

**Individual and Technology Characteristics as Predictors of Motivation to Use  
Digital Library Among Polytechnic Student in Ondo State, Nigeria**

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### Certification

This is to certify that this thesis was carried out by **Cyril Iloba IJEH** with Matriculation Number **LCU/PG/002863**, a student in the Department of Information Management under my supervision in the Faculty of Communication and Information Science, Lead City University, Ibadan, Nigeria.

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## **Dedication**

This thesis is dedicated to God Almighty for His sufficient grace over my life.

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## Abstract

Digital libraries offer a lot of advantages for students and this explains why many tertiary institutions including polytechnics in Nigeria have invested in creating various digital libraries. However, many of the libraries often experienced low patronage as students are more inclined to use other source of digital information. In line with this, the study examines the influence of examine individual characteristics, technology characteristics and the motivation to use digital library among polytechnic student in Ondo State, Nigeria. The study adopted the descriptive survey research with the population including 13,407 students from two government owned polytechnic in Ondo State. Multistage sampling procedure was followed to select 375 students as sample. A structured questionnaire was used for data collection. The data was analyzed using both inferential and descriptive statistics. The results show that individual characteristics (Adj.  $R^2 = 0.244$ ,  $p < 0.05$ ) has significant but weak influence on the motivation to use digital library among polytechnic student in Ondo State. It was also found that technological characteristics (Adj.  $R^2 = 0.325$ ,  $p < 0.05$ ). In addition, multiple regression analysis showed that technology characteristics and individual characteristics have a positive and significant combined influence (Adj.  $R^2 = 0.488$ ,  $p < 0.05$ ) on the motivation to use digital library among polytechnic student in Ondo State. The study concluded that the moderate positive perception of the technology characteristics related to digital libraries in their underscores the importance of user satisfaction and engagement. It was therefore recommended that polytechnic libraries should provide comprehensive training on how to effectively use digital libraries.

**Keywords:** Digital Libraries, Information Services, Polytechnics, Self-efficacy, Perceived usefulness, Perceived Ease of use.

**Word Count:** 251

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## **Chapter One**

### **Introduction**

#### **1.1 Background to the Study**

The significance of digital library in promoting the e-learning process cannot be overstated. They provide diverse library services and accessible information anytime and from anywhere. The use of digital library in Nigerian tertiary institutions has become increasingly popular in recent years due to the growth of technology and the internet. However, the use of digital library may be affected by various factors such as technological characteristics of digital library and personal characteristics of the users. Digital library provide a wealth of resources that can be accessed remotely, which is particularly useful for students who may not have access to physical libraries or who need to access information outside of regular library hours<sup>1</sup>.

In addition to these advantages, digital library offer access to a vast collection of digital resources, including e-books, e-journals, research papers, multimedia content, and more. This provides users with a wider range of resources to choose from compared to traditional libraries. Digital library are accessible from anywhere and at any time, as long as the user has an internet connection. This makes it convenient for users to access information from the comfort of their own homes, without having to physically visit a library<sup>2</sup>.

Furthermore, digital library often have advanced search functions that enable users to find specific information quickly and easily. This saves time and makes it easier for users to

locate relevant resources. Compared to traditional libraries and printed books, digital library often offer free access to their resources, which can save users money on purchasing physical copies of books and journals. Digital library also provide a way to preserve resources and protect them from damage and loss. Digital resources are not subject to the wear and tear that physical copies experience over time, and can be easily backed up and stored in multiple locations. Overall, digital library offer a range of advantages over traditional libraries, including wider access to resources, greater convenience, improved search functionality, cost savings, preservation of resources, and increased collaboration and sharing opportunities. This is why students are expected to make use of digital library<sup>3</sup>.

The motivation to use digital library has always been seen as a function of ease of use and perceived usefulness of digital library. Perceived ease of use and perceived usefulness are critical factors that influence users' attitudes and behaviors towards digital library. These concepts play a significant role in determining how users interact with and benefit from these digital resources. Perceived ease of use refers to the degree to which users believe that utilizing a digital library is effortless and straightforward. If users find the interface intuitive, navigation simple, and interactions smooth, they are more likely to perceive the digital library as easy to use. This perception positively affects their overall experience and motivate them to explore the library further<sup>17</sup>.

