant variable of this theory is behavioural intention *(BI)* which refers to the degree to which

an individual wish to use a technology or device for personal activities, other variables are; perceived ease of use *(EU)* and perceived usefulness *(U)* (Shohar, Ubaid, & Ali, 2019). Of course, the relevance of this theory to the uses of web 2.0 applications for knowledge sharing can be traced on issues of acceptance and uses, since the theory predominantly address acceptance and use of technology, this theory also represents a modification from a split view of technology acceptance to a unified view that joined the major theories and technology acceptance models into a single theory (Dijk, 2012; Abushanab, Pearson, & Setterstrom, 2010). For years now UTAUT, which is among the more matured areas of exploration, has been widely used in technology adoption and diffusion research as a theoretical lens by researchers doing empirical studies of users' intention and behaviour (Williams, Rana, & Dwivedi, 2014).

Through the aid of the eight different models and theories, Venkatesh, et al. (2003) came out with a unified model called the Unified Theory of Acceptance and Use of Technology (UTAUT) model which has been studied and analysed in various scopes and disciplines including education, banking, health, tourism, and e-government services. Thus, the theory is an authenticated and combined prototype of technology acceptance which was established and confirmed within the new communication technology field, hence its combined edifice makes it beneficial for those learning the acceptance of technology and its uses, as the case of this study, (Venkatesh., Morris, Davis, & Davis, 2003; Shohar, Ubaid, & Ali, 2019).

The theory consists of four main elements that directly influence a user's intent to use the emerging technologies: (a) performance expectancy, (b) effort expectancy, (c) social influence, and (d) facilitating conditions (Eria, 2019). The first element; performance expectancy defines the degree to which an individual accepts that

technology influences the improvement in job performance whereby the effort expectancy defines the degree of ease with which one uses a system as technology, how much efforts put in using it including learning the skills. Social influence, therefore, consider the individual believed that the community has the belief that he/she has the ability to use the system; that is the emerging technologies (Eria, 2019; Eria & McMaster, 2017).

The uses and acceptance of technology innovations has been a trending issue with concern for research and practice. The major difference between the UTAUT and other technology-based theories is that UTAUT proposed four moderators; gender, age, experience and voluntariness with a view to enhancing predictive power of the model. This model since inception has been in use by researchers to extensively explain or discuss the adoption of technology by individuals, (Dwevedi, Rana, Jeyaraj, Clement, & Williams, 2019).

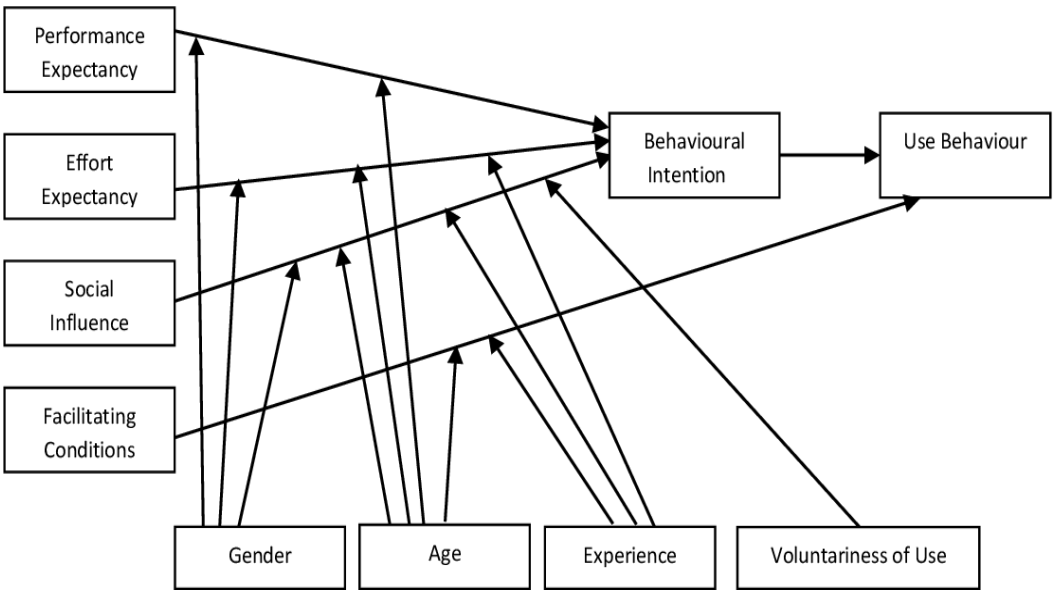

Figure 5: The Unified Theory of Acceptance and Use of Technology; UTAUT, (Venkatesh, Morris, Davis, & Davis, 2003)

Figure 5 indicates that, the four constructs; performance expectancy, effort expectancy, social influence and facilitating conditions are the direct determinants of behavioural intention and ultimately behaviour, whereas these constructs are moderated by gender, age, experience and voluntariness of use, (Venkatesh, Morris, Davis, & Davis, 2003). It has been argued that by considering the presence of each of these constructs in a real world, researchers will be able to assess an individual's intention to use a specific system, thereby allowing to identify the key influences on acceptance in any giving context like this research on the academics' use of web applications to share their knowledge, (Williams, Rana, & Dwivedi, 2014).

Performing a systematic review of articles that have used the UTAUT as a theory in their research, Williams, et al. (2014) found that cross sectional approach, survey methods and structural equation modelling analysis techniques were the most explored research methodologies, whereas SPSS was found to be the largely used analysis tool. According to the research variables such as performance expectancy, and behavioural intention qualified for the best predictor categories. They reviewed 174 existing articles on the UTAUT model by collecting data including demographic details, methodological details and significance of relationship between the construct from the available articles based on UTAUT, (Williams, Rana, & Dwivedi, 2014).

The research which was conducted within time frame from 2004 June to 2011, using a comprehensive electronic search of Information system, Web of knowledge and google scholar, also scattered across 134 Journals and conferences. The research also reveals that a number of new constructs have been incorporated into the original theory with the UTAUT being blended with other theoretical models, (Williams, Rana, & Dwivedi, 2014).

Re-examining the theoretical model of UTAUT, Dwivedi Y K, Rana N P, Jeyaraj A, Clement M and Williams M D (2019) indicate that attitude became the bedrock to behavioural intentions, and practise behaviour partly facilitated the consequence of concept on behavioural intention and influence directly on the practice behaviours. The research formalised a substitute hypothetical classic for elucidating the adoption and use of communication system and the new communication technology. The research was empirical in nature, using an amalgamation of document-analysis and physical equation modelling techniques, (Dwevedi, Rana, Jeyaraj, Clement, & Williams, 2019).

The moderators specified in the original UTAUT model may not be applicable in all contexts, there is need to consider the missing path from facilitating conditions to behavioural intention and individual characteristics such as attitude which is not included, (Dwevedi, Rana, Jeyaraj, Clement, & Williams, 2019). UTAUT theory is found relevant to this research, since there is the need to consider the influential factors of using the web 2.0 applications for knowledge sharing, such as the performance, effort, social and organisational as enshrined in the theory's elements as determinants of users' behavioural intention.

2.5.3 Model Update

Despite the fact that, one of the theories guiding this study, the UTAUT identified some determinants or elements of individual behavioural intention to acceptance and use of technology, which include performance expectancy, effort expectancy, social influence and facilitating condition. With the moderators; age, gender experience and voluntariness. Thus, this study tries to update this Venkatesh model by looking at the

possibility of adding political economy of the use of technology into the determinants or element and the appropriateness of the technology into the moderators.

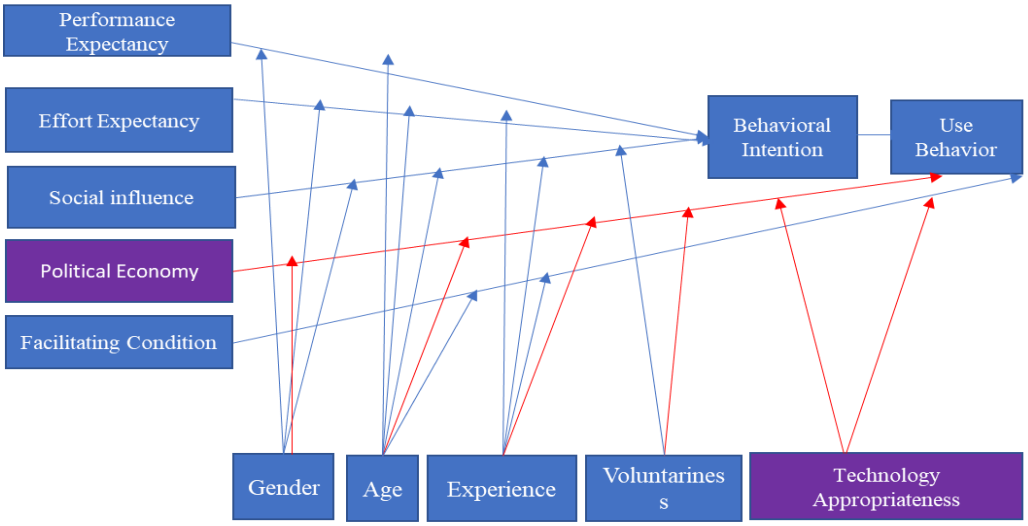

Figure 6: The Modified Model of the Unified Theory of Acceptance and Use of Technology; UTAUT as Recommended by the Study

The above figure indicates that the original determinants of the individual Intention to accept and use of technology according to Venkatesh, are; performance expectancy, effort expectancy, social influence and facilitating condition. However, this study recommends Political economy as additional determinant or elements, since some technology users tend to accept and use the technology for financial or material benefit. On the other hand, these determinants or elements were controlled by moderators according to the theory, and the original moderators are gender, age, experience and voluntariness. This study, therefore, recommends technology appropriateness to be part of the moderators, since users of technology find it difficult to use what is not appropriate for them, for instance some of the technology devices were not appropriate for hot weather and others not for old age and the rest.

Chapter 3

METHODOLOGY

3.1 Introduction

This chapter is based on the following: the population, research design and method, data gathering instruments, and sampling of the study, procedures for data analysis, and validity and reliability adopted for this research.

3.1.1 Population and Sampling of the Study

This study used non-probability sampling which is an umbrella term to discuss all types of sampling that are not conducted in accordance with the tenant of probability sampling. The term has covered a variety of sampling techniques or strategies, among them is the convenience sampling.

Convenience sampling technique which is one of the non-probability sampling strategies, is a technique that involves the choice of the nearest individuals or those accessible to serve as respondents of the study as a continuous process until the desired sample size has been obtained (Cohen, Manion, & Marrison, 2011).

The convenience sampling technique was adopted for this study, since the study is social science based and that “social science research is frequently based on convenience sampling” (Bryman, 2012, p. 202), in which convenience sampling is common and indeed more prominent than probability sampling (Bryman, 2012) in studying organisations.

Adopting this type of sampling technique will provide chances of collecting or retrieving almost all the copies of the administered questionnaire in order to have a good response rate. However, this sampling strategy has its limitations as it is impossible to generalise the findings of the study, but the data generated through this sampling may only help researchers for further research or provide a link to be used in existing findings within the area (Bryman, 2012, pp. 201-202).

The population and area of this study are 13 faculties which consists 95 departments, sections and units of the Ahmadu Bello University (ABU) located in Zaria, Kaduna State Nigeria, which was established on October 4, 1962, as the University of Northern Nigeria named after the Sardauna of Sokoto, Alhaji Sir Ahmadu Bello, the first premier of Northern Nigeria (ABU, 2019).

The study, therefore, conveniently sampled this population through multi-stage sampling procedure, in which only faculties were selected without schools and colleges under the university, and within the 13 faculties sampled the researcher selects 1,278 participants as sample size of the study. This size; 1,278, was generated using an online sampling calculator, with a total number of 2,900 faculty members of the university as population (ABU, 2019).

To fix the sample magnitude the researcher used the border error at 95% certain, with the assurance intermission of 2.05 on the populace of 2900, and arrived at 1,278 as 50% of the populace. The sample size here can represent the population under study which can be generalised for the academic staff of the university under study.

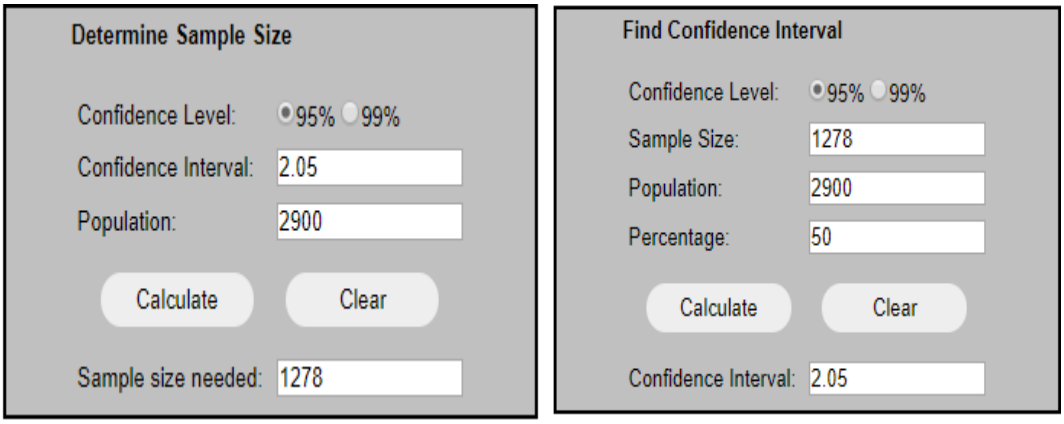

Figure 7: How the Sample Size and Confidence Interval were Calculated, Source: (CRS, 2020)

3.2 Research Design and Method

3.2.1 Research Design

Researchers within social sciences have many research designs while conducting their studies. This study is a cross-sectional within the action research framework. Cross-sectional design is for data gathering at multidisciplinary intersectional levels in a particular research area across either faculties or departments or sections or units of the same organisation, whereas, action research is widely used in educational institutions especially for teachers as a process by which practitioners like academics attempt to study their problem (Lesha, 2014; Bryman, 2012).

Lesha (2014) and Bryman (2012) explanation showed that cross-sectional within action research framework can be any of the methods either single or mixed from a variety of research approaches such as opinion polls, in-depth interviews, focus group discussion, and questionnaire inquiry as well as to some extend even a case study and the like. Researchers using cross sectional within action research framework are usually professionals involved in conducting research to discover issues or problems

in their profession or approaches in the professions and the ways of improving things for themselves (Lesha, 2014; Corey, 1953).

This means that researchers conducting action research within social sciences usually choose the most suitable research approach/approaches from many research designs and sub or subunits of the designs, depending on their research types, while conducting their studies. In this research, the researcher tends to use the cross-sectional research approach, which is one of the research designs under the action research framework.

The cross-sectional approach here refers to a design for data sampling at multidisciplinary intersectional levels in a particular research area across either faculties, departments or sections and units of the same organisation or a combination of organisations. The Cross-sectional approach traditionally consists of collecting data on more than one case within a single place or point in time with a view to having a combination of quantitative and qualitative data, that has to do with many variables that can be examined in research that requires detecting relationships (Bryman, 2012). The cross-sectional approach is accessible also to either exclusively quantitative research or exclusively qualitative research.

Among the reasons for choosing cross-sectional design is that the researchers find it suitable for studying population samples and representations. It can also be used to find out what people know about certain issues, and how they think about a specific phenomenon or what is their attitude towards using certain technology or programmes. This research's use of mixed method within action research framework justifies also using the cross-sectional approach. This justification is in the sense that using a cross-sectional approach for data collection in a research like this permits data collection

across multiple disciplines whether such are economical, sociological or cultural in nature while retaining the validity of the survey research information obtained from the respondents, (Berger, 2000). This advantage is most potent in research that uses surveys within an action research framework.

Justification for Action Research Framework

Action research approach as a framework of this study is a process that investigates a problem, finding-fact and taking action about the result of the finding. It was originated by Kurt Lewin and widely used in educational institutions especially for teachers as a process by which practitioners like academics attempt to study their problem scientifically with a view to guiding, correcting and evaluating their decision and actions, (Lesha, 2014; Corey, 1953).

Action research approach integrates practice, theory and provides meaningful application of the research findings, thereby encouraging changes in schools by empowering academics through collaboration with one another and reflection. However, this type of research typically focuses on a particular issue that is examined in a single institution as the case of this study, and the result of the findings tend to be localised to the institution under study, (Corey, 1953). Action research design which mostly takes place in a single institution, rarely conducted involving multiple institutions because of the organisational complexity, also facilitates collecting quantitative and qualitative data to analyse and interpret in order to solve certain problems.

With the advent of new communication skills, therefore, learning and teaching have been transformed rapidly thereby attracting researchers in media and technology to

investigate the key issues in the use of these new communication technologies in higher institutions to communicate their ideas. In order to meet the challenges of the 21st century academics, institutions of higher learning like universities were encouraged to restructure their system by providing faculty members with opportunities like internet facilities for collaborative inquiry, sharing of ideas with colleagues and students.

Thus, it formed the basis of employing cross-sectional design within an action research approach to investigate the use of web technologies by academics of Ahmadu Bello University Zaria, to share their knowledge.

3.2.2 Research Method

Cross-sectional design within the action research framework was conducted using mixed-methods; statistical data collection and conducted interviews, which contained structured questionnaires and in-depth interviews as instruments of data collection.

3.3 Data Gathering Instruments

This study used two instruments which are questionnaire and face-to-face in-depth interview. Five research assistants were employed for the distribution and collection of the survey instrument. The instrument based on the approval of the research supervisor has been distributed and retrieved by the research assistants (Appendix 1) under the supervision of the researcher. For the interview ten (10) people were conveniently selected from the participating faculties including representatives from the ICT centre of the University with a view to justifying the institution's readiness in terms of staff support in using technology to enhance their academic behaviour.

Questionnaire

This instrument of data collection was used to collect surveyed data from the participants of the study. Questionnaires are ideal for statistical descriptive research, and when data need to be collected from many people (Randolph, 2008). This method of data collection here is referred to as the survey method.