On the other hand, perceived usefulness relates to users' beliefs about the value and benefits they can gain from the digital library. If users perceive that the library offers relevant and valuable information, aids in their research, or supports their learning objectives, they are more likely to consider the digital library as useful. This perception

of usefulness directly influences users' motivation to engage with the library's resources and services. Both perceived ease of use and perceived usefulness are interconnected. A digital library that is perceived as easy to use can enhance users' perceptions of its usefulness. Conversely, if users struggle with navigation or encounter technical difficulties, their perception of the library's usefulness may diminish, regardless of the potential value it holds.

Digital library that prioritize optimizing these two factors can cultivate positive user experiences, leading to increased engagement, prolonged usage, and ultimately achieving the library's intended goals. It is essential for digital library designers and administrators to focus on creating user-friendly interfaces, providing clear guidance, and delivering content that aligns with users' needs and expectations<sup>17</sup>. Despite the various benefits of the digital library that have been identified by experts, there have been mixed reports on the motivation to use the digital library among undergraduate students.

Research indicates that Nigerian university students used digital library infrequently. A study found that only two in five of the students had used a digital library in the past month. The study also found that the main reasons for not using digital library were lack of access to the internet, lack of awareness of digital library, and preference for physical books<sup>3</sup>. Another study found that Nigerian university students used digital library less frequently than traditional libraries. The study found that majority of the students used digital library at least once a month, while only a few used traditional libraries at the same frequency. The study also found that the main reasons for using digital library were convenience, availability of resources, and ease of access<sup>4</sup>.

However, a more recent study found that the motivation to use digital library among Nigerian students varied depending on the level of education. The study on the use of library among secondary schools, polytechnics, and universities in Nigeria found that university students used digital library more frequently than students from secondary schools and polytechnics<sup>5</sup>. These studies indicate a difference in the level of motivation to use digital library which may be explained by technology and individual characteristics.

Individual characteristics in the context of motivation to use digital library refers to the personal attributes and traits of polytechnic students that can influence their interaction with digital library. These individual characteristics include cognitive factors, computer self-efficacy, and attitudes of polytechnic students towards technology<sup>11</sup>. All of these are metrics that measures individual characteristics that can influence the use of digital library among polytechnic students. The examination of the influence of individual variances on the utilization of information systems has been a longtime subject of inquiry within the field of information systems research. The existing body of research on cognitive aspects investigates the potential influence of individual cognitive style on the effectiveness and efficiency of utilizing information systems.

Cognitive abilities refer to mental processes that involve problem-solving, learning, memory, and information processing. These individual differences can influence students' overall experience with digital library and their ability to extract maximum value from these resources<sup>7</sup>. Cognitive factors pertain to an individual's understanding about why they need information and how they can get the information needed. The prevailing cognitive styles in information retrieval encompass intuitive and analytical kinds, whereas information processing is characterized by task related and task independent.

Task-related information seeking and expertise pertains to the undergraduate students' understanding of the task requirements, domain knowledge, and proficiency in performing the task. Users with higher task-related information are more likely to assess the fit between the technology and the task accurately. What this means is that polytechnic students who have adequate understand of the assignment or academic tasks to be done would understand the role of digital library in accomplishing those academic tasks. The ability of undergraduate students to understand each academic task would differ as each student differs in cognitive ability<sup>6</sup>.

Individual differences in cognitive abilities, such as problem-solving skills, learning capabilities, and information processing speed, can influence how effectively users can adapt to and utilize the technology for the task at hand. In the context of digital library use among Nigerian polytechnic students, individual differences in cognitive abilities play a significant role in determining how effectively students can adapt to and utilize the digital library for their academic tasks<sup>7</sup>. Students with strong problem-solving skills can navigate the digital library interface more efficiently and effectively. They are better equipped to identify relevant resources, formulate search queries, and critically assess the credibility and relevance of the information retrieved.

On the other hand, students with weaker problem-solving skills may struggle to find the information they need, leading to frustration and potentially compromising the quality of their academic work. In addition, the ability to learn and adapt to new technologies is crucial in the digital library context. Students who are quick learners can familiarize themselves with the library's functionalities and features faster, enabling them to exploit its resources fully. Conversely, students who face challenges in learning new technology

may feel overwhelmed or avoid using the digital library altogether, missing out on its benefits.

Computer self-efficacy has been identified as the personality factor most commonly referenced in the literature on information systems. Computer self-efficacy pertains to an individual's degree of confidence or belief in their own capacity to effectively use computers. The findings of the research indicate a positive correlation between an individual's level of self-efficacy and their willingness to adopt new technology. In addition, individuals who had knowledge and practical expertise in computer usage are more likely to readily and effectively embrace the technology.