The researcher decided to use a self-designed survey covering mutually open and close-ended questions as a tool for data collection, because it offers organised**,** geometric data, and support to regulate or classify collecting and dispensation of the data (Randolph, 2008). The main benefit of this instrument for this research is that the participants of the study select their answer out of many.

Copies of the survey can be completed in by the participants in the company of the research assistant or in his absence, and the survey can be completed privately, (Hansen, Cottle, Negrine, & Newbold, 1998) However, individual method was used rather instead of internet-based system because of insufficient internet connectivity and power supply in the area under study. The questionnaire was accompanied by a cover letter explaining the rationale behind conducting the research as well as pointing out in the questionnaire how it is in the interest of the respondent to answer the questions. (Berger, 2000).

A total of 1,278 copies of the questionnaire were issued to the participants from 13 faculties of the University for the study out of which 1047 representing 81.9% were successfully gathered and the rest 18.1% as mortality.

In-depth interview

This research tends to use face-face in-depth interviews on voice recording devices as one of the data collections instruments for the study, because of its role and flexibility in qualitative research and qualitative data collection of this magnitude. This method of data collection, which refers to as semi-structured or unstructured, impacts expert knowledge about the issue at hand especially research on professional socialization such as the use of web technologies by academics to communicate with their colleagues or students online with a view to sharing their ideas (Bryman, 2012). Compared to other research approaches in social sciences, interviews are very related to the interpretation of the social reality like the sharing culture through web application by academics, (Flick, Kardorff, & Steinke, 2004).

Being the most widely used method of data collection, interviews become more attractive to researchers and flexible to manage, in which it gives insight into what the interviewee sees as very relevant and important. It also provides room for follow up questions as well as changing the pattern and wording of the question in the course of the interview. (Bryman, 2012).

The researcher purposively selects ten people as interviewees, from the faculties under study who used web applications among the academics and one person was from the ICT Centre of the University with a view to having the organisation's view on the provision or not of the internets and other related facilities for the academics. The rationale behind using in-depth interviews is to obtain a rich and detailed information from the respondents of the study since questions not included in the guide (Appendix 1.2) may be asked as follow up questions as a result of the interviewee's additional or complimentary information.

3.4 Validity and Reliability of Data Collection Instruments

Validity has to do with the question of whether the indicators used to study the concepts of the study have definitely measured those concepts, this can be done through other faces of validity; face validity, concurrent validity, predictive validity and construct validity (Bryman, 2012, p. 171). In this study the validity of the data collection instrument was measured through the coding process, with a view to having synergy within the limitations of the study.

Validity is one of the important key elements in research for effective result, it is also a requirement for both qualitative and quantitative research, (Cohen, Manion, & Marrison, 2011). Validity has been described as a demonstration of particular research instruments when it measures what is supposed to measure, and others stated that it can be found through honesty and truthful in response and approach of the participants, depth, richness of questions and scope of data achieved, and objective of the researcher himself, in a qualitative research, but in quantitative method validity may be addressed through careful sampling, appropriate instrumentation and statistical treatment of data, (Cohen, Manion, & Marrison, 2011, p. 179).

The reliability therefore, has to do with the consistencies of measures of concepts, and for these measures to become reliable there should be stability reliability in which the question of measure stability over time will be considered so that the researcher will have more confidence that the result of the study for sample respondents will not fluctuate that it remains stabled. This therefore means that if a researcher administered a survey to a group of respondents and re-administer it again there will be small variation over time in the result (Bryman, 2012).

Reliability, according to Cohen, Manion and Morrison (2011) is the dependability, consistency, replicability, and completeness over time of the research, over instruments used, and over the groups of respondents of the survey. It is also considered with precision and accuracy of the data (Cohen, Manion, & Marrison, 2011).

3.5 Data Analysis Procedure

In this study, statistical data analysis approach is used for quantitative data, which is very important in supporting researchers to understand more about a phenomenon and make precise estimates from a populace to a sample, or from a model to a populace (Randolph, 2008, p. 83). Therefore, statistical data of this study was outlined and analysed via Chi-Square test using descriptive and correlation statistics with the support of the Statistical Package for social sciences (SPSS). Chi-square test is applied to contingency tables to allow the establishment of how confident the researcher can be, when there is a relationship between the two variables (Bryman, 2012).

A descriptive method of data analysis is used to describe the population under study by obtaining data about the demographic factors of the respondents such as their age, gender, marital status, occupation, race, ethnicity and other information like respondents' opinion, belief, value and behaviour, (Berger, 2000, p. 188), while correlation is used to measure the relationship between two variables, in which a correlation of +1 indicates that there is perfect positive linear relationship between the variables and if it is -1 means there is a perfect negative linear relationship between the variables, (Stuart & Nicola, 1986).

The qualitative data of the study gathered through the face-to-face recorded in-depth interview therefore, was transcribed and analyzed using qualitative data analysis software NVivo, via thematic analysis approach which was also used to test the hypothesis of the research.

Chapter 4

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the analysis of the data, quantitative and qualitative on investigating how academics use Social Media and Social Networking applications, for knowledge sharing. 1278 participants from the 13 faculties of ABU Zaria were selected, within which statistics were positively generated from 1047 representing 81.9% and the rest 18.1% as mortality. The most used statistical software SPSS was used to collate and analyse the results. The analysis is presented in sections. The bio data variables and the general variables are presented in either frequencies and percentage distributions or in charts.

The research questions were answered with a particular section that answers each research question and at the end the research hypotheses were tested based on the findings. Thereafter the relationships between each pair of selected variables were presented in Chi square and cross tabulation statistics. The presence or absence of significant relationship is based on calculated probability (p) value lower than the 0.05 alpha level of significance and the computed Chi square value greater than the critical (table Appendix) chi square value at the respective computed df values.

The qualitative data was presented as coded according to the nodes or themes via NVivo a qualitative data analysis software. Thereafter the summary of answers to the seven research questions were presented**.**

4.1.2 Demographic Information

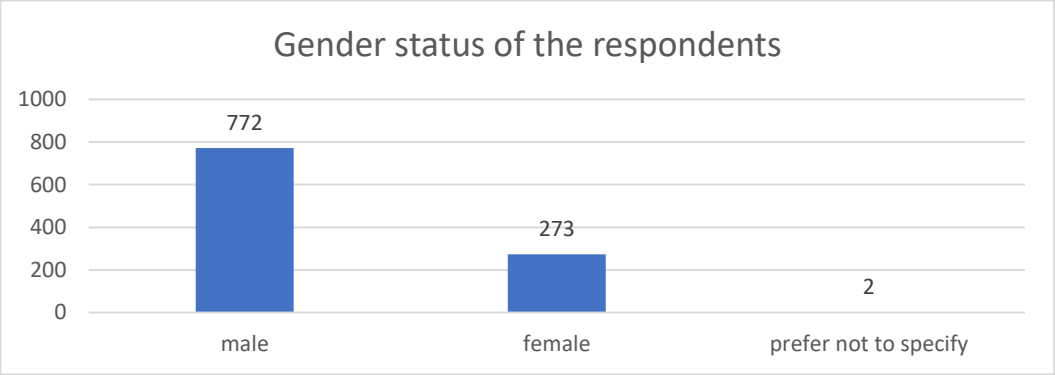

Figure 8: Gender Status of the Respondents

By implication the majority of the respondents are males with a sizable number of females as well.

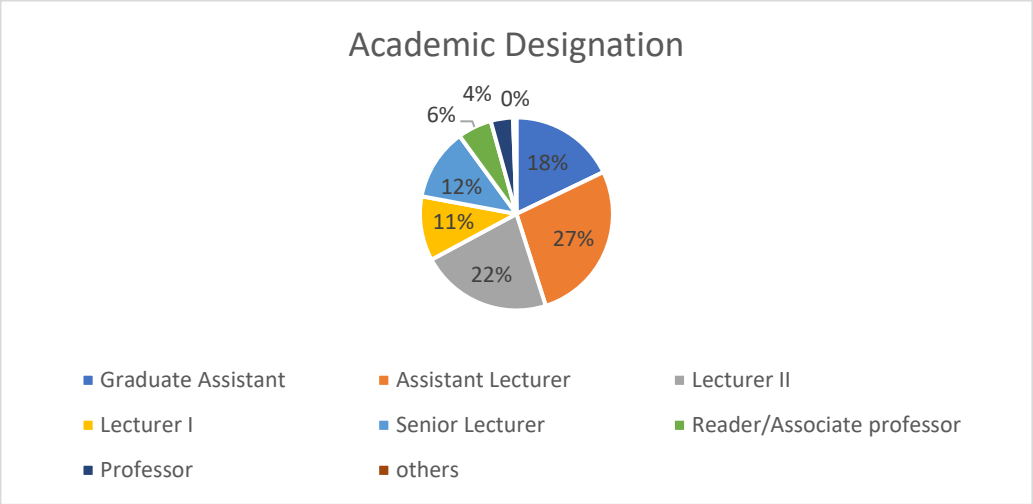

Figure 9: Academic Designation of the Respondents

The respondents' academic designation according to the above statistics 187 representing 17.9% are graduate assistants, while 285 representing 27.2% are Assistant Lecturers as against 231 representing 22.1% are Lecturer II, and 113 or 10.8% are Lecturer I as against 126 representing 12.0% that are senior lecturers while 60 or 5.7% are Reader/Associate professors while 39 or 3.7% are Professors and the rest 6 representing 0.6% are in other designations.

A total of 13 faculties were used for this study. Faculty of medicine had 162 (15.2%), followed by Engineering with 118 or 11.3% then veterinary Medicine with 106 or 10.1% while Arts had 102 or 9.7% respondents. Education faculty had 86 or 8.2% as Agriculture had 77 or 7.4% as against life science had 64 or 6.1% as against Pharmaceutical sciences that had 58 or 5.5% followed by Administration with 53 or 5.1% then Social science with 40 or 3.8% and Faculty of law with 35 or 3.3% respondents. This shows that the Faculty of Medicine were the most represented while Law is the least represented in this study.

4.1.3 Presentation of Information on the Uses of Social Media and Social Networking Applications

Table 1: Awareness of the web applications

	Frequency	Percent
Yes	1013	96.8
No'	34	3.2
Total	**1047**	**100.0**

This shows that an overwhelming number of lecturers in ABU are aware of Web platforms (Social media and academic resources applications). Thus, therefore reject

the research hypothesis that lecturers not aware of the social media and social networking applications as knowledge sharing avenues.

Also, a total of 936 representing 89.4% of the participants according to the statistical data use Social media and academic resources applications, while the rest 111 or 10.6% said they do not use Social media and academic resources applications. This shows that majority of the lecturers of ABU representing over 89.0% use Social media and social networking applications

4.1.3.1 On the Awareness of the Social Media and Social Networking Applications

Most of the participants acknowledged that the future relies on our adaptation of the new technology which is growing rapidly and people shall be encouraged to use it. **"**Technology is here" said AS[1] "I would encourage everybody to embrace it because this is the future and a lot of innovations are still ongoing. So, embrace it, try and adapt make this a reality, assessment is possible today, interaction is possible to let everybody come on board, this is the future you do not want to be left behind" Similarly, SM[2] said "I think one of the ventures that grows so fast in the world is technology, everyday there are innovations, in that respect. So, the www that has grown over time what you could not access during the web1.0 you can access it in web2.0 or 3.0"

Some of the participants were even aware of the differences between web 1.0 and the developed versions. AA has this to say "the boundaries of the web 1.0 to 4.0 actually is an advancement, a way of enhancing the behaviour and culture of sharing ideas and information. Before we only used email but today, we have a lot of different

[1] Abubakar Shehu
[2] Sani Muhammad

applications ranging from Facebook and WhatsApp and the rest". Thus, also reject the research hypothesis that the academics are not aware of the applications as knowledge sharing avenues. AH statement also confirmed that they have the knowledge of the web transition saying "the issue of web transition, the web 1.0 is the first to be developed and used for sharing of ideas and information". To confirmed the transition as development in academic activities and support the hypothesis 2 of this research that, the academics will be interested in using social media and social networking application as knowledge sharing avenue if the technical support is provided, participant ED, stated that "the web transition allowed readers to read and write with feedback, comments etc, that also allow interactivity little bit. And web 3.0 the semantic web allowed you to read, write and execute on the web. Looking at all the transition of the web now the web 4.0 with interactivity of the highest order and immediate response, that is immediacy is there in it." In addition, the use of the applications for learning and teaching especially the academics has developed the system globally, said AA

4.1.3.2 On the Use of Social Media and Social Networking Applications by Academics

Majority of the participants indicate that they use the applications indicating its importance and contributions towards developing academic activities, AH has this to say "Web platforms are very important tool in our society today and from time being I started using technologies; social media and social networking applications, but we have gone a long way compared to normal teaching classes, online teaching is quite better". This accept the hypothesis 4 of the research that, the technical Barrie will create a gap between the education system of the rich and developing countries. In addition, the rich ones adopt online learning system thereby leaving the poor ones or

non-committed nations like Nigeria behind, as conformed by participants AA, “but when you move to 3.0 or 4.0, I don’t think in Nigeria we actually experience using such or even benefited from it yes, we only use web 2.0 and benefited from its interactivity”.

Some participants took the advantage of using the applications and advised others to borrow a leaf, so that they can compete with the global trend of using technology for content delivery and meet the challenges of the 21st century academics as well as providing a synergy in the knowledge gap among the technology users. A S stated that “My advice to other colleagues in terms of using web platforms is that we should take technology to be important tool for teaching because the world is going online and electronically in learning we should therefore accept it and give it what it deserved than normal leaning environment”.

Technology integration in education system has boasted the system in the developed nations hence they are committed and have the resources to make use of the technology, whereby the non-committed nations like Nigeria because the country has the resources, will continue to suffer. Participant, AA stated that “Using social media and social networking application for learning is very interesting generally knowledge sharing through these applications help Nigeria as a country to improve its learning system”.

Even though some participants identify the benefit and advantages of using the web applications for learning and teaching, yet they have to consider the challenges of the country the belonged to; Nigeria, such as poor electricity supply, insufficient internet facilities across the country and the high cost of data. Participant ED, explained that

“These applications give us opportunity to use multimedia format in teaching whereby the students have softcopy of reading materials, video and audio clips as well as some sources for learning that is relevant to the student’s courses”. In addition, AA mentioned that “Well using technology such as web2.0 and beyond has actually enable what we have today like distance learning education, before, things are difficult to make”

Despite the fact that they are aware of the applications and use some of these web applications some of the participants confessed that they use video conferencing application in their live as academics, AA explained that “So, I personally I don’t use social media or social networking application to teach my students but I do use Zoom meeting application to attend conferences, lectures somewhere around the globe for myself development academically. So, we use the platforms to attend lectures, seminars and conferences online”. However, students of the university under study ABU Zaria may find it difficult to check materials using internet, since the network is not available in some part of the communities.

A total of 242 representing 23.1% use the application as knowledge sharing technologies via mobile internet, as against 164 or 15.7% who use it through office network, and the rest 641 or 61.2% use the platforms through both mobile network and office network. This shows that the lecturers use the platform as knowledge sharing technologies through both mobile and office networks.

Table 2: Sort of social media lecturers use for Knowledge sharing

S/NO	SOCIAL MEDIA	YES		NO		MEAN	RANK
		Freq	%	Freq	%		
1.	Do you use the following Social Media: Facebook	874	83.5	173	16.5	1.835	2
2.	Do you use the following Social Media: Twitter	807	77.1	240	22.9	1.771	3
3.	Do you use the following Social Media: WhatsApp	970	92.6	77	7.4	1.926	1
4.	Do you use the following Social Media: Instagram	177	16.9	870	83.1	1.169	4
5.	Do you use the following Social Media: Telegram	24	2.3	1023	97.7	1.023	6
6.	Do you use the following Social Media: None	8	0.8	1039	99.2	1.008	7
7.	Do you use the following Social Media: Others	48	4.6	999	95.4	1.046	5
						1.397	

The research showed that academics were aware and mostly using the academic applications that serves their academic career. This therefore, reject the research hypothesis that, lecturers are not aware of the web applications as knowledge sharing avenues. The data revealed that ResearchGate is the mostly used application with a mean agreement of 1.745 as used by 780 representing 74.5% of the participants. The

second most used social networking application is the Google scholar which involved the second maximum mean of 1.660 used by a sum of 691 that is 66.0 % of the survey. The third type of Social Networking applications the academics use is the Wikipedia which ranked with the third highest mean use of 1.606 as a total of 635 that is 60.6% of the survey. To summarised it, the most used sort of Social Networking applications by the academics include ResearchGate, Google Scholar and the Wikipedia.

4.1.3.3 On the Sort of Social Media and Social Networking Applications Used by Academics for Knowledge Sharing

Some participants admitted that they different social media to communicate with students and colleagues outside the academia, as confirmed by RIA who said "Yes, I can't remember when we use our Learning Management System to communicate with our colleague, but outside the LMS we do communicate and share ideas through applications like WhatsApp and Facebook messenger" the issue here is that the official system use to communicate with students or colleagues was neglected or abandoned and make use of normal social media like WhatsApp and Facebook messenger which are not official sites. This may be attributed to lack of institutional commitment towards using technology for learning. That is why most of the academics prefer using WhatsApp to share ideas even with their students as stated by SM "I prefer using WhatsApp to share information or any research work with my students, because it is more of interpersonal communication between the teacher and students, unlike Facebook which is for the general public". A A stated that "we enjoy using it particularly the WhatsApp, Instagram, tik tok and others. We are using them to share ideas, information between us and the students.

Table 3: Intensity of usage of the web Applications

	Intensity of usage of web Applications	
	Frequency	Percent
Several times a day	515	49.2
Daily	453	43.3
Weekly	30	2.9
Rarely	21	2.0
Rarely	26	2.5
Never	2	.2
Total	1047	100.0

On the lecturers Intensity of usage of web platforms (social media and social networking applications), according to statistical data most of the lectures use the social and social networking applications daily.

The reasons for using Web Platforms (Social Media and Social Networking applications) according to the data, is sharing new ideas/knowledge as this ranked first with a mean agreement of 1.678 as a sum of 710 representing 67.8% asserted. The second sharing new ideas/knowledge is for socialization as this reason ranked the second maximum mean agreement of 1.556 with a sum of 582 that is 55.6% asserted. The third reasons for using Web Platform is fear of missing out as this reason ranked with a mean agreement of 1.498 with a sum of 521 representing 49.8% asserting this.

The issue of whether social media and social networking applications transform knowledge sharing culture among academics, a total of 471 representing 45.0% strongly agree that Web platforms transform knowledge sharing behaviour among academics, as against 538 or 51.3% who agreed that Web platforms transform knowledge sharing behaviour among academics as against 37 or 3.6% that were undecided and only 1 or 0.1% believe it does not. This shows that an overwhelming

majority representing 96.3% were in agreement that Web platforms transform knowledge sharing behaviour among academics.

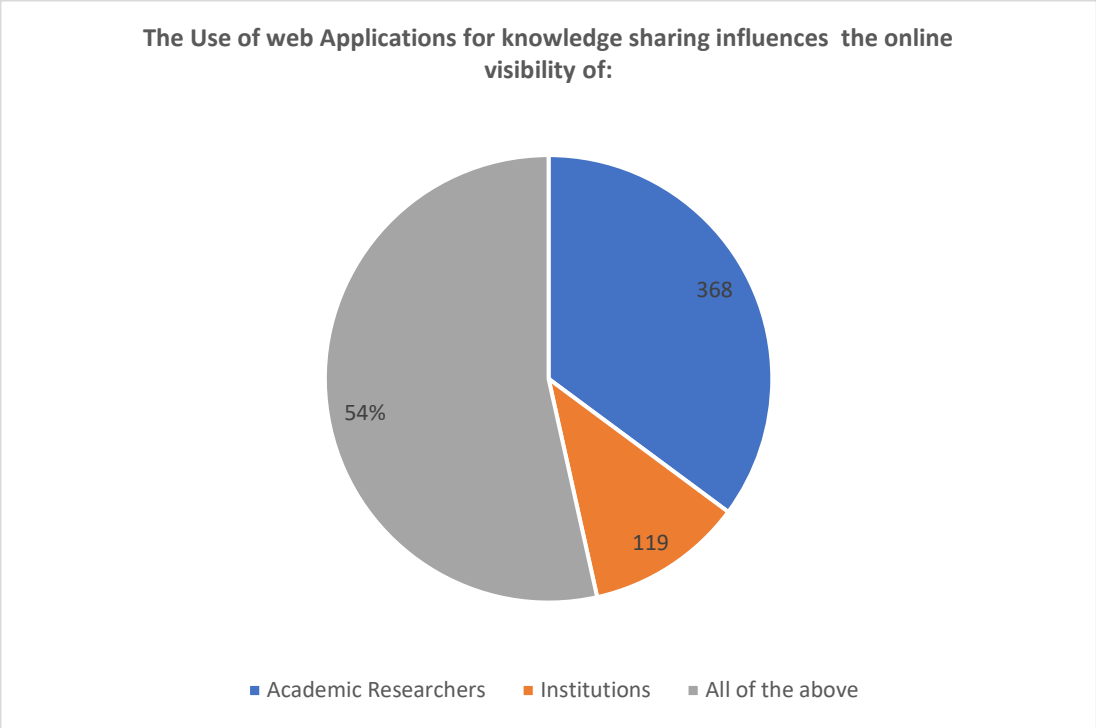

Figure 9: The Influence of the Usage of Web Applications

In summary the use of web platforms for knowledge sharing influence the online visibility of both the academic researchers and the institutions. The academics and their institutions might be visible on the net through certain activities such as sharing general information or updating ideas.

On how the usage influence online visibility of both academics and the institutions, 316 or 30.2% declined to comment while 299 or 28.6% said to know about current academic updates as against 80 or 7.6% said for general knowledge/information while 105 or 10.0% said for research purposes/updates as against 167 or 16.0% who said to know what is going on in the internet and boost of information sourcing while 46 or 4.4% said for new findings/literature and the rest 34 or 3.2% other reasons such as to

get connected with other academicians and for scholarship opportunities etc. This implies that the main way how the usage influence online visibility of both academics and the institution are through knowledge about current academic updates and to know what is going on in the internet and boost of information sourcing.

4.1.4 Presentation of Information on the Motivational Factors

According to the data gathered and run through the SPSS indicate the factors motivating academics to share their ideas through Web Platforms. These factors are serious and severe, because the respondent's cumulative mean agreement level of 1.51 is higher than the 1.500 standard decision mean. The main Factor motivating in sharing knowledge through Web Platforms is Technological as indicated in the table below:

Table 4: Factors motivating sharing knowledge through Web Applications

S/No	Motivating Factors	Yes		No		Mean	Rank
		Freq	%	Freq	%		
1	Factors motivating sharing knowledge thru web 2.0 platform: Individual	756	72.2	291	27.8	1.722	2
2	Factors motivating sharing knowledge thru web 2.0 platform: Organizational/ management	751	71.7	296	28.3	1.717	3
3	Factors motivating sharing knowledge thru web 2.0 platform: Technological	802	76.6	245	23.4	1.766	1
4	Factors motivating sharing knowledge thru web 2.0 platform: Social/Culture	281	26.8	766	73.2	1.268	4
5	Factors motivating sharing knowledge thru web 2.0 platform: Others	32	3.1	1015	96.9	1.031	5

Standard/decision mean =1.5

In summary the main Factors motivating in sharing knowledge through Web Platform included technological, individual and Organizational/ management in that order. Thus, therefore, accept the 2nd hypothesis of this research that, academics will be interested in using the web applications if the technical support is provided.

On factors influencing the use of social media and social networking applications among academics, majority of the participants assert that availability of the technology motivated them to use it, either for personal or official work, which include sharing of ideas with t and colleagues as stated by SM that "The speed at which you access such information on the web also changes. The free access or the web also has changed, because then even computers are not accessible easily as well as the web. Every day they keep on improving on the web platforms and the improvement is of higher advantage because it helps to do so many things online".

Even though there is available technology for the academics to use some attributed the influence of the usage to the flexibility of the technology as well as their individual interest. This happens to be the situation in Ahmadu Bello University Zaria, instead of the management factor to ranked the first in the order of preference, it became last because of non-commitment by the university management. Participant AH stated that "web platforms are very flexible and therefore make learning so flexible too. Teachers can use these platforms to caution their students online, despite the fact that you don't see them; face-to-face".

Conveniency is another issue as part of the individual and technological factor, as explained by MMP that "convenience is one of the advantages of using social networking applications, compared to conventional classroom". However, the case in

ABU Zaria may be different in the sense that you may have the time and the technology to use but the issue of poor network or electricity supply will deny you access to the internet or any of the web applications. This is exactly what transpired the issue of the challenges faced while using the web applications to share ideas. Thus, however, brough about the issue of knowledge gap that exist among the technology users, which one of the hypothesis assert that the technological barrier will create this gap among the academics, RIA gave solution to this saying that "There should be appropriateness of this technology for the developing nations like Nigeria because we have to consider the literacy level of the technology among the people, remember that we in a knowledge economy era, and here in Nigeria our economy is knowledge-based and knowledge is about information not industry based as the case here in Nigeria".

On why it became imperative for academics to communicate their knowledge online, the statistical data indicate that 191 or 18.2% declined comment while 237 or 22.6% said for contribution on academic updates as against 171 or 16.3% who said to know the researches that have already been done to prevent duplications as against 203 or 19.4% said to be involved in research activities as against 179 or 17.1% who said to ease students' work as knowledge is shared on line and the rest 66 or 6.3% had other reasons. Therefore, the main reason why it is imperative for academics to communicate their knowledge online include contribution on academic updates and to be involved in research activities.

On the possible problems for using web platforms for academic purpose according to the data 372 or 35.5% declined comment while 236 or 22.5% said high cost of data in the country generally as against 114 or 10.9% who said slow network and internet resources as against 153 representing 14.6% who said some of the contents are

immoral as against 117 or 11.2% who had other problems and the rest 55 or 5.3% said there are no problems. This shows that most assert that the high cost of data in the country generally and some immoral content of the web are the problems in use of the web platforms.

On the most effective sort of Social Media and Social Networking applications for knowledge sharing among academics, the statistical data revealed that a total of 55 or 5.3% declined comment while 510 or 20.1% said research gate as against 343 or 32.8% google scholar while 89 or 8.5% said Wikipedia as against 95 or 9.1% who said Academic Edu while 54 or 5.2% said Twitter as against 67 or 6.4% who said Academic resources sites and the rest 134 or 12.8% others. This implies that most of the lecturers recommend google scholar and the Research gate as most effective for knowledge sharing among academics.

Table 5: Challenges faced while using web applications

Challenges faced while using web Applications as knowledge sharing technologies		
	Frequency	Percent
Declined comment	55	5.3
Slow connectivity/internet source	189	18.1
High cost of data	350	33.4
Unstable power supply	142	13.6
Lack of proper awareness of web 2.0	129	12.3
Too many similar researches	96	9.2
Others	86	8.2
Total	1047	100.0

Challenges are everywhere, therefore, the challenges attributed to the use of social media and social networking applications as knowledge communication interface according to the statistical data, the greatest challenges faced using web platforms

include data inflation, insufficient internet sources and unstable electricity supply. AA stated that “Actually, using technology for teaching there are a lot of challenges attached to it; some of them are peculiar to the institution, Nigeria and even the world in general”.

Majority of the participants of the research believed that poor network is one of the challenges they faced while using web applications to share their ideas, AA stated that “From the challenges sometimes we experience network problem which usually slow down the level of communication with our students” sometimes the network may be off and for a lecturer to communicate with students or colleagues especially an issue that needs discussion, it will take long time before it works properly.

The issue network became a problem that crippled academic activities of both the students and lecturers of the ABU Zaria. Participant AS said “there a lot of challenges, but the major ones to me of using social media and social networking applications especially in our country Nigeria are two: 1) there is issue of network failure, sometimes you are working with internet it will stop because of certain irregularities attached with the networking system. 2) The second one is the issue of power outage where you want to use the social media and the devices will fail no charge.

The issues of network failure and power outage are not related to economic status of the country or the Institutions, since Nigeria has the resources to take care of all the internet infrastructures in the country’s higher institutions. However, individual academics has to buy data with their earned salary especially using their mobile phones, because the institution’s internet is based on availability of electricity in the campus, AA has this to say “The issue of data is another challenge, sometimes you

don’t have access to data to access the internet since you may rely on salary to subscribe for monthly data”.

There are challenges that can be attributed to orientation and training either individually of in group by the management of a certain organisation, like university. In Nigeria and ABU Zaria in particular some students and even academics needs orientation on how to use the technology for learning like video conferencing applications.

Some applications also are not appropriate with the users in this university, because some of the students are from remote areas where there is no network facility available, and that confirmed the knowledge gap among the institutions, SM has this to explained “there are also instances that you have to soft-land in order to carry the students along, because some of the students don’t have the knowledge on how to use the applications. They need basic skills so you are teaching, you have to carry them and put them through by facilitating and orienting them”

4.1.5 Crosstabs/Relationships Between Pair of Variables

The cross tabulation/Chi-Square statistics indicate that there is no significant relationship between the gender and the awareness level of Web platforms. The crosstabulation data showed that the awareness level of both male and female lecturers on web is the same.

Table 6: Academic designation and the use of web applications

Academic designation and the use of the academic resource site; Blogs. Crosstabulation					
			Do you use the following academic resource site? Blogs?		
			No	Yes	Total
Academic Designation	Graduate Assistant	Count	136	51	187
		% within Academic designation	72.7%	27.3%	100.00%
		% within Do you use the following academic resource site: Blogs	15.6%	29.1%	17.9%
	Assistant Lecturer	Count	248	37	285
		% within Academic designation	87.0%	13.0%	100.0%
		% within Do you use the following academic resource site: Blogs	21.8%	21.1%	27.2%
	Lecturer II	Count	190	41	231
		% within Academic designation	82.3%	17.7%	100.0%
		% within Do you use the following academic resource site: Blogs	21.8%	23.4%	22.1%
	Lecturer I	Count	84	29	113
		% within Academic designation	74.3%	25.7%	100.0%
		% within Do you use the following academic resource site: Blogs	9.6%	16.6%	10.8%
	Senior Lecturer	Count	118	8	126
		% within Academic designation	93.7%	6.3%	100.0%
		% within Do you use the following academic resource site: Blogs	13.5%	4.6%	12.0%
	Reader/Associate Professor	Count	55	5	60
		% within Academic designation	91.7%	8.3%	100.0%
		% within Do you use the following academic resource site: Blogs	6.3%	2.9%	5.7%
	Professor	Count	35	4	39
		% within Academic designation	89.7%	10.3%	100.0%
		% within Do you use the following academic resource site: Blogs	4.0%	2.3%	3.7%
	Others	Count	6	0	6
		% within Academic designation	100.0%	0.0%	100.0%

		% within Do you use the following academic resource site: Blogs	0.7%	0.0%	0.6%
Total			872	175	1047
		% within Academic designation	83.3%	16.7%	100.0%
		% within Do you use the following academic resource site: Blogs	100.0%	100.0%	100.0%

On the connection between academics' designation and the use of social networking applications the results of the above Chi square/crosstabulation statistics indicated that there is substantial connection between academics' designation and the usage of social networking applications[3] The cross-tabulation data revealed that senior academics and others with higher qualification use Social Networking applications than those with lower designations. Therefore, there is a substantial relationship between academics'' designation level and their usage of Social Networking applications.

The cross-tabulation and chi-square statistics indicate that there is significant relationship between the lecturers' faculties and their awareness level of the web platforms; Social media and academic resources site[4]. The level of awareness of web platforms across the various faculties varies.

The cross tabulation and chi square statistics indicate that there is significant relationship between the lecturers' faculties and their level of use of the web platforms; Social media and academic resources site. Reason being that the calculated p value of 0.000 is lower than the 0.05 alpha level of significance and the computed Chi-square

[3] Reasons being that the calculated value p value of 0.000 is lower than the 0.05 alpha level of significance and the computed chi square value of 39.630 is greater than the 14.067 at df 7

[4] Reason being that the calculated p value of 0.000 is lower than the 0.05 alpha level of significance and the computed Chi square value of 62.391 is greater than the 21.026 chi square critical at df 12

value of 254.185[a] is greater than the 21.026 chi square critical at df 12. The cross-tabulation showed that while all the lecturers from faculties such as Administration, Pharmacy and Medicine use the web 2.0 platforms, only 55.0% of Engineering, 69.8% of veterinary Medicine use the platforms and the level of use of the web platforms across the various faculties varies.

On gender and fear of missing out factor, according to the statistical data there is no substantial connection between academics'' gender and fear of missing out factor for using web platforms (Social Media and Social Networking applications). This is because the Chi-Square calculated p value of 0.180 is greater than the 0.05 alpha level of significance and the computed Chi-Square value of 3.427 is lower than the 5.991 Chi-Square critical value at df 2. This shows that the male and female use of web as a result of fear of missing out is relatively the same.

Gender and the Reasons for Using Web Applications: Fear of Missing Out

Table 7: Cross-tab on Gender and the reasons for using web Applications

			The reason for using web 2.0 platforms: fear of missing out		Total
			No	Yes	
Gender	male	Count	397	375	772
		% within Gender	51.4%	48.6%	100.0%
		% within the reason for using web 2.0 platforms: fear of missing out	75.5%	72.0%	73.7%
	female	Count	129	144	273
		% within Gender	47.3%	52.7%	100.0%
		% within the reason for using web 2.0 platforms: fear of missing out	24.5%	27.6%	26.1%
	prefer not to specify	Count	0	2	2
		% within Gender	0.0%	100.0%	100.0%
		% within the reason for using web 2.0 platforms: fear of missing out	0.0%	0.4%	0.2%
Total		Count	526	521	1047
		% within Gender	50.2%	49.8%	100.0%
		% within the reason for using web 2.0 platforms: fear of missing out	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Df	p
Pearson Chi-Square	3.427[a]	2	.180
Likelihood Ratio	4.200	2	.122
Linear-by-Linear Association	2.300	1	.129
N of Valid Cases	1047		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.00.

There is no substantial relationship between academics'' gender and socialization factor for using web platforms (Social Media and Social Networking applications)[5]. This shows that the male and female use of the web as a result of socialization factor is relatively the same.

The chi-square and the cross-tabulation statistics revealed that there is significant relationship between lecturers' response on the influence of usage of Social Media and Social Networking applications, on online visibility of both academics and the institutions on the basis of lecturers' designation[6]. The male and female lecturers' response rate on the influence of usage of web platform on online visibility of both academics and the institutions, is relatively the same.

4.1.6 The Impact of COVID-19 Pandemic on the Use of Social Media and Social Networking Applications by Academics for Knowledge Sharing

Almost every participant of the research agreed that the COVID 19 pandemic pushed the academics to use web applications in teaching and learning especially for sharing ideas with students or colleagues. Some of them even refer to the pandemic as positive

[5] This is because the Chi-Square calculated p value of 0.151 is greater than the 0.05 alpha level of significance and the computed Chi-Square value of 3.77 is lower than the 5.991 Chi-Square critical value at df 2.

[6] Reason being that the calculated p value of 0.035 is lower than the 0.05 alpha level of significance and the computed Chi-square value of 60.037 is greater than the 55.758 chi-square critical value at df 42.

conflict within the education system, just like a saviour in the crisis, AS stated that, "Yes, we discussed issues with colleagues virtually within the pandemic period. There is some period if we travelled, we used zoom application for virtual meetings and conferences, when the COVID 19 lockdown was at pick we virtually hold our meeting, so pandemic doesn't affect us". Despite the fact that they were compelled to use web applications during the pandemic with a view to meeting the requirement of the digital learning in the 21st century, it is not possible for all to make best use of it due to network problem and electric power supply. So those with the access to it will take the advantage of it and the poor ones will be left behind thereby confirming the knowledge gap and the theory of this research that the poor individuals and organisations will have their education system suffering. MMP stated that "Conflict itself has its own advantages but we look at negative part, there are developments in some conflict. Yes, if not because of covid19, there are so many things in Nigeria that might not be achieved. Some universities in Nigeria have introduced online learning for their students which they never think of, some who are conservative in nature".