Polytechnic students with high computer self-efficacy are generally more confident and comfortable in adopting and using new technologies. Computer self-efficacy can be developed through various means such as users prior experience and familiarity with similar technologies. It is assumed that undergraduate students, who are regarded as digital natives, are more likely to adapt quickly to the use of digital library, especially since there are similarities between digital library and the search engines often used by the students<sup>8</sup>.

Another individual characteristic capable of affecting the use of digital library among polytechnic students is users' attitudes towards technology. Attitude such as their openness to change and willingness to try new tools can impact their acceptance and effective use of the technology. In the context of digital library use among Nigerian polytechnic students, attitudes towards technology play a crucial role in determining the level of acceptance and effective use of digital library resources. Nigerian polytechnic students' attitudes towards technology can significantly influence their willingness to

embrace digital library as a valuable tool for academic and research purposes. Attitudes are demonstrated in several forms such readiness to embrace change.

Nigerian polytechnic students who are open to embracing technological advancements and changes in traditional learning methods are more likely to adopt digital library. Students who have a positive attitude towards exploring new ways of accessing and using information are more inclined to see the benefits of digital library and incorporate them into their academic routines. In addition, students who demonstrate a willingness to experiment with new technologies and tools are more likely to explore and engage with digital library platforms. They may be curious about the potential advantages of digital resources and are more receptive to incorporating them into their study habits<sup>9</sup>.

Attitude of students are shaped by various factors such as previous experiences with technology and environmental factors. Previous experience can shape attitudes towards digital library use. Students who have prior positive experiences with digital resources may be more confident and comfortable in utilizing digital library effectively. In the same vein, environmental factors such as organisational culture, peer influence and norms can also influence attitudes towards technology. If the use of digital resources aligns with the prevailing norms and values, students may be more accepting and inclined to integrate digital library into their learning practices<sup>10</sup>. In addition to individual characteristics, technological characteristics is another factor that can determine the motivation to use digital library.

Technological characteristics refer to the attributes and features of the technology system being implemented to support a particular task or job. In the context of digital library, technology characteristics refer to the specific attributes and features of the technology

infrastructure and software that are put in place to support and facilitate the functioning of the digital library. These characteristics play a vital role in determining how effectively the digital library can meet the needs of its users and provide a seamless and efficient experience for accessing and managing information resources<sup>11</sup>. Technology characteristics of digital library can be measured with metrics such as; functionality, ease of learning, reliability, feedback and support and other similar characteristics<sup>12</sup>

The functionality of a digital library relates to the range of tasks it can perform and the features it offers. A system with comprehensive functionality that aligns with the task's requirements is more likely to fit well and support users effectively. Digital library are expected to be highly functional in order to serve the needs of the users. The functionality of digital library can vary depending on the platform. Some of the common features and functionalities that are typically found in digital library include search function. Digital library usually offer a search function that allows users to search for specific resources or topics of interest. This search function can include advanced search options that allow users to refine their search results<sup>13</sup>.

Another functionality is browsing function. Digital library may also have a browse function that allows users to explore resources by subject, author, or other categories. Many digital library also allow users to create personalized accounts that enable them to save their searches, bookmarks, and preferences. Most importantly, digital library should provide access to a wide range of resources. Digital library typically offer access to a wide range of digital resources, including e-books, e-journals, research papers, multimedia content, and more. Digital library may also offer collaboration features, such as the ability to share resources and workspaces with other users. Many digital library

provide accessibility features, such as text-to-speech options or tools to enlarge text, to accommodate users with visual or hearing impairments. In modern digital library, users are allowed to link to other media such as email and social media. All these functionalities must however be easy to learn for the users<sup>11</sup>.

Ease of learning is another technology characteristic that polytechnic students may consider in the use of digital library. The ease of learning of the system refers to how user-friendly and intuitive it is. A system that is easy to learn and operate allows users to perform tasks more efficiently and with fewer errors. In order to be easily learnable, digital library have to be flexible. Flexibility of a digital library indicates its ability to adapt to different task requirements and user preferences. A flexible system can be customized or configured to meet specific needs and workflow variations. It can also meet the need of various undergraduate of different level of information retrieval skills<sup>14</sup>.

Digital library should also be reliable and stable over a long period of time. Reliability denotes the consistency and accuracy of the system's performance, while stability pertains to its ability to function without unexpected disruptions or crashes. A reliable and stable digital library is crucial for maintaining productivity and user confidence. One of the means of ensuring reliability is good security features. These are essential to protect sensitive data and information from unauthorized access or breaches. A system with robust security measures instills trust and confidence in users.

Another important system characteristic of digital library that could be considered by undergraduate students is the availability of feedbacks and instructions. A digital library should provide informative feedback and user support. Clear guidance, error messages, and readily available support resources can assist users in navigating the system

effectively. feedback and support are critical system characteristics that aim to assist users in effectively navigating and utilizing the digital library. These features are designed to enhance the user experience and ensure that users can easily access and make the most of the available resources. The key aspects of feedback and support in a digital library system include informative feedback, clear guidance, error messages, and users support resources<sup>12</sup>.

The system should provide timely and informative feedback to users when they interact with it. For example, when conducting a search, the system can offer relevant suggestions or notify users if their search query returns no results. Informative feedback helps users refine their actions and achieve their intended objectives more efficiently. In addition, the digital library system should offer clear and easy-to-understand instructions on how to perform various tasks, such as searching for specific resources, accessing full-text documents, or using advanced features. Clear guidance empowers users, particularly those who may be less tech-savvy, to navigate the system with confidence.

In the event of errors or issues, the system should display user-friendly error messages that explain the problem and suggest potential solutions. Clear error messages help users troubleshoot problems and take appropriate actions to resolve issues quickly. After encountering errors, digital library users would expect information on how to proceed. The digital library system should provide readily available support resources, such as a comprehensive FAQ section, user guides, or tutorials. These resources assist users in understanding the system's functionalities and addressing common queries without needing external assistance<sup>15</sup>.

Furthermore, the digital library should offer responsive and accessible support channels, such as email, live chat, or a dedicated help desk, where users can seek assistance from library staff or technical support teams. Having responsive support channels ensures that users can get timely help when encountering more complex issues or inquiries. The digital library can also offer contextual help or tooltips to provide additional information or explanations relevant to specific features or actions. Contextual help can be especially beneficial for guiding users through unfamiliar parts of the system. This is easily done when there are mechanisms for users' feedback. The digital library can include mechanisms for users to provide feedback on their experience with the system. Gathering user feedback helps identify areas for improvement and allows the library to tailor its support and resources to better meet user needs<sup>16</sup>.

However, while studies have focused in the individual characteristics of studies such as digital competence, computer self-efficacy, computer attitude among others, studies combining these characteristics with individual characteristic are rare, especially in Nigeria<sup>4,5,7</sup>. Studies have attributed the main reasons for not using digital library were lack of access to the internet, lack of awareness of digital library, and preference for physical books. These findings suggest that the digital library may not have been meeting the task requirements of the students, which led to low adoption and usage rates. A more recent study found that Nigerian students use digital library more frequently, which could be attributed to an improvement in task technology fit. The study found that the main reasons for using digital library were access to up-to-date information, convenience, and ease of access. These findings shows that there is a divergence of opinions on whether digital library are now better aligned with the task requirements of the students. In

addition to this, studies on the use of digital library in Nigeria have often focused on university students to the exclusion of students in other tertiary institutions such as polytechnics. This makes it necessary to conduct a study on the influence of individual and system characteristics on the use of digital library among polytechnic students in Ondo state Nigeria.

## **1.2 Statement of the Problem**

Digital library has become popular in tertiary institutions as a convenient platform that provides a broad range of users with quick access to information resources. In contemporary times, Nigerian polytechnics have undertaken the incorporation of technologies into their operations with the aim of enhancing and advancing many aspects, particularly in the realm of digitalization, distribution, and preservation of scholarly information resources. Consequently, digital library has emerged as a main source of digital information resources within numerous Nigerian universities. However, research reports and anecdotal evidence indicates that polytechnic students are not highly motivated to make use of the digital library.

However, despite the significant expenditure dedicated to the construction of digital library in Nigerian academic libraries, a review of existing literature indicates a limited amount of study conducted on the motivation to use these libraries by students in Nigerian polytechnics. Understanding the factors determining the motivation to use digital library among polytechnic students is important because of the needs to ensure the best academic outcomes for the students and also to ensure that Nigerian polytechnics get value for the money invested in the development of digital library. Hence, this study

examines the influence of individual and technology factors on the motivation to use digital library by polytechnic students in Ondo state, Nigeria.