The pandemic has changed the academics' mind of using technologies in their activities at a level where some used the period to attend virtual meetings via ZOOM which they never did before, ED said "In fact, I have never attended any zoom conferencing in my life, but during the pandemic I have attended 2. We have the opportunity to test some futures of our platform during the covid19 which was never used before" Yes, of course, the Pandemic is transforming the educational system around the globe to an advanced stage of using technologies as hypothesised by this research and confirmed by RIA one of the participants that "Actually, we can say during the pandemic we advanced the usage of the social media and social networking

applications unlike before the COVID 19 pandemic where we have limited platforms to interact with the students and colleagues. So, in the absence of many physical classes we resolved to use technology to continue with our activities".

In addition AA[7] has this to say on the advancement of their effort to use technology during the pandemic "During the pandemic we continue with it but in an advance stage because we missed a lot of physical classes where may be a number of people who are there will make it impossible to have social distancing, so because of that we added a number of platforms that we met our students especially where we have a number of students that is very higher". However, the question about the advancement is that, how in a country with poor network connectivity and poor electricity supply with institutional alternative power that can be used to operate the internet infrastructures use the web technologies effectively? Because majority of the academics and their students used their personal internet sources to brows unlike developed or rich organisations.

It is not surprising for a Nigerian academic to say that he never used any platform to communicate with students or colleagues apart from email messages. In ABU Zaria there are some these academics who were compelled by the COVID 19 pandemic to learn how to use other web applications for learning and teaching or sharing ideas, AH confirmed this "Before the pandemic we don't really utilized the platforms, we only concentrate in communicating via emails. We don't use social media for academic activities, but with the coming of the COVID 19 we have to use it. I have students that I supervised and they created a platform where we can discuss issues related to their

[7] Abubakar Shehu

research". Also, another participant AA[8] said "The pandemic makes people to adopt using the social media and social networking applications as new normal in the academia. When you are addictive to something that means you have developed a certain relationship with it so we have that relationship with our devices".

Insecurity, ranging from banditry, kidnapping, robbery and insurgency became a threat to academics in terms of traveling for conferences, seminars, data collections and even teaching at other institutions around the country. This is part of the limitation of this research for selecting one institution ABU Zaria, MMP confirmed this issue of insecurity that with COVID 19 and technology at hand we are safe "During the pandemic I do attend conferences online we don't bother to travel; the issue of insecurity and cost of travel is no more a threat to us".

4.1.7 Testing the Research Hypothesis

This research developed 4 hypotheses which were tested using the data of the research obtained from in-depth interview as follows:

H1- The lecturers are not aware of the Social Media and Social Networking applications as knowledge sharing avenues.

Hypothesis 1 stands rejected as majority of the academics of Ahmadu Bello University Zaria from the statistical data and majority of those interviewed are aware of the web applications as knowledge sharing avenues.

[8] Almansur Ado

H2- The academics will be interested in using Social Media and Social Networking applications as knowledge sharing avenues if the technical support is provided.

The research hypothesis 2 stands accepted as majority of the participants agreed that the availability of technology and individual training on the use of this technology influenced their interest to use social media and social networking applications for sharing ideas, this can be confirmed by the coded data from the interview, that technological factor ranked the first as motivational factors to use web applications.

H3- The lock down conditions of COVID 19 pandemic pushed the academic world to transform the education system from face to face to online education.

The research hypothesis 3 also stands accepted by the research findings as majority of the participants believed that the COVID 19 pandemic helped them to make use of the web applications as knowledge sharing avenues, as confirmed by the in-depth interview responses. The issue of using technology for learning in the higher institutions is part of the rationales behind the strike action embarked by the academic staff of the Nigerian Universities. The staff are demanding among many things the provision of infrastructures including technology that will enhance learning system.

H4- The technical barriers on the use of technology will create a gap between the education systems of rich and developing countries.

This hypothesis, H4 stands accepted as majority of the participants confessed that they use few social media especially the WhatsApp and Facebook messenger to share ideas with students or colleagues. This implies that gap in knowledge of using the web

applications exist between the individual academics and the institutions of higher learning. Some of them explained that they don't have access to the excellent internet connectivity and sufficient power supply which are some of the contributing elements of the gap between the rich and developing nations.

4.2 Discussion of Findings

The goal of this research was to explore the level, impact, motivational factors and challenges of using social media and social networking applications for knowledge sharing among academics in Nigeria as well as the impact of COVID 19 pandemic during and after the lockdown, on the use of these web applications. This part grounded on the facts generated and outlined was led by the research questions, hypothesis and objectives as well as the theories of the research.

4.2.1 RQ1: What is the Level of Lecturer's Awareness of the Web Platforms as Knowledge Sharing Technologies?

The level of lecturer's awareness of the web platforms as knowledge sharing technologies can be considered as perception or knowledge of a situation or fact such as the emergence and presence of web applications in a certain society. The overwhelming number of academics in ABU Zaria representing over 96.0% are aware of social media and social networking applications, that is to say they have the knowledge of the existence of the applications. This also confirmed the rejection of the research hypothesis 1 (H1) that academics under study are not aware of the social media and social networking applications as knowledge sharing avenues.

Thus, can be traced in the statistical data and the sampled responses from the in-depth interview page but how to use it is another issue. The number of those who are aware of the applications seems to have the idea of the existence through product promotion

as confirmed by the Diffusion of Innovation theorist that people may be aware of innovation in the process of sales penetration of a new products or services that is driven by social influence, (Peres, 2010). In the process of adopting new things, knowledge is the first step according to Rogers Everett (2003), that one should have the knowledge of certain innovation before using it.

The most amazing thing is that, there is no significant relationship between the respondents' gender and awareness of the web applications as confirmed by the crosstab in the data presentation unit. This is because one may think that female gender seems to have more knowledge of the applications than their male counterpart, however, the level of awareness among the faculties varies.

The responses of the participants through the in-depth interview indicate that they have the knowledge of the social media and social networking applications, including the web boundaries as confirmed by the participants of the research on the awareness of the web applications. The relative advantage and compatibility as characteristics of an innovation support individual's level of awareness of the social media and social networking applications since people look at the degree at which the innovation benefits them either socially or economically before delving into the usage. Also understanding the compatibility of the innovation to the present value of the user of his past experience also has a role in developing awareness of an innovation, (Rogers, 2003).

Some academics, therefore, are aware of the innovations in terms of the web platforms such as Teams and Zoom meeting applications and other video conferencing platforms, but might only be aware of the existence not on how to use it. Applications

like Second Life and Teams are some of the strange applications among the academics of ABU Zaria, since, they are aware of the existence through their colleagues outside their environment thereby trying to learn how to use it personally and that the influence of the social structure of the social system that reflect individual's creativity contribute in having effective awareness of innovation (Sahin, 2006), as confirmed by the data gathered from the in-depth interview . According to the assumption of the Diffusion of innovation theory, people may have the knowledge of the innovations through mass media, interpersonal communication channels, and the internet which has more impact for creating awareness on the new idea, (Rogers, 2003).

4.2.2 RQ2: What Sort of Web Platforms (Social Media and Social Networking Applications) are Lecturers likely to Use in Sharing their Knowledge?

In fact, majority of people today use social media and social networking applications to communicate or socialized with their relatives, friends and well-wishers, and these users should be socially comfortable with collaborative modes of engagement. According to the data gathered it shown that majority of the academics of ABU use social media and social networking applications as confirmed by the statistical data and the in-depth interview conducted. The most used type of social media by these academics include WhatsApp, Facebook and Twitter, as indicated in the statistical and qualitative data. Whereby the most used sort of social networking applications by the academics include ResearchGate, Google Scholar and the Wikipedia, as confirmed by the survey data. People used the social media and social networking applications to communicate new ideas, documents, pictures and videos with new friends or collaborating with others virtually, these academics used the said applications because of the availability and accessibility not because it is the official application for their work.

However, most of the academics recommend google scholar and the Research gate as most effective for knowledge sharing among academics as part of the said social networking sites. This may be attributed to the motivating factors influencing their usage of the applications since some of them were influenced by the technological factor, that they use it because technology simplifies their teaching job as confirmed from the in-depth. One of the theories that this study is based on, the UTAUT, has it as core dependent variable 'behavioural intention *(BI)'* which refers to the degree at which an individual tends to use a technology or device for personal activities.

Thus, therefore, confirmed that academics use technology because they individually tend to use not because they were compelled by the management of their institutions, contrary to some universities around the globe, for instance the Eastern Mediterranean University North Cyprus, the university management made it easier for the academics to embed technology in teaching. People used social media and social networking applications because of its vital role in the development of the society thereby contributing in training, educating and even guiding members of the society as well as bringing more awareness about innovations.

4.2.3 RQ3: How do Lecturers of Ahmadu Bello University Zaria, Use Web Platforms as Knowledge Sharing Technologies?

Social media and social networking applications encourage these academics to support thinking of their world, simplify instinctive and collaborative thinking, thus, making it easy for users to access so much information and provide avenue for interface with different opinions and share with others, (Yoo & Huang, 2011). Based on this, therefore, lecturers of Ahmadu Bello University Zaria use social media and social

networking applications as knowledge sharing technologies through both mobile and office network as means of accessing the internet.

Overwhelming majority of the respondents were in agreement that Web platforms transform knowledge sharing behaviour among academics, since they use both their personal devices and that of the school to access internet and share their ideas. Data gathered from the in-depth interview also indicate that academics use their personal devices and means to access internet and use the social media and social networking applications for their academic activities.

The issue of providing means of using the social media and social networking applications for academics at the university under study has been considered by some respondents of the study that even laptop computers were not provided for some staff talk less of subscribing for conferencing platforms like Teams or Zoom meeting applications, the usage therefore is not that encouraging. This confirmed that employees use external social media or social networking applications for their activities, (Gaal, et al, 2015).

4.2.4 RQ4: How does the Uses of Social Media and Social Networking Applications Influence the Visibility of their Work and the Institution on the Net?

Of course, their individual zeal to use the technology might be attributed to their needs to be visible online sine the visibility of academics on knowledge sharing platforms is very important, but this is scanty, and that might be connected to low usage of these technologies. Also, low educational uptake reflects the fact that the adoption of web platforms creates many practitioners' tension as a challenge to innovation (Crook, et al., 2008).

The use of web platforms for knowledge sharing influence the online visibility of both the academic researchers and the institutions in which the changing paradigm has forced universities to adopt new technologies such as sharing technologies and enable social visibility online, (Chu & Du, 2013) as confirmed by the data gathered and presented in the statistical data , that majority agreed that in the process of updating their academic activities and searching for others' update, both the institution and the academics would be visible online.

Categories of sharing also determined how academics and their institutions would be visible on the internet. Therefore, according to the data collected and presented indicates that the main categories of sharing academics used via web platform include, sharing with feedback, sharing with notification, and basic sharing just to share new ideas/knowledge, socialization and fear of missing out online as indicated in the survey data.

Academics share new ideas or knowledge with either their students or colleagues in and outside their country with a view to getting feedback in which they can use to update or solve certain problem thereby updating their knowledge, this can be done through posting a question or raising a case to deliberate online by friends.

Some academics also use social networking applications to solve issues within their profession by asking questions, as confirmed by Rogers Everett founder of Diffusion of innovation theory, that, diffusion is a process of convergence in which individuals exchange ideas in order to move forward, (Rogers, 2003).

Thus, usefulness and even ease of the usage in addition to users' attitude has very significant influence on the use of social media and social networking applications. The usage influences online visibility of both academics and the institution through searching for knowledge about academic updates and that of general issues on the internet with a view to boosting information sourcing and improve job performance as assumed by the UTAUT theory.

4.2.5 RQ5: What Factors Influence the Use of Social Media and Social Networking Applications among these Academics?

In fact, using technologies might be motivated by certain factors, ranging from individual, technological and management. The findings of this study therefore, indicate that the main factors motivating the sharing of knowledge through social media and social networking applications among academics of Ahmadu Bello University Zaria, include technological, individual and organizational or management in that order.

The technological factor is the most influential factor in encouraging knowledge sharing culture among people. This is because technology encourages community members to develop the idea of sharing their thought and knowledge with others especially in a learning environment like university. Thus, the new communication technologies have transformed the way academics connect and interact with others and also facilitate the habit of knowledge sharing among the community of learners like a university (Arif, Dhanapal, Lari, & Angappa, 2018; Oyefolahan & Dominic, 2013; Paroutis & Al Saleh, 2009).

Knowledge should be shared via certain means of communication in which technological factors can be considered and categorized as availability of the

infrastructure and usage of social networking sites, (Adedolapo & Wole, 2019). Also, with the availability of technological devices and the internet, the usage will be easier for academics to share their knowledge with colleagues or students, as some of them use their earned money to obtain the devices and even the internet services, the reason that technological factor has the higher percent of responses as indicated in the statistical data.

Considering the nature of the university under study being one of the first-generation universities in Nigeria, where some of the academics do not believe or have no zeal to use social media or any web platforms to aid their academic activities, it is indeed a war to convince them to share their knowledge on the internet.

Thus, can be attributed to the fact that there is digital divide within the academics; the digital Native and Immigrant academics, since age and experience of technology users (academics) moderate their effort, performance and even the intentional behaviour to share their knowledge through social media and social networking applications (Venkatesh, Morris, Davis, & Davis, 2003).

Rapid changes in academia as a result of technological advancement has forced Individuals to consider themselves as members of the production team in the learning industry (Bush, 2020) who contribute in the organizational development or participate in the community of practices on the net, through knowledge sharing either with colleagues or students (Arif, Dhanapal, Lari, & Angappa, 2018).This indicates that academics use the technology to ease their activities especially teaching, in which some educational technologists considered the system as technology-based learning

environment or blended learning with the encouragement of individuals' zeal to use the technologies, (Bate & Poole, 2003).

Of course, this can be considered as a force outside the organization and personal interest that influence academics to use the technology, just to improve their academic knowledge too, and also help an individual to develop communication skills on the internet (Quan, Lan, & Di, 2015; Wangpipatwong, 2009; Cho, Li, & Su, 2007; Hoff, Elving, Meeuwsen, & Dumoulin, 2003). Individually, academics consider the use of social media and social networking applications to share their knowledge as a way of boosting the existing knowledge on the net in which others will be influenced (Paulin & Suneson, 2012).

According to the findings of this study, this influencing factor ranked second. knowledge sharing through social networking sites and academic resource sites, is being influenced by individual factor, since academics within Ahmadu Bello university Zaria believed that they use the technology in sharing their knowledge. They specifically share with their students not because the university management make it mandatory or being trained on that, but because they have the zeal and courage to use their earned money to buy data and share things with the rest of the world as confirmed by the UTAUT theory. The theory assumed that, using technology effect the improvement in job performance, (Eria, 2019). The influence of the individual factor may be attributed to the non-interest of the management to engage the academic staff in the use of technology in their activities or rather include it in the curricula for the use of the academics.

The organizational factor that encourage knowledge sharing culture include; administrative support, rewards, executive structure, and executive culture. Thus, are the four main dimensions that identify the influence of the organization on the use of technology or social networking sites to share knowledge, (Hau, Kim, Lee, & Kim, 2013; Amaya, 2013; Seba, Rowley, & Delbridge, 2012). Through organizational factor, team or group sharing behaviour emanates to have more opportunities to connect with other community members, the factor also encourages unity and team building to strengthen the organization as well as serving as a supporting tool in creating value for the organization, (Banker & Bhal, 2020; Killingsworth, Xue, & Liu, 2016; Quan, Di, & Bocai, 2014; Hoff, Elving, Meeuwsen, & Dumoulin, 2003).

According to the data collected, however, it reveals that few of the academics were influenced by the organizational structure as this factor attracted the third highest who asserted this as a factor. Thus, the university as an organization supports them in the discharge of their assignment, to encounter the mandate of the digital era, which is part of the university policy as an organizational factor to train and support the academics, (Adedolapo & Wole, 2019; Paroutis & Al Saleh, 2009).

Thus, was also confirmed by one of the elements of the UTAUT theory which defines the level of flexibility with which one uses a system as technology, how much effort put in using it, including learning the skills through training, (Eria & McMaster, 2017). It has been confirmed that to have effective knowledge sharing habit there is need for the management to support its staff, (Han, Seo, Yoon, & Yoon, 2016; Aljuwaiber, Chase, & Chase, 2016; Amaya, 2013).

This factor works in sharing culture very strongly in which members of the organization may be more active and always willing to accept and use the knowledge shared by their colleagues (Quan, Di, & Bocai, 2014), in which, institutions of the 21st century invest in the progress and acquisition of new communication technologies in the name of learning or content management systems (Khalil, Atieh, Muhammad, & Bagdadlian, 2014).

4.2.6 RQ6: What Challenges does the Academics Face while Using Social Media and Social Networking Applications to Share their Knowledge?

Users of social media and social networking applications academic inclusive, no matter how they are being motivated might face some challenges especially in a situation where there is knowledge gap in the use of these technologies where the rich overshadowed the poor countries in the use of these technologies. Social media, therefore, is about communicating and sharing ideas via the digital communication technologies that include the software and hardware facilities as well as the channel of communication with a view to sharing pictures, documents ides and videos for collaborative use (Kwahk & Park, 2016; Ridzuan, et al., 2012).

Thus, the presence of these new technologies simplified thins for individual users to connect and interact about new idea or information online. Hence education system uses web application tools to develop the skills and knowledge of its members like academics to share their ideas online and make teaching so effective (Gaal, Szabol, Obermayer-Kovacs, & Csepregi, 2015).

The use of as social media and social networking applications encourage users to socialize, share opinions and issues of their interest (Al-Hawamdeh & Hart, 2002).

These applications therefore, comprises of social media such as Facebook, Twitter, YouTube, WhatsApp, Instagram, and flicker, among others.

The applications have been supportive in education system in which academics engaged in socializing with each other as adopted by the socio-cultural determinism theory of the digital divide, (Xiao, 2020), and also support many educational activities like communicating new idea, (Qiao & Shih, 2018).

The features and habit of those using technologies play very vital role more than the qualities of the technical facilities itself in determining its acceptance, use and even the effect (Xiao, 2020). Also, though these academics according to the statistical data use WhatsApp supplementarily than other web platforms and the Research gate more than the remaining social networking applications. Non-users of social media or social networking applications should be considered as individuals with diverse informational needs, instead of looking at them as end-users of ready-made information, (Xiao, 2020), since the population under study consist of the digital natives and immigrants as well as the rich and the poor individuals.

The advent of new digital communication technologies has transformed education system globally with drastic changes from analogue to digital system, as online learning platform. Thus, these activities face challenges of knowledge gap among the lecturers where the rich ones have the access to the internet and the facilities whereby the poor ones remain poor in terms of using the technology, since the society is being divided into two clusters; the haves and have nots to access the technology. In addition, some of the academics believed that online is not a suitable channel for them to share their work because of the issue of privacy and trust, (Qiao & Shih, 2018).

The 21st century higher Institutions are full of digital natives as students and some academics as well, with other scholars as digital immigrants who are naïve in integrating their academic activities with technologies for their students who prefer reading electronic materials than hard copies. The most substantial challenges, therefore, faced using web applications include the data inflation, ineffective internet sources and poor electricity supply.

Even though there is basic idea and skills on the use of emails, other web applications have been neglected by the academics which confirmed the existence of knowledge gap of the use of technology and the importance of the usage as a challenge. This is because some of them opined that the high cost of data in the country generally and some immoral content of the web are other challenges in using the platforms.

The earnings of the academic which is based on their monthly wages also attributed to their opinion that the internet data is cost in developing nations particularly Nigeria, since their salary compared to their counterpart in the Developed countries is too low as the average academic earns less than $100 per month. This take home includes the rest of the family issues as well as academic activities, therefore, these academics looks at data as expensive community and should be provided with less coast.

In addition, the issue of service providers is another challenge, these providers include MTN, GLO, Airtel and the rest, with their expensive subscription leading exploitation of customers especially in the developing states like Africa. According to the study, poor electricity supply is another challenge, the electricity used to power the browsing devices, the smartphones, computers, and the rest.

It is an unadorned challenge for internet users, because the supply depends on sharing system among the states of the nations and within the state among the communities. Thus, it is hard to get one-week power supply without interruption, in some areas also it is hard to spend the whole day without interruption, and the university system in the country is not helping in solving the issue since there is no provision for alternative means of electricity supply especially within the university under study.

4.2.7 RQ7 How did COVID 19 Period Impact the Use of Social Media and Social Networking Applications for Academic Activities?

COVID 19, the pandemic that brought about the lockdown of the global activities including education, and introduces new normal in the system that is integrating technology into the learning system. This is a situation where the rich and developed nations benefited more and the poor or developing nations suffered a lot.

As part of the effort to fight the spread of the COVID 19 pandemics many countries across the globe including Nigeria introduce some protective measures that include; shutdown/lockdown of all schools in the country, social distancing, public life that include all sort of gathering. In view of this therefore, this question tends to look at the implication of the COVID 19 period on the academia as social activity with more emphasis on the use of social media for knowledge sharing.

The COVID 19-driven school closure have impacted over one billion students with over 150 countries across the globe reporting school closure in which the number increases rapidly since February 2020, (World Bank, 2020).

Despite that academics do their activities as humans in social gathering and other platforms, the WHO in its bid to fight the COVID 19 pandemic directed that social

distancing should be observed (WHO, 2020). thereby resulting to the closure of all schools in some countries Nigeria inclusive in which remote working environment was introduced such as virtual online platforms.

Thus however, promoted this section to discuss how academics in ABU Zaria manage to continue producing and sharing knowledge among their colleagues and the students during and after the COVID-19 lockdown. This is because social media and social networking applications serve as a tool used to conduct official academic activities as agreed globally to face the reality of the new normal in the academia, (Qiao & Shih, 2018).

COVID 19 pandemic has impacted on the university higher education across the globe both for the policy makers, students and the lecturers as well as the system as a whole. This justified the respondents' reaction on how the pandemic simplified their academic activities. Some of the impact are not visible for the moment but very significant and will surface in the meantime (UNESCO, 2020).

In view of the above the federal government of Nigeria decided to take necessary action towards facing the reality by encouraging knowledge sharing culture within education system through online platforms such as Zoom meeting and Webinar.

Academic profession and the academics were impacted significantly at home and the workplace, however, not all universities in Nigeria have strategized teaching continuity activity to be considered within the system. However, some states ministry of education like Kaduna, Lagos, Kano, Sokoto have introduced the use of radio as a means of content delivery by secondary school teachers for their students at home

during the lock down. This is because the use of web applications is not realistic since the access to the internet facilities in the rural areas is not provided and also there is problem of electricity supply. So, the use of radio technology is the only alternative to teach while students were at home. Thus, therefore, confirmed how the knowledge gap exist in the Nigerian institutions of learning.

The significant impact on lecturers is the society expectation that teaching activity should continue using a virtual modality which temporarily halted the face-to-face academic activities thereby disrupting the higher education system which depends on the institutions' ability to stay active in both academic activities and financial sustainability, (UNESCO, 2020) and confirmed by the elements of UTAUT theory, effort expectancy which defines the degree of effort put in using the technology. According to the respondents the COVID 19 conflict remains positive in certain areas like use of technology, find in page.

However, the management of the university under study only provide internet facility within the offices but no any subscription to virtual conference applications like Zoom or Teams. Even though there seems to be significant differences among the users in the level of uses and the anxiety of utilizing the social media and social networking applications, (Yoo & Huang, 2011).

Most of the countries Nigeria inclusive have put more effort towards utilizing web technologies in supporting learning process either online or distance education, as well as sharing of ideas among teachers during the COVID 19 period, (World bank, 2020). Higher education institutions across the world quickly reacted to teach their students online by embedding technology as confirmed by some published research on the

current crisis of emergency digitalization of higher education, (Marinoni, vant Land, & Jensen, 2020). Data gathered also confirmed thus, as stated by one of the respondents.

Reacting to the pandemic, social distancing and the use of facemask was first implemented in Nigeria as public health measures, in some state like Lagos, Kano, and the Federal Capital Territory Abuja, the federal government enforced a curfew to avoid the wide spread of the virus.

Tracing the political economy within the Federal government effort to fight the spread of the coronavirus in Nigeria, there is a wide gap between the original and fake media content consume by Nigerians with a view to crating inconvenience within the social system. There is fake news as related to the origin of the coronavirus and also how it is contracted or be killed, (Fuchs, 2020a).

In summary, majority of the academics of the ABU Zaria are aware of the existence of the social media and social networking applications, and that according to the cross-tabulation of the surveyed data there is no significant relationship between the participants' gender and level of awareness. Some of the academics under study are aware of only the existence of the web applications not how to use it, since their knowledge of the innovation seems to be either from the product promotion or their colleagues. And majority of them use social media and social networking applications for knowledge sharing either among themselves or with their students.

The most used sort of social media by these academics include WhatsApp, Facebook and Twitter. However, these academics use technology because they tend to use it

individually not because they were supported by their institution. The overwhelming majority of the academics under study have agreed that web applications; social media and social networking applications, transform the culture of knowledge sharing among them, thereby using both personal devices and that of the school to access the internet.

In addition, the university management didn't provide the devices as well as video conferencing applications for the academics, instead they rely on their own devices and self-subscription to use video conferencing applications like webinar or zoom applications. The key factors influencing the knowledge sharing via social media and social networking applications among academics of Ahmadu Bello University Zaria, include technological, individual and organizational or management, and that academics under study use their earned money to purchase both the devices and the data to access internet for their professional development.

The greatest challenges faced using social media and social networking applications include data inflation, low internet connectivity and insufficient electricity supply. COVID 19 pandemic period has positively impacted on the use of social media and social networking applications among academics for knowledge communication, however, the university management according to the data gathered only provide internet source, but no provision for video conferencing applications such as the Teams, Zoom or Webinar for the academics to share their knowledge online, instead the academics use their earned money to subscribe for the available applications like zoom meeting.

The Researcher's Theory

The researcher therefore, based on the findings of the research and theories reviewed decide to come up with a theory that "the poor nations or states might loss the standard of their education system due to insufficient and ineffective use of technologies in the system". This theory confirmed the issue of the gap between the rich and the poor in terms of access to knowledge and the technologies or devices, in another term digital divide of the technologies. Compared to the developed nations the developing states suffer a lot to have enough technologies for their institutions, but the developed or rich nations who are the manufacturers of these technologies are in the front line to use them for educational purposes.

Some higher institutions of learning in some poor countries during the COVID 19 lockdown have no sufficient technologies for their learning system, instead they shut down their institutions while some use very cheap applications like zoom meeting applications. And at the same time the rich nations are using different applications to enhance their education system.

Chapter 5

CONCLUSION

5.1 Conclusions

This section presents the summary, conclusions and recommendations of the study titled investigating how academics use social media and social networking applications for knowledge sharing.

This study is theoretically a diffusion-based research which is rooted in the communication aspect of web platforms in which research in communication usually investigates a specific kind of communication process, like knowledge sharing through social media and social networking applications among academics in Nigeria. The research which is a cross-sectional within the framework of action research is based on two theories; the Diffusion of Innovation, DoI, and Unified Theory of Acceptance and Use of technology 9UTAUT).

The researcher used mixed method; survey and in-depth interview as research method for the study, a survey questionnaire was used as a data collection instrument distributed to 1,287 conveniently sampled participants among the 13 faculties of the ABU Zaria, Nigeria. The data was effectively generated from 1047 that is 81.9% and the rest 18.1% as mortality was outlined and analyzed through Chi-Square test, descriptive and correlation statistics. While for the interview ten people were conveniently selected from the participating faculties including representative from

the IT Centre of the University with a view to justifying the institution's readiness in terms of staff support in using technology to enhance their academic behaviour.

The research findings reveal that, majority of Ahmadu Bello University lecturers are aware and use the Web platforms which involves both social media and social networking sites and that WhatsApp and Facebook are the most used social media while the Research Gate and Google Scholar are the two most academic resources or social networking sites used by these academics through both mobile and office network and the usage also transform knowledge sharing behaviour among them, as assumed by Diffusion of innovation theory that use of technology or innovation improve job performance of its users. The use of these technologies influences online visibility of both academics and the institution thereby communicating ideas about academic updates since they have the zeal to communicate new ideas/knowledge, socialize with friends to avoid the fear of missing out.

Conclusively, the findings of this research attempt to answer the research questions, falsified hypothesis 1 and approved hypothesis 2,3,and 4. On the issue of the academics' level of awareness it has been revealed that, the academic staff of the ABU Zaria are quite aware and also use the social media and social networking applications for their academic and information sharing purposes such as update of academic activities. In addition, senior lectures use social networking applications like Blog than those with lower designations. Thus, can be related to the adoption categorization as stipulated in the Diffusion of Innovation theory that; among the adopters of technology there are Early adopters, Early majority, late majority and laggards. So, among the academics there are early adopters and laggards of using the social media and social networking sites.

On the question of the challenges faced while using these technologies, the research concludes that, the use of technology among the academics of the university under study face challenges of slow internet connectivity, data inflation and insufficient electricity supply in Nigeria. In addition, the findings indicate how inconsiderate serious the management of the higher institutions of learning are in Nigeria, where there is no much commitment towards providing effective technology for the learning purposes in their institutions. Thus, therefore, confirmed the theory of this study that the existing gap of knowledge between technology users makes those with access to technology more advantageous than those without the access, and the richest institutions of learning improve more than the poor ones in terms of technology integrations in the education system.

Even though the academics were not motivated by the university authority to use social media and social networking applications through technical support, they end up in using their personal money to buy both the data and the devices for their academic development. Thus, also attempt the research question on the motivational factors for using the social media and social networking applications among the academics in Nigeria. In fact, the adoption or diffusion of innovation such as the social media or social networking sites might be positive or negative for users as assumed by one of the theories guiding this research, Diffusion of Innovations.

It has been drawn from the research that the issue of knowledge gap or digital divide exists among the academics who are from rich or poor income segments of the society, in terms of using technology to communicate their ideas, since there are rich and poor among them, Similar differences are observed as well as between the private and public universities. Thus, therefore, confirmed Findings of the study confirmed that

the rich universities, nations and individuals will always have the higher rate of using technologies compared to the poor ones.

The issue of non-compliance by some universities or individual academics to use technology for learning has been traced during the COVID 19 lockdown when institutions were shut down in Nigeria. Even though the country is placed as the richest nation in Africa, almost none of the public universities were able to adopt switching their education system to online-based education during the lockdown. Due to the insufficient infrastructure in Nigeria some private universities used radio programs instead to provide education to their students. This is exactly what diffusion of innovation theory asserts, that, the adoption or diffusion process include knowledge, decision and implementation. It is either the institutions or faculty members have no knowledge of the usage or there is problem of implementation of the technology integration system.

With regard to the research question on the impact of COVID 19 pandemic during and after the lock down, the research concluded that during the COVID 19 pandemic the use of social media and social networking applications to communicate ideas has increased among the academics. Both survey and in-depth interview data indicate that the academics under study used their earned money to use the social media and social networking applications especially the video conferencing platforms, hence the authority only provided limited internet services within the school building.

During the pandemic lockdown many universities across the globe that have the financial power provided technical support in using programs such as Teams, Moodle, Blackboard, etc. for video conferencing and online education. However, under the

conditions of having limited institutional support provided in Nigeria it will not be wrong to say that the That is to say the academics were technologically and individually motivated by themselves to use the applications for the academic development. Compared to some universities across the globe, the authorities provide means of video conferencing like the Teams for example, the Eastern Mediterranean University North Cyprus, (emphasis mine).

On the research hypothesis, the findings indicated that hypothesis 1 (H1) stands rejected as majority of the respondents agreed that they are aware of the social media and social networking applications. While Hypothesis H2, H3, and H4 stands accepted as indicated in the analysis part of the study.

The following basic recommendations are put forward for action as a result of the findings from the study since it was conducted within the frame work of action research. These are:

Some social media and social networking parts of the web platforms such as Telegram, Teams, and Instagram are grossly under-utilized and lecturers should therefore begin to appreciate their importance in communicating their academic activities especially with the recent period of COVID 19 pandemic when education globally rely on the internet.

The level of awareness of the web platforms among some lecturers of some few faculties such as Arts, Veterinary Medicine and Engineering is still relatively low, and therefore adequate level of publicity of awareness should be created among the

academicians of the importance and indispensability of the platforms for all academic purposes.

The social media and social networking applications such as Teams, Zoom and Webinar applications should be explored by the academics of Ahmadu Bello University in forming personal and friendly relationships over the internet beside their academic use for their visibility online and enjoy the dividends of the 21st century abilities.

The challenge of data inflation should be considered by having effective implementation of social media strategies as well as appointing social media experts within the institution in addition to the provision of portable devices for the academics.

Another problem which they envisaged by the respondents is about the with the web platforms containing immoral and indecent contents. This should be solved by controlling the content of the platforms through international monitoring committees.

The outcome of this study has contributed to knowledge in the following ways:
The faculty academic staff of Ahmadu Bello University Zaria and other users of the social media would have appreciated the great importance the social media and social networking applications offer to their academic activities such as research update, communication and socialization.

The Institution itself through the management personnel would have documented the most used social media and social networking applications with a view to making them abundantly available to the institutions as secondary data that can be consulted by

future researchers of communication and media studies especially by Nigerian communication scholars who are in the field of communication.

The web applications stand as an innovation for the lecturers of ABU Zaria, even though the rest of the world use advanced levels of the applications such as artificial intelligence in the area of communication. The academics under study appear to be advantaged from the facilities of the social media and social networking applications as new platforms to share their ideas as assumed by the UTAUT theory that user's intention of acceptance and use of technology help in identifying the key influences of the acceptance.

REFERENCES

ABU. (2019, September 20). *Ahmadu Bello University Zaria About the institution*. Retrieved from ABU Zaria: https://abu.edu.ng/

Abushanab, E., Pearson, J. M., & Setterstrom, A. J. (2010). Internet banking and customers' acceptance in Jordan: the unified model's perspective. *Communications of the Association for information systems, 26(1), 23.*, 23.

Adedolapo, A., & Wole, O. (2019). Factors influencing knowledge sharing among academics in Bowen University, Nigeria. *Journal of Librarianship and Information Science*, 1-18.

Adler, P. S. (1975). The transitional experience: An alternative view of culture shock. *Journal of Humanities Psychology*, 13-23.

Adomi, E. E. (2005). Internet development and connectivity in Nigeria. *Program: Electronic Library and Information System*, 257-268.

Ahmad, Y. A., Ahmad, N. M., Ahmad, N., & Zakaria, N. H. (2019). Social media for knowledge-sharing: A systematic literature review. *Telematics and Informatics*, 72-112.

Akindele, M. I. (2011). The challenges facing early childhood care, development. *Early Childhood Educ J*, 161-167.

Aljuwaiber, A., Chase, R., & Chase, R. (2016). Communities of practice as an initiative for knowledge sharing in business organisations: a literature review. *Journal of Knowledge Management*, 731-748.

Al-Kurdi, O. F., El-Haddadeh, R., & Eldabi, T. (2020). The role of organisational climate in managing knowledge sharing among academics in higher education. *International Journal of Information Management*, 217-227.

Almeida, F. (2017). Concepts and dimensions of Web 4.0. *International Journal of Computer and Technology*, 740-746.

Altanopoulou, P., Katsanos, C., & Tselios, N. (2014). Effectiveness of wiki-based learning in higher education. *Research on E-learning and ICT in Education*, 137-147.

Amaya, A. T. (2013). Determinants of knowledge sharing in a public sector organization. *Journal of Knowledge Management*, 454-471.

Andrews, D. (1984). *The IRG solution: Hierarchical incompetence and how to overcome it souvenir*. Souvenir Press.

Arif, A. A., Dhanapal, D. D., Lari, P., & Angappa, G. (2018). Key factors influencing knowledge sharing practices and relationship with organisational performance within the Oil and Gas Industry. *Journal of Knowledge Management*, 1806-1837.

Arwuyo, O. M., & Omoera, O. S. (2019). An assessment of the learning environment of early childhood and development education in public schools in Esan West Local Government Area of Edo State, Nigeria. *Sociology International Journal*, 15-19.

Banker, D. V., & Bhal, K. T. (2020). Creating world class universities: Roles and responsibilities of academic leaders in India. *Educational Management Administration and Leadership*, 570-590.

Banks, A. (2008). *On the way to the Web: The secret history of the Internet and its founder.* USA: A Press.

Baran, S. J., & Davis, D. K. (2012). *Mass communication theory; foundations, ferment and future, 6th Edition.* New York: Wadsworth.

Barney. (2008). *The network society.* Polity.

Bate, A. W., & Poole, G. (2003). *Effective teaching with technology in higher education.* San Francisco: Jossey-Bass.

Birk, F. M., & Knierim, A. (2020). ICT for agricultural extension: Actor network theory for understanding the establishment of agricultural knowledge centres in South Wollo, Ethiopia. *Information Technology for Development*, 591-606.

Boehnke, K., Munch, T., & Hoffman, D. (2002). Development through media use? A German study on the use of radio in adolescence. *International Journal of Behavioural Development*, 193-201.

Browne, K. (2005). Snowball sampling: Using social networks to research non-heterosexual women. *International Journal of Social Research Methodology*.

Bryman, A. (2012). *Social research method 4th edition.* New York: Oxford University Press.

Bukowitz, W., & Williams, R. (1999). *The knowledge management field book. London: Financial Times Prentice Hall.* London: Financial Times Prentice Hall.

Bush, T. (2020). Knowledge production in educational leadership and management: Broadening the base. *Educational Management Administration and Leadership*, 207-208.

Butler, J. (2012). Grappling with change: Web 2.0 and teacher education. In D. Polley, C. Mim, & K. A. Persichette, *Developing Technology-Rich Teacher Education Program, Key Issues* (pp. 135-150). Hershey PA: IGI Global.

Byatzis, E. R. (1998). *Transforming qualitative information: Thematic analysis and code development.* London: Sage.

Chen, I. Y., Chen, N., & Kinshuk. (2009). Examining the factors influencing participants' knowledge sharing behaviour in virtual learning communities. educational technologies and society, 134-148. *Educational Technologies and Society*, 134-148.

Choudhury, N. (2014). World-wide web and its journey from web 1.0- web 4.0. *International Journal of Computer science and Information Technologies*, 8096-8100.

Chuang, S. H., Liao, C., & Lin, S. (2013). Determinants of knowledge management with information technology support impact on firm performance. *Information Technology and Management*, 217-230.

Clark, L. S., Demont-Heinrich, C., & Webber, S. A. (2004). Ethnographic interviews on the digital divide. *New Media and Society*, 529-547.

Cohen, L., Manion, L., & Marrison, K. (2011). *Research methods in education 7th edition.* New York: Routledge.

Cohen, L., Manion, L., & Marrison, K. (2011). *Research methods in education, 7th edition.* London: Routledge.

Corey, S. M. (1953). *Action research to improve school practice.* New York: Columbia University Press.

Crook, C., Cumming, J., Fisher, T., Graber, R., Harrison, C., Lewin , C., . . . Sharples, M. (2008). *Web 2.0 technologies for learning: The current landscape-opportunities, challenges and tension.* UK: BECTA Research Report.

CRS. (2020, 03 28). *Creative research system*. Retrieved from Survey System: https://www.surveysystem.com/sscalc.htm

David, I., Poissant, L., & Rochette, A. (2012). Clinicians' expectations of web 2.0 as a mechanism for knowledge transfer of stroke practice. *Journal of Medical Internet Research*.

Dijk, J. A. (2012). The evolution of the digital divide; the digital divide turn to inequality of skills and usage. In J. A. Van Dijk, & t. D. Bus, *Van Dijk, J A G M (2012) The Evolution of the Digital Divide; the Digital Divide turn to I Digital Enlightment Yearbook 2012 (Eds).* USA: IOS Press.

Dwevedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the UTAUT: towards a revised theoretical model. *Information System Front*, 719-734.

Eadie, F. W. (2009). *21st century communication; a reference handbook, volume 1 &2*. London: SAGE.

Easley, D., & Kleinberg, J. (2010). *Networks, crowds and markets: reasoning about a highly connected world.* UK: Cambridge University Press.

Ebner, M., Lienhardt, C., Rohs, M., & Meyer, I. (2010). Microblogging in higher education: A chance to facilitate informal and process-oriented learning. *Computer and Education*, 92-100.

Edger, A., & Sedgwick, P. (2008). *Cultural theory.* London: London: Routledge.

Eria, S. (2019). Diffusion of GIS in Uganda: The role of change agents, opinion leaders, champions, social network links and reinvention. *GeoJournal*, 1567-1595.

Eria, S., & McMaster, R. B. (2017). GIS diffusion in Uganda. *International Journal of Geographical Information Science*, 884-906.

Eshet-Alkalai, Y. (2004). Digital Literacy: A conceptual framework for survival skills in the digital age. *Journal of Educational Multimedia and Hypermedia, 93-106.*, 93-106.

Eveland, J. D. (1986). Diffusion, technology transfer and implementation. *Knowledge Creation, Diffusion Utilization*, 303-322.

Fabre, R. (2016). *New challenges for knowledge: digital dynamics to access and sharing.* London: WILEY.

Fagrell, H., & Ljungberg, F. (2000). Empirically informed knowledge management system in mobile domains. *PDC* (pp. 60-69). New York: NY.

Fagrell, H., Kristoffersen, S., & Ljungberg, F. (1999). Exploring support for knowledge management in mobile work. *ECSCW Copenhegen*, (pp. 259-275). Denmark.

Farber, D. (2007). *From semantic web (3.0) to the webOS (4.0).* Retrieved from semantic Web (3.0) to the WebOS (4.0): http://www.zdnet.com/blog/btl/from-semantic-web-30-to-the-webos-

Flick, U., Kardorff, E., & Steinke, I. (2004). *A companion of qualitative research.* London: SAGE.

Fuchs, C. (2017). *Social media; A critical introduction, 2nd edition.* London: Sage.

Fuchs, C. (2020a). Everyday life and everyday communication in coronavirus capitalism. *TripleC*, 375-399.

Fuchs, C. (2020b). *Communication and capitalism: A critical theory.* London: University of Westminster Press.

Fuchs, C. (2020c). *Nationalism on the Internet: A critical theory and ideology in the age of social media and fake news.* New York: Routledge.

Gaal, Z., Szabol, Obermayer-Kovacs, N., & Csepregi, A. (2015). Exploring the role of social media in knowledge sharing. *The Electronic Journal of Knowledge Management*, 185-197.

Gamji, M. B., Kara, N., Nasidi, Q. Y., & Ibrahim, A. A. (2021). The challenges of digital divide and use of web 2.0 platforms as knowledge sharing tools among Nigerian academics. *Information Development*.

Greenberg, J., Sutton, S., & Campbell, G. D. (2003). Metadata: A fundamental component of the semantic web. *Bulletin of the American Society for Information Science and Technology*, 16-18.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., Kyriakidou, O., & Peakock, R. (2005). Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social Science & Medicine 61*, 417-430.

Gunilla, W.-W. (2007). *The challenges of knowledge sharing in practice.* England: Chandos Publishing Oxford.

Gupta, S., Habjam, J., & Tutek, H. (2016). *Academic labour, unemployment and global higher education; neoliberal policies of funding and management*. Palgrave: Macmillan.

Hall, E. T. (1959). *The silent language.* Garden City. New York: Doublelady.

Han, S. H., Seo, G., Yoon, S. W., & Yoon, D. Y. (2016). Transformational leadership and knowledge sharing: Mediating roles of employee's empowerment, commitment, and citizenship behaviours. *Journal of Workplace Learning*, 130-149.

Hansen, A., Cottle, S., Negrine, R., & Newbold, C. (1986). *Mass communication research method.* NewYork: Palgrave.

Harvey, D. (2020). *Anti-capitalist policies in time of COVID 19.* JACOBIN.

Hau, Y. S., Kim, B., Lee, H., & Kim, Y. G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 356-366.

Ho, J., & Thukral, H. (2009). Tuned in to student success: assessing the impact of interactive radio instruction for the hardest-to-reach. *Journal of Education for International Development*, 34-51.

Hoic-Bozic, N., Holenko Dlab, M., & Mornar, V. (2016). Recommender system and web 2.0 tools to enhance a blended learning model. *IEEE Transactions on Education*, 39-44.

Howard, P. P., Amanda, C. O., & Craig, B. (2010). Missing the boat with technology usage in early childhood settings: a 21st century view of developmentally appropriate practice. *Early Childhood Edu J*, 335-343.

Inan, F. A., & Lowther, D. I. (2010). Factors affecting technology integration in k-12 classroom: A path model. *Education Technology Research Develpment*, 137-154.

Jagboro, K. (2003). A study of internet usage in Nigerian universities: A case study of Awolowo University Ile-Ife, Nigeria. *First Monday*.

James, U. (2002). Determinants of the private costs of primary and early childhood education: findings from Plateau State, Nigeria. *International Journal of Educational Development,* 131-144.

Jean, J. S., & Margaret, D. L. (2013). *essential ethnographic methods; a mixed methods approach, (2nd Ed).* New York: Altamira Press.

Kara, N., Cubukcu, B., & Elci, A. (2020). Using social media to support teaching and learning in higher education: An analysis of personal narratives. *Research in Learning Technology*.

Katz, E. (1987). Communication research since Lazarsfeld. *Public Opinion Quarterly,* 525-545.

Kazaure, A. S., Dabai, U. S., Ali, M. S., Salisu, S., & Sabo, M. (2016). Identifying obstacles to knowledge sharing in an organization. *Dutse Journal of Pure and Applied Sciences*.

Khalil, T., Atieh, K., Muhammad, U., & Bagdadlian, F. (2014). Examining the social and technical factors influencing school teachers knowledge sharing intentions in a teachers online professional community. *The Electronic Journal of Knowledge Management,* 157-165.

Killingsworth, B., Xue, Y., & Liu, Y. (2016). Factors influencing knowledge sharing among global virtual teams. *Team Performance Management*, 284-300.

Kinnunen, J. (1996). Gabriel tarde as a founding father of innovation diffusion research. *Acta Sociologica 39*.

Kwahk, K. Y., & Park, D. H. (2016). The effects of network sharing on knowledge - sharing activities and job performance in enterprise social media environment. *Computer and Human Behaviour*, 826-839.

Lee, M. J., & Mcloughlin, C. (2011). *Web 2.0-based E-Learning: applying social informatics for tertiary teaching.* New York: Information Science Reference.

Lee, S., & Woods, K. J. (2010). Using contemporary topics and Internet resources to stimulate student-centred learning. *Australasian Journal of Educational Technology*, 775-790.

Lesha, J. (2014). Action research in education. *European Scientific Journal*, 1857-1881.

Lupac, P. (2018). *Beyond the digital divide; contextualizing the information society.* UK: Emerald.

Lyytinen, K., & Yoo, Y. (2001). The next wave of nomadic computing; a research agenda for information systems research. *Sprouts, Work Papers Information Syatem*, 1-10.

Marinoni, G., vant Land, H. V., & Jensen, T. (2020). *The impact of COVID 19 on higher education around the world*. France: IAU Global Survey Report.

Mathew, N. S., Emmanne, D., Adebowale, E. S., & Sarhan, M. M. (2016). Mathew, N O S, Emmanne, D., Adebowale, E S, & Sarhan, M Saran. (2016) Digital divide. *Journal of Multidisciplinary Engineering Science and Technology*.

Mavrou, K. (2020). *COVID 19 and education; use technology for more inclusive approach.* AAATE.

Meyers, M. E., Erickson, I., & Small, R. V. (2013). Digital literacy and informal learning environment: An introduction. *Journal of Learning, Media and Technology,* 355-367.

Mowla, M. M., Ahmad, I., Habibi, D., & Phung, Q. V. (2017). Transactions of green communications and networking. *IEEE,* 264-280.

Muhammad, R. N., & Abu, H. H. (2010). Radio as an educational media: Impact on agricultural development. *Journal of the South Asia Research centre for Communication and Humanities,* 13-20.

NCC. (2021, August 8). *Nigerian communication commission*. Retrieved from Internet Development in Nigeria: www.ncc.org.ng

NCDC. (2020). *COVID 19 Guidance for schools in Nigeria.* Abuja: Nigeria Centre for Disease Controle, NCDC.

Nesheim, T., & Hunskaar, H. M. (2015). When employees and external consultants work together on project: Challenges of Knowledge sharing. *International Journal of Project Management*, 1417-1424.

Nunnally, J. (1978). *Psychomeric theory 2nd ed.* New York: McGraw-Hill.

Nwaerondu, N. G., & Gordon, T. (1987). The use of educational radio in developing countries: Lessons from the past. *International Journal of E-Learning and Distance Education*, 43-54.

O'Reilly, K. (2005). *Key Concepts in ethnography.* New York: SAGE Publications Inc.

Oyefolahan, I. O., & Dominic, P. (2013). Knowledge management systems use and competency development among knowledge workers: the role of socio-technical antecedents in developing autonomous motivation to use. *The Journal of Information and Knowledge Management Systems,* 482-500.

Ozad, B. E., & Barkan, M. (2004). Open learning: communicating with learner. *The Turkish Online Journal of Educational Technology*, 43-48.

Ozad, B., & Barkan, M. (2004). Lecture or the web-based courses for the tertiary level. *The Turkish Online Journal of Educational Technology, 38-41.*, 38-41.

Paroutis, S., & Al Saleh, A. (2009). Determinants of knowledge sharing using web 2.0 technologies. *Journal of Knowledge Management*, 52-63.

Paulin, D., & Suneson, K. (2012). Knowledge transfer, knowledge sharing and knowledge barriers-Three blurry terms in KM. *The Electronic Journal of Knowledge Management*, 81-91.

Pemberton, H. E. (1936). The curve of culture diffusion rate American sociological review, 1 (4): 547–556. *American Sociological Review*, 547-556.

Pena-Lopez, I. (2010). From laptops to computers: Bridging the digital divide in education. *RUSC*.

Peres, R. (2010). Innovation diffusion and new product growth models: A critical review and research directions. *International Journal of Research in Marketing*, 91-106.

Prensky, M. (2003). *Digital Game-based learning*. New York: Games2train.

Quan, L., Lan, L., & Di, Y. (2015). Factors influencing knowledge-sharing behaviour and learning effect: A Multilevel investigation. *Social Beahvior and Personality*, 1683-1698.

Randall, N. (1997). *The soul of the Internet: Net God, Netizons and the wiring of the world*. USA: Thomson Computer Press.

Rebbeca, S. N., & Moncrieff, C. (2007). *Early childhood education: An International Encyclopedia*. london: Praeger.

Rhodes, J., Hung, R., Lok, P., Lien, B. Y.-H., & Wu, C.-M. (2008). Factors influencing organisational knowledge transfer: Implication for corporate performance. *Journal of Knowledge management,* 84-100.

Rogers, E. M. (2003). *Diffusion of innovations.* Free Press.

Roggiero, T. E. (2000). Uses and gratification theory in the 21st century. *Mass communication and Society*, 30-37.

Ru-Chu, S. (2011). Can web 2.0 Technology assist college students in learning English writing? Integrating facebook and peer assessment with blended learning. *Australasian Journal of Educational Technology,* 829-845.

Saeed, S., Papek, V., Rhode, M., Reuter, L. R., Cavalho, A. F.-P., & Wulf, V. (2019). Nomadic knowledge sharing pracrices and challenges: Findings from a long-term case study. *Digital Object Identifier*, 63564-63577.

Sahin, I. (2006). Detail review of Roger's diffusion of innovations theory and educational technology-related studies based on Roger's theory. *The Turkish Online Journal of Educational Technology*.

Sajda, Q. (2012). As the global digital divide narrows, who is being left behind? *Information Technology for Development*, 277-280.

Sajda, Q. (2014). Overcoming technical determinism in understanding the digital divide; where do we go from here? *Information Technology for Development*, 215-217.

ScholarsatRisk. (2018). *Promoting Higher education values: A guide for discussion.* Scholars at Risk Network.

Seba, I., Rowley, J., & Delbridge, R. (2012). Knowledge sharing in the Dubai police force. *Journal of Knowledge Management*, 114-128.

Serrano-Cinca, C., Munoz-Soro, J. F., & Brusca, I. (2018). A multivariate study of internet use and the digital divide. *Social Science Quarterly*.

Shagrir, L. (2017). *Journey to ethnographic research, springer briefs in education.* Springer.

Shana, M. M., & Kenneth, L. H. (2003). Applying communication theory to digital divide research ICT and society, 1/5/4. *ICT and Society*.

Sharma, P., & Land, S. (2019). Patterns of knowledge sharing in an online affinity space for diabetes. educational technology research and development, 247-275. *Educational Technology Research and Development*, 247-275.

Shohar, B., Ubaid, U. S., & Ali, S. (2019). Personality and technology; big five personality traits as descriptors of universal acceptance and usage of technology, UTAUT. *Library Philosophy and Practice*.

Sindhvad, S., Mikayilova, U., & Kazimzade, E. (2020). Factors influencing instructional leadership capacity in Baku, Azerbaijan. *Educational Management, Administration and Leadership*, 1-18.

Soetan, A. K., Ogunlade, O. O., Fakomogbon, M. A., & Bolaji, H. O. (2014). Availability and utilization of information and communication technology (ICT) in early childhood education in Ilorin, Nigeria. *Journal of Science, Technology, Mathematics and Education*.

Spier, L. (1929). The building of cultures Roland B. Dixon. *American Anthropologist 31*.

Stuart, M., & Nicola, H. (1986). *Research methods handbook: Introductory guide to research methods for social research.* Manchester: Centre for local Economics Strategies CLES.

Suarez-Rodriguez, J., Almerich, G., Oreliana, N., & Diaz-Garcia, I. (2018). A basic model of integration of ICT teachers; competence and use. *Educational Technology, Research and Development*, 1165-1187.

Taft, R. (1977). Coping with unfamiliar culture. In N. Warren, *Studies in Cross-Cultural Psychology (pp. 125-153). London: Academic Press.* (pp. 125-153). London: Academic Press.

Talib, M. A., Bettayeb, A. M., & Omer, R. I. (2021). Analytical study on the impact of technology in higher education during the age of covid 19: Systematic literature review. *Education and Information Technologies*.

Tan, C. N. (2016). Enhancing knowledge sharing and research collaboration among academics: The role of knowledge management. *The Journal of Higher Education*, 1–32.

Theresa, R. R., & Erwin, V. J. (2006). Educational radio, childhood, and philanthropy: A new role for the humanities in popular culture from 1924-1941. *Journal of Radio Studies*, 1-18.

Thomas, D. T., & Bekele, D. (2000). *Ethiopia: Educational radio and television.* Ethiopia: Knowledge Enterprise.

UNESCO. (2020). *COVID 19 and higher education; today and tomorrow*. UNESCO International Institute for Higher Education.

Van-Deursen, A. J., & Van-Dijk, J. A. (2014). The digital divide shift to differences in usage. *New Media and Society*, 507-526.

Van-Dijk, J. A. (2012). The evolution of the digital divide; the digital divide turn to inequality of skills and usage. In J. Bus, *Digital Enlightment Yearbook 2012, (Eds).* USA: IOS Press.

Venkatesh., Morris, M. G., Davis, G. B., & Davis, F. B. (2003). User acceptance of information technology: Toward a unified view. *Management Information System Quarterly*, 425-478.

Vesisenaho, M., Valtonen, T., Kukkenen, J., & Anu, S. H. (2010). Blended learning with everyday technologies to activate students' collaborative learning. *Science Education International*, 272-283.

Wang, S., & Noe, R. A. (2010). Knowledge sharing; A Review and direction for future research. *Human Resources Management*, 115-131.

Warschaver, M. (2007). The paradoxical future of digital learning. *Learn Inq*, 41-49.

Weiyan, L. (2015). A historical overview of uses and gratification theory. *Cross Cultural Communication*, 71-78.

Whitworth, A. (2009). *Information Obesity.* UK: Chandos.

WHO? (2020). *WHO announces COVID 19 outbreak as pandemic?* World Health Organisation.

Williams, K. (2003). *Understanding media theory.* New York: Oxford University Press.

Williams, M. D., Rana, N. P., & Dwivedi, Y. K. (2014). The unified theory of acceptance and use of technology UTAUT: A literature review. *Journal of Enterprise Information Management*, 443-488.

Wimmer, R. D., & Dominick, J. R. (2006). *Mass media research; An introduction 8th edition.* UK: Thomson Wadsworth.

Wimmer, R. D., & Dominick, J. R. (2011). *Mass media research; An introduction. 10th edition.* Boston: Wadsworth Cangage Learning.

Winkelman, M. (1994). Cultural shock and adaptation. *Journal of Counselling and Development*, 121.

Worldbank. (2020, May 21). *EduTech COVID 19*. Retrieved from The World Bank: https://www.worldbank.org/en/topic/edutech/brief/edtech-covid-19

WorldBank. (2020). *Guidance note on education systems' response to COVID 19.* World Bank.

Worldbankedu. (2020). *The COVID-19 Crises response: Supporting tertiary education for continuity adaptation and innovation.* World Bank Group; Education.

Xiao, Z. (2020). 'You Are Too Out!' A mixed methods study of the ways in which digital divides articulate status and power in China. *Information Development,* 257-270.

Yunjuan, G., & Guangqiu, H. (2014). The research of influencing factors of knowledge sharing in virtual communities. *Applied Mechanics and Materials*, 3070-3073.

Zalat, M. M., Hamid, M. S., & Bolbol, S. A. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the covid 19 pandemic among university medical staff. *PLosONE*.

Zapf, M. K. (1991). Cross-cultural transitions and wellness; dealing with culture shock. *Internal Journal for the Advancement of Counselling*, 105-119.

APPENDICES

Appendix A: Questionnaire

Dear Respondent

Thank you for your time and agreeing to participate in this very important survey. The use of New Communication Technology in education has become a topic of research amongst media researchers and educationists, especially the use of Social Media and Social Networking Applications as knowledge sharing technologies. The 21st century research has been fully characterised by digital technologies; therefore, this study aim at investigating how academics use social media and social networking applications for knowledge sharing, being a PhD research by a student of the Faculty of Communication and Media studies, Eastern Mediterranean University, Northern Cyprus. The study is anonymous, do not write your name on the questionnaire nor feel obligated to answer all questions if you are not comfortable or unable to do so. We very much appreciate your effort for taking time to complete our questionnaire. Thank you.

NB: Please **tick or cycle** appropriately.

Demographic Information

1. Gender
    a) Male (b) Female (c) Others, specify ……
2. Age group
    a) 18-25 (b) 26-45 (c) 46-55 (d) 56 and above
3. Educational qualification
    a) Bachelor's Degree b) Masters c) PhD d) others, specify……
4. Academic designation
    a) Graduate Assistant (b)Assistant Lecturer (c)Lecturer II (d)Lecturer I (e)Senior Lecturer (f) Reader/ Associate Professor (g)Professor (h) Others specify……
5. Faculty:
    Specify…….

Information on the acceptance and uses of Web 2.0 platforms

6. Are you aware of the web platforms (social media and Social Networking Applications)?
    a) Yes (b) No
7. Are you using web platforms, (social media and Social Networking applications)?
    a) Yes (b) No
8. What sort of social media do you use? Please tick appropriate **ONES**
    a) Facebook (b) Twitter (c) WhatsApp (d) Instagram (e)Telegram (f) Others, specify…….
9. What sort of Social Networking Applications do you use? Please tick appropriate **ONES**
    a) Blogs (b) Wikipedia (c) Research Gate (d) Academia Edu (e) Google Scholar (f) Wikis (g) Others, specify…….
10. For how long have you been using social media?
    a) 1-5 years (b) 6-10 years (c) 11-15 years (d) 15 and above (e) Others, specify…….
11. For how long have you been using Social Networking Applications?
    A) 1-5 years (b) 6-10 years (c) 11-15 years (d) 15 and above (e) Others, specify…….
12. Intensity of uses of web platforms (social media and Social Networking Applications)
    a) Several times a day (b) Daily (c) Weekly (d) Monthly (e) Rarely
13. What are your reasons for using web platforms? Please tick appropriate **ONES**
    a) Fear of missing out (b) Socialisation (c) Making new friends (d) Sharing new ideas / knowledge (e) Making fun/entertainment (f) All of the above
14. Web platforms transform knowledge sharing behaviour among academics.
    a) Strongly agree (b) Agree (c) Undecided (d) Disagree (e) Strongly disagree
15. Use of web platforms for knowledge sharing, influence the online visibility of…
    a) Academics/Researcher (b) Institutions (c) All of the above

Information on the motivational factors for knowledge sharing

16. Individual factor influences knowledge sharing behaviour among academics through web platforms

    (a) Strongly agree (b) Agree (c) Undecided (d) Disagree (e) strongly disagree

17. Organizational or management factor influences knowledge sharing using web platforms

    (a) Strongly agree (b) Agree (c) Undecided (d) Disagree (e) strongly disagree

18. Technological factor influences knowledge sharing behaviour among academics using web platforms

    (a) Strongly agree (b) Agree (c) Undecided (d) Disagree (e) strongly disagree

19. Social or cultural factor influences knowledge sharing behaviour among academics using web platform

    (a) Strongly agree (b) Agree (c) Undecided (d) Disagree (e) strongly disagree

20. What category (ies) of sharing do you use via web platforms? Tick more than **ONE**

    a) Basic sharing (b) Sharing with notification (c) Sharing with feedback (d) Sharing with interaction

21. What sort of web platforms (social media and social networking applications) do you recommend as most effective for academic discussions (sharing of ideas)?

    Specify .....

22. What challenges do you face while using web platforms as knowledge sharing

    technologies?.....

23. Why is it necessary for the 21st century academics to share their knowledge online?

    Comment

    .....

Appendix B: Interview Guide

Supplementary Interview schedule guide for Nigerian academics

The following questions will additionally be used to guide the in-depth interview to gather qualitative data from the participants of this study.

1. Based on your experiences in using web platforms to share your knowledge with either colleagues or students, are there any challenges, merits or demerits that you have encountered/observed that you can share about?
2. How do you determine the boundaries around technological Innovation; the transition within the World Wide Web WWW, from web 1.0 to 4.0 and the future?
3. Are there significant ways in which the use and impact of technology on your work (academic activities) may have changed if you think in terms of before covid-19 and during the pandemic (from late March to Present)? Kindly compare and share the highlights on the major changes, along the lines of questions “a” and “b” below:

a) How do you apply technology for academic activities before the lockdown?

b) How do you apply technology for academic activities during the lockdown?

Appendix C: Chi Square Critical Table

	α =0.995	0.99	0.975	0.95	0.9	0.1	0.05	0.025	0.01	0.005
df =1	---	---	0.001	0.004	0.016	2.706	**3.841**	5.024	6.635	7.879
2	0.01	0.02	0.051	0.103	0.211	4.605	**5.991**	7.378	9.21	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	**7.815**	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	**9.488**	11.143	13.277	14.86
5	0.412	0.554	0.831	1.145	1.61	9.236	**11.07**	12.833	15.086	16.75
6	0.676	0.872	1.237	1.635	2.204	10.645	**12.592**	14.449	16.812	18.548
7	0.989	1.239	1.69	2.167	2.833	12.017	**14.067**	16.013	18.475	20.278
8	1.344	1.646	2.18	2.733	3.49	13.362	**15.507**	17.535	20.09	21.955
9	1.735	2.088	2.7	3.325	4.168	14.684	**16.919**	19.023	21.666	23.589
10	2.156	2.558	3.247	3.94	4.865	15.987	**18.307**	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	**19.675**	21.92	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	**21.026**	23.337	26.217	28.3
13	3.565	4.107	5.009	5.892	7.042	19.812	**22.362**	24.736	27.688	29.819
14	4.075	4.66	5.629	6.571	7.79	21.064	**23.685**	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	**24.996**	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	**26.296**	28.845	32	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	**27.587**	30.191	33.409	35.718
18	6.265	7.015	8.231	9.39	10.865	25.989	**28.869**	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	**30.144**	32.852	36.191	38.582
20	7.434	8.26	9.591	10.851	12.443	28.412	**31.41**	34.17	37.566	39.997
21	8.034	8.897	10.283	11.591	13.24	29.615	**32.671**	35.479	38.932	41.401

22	8.643	9.542	10.982	12.338	14.041	30.813	**33.924**	36.781	40.289	42.796
23	9.26	10.196	11.689	13.091	14.848	32.007	**35.172**	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	**36.415**	39.364	42.98	45.559
25	10.52	11.524	13.12	14.611	16.473	34.382	**37.652**	40.646	44.314	46.928
26	11.16	12.198	13.844	15.379	17.292	35.563	**38.885**	41.923	45.642	48.29
27	11.808	12.879	14.573	16.151	18.114	36.741	**40.113**	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	**41.337**	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	**42.557**	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	**43.773**	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	**55.758**	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	**67.505**	71.42	76.154	79.49
60	35.534	37.485	40.482	43.188	46.459	74.397	**79.082**	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	**90.531**	95.023	100.425	104.215
80	51.172	53.54	57.153	60.391	64.278	96.578	**101.879**	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	**113.145**	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	**124.342**	129.561	135.807	140.169

Appendix D: Coded Responses from the In-depth Interview

1. Awareness of the social media and social networking applications

Maichiki Manasseh Paul Male 42yrs

My advice to other colleagues in terms of using web platforms is that we should take technology to be important tool for teaching because the world is going online and electronically in learning we should therefore accept it and give it what it deserved than normal leaning environment.

Abubakar Shehu Male 35yrs

Technology is here to stay, so I would encourage everybody to embrace it because this is the future and a lot of innovation are still ongoing. So, embrace it, try and adapt make this a reality, assessment is possible today, interaction is possible to let everybody come on bord, this is the future you do not want to be left behind

Sani Mohammad Male 40yrs

I think one of the ventures that grow so fast in the world is technology, everyday there are innovations, in that respects. So, the www that has grown over time what you could not access during the web1.0 you can access it in web2.0 or 3.0

Ahmad Abubakar Male 50yrs

Yes, we can say the boundaries of the web 1.0 to 4.0 actually is an advancement a way of enhancing the behaviour and culture of sharing idea and information. Before we only use email but today, we have a lot and different applications ranging from Facebook and WhatsApp and the rest,

Abdul Azeez Haruna Male 49yrs

The issue of web transition, the web 1.0 is the first to be develop and used for sharing of ideas and information

Amina Aminu female 37yrs

Sharing information via web 1.0 was not interactive you have to wait for a while to get feedback but with the advancement of web 2.0 to 4.0 where there are social media and social networking applications the issue of interactivity become very high and effective with immediate feedback. The world has change just as what Marshal McLuhan said in the 1960s that the world will be a global village, and the medium is the message

Ruqayya Ibrahim Abdullahi female 41yrs

Well as a researcher, I most confessed that the web platforms really assisted in terms of academic development, communication and other related issues

Tamar H Dembo female 45yrs

The transition is actually a development, but because we are in Nigeria a developing nation, and what we have in terms of web transition is web 2.0 with interactivness

Tamar H Dembo female 45yrs

Well to talk about my own experience in terms of using social media and social networking applications for either communicating with students or colleagues. I tried to become up-to-date of what is happening in my own social platform,

Almansur Ado Male 47yrs

Well for technology we can say it is always advancing and you know initially prior to the coming of web 1.0 it was read only format of the web, the web 1.0 allowed us to read the information that is there on the screen or looking at shopping sites

Emmanuel David male 32yrs

So, the transition from web 1.0 to web 2.0 allowed readers to read and write with feedback, comments etc, that also allow interactivity little bit. Then the web 3.0 which is the semantic web allowed you to read, write and execute on the web. Looking at all

the transition of the web now the web 4.0 with interactivity of the highest order and immediate response, that is immediacy is there in it.

2. **Sort of social media and social networking applications used by academics**

Maichiki Manasseh Paul male 42yrs

So far so good some modern LMS has incorporate those future such as video conferencing in order to aid learning and teaching

Ruqayya Ibrahim Abdullahi female 37yrs

Yes, I can't remember when we use our LMS to communicate with our colleague, but outside the LMS we do communicate and share ideas through applications like WhatsApp and Facebook messenger

Tamar H Dembo female 50yrs

and attend meeting via zoom

Abubakar Shehu male 35yrs

Yes, we can say the boundaries of the web 1.0 to 4.0 actually is an advancement a way of enhancing the behaviour and culture of sharing idea and information. Before we only use email but today, we have a lot and different applications ranging from Facebook and WhatsApp and the rest,

Amina Aminu female 41yrs

we enjoy using it particularly the WhatsApp, Instagram, tick talk and others. We are using them to share ideas, information between us and the students.

Sani Muhammad male 40yrs

I prefer using WhatsApp to share information or any research work with my students, because it is more of interpersonal communication between the teacher and students, unlike Facebook which is for the general public.

Almansur Ado Male 47yrs

The academics during the pandemic attend conferences virtually through Zoom,

Ahmad Abubakar male 50yrs

we chat and have video conferences via social media and social networking applications such as Zoom meeting, google meet,

Maichiki Manasseh Paul male 42yrs

I do use Zoom meeting application to attend conferences, lectures somewhere around the globe for myself development academically

Abdul Azeez Haruna male 49yrs

I prefer using the webinar. So, you have to adopt the challenges.

3. **Use of social media and social networking applications by academics**

Abubakar Shehu male 35yrs

I have students all over, and they don't need to be on campus. though it is optional if they wish they can come to the school premises for site seeing not teaching purpose.

Maichiki Manasseh Paul male 42yrs

My advice goes to the regulatory bodies and agencies, they should make the policy so that all the universities, teaching institutions, educational institutions will have web platforms such as learning management system for them to use it, and their students can have access to information and knowledge without being in the school

Abdul Azeez Haruna male 49yrs

Web platforms are very important tool in our society today and from time being I started using technologies; social media and social networking applications, but we have gone a long way compared to normal teaching classes, online teaching is quite better

Ruqayya Ibrahim Abdullahi female 37yrs

There are a lot of advantages in using web platforms, especially during the coved 19 pandemic period when other students are away from the classes ours are in the class virtually, we interact online,

Sani Muhammad male 40yrs

I am using web platforms as an experience teacher and both social media and social networking applications are user friendly

Almansur Ado Male 47yrs

Yes, I only share information with colleagues and students via web platforms.

Abubakar Shehu male 35yrs

My advice to other colleagues in terms of using web platforms is that we should take technology to be important tool for teaching because the world is going online and electronically in learning we should therefore accept it and give it what it deserved than normal leaning environment.

Amina Aminu female 41yrs

well using technology such as web2.0 and beyond has actually enable what we have today like distance learning education, before, things are difficult to make

Tamar H Dembo female 50yrs

Web2.0 has actually made it reality as tutor were able to give assignment online,

Maichiki Manasseh Paul male 42yrs

we use discussion forum to discuss with the student

Emmanuel David male 32yrs

These applications give us opportunity to use multimedia format in teaching whereby the students have softcopy of reading materials, video and audio clips as well as some sources for learning that is relevant to the student's courses.

Ahmad Abubakar male 50yrs

Using social media and social networking application for learning is very interesting generally knowledge sharing through these applications help Nigeria as a country to improve its learning system.

Sani Muhammad male 40yrs

In fact, I have never attended any zoom conferencing in my life, but during the pandemic I have attended 2

Ruqayya Ibrahim Abdullahi female 37yrs

Part of the advantages of these social media and social networking applications is that it allows for knowledge sharing, we share a lot of ideas among ourselves and even among students themselves, but among the academics we share educational materials like eBooks through or networking applications that we create for sharing issues.

Abubakar Shehu male 35yrs

Yes, sometimes I use social media to post a question to my students and they do respond, I use their responses for my academic research thereby knowing their capabilities.

Maichiki Manasseh Paul male 42yrs

Actually, we can say during the pandemic we advanced the usage of the social media and social networking applications unlike before the COVID 19 pandemic where we have limited platforms to interact with the students and colleagues. So, in the absence of many physical classes we resolved in using technology to continue with our activities.

Amina Aminu female 41yrs

Social media and social networking applications are part of the technologies we use in the 21st century academics especially in the higher institutions of learning

Ahmad Abubakar male 50yrs

Social media and social networking applications really support academic activities for both students and lecturers in the higher institutions of learning. But you need to be hardworking otherwise you will find it difficult to use it.

Tamar H Dembo female 50yrs

Sharing information via web 1.0 was not interactive you have to wait for a while to get feedback but with the advancement of web 2.0 to 4.0 where there are social media and social networking applications the issue of interactivity become very high and effective with immediate feedback. The world has change just as what Marshal McLuhan said in the 1960s that the world will be a global village, and the medium is the message

Abdul Azeez Haruna male 49yrs

In fact, the transition is really a development it has changed the world entirely including the academic world since we can do all our work at home, office anytime anywhere through our phones on the web.

Maichiki Manasseh Paul male 42yrs

I have attended a meeting with some organizations via Zoom meeting application during the pandemic.

Abubakar Shehu male 35yrs

Communication is vital in human endeavour and the platforms has created an avenue that reduce our stress of traveling to attend conferences, you know you can be at home and send the abstract of your paper, and attend the conference. Indeed, our devices give us opportunity to access information and response to them immediately, but before the digital age, we have to use our personal computers at home or internet café to access our emails.

Tamar H Dembo female 50yrs

we chat and have video conferences via social media and social networking applications such as Zoom meeting, google meet,

Emmanuel David male 32yrs

With the social media and social networking applications life is easier as well as academic communication

Ahmad Abubakar male 50yrs

I use social media platforms which is actually instant and active, especially if the person is online or active on social media. therefore, to send message via these platforms I think is more effective today even more than the email.

Sani Muhammad male 40yrs

…but when you move to 3.0 or 4.0, I don't think in Nigeria we actually experience using such or even benefited from it, yes, we only use web 2.0 and benefited from its interactivity

Abubakar Shehu male 35yrs

So, I personally I don't use social media or social networking application to teach my students but I do use Zoom meeting application to attend conferences, lectures somewhere around the globe for myself development academically. So, we use the platforms to attend lectures, seminars and conferences online.

Maichiki Manasseh Paul male 42yrs

In fact, it is technology that virtually simplifies academic activities around the globe, because the entire world has moved on and we are still battling with the 19th century or 20th century technologies talk less of the 21st century.

Sani Muhammad male 40yrs

In this digital era if you didn't use the technologies to improve yourself and your content delivery as a teacher, then you are virtually doing nothing,

Amina Aminu female 41yrs

when you find yourself out of your country for academic issue most of the time you have to be train or oriented on how to use the facilities there, because you don't have them back home, how can you use it

Ruqayya Ibrahim Abdullahi female 50yrs

Well to talk about my own experience in terms of using social media and social networking applications for either communicating with students or colleagues. I tried to become up-to-date of what is happening in my own social platform,

Abdul Azeez Haruna male 49yrs

I really don't' I don't normally send messages to students via social media platforms. I prefer to see them physically and inform them whatever I want to communicate to them.

Sani Muhammad male 40yrs

For students if you engage them in social media applications always, they will become lazy students, lazy in the sense that they wouldn't want to see you all the time physically, they avoid classes they always want you to give them soft copies or electronic document online so that they will stay at home, if you decide to give them a test that is when you

Abubakar Shehu male 35yrs

if you look at our departmental group, we normally send notices and everything on academic issue via the platform,

Ahmad Abubakar male 50yrs

Well the use of social media and social networking applications have made our work easier very much easier that time and space is not our problem any more

Amina Aminu female 41yrs

When you are addictive to something that means you have developed a certain relationship with it so we have that relationship with our devices.

4. **Factors Influencing use of social media and social networking applications**

Emmanuel David male 32yrs

It is possible to meet a number of students at a particular time using web platform for example, there is what we called Synchronous and Asynchronous teaching online

Maichiki Manasseh Paul male 42yrs

so, convenience is one of the advantages of using social networking applications, compared to conventional classroom

Abdul Azeez Haruna male 49yrs

web platforms are very flexible and therefore make learning so flexible too. Teachers can use these platforms to caution their students online, despite the fact that you don't see them; face-to-face

Sani Muhammad male 40yrs

The speed at which you access such information on the web also changes. The free access or the web also has changed, because then even computers are not accessible easily as well as the web. Every day they keep on improving on the web platforms and the improvement is of higher advantage because it helps to do so many things online

Tamar H Dembo female 50yrs

Conflict itself has its own advantages but we look at negative part, there are developments in some conflict. Yes, if not because of covid19, there are so many

things in Nigeria that might not be achieved. Some universities in Nigeria have introduced online learning for their students which they never think of, some who are conservative in nature.

Ahmad Abubakar male 50yrs

It allows sharing of information, sometimes you don't need to listen to radio or watch television, you get all the information via social media, and also it serves as entertainment platform, when you got tired, we sometimes be entertained through social media that will help us ease our difficulties.

Maichiki Manasseh Paul male 42yrs

Actually, the boundaries are a way of expanding this technology and help us a lot in performing our academic activities and improve learning itself.

Amina Aminu female 41yrs

In terms of the management support, I can say, no, at all we are just encouraged as a teacher to be using virtual platforms for the profession, but yes there was no any official application or provision from the university management, we use it personally to enhance our sharing culture.

I therefore, advised the university management to look at the possibility of providing an official platform that will help lecturers to enhance their academic activities.

Sani Muhammad male 40yrs

The advantage of social media and social networking applications differs, therefore, to me as academic we don't need to call students face-to-face, we use it to inform them of what we are going to treat as a topic, for them to get ready before time

Abubakar Shehu male 35yrs

Another advantage is that social media and social networking applications are interactive in nature, the issue of interactivity is there, anytime you can send

information for the benefit of the students and interact with them before the actual class.

Maichiki Manasseh Paul male 42yrs

Regarding the management of the institution to provide online conferencing applications for the academics, the present Vice Chancellor tried on that to make it a reality but somewhere around the line they stopped the effort.

Ruqayya Ibrahim Abdullahi female 37yrs

It is really very vital for the academics, since you can do all your work at home and deliver things online, for those who don't use it should start now for them not to be left behind, no one will do it for you one day.

Almansur Ado Male 47yrs

with this transition or development in the world wide web, the communication is more interactive and interpersonal, since we chat and have video conferences via social media and social networking applications such as Zoom meeting, google meet, and the rest of them. The transition really helps the academic activities to improve.

Sani Muhammad male 40yrs

The university only provide internet facility in the office, LAN and Wireless that we connect to our devices, but the video conferencing applications or learning management system for both students and the lecturers were not there

Abdul Azeez Haruna male 49yrs

The second advantage is the prompt feedback, so when you see that you witness absence of feedback or delayed one for about some time you know there may be a problem either the person is not online or the network is poor, so to me communication via social networking applications and social media is more effective, faster and accurate.

Ruqayya Ibrahim Abdullahi female 37yrs

There should be appropriateness of this technology for the developing nations like Nigeria because we have to consider the literacy level of the technology among the people, remember that we in a knowledge economy era, and here in Nigeria our economy is knowledge-based and knowledge is about information not industry based as the case here in Nigeria.

Ahmad Abubakar male 50yrs

I personally I don't use social media or social networking application to teach my students but I do use Zoom meeting application to attend conferences, lectures somewhere around the globe for myself development academically. So, we use the platforms to attend lectures, seminars and conferences online.

However, when you are saying that you use it to teach then the university is expected to provide everything for that, but I can tell you that my university doesn't provide any application meant for that even if there is, it is not widely communicated to us as academic staff

Abdul Azeez Haruna male 49yrs

My advice to the management of the university is that the social media and social networking applications should be embedded into learning and teaching system

Maichiki Manasseh Paul male 42yrs

Sincerely speaking we need technology related teaching support like smartboard projector and learning management system applications like teams.

Almansur Ado Male 47yrs

Well the use of social media and social networking applications have made our work easier very much easier that time and space is not our problem any more.

Ahmad Abubakar male 50yrs

Looking at the characteristics of social media and social networking applications with the fact that it is interactive in nature and also bridged the gap between the space and time to communicate with the friends to make you up-to-date with the department and entire university. When we have effective communication, we know the result will be positive one.

Tamar H Dembo female 50yrs

So, the transition from that to web 2.0 allowed readers to read and write with feedback, comments etc, that also allow interactivity little bit. Then the web 3.0 which is the semantic web allowed you to read, write and execute on the web. Looking at all the transition of the web now the web 4.0 with interactivity of the highest order and immediate response, that is immediacy is there in it.

Yes, I can say the transition is supportive for me as an academic because before now, you can read only no input, but now the communication process is now effective and the transition is more advantageous to the users since they can contribute in the production process.

Maichiki Manasseh Paul male 42yrs

However, the challenge is that you have to learn the processes and use of the applications like the zoom application which is for me not flexible,

5. **Challenges of using Social media and social networking applications**

Tamar H Dembo female 50yrs

Some of the challenges attached to web platforms such as the learning management system, LMS is that the platform doesn't have the capacity to accommodate large number of students, no video conferences facility for students to see as a learning tool

Sani Muhammad male 40yrs

They do have issue with power supply as well as the network, sometimes they have to travel to areas looking for a better network service.

Ahmad Abubakar male 50yrs

From the challenges sometimes we experience network problem which usually slow down the level of communication with our students

Ruqayya Ibrahim Abdullahi female 37yrs

Yes, we use technology at home but there is issue of network, that is why students preferred using WhatsApp platform

Abubakar Shehu male 35yrs

one challenge with some of the platform is that if you post a message for a targeted audience it will appeared for all instead of specific class, unlike those webs 3.0 platforms you can communicate with your students without other teachers having access to the information.

Amina Aminu female 41yrs

well the challenge, internet access in Nigeria today is still a major challenge, you see this, it occurs a number of times. A tutor experience down time, of the network and the centre tried to minimized the down time of the accessibility.

Maichiki Manasseh Paul male 42yrs

There are times tutor scheduled classes with students, then probably at his location there is internet issue, therefore, this tutor has to postponed the class, discussion or assignment that has already scheduled for that day at that time and sometimes assignments were given to students and expected to return it at a given time

Abubakar Shehu male 35yrs

Actually, using technology for teaching there are a lot of challenges attached to it; some of them are peculiar to the institution, Nigeria and even the world in general.

Amina Aminu female 41yrs

The basic challenges are issues of inadequate network and sometimes the challenges of power shortage that is power failure, even when you want to use the internet you tend to have the challenge of power failure.

Emmanuel David male 32yrs

Another challenge is limited that you can only interact with students using limited futures, for example, we use discussion forum to discuss with the student but component of video Conferencing and other related are not incorporated in the platform.

Ruqayya Ibrahim Abdullahi female 37yrs

There is challenge of feedback, there is no immediate feedback from the student if they were given instruction by their teachers,

Sani Muhammad male 40yrs

There are also instances that you have to soft-land in order to carry the students along, because some of the students don't have the knowledge on how to use the applications. They need basic skills so you are teaching, you have to carry them and put them through by facilitating and orienting them.

Abdul Azeez Haruna male 49yrs

I can say there a lot of challenges, but the major ones to me of using social media and social networking applications especially in our country Nigeria are two: 1) there is issue of network failure, sometimes you are working with internet it will stop because of certain irregularities attached with the networking system. 2) The second one is the

issue of power outage where you want to use the social media and the devices will fail no charge

Abubakar Shehu male 35yrs

The major disadvantage of the social media and social networking applications is that sometimes you may be exposed to phonographic sites that you don't want especially the video sites, you will be expose to what is contrary to your religion and culture especially the younger ones who are not aware of such issues

Abdul Azeez Haruna male 49yrs

One of the challenges we are facing in terms of using these platforms is lack of sufficient power supply in our country Nigeria, because the developing countries like ours face such problem where you can spend the whole day without electricity

Emmanuel David male 32yrs

The second challenge is that people are sceptical in the sense that they share ideas to the entire world, and they don't know who will access it, may be their students or academic colleagues from another country.

Maichiki Manasseh Paul male 42yrs

There is this challenge of network, the network is little bit fair, here in my department is fair in the sense that we have internet services within including wireless and LAN for the academics and students.

Abubakar Shehu male 35yrs

One of the challenges is the issue of connectivity or network, sometimes you may not be online and many have sent in messages for you but you could not access it because you don't have network, there is no connectivity

Ahmad Abubakar male 50yrs

The issue of data is another challenge, sometimes you don't have access to data to access the internet since you may rely on salary to subscribe for monthly data.

Emmanuel David male 32yrs

Another challenge also has to do with power supply since most of the cities they don't have frequent power supply in the country.

Tamar H Dembo female 50yrs

the major challenge I can say is network, the speed of the network is low,

Ruqayya Ibrahim Abdullahi female 37yrs

The second disadvantage is the issue of moral decadence in the society, it is increasing so high as a result of using the social media.

Abubakar Shehu male 35yrs

One issue about social media and social networking applications and the internet in general is the issue of privacy

Abdul Azeez Haruna male 49yrs

but one major disadvantage of using the video conferencing application is the connectivity especially in the developing nations like Nigeria, where the connectivity is not strong and the network is so terrible sometimes, you will be missing some portions of the conference.

Maichiki Manasseh Paul male 42yrs

security is a challenge of using internet, we have to be careful on any other information we share on the net and for the university the security issue should be considered and improve the strength of the connectivity of the network for the academics to have effective means of sharing their work and ideas.

6. **The impact of COVID 19 pandemic on the use of social media and social networking applications**

Abubakar Shehu male 35yrs

Yes, we discussed issues with colleagues virtually within the pandemic period. There is some period if we travelled, we used zoom application for virtual meetings and conferences, when the covid 19 lockdown was at pick we virtually hold our meeting, so pandemic doesn't affect us

Abdul Azeez Haruna male 49yrs

The only difference is the timing, the time spent before the covid 19 pandemic is less than during the pandemic online. Because you spend time doing activities online during the lockdown even at home. You also engage with your students all the time doing things at home since you are under lockdown, sometimes we use WhatsApp to share information even during the lockdown period.

Maichiki Manasseh Paul male 42yrs

The impact was not really negative though it slowed some activities

Ahmad Abubakar male 50yrs

The experience during the covid 19 is wonderful I most mention that, during the pandemic there was institutions closure of all levels,

Ruqayya Ibrahim Abdullahi female 37yrs

So, the only thing not done during lockdown was exams, because it is purely supervised as regulated by NUC.

Amina Aminu female 41yrs

but immediately when the lockdown was eased, they were called for exams using covid19 rules of social distancing.

Emmanuel David female 32yrs

In fact, I have never attended any zoom conferencing in my life, but during the pandemic I have attended 2. We have the opportunity to test some futures of our platform during the covid19 which was never used before

Almansur Ado Male 47yrs

Conflict itself has its own advantages but we look at negative part, there are developments in some conflict. Yes, if not because of covid19, there are so many things in Nigeria that might not be achieved. Some universities in Nigeria have introduced online learning for their students which they never think of, some who are conservative in nature.

Sani Muhammad male 40yrs

They don't think also of converting the delivery to online platforms, until when the covid 19 lockdown compelled them to adapt it and attend meeting via zoom, if not of covid 19 many institutions might not explore the benefits of web applications for knowledge communication.

Abubakar Shehu male 35yrs

Yes, before the pandemic we ask students to create group chat where they can post issues about their classes and materials that help their academic activities can be shared. We do that before the pandemic. During the pandemic we continue with it but in an advance stage because we missed a lot of physical classes where may be a number of people who are there will make it impossible to have social distancing, so because of that we added a number of platforms that we met our students especially where we have a number of students that is very higher.

Ruqayya Ibrahim Abdullahi female 37yrs

Actually, we can say during the pandemic we advanced the usage of the social media and social networking applications unlike before the COVID 19 pandemic where we have limited platforms to interact with the students and colleagues. So, in the absence of many physical classes we resolved in using technology to continue with our activities.

Sani Muhammad male 40yrs

Even with the corona virus, the COVUD 19 pandemic the internet has really changed the world it helps in shaping the academic activities where the academics deliver their content online. This is why the issue of Zoom meeting aroused. The academics during the pandemic attend conferences virtually through Zoom, even those in businesses operate online during this pandemic.

The academics doesn't really find it difficult during the pandemic to deliver the knowledge to their students as well as sharing information or attending conferences. I have attended a meeting with some organizations via Zoom meeting application during the pandemic.

Ruqayya Ibrahim Abdullahi female 37yrs

I can tell you with the coming of the COVID 19 pandemic there was lockdown as schools were shut down too as a result of that you have no means of communicating with your students except through the social media and social networking applications

Abubakar Shehu male 35yrs

Before the pandemic we don't really utilized the platforms, we only concentrate in communicating via emails. We don't use social media for academic activities, but with the coming of the COVID 19 we have to use it. I have students that I supervised and they created a platform where we can discuss issues related to their research,

Maichiki Manasseh Paul male 42yrs

During the pandemic I do attend conferences online we don't bother to travel; the issue of insecurity and cost of travel is no more a threat to us

Tamar H Dembo female 50yrs

at least, the COVID 19 pandemic has thought us that we can't do without the internet, we have to use it so that we can move forward.

Abdul Azeez Haruna male 49yrs

Actually, during the pandemic COVID 19 we are more active on social media and social networking applications we only use it to communicate to others that are not very closed to us since we are being locked down in our homes, we don't move around, so using it is paramount we spend more time on our devices during the lockdown. But after the lockdown, we have other activities that we do physically.

Maichiki Manasseh Paul male 42yrs

Well to me the usage has changed a little in terms of the academic environment, you know initially if you are to attend a workshop or conference you can do it physically including meetings but with the coming of the COVID 19 pandemic one has to do it all online via video conferencing applications.

Amina Aminu female 41yrs

During the lockdown I utilized the period for my kids and family I use it to rest is not that I didn't do any academic activities, I also engage in attending online meetings and conferences.

Ahmad Abubakar male 50yrs

Yes, we do appreciate the use of social media and social networking applications during the pandemic even with the development that we resume work we appreciate using it.

Abubakar Shehu male 35yrs

the pandemic makes people to adopt using the social media and social networking applications as new normal in the academia. When you are addictive to something that means you have developed a certain relationship with it so we have that relationship with our devices.