### **1.3 Aim and Objectives of the Study.**

The aim of the study is to examine individual characteristics, technology characteristics and the motivation to use digital library among polytechnic student in Ondo State, Nigeria. The objectives of the study are to;

- i. identify the level of motivation to use digital library among polytechnic student in Ondo State, Nigeria.
- ii. identify the individual characteristics related to the motivation to use digital library among polytechnic student in Ondo State, Nigeria.
- iii. examine the technology characteristics of digital library available to polytechnic students in Ondo State, Nigeria.
- iv. examine the influence of individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria.
- v. ascertain the influence of technology characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria
- vi. ascertain the combined influence of technology and individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria

### **1.4 Research Questions**

The study will be guided by the following research questions;

1. What is the level of motivation to use digital library among polytechnic student in Ondo State, Nigeria?

2. What are the individual characteristics related to motivation to use digital library among polytechnic student in Ondo State, Nigeria.
3. What are the technology characteristics of digital library available to polytechnic students in Ondo State, Nigeria?

### **1.5 Research Hypotheses**

The following hypotheses will be tested at 0.05 level of significance

H<sub>01</sub>: There will be no significant influence of individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria.

H<sub>02</sub>: There will be no significant influence of technology characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria

H<sub>03</sub>: There will be no significant combined influence of technology and individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria

### **1.6 Scope of the Study**

The study focuses on the influence of technology and individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria. The dependent variable is motivation to use digital library which is measured by perceived ease of use and perceived usefulness. There are two independent variables. The first is individual characteristics measured by cognitive factors, attitude towards change, and computer self-efficacy. The second independent variable is technology characteristics which is measured by ease of learning, functionality, feedback and support, and system

reliability. The study area will include polytechnics across Ondo State namely, Rufus Giwa Polytechnic, Owo; Federal Polytechnic, Ile-Oluji, and Ondo City Polytechnic (OCPOTECH), Ondo. The respondents will be second year students at both the national diploma and higher national diploma in the institutions.

### **1.7 Significance of the Study**

This study is significant because the findings have the potential to contribute to the improvement of digital library usage and digital literacy among polytechnic students in Ondo State, ultimately leading to better educational outcomes and increased access to knowledge and information resources. The study findings is expected to be of use to polytechnic students in Ondo state, polytechnic educators and librarians, polytechnic administrators and policymakers, library information professionals, digital library developers and providers. In addition, the study finding will also contribute to the theory and practice of academic librarians in Nigeria.

The primary beneficiaries of the study are the students enrolled in various polytechnics in Ondo State, Nigeria. Understanding how their individual characteristics and perceptions of technology influence their use of digital library can help in designing interventions and strategies to enhance their digital literacy skills and improve their academic performance through effective use of digital library resources.

Educators and librarians in polytechnics can also benefit from the study by gaining insights into the factors that impact students' utilization of digital library. This understanding can guide them in developing targeted training programs, workshops, and

support services to encourage and facilitate the integration of digital library resources into the teaching and learning process.

The study's findings can also be valuable for polytechnic administrators and policymakers in Ondo State and Nigeria in general. The findings have potential to inform them about the current state of digital library usage and shed light on the factors that influence students' adoption of these resources. This knowledge can guide decision-making processes related to resource allocation, infrastructure development, and technology integration in polytechnics.

Professionals working in the field of library and information science may also benefit from the study's insights into the role of technology characteristics and individual traits in influencing digital library use. This knowledge can assist them in devising best practices and strategies for promoting digital literacy and maximizing the impact of digital library in various educational settings.

Researchers and academicians interested in the fields of educational technology, digital library, and information science can find the study's findings relevant to their own research. It may stimulate further investigation into the dynamics of technology adoption and individual characteristics in the context of digital library, leading to the advancement of knowledge in these areas.

Developers and providers of digital library platforms and resources can gain valuable insights into the user needs and preferences of polytechnic students in Ondo State. This understanding can help them tailor their offerings to better meet the requirements of the target audience and enhance user satisfaction.

## 1.8 Operational Definition of Terms

**Digital Library:** A digital library is a digitalized and organized collection of digital resources such as documents, books, multimedia, and other forms of information that can be accessed, searched, and retrieved electronically via computers or digital devices. They may include materials that are born-digital or digitized versions of physical materials, making them accessible to a global audience.

**Motivation to Use Digital Library:** This refers to the extent to which polytechnic students in Ondo state are ready and willing to engage with and utilize the digital library resources and services. It can be measured by tracking the number of times students access the digital library, the duration of their sessions, and the variety of resources they interact with.

**Perceived Ease of Use:** refers to the perception of polytechnic students in Ondo state about how easy it would be to make use of digital library available in the polytechnic library.

**Perceived Usefulness:** refers to the perception of polytechnic students in Ondo state about relevant contents of digital library available in the polytechnic library.

**Individual Characteristics:** refer to the personal attributes and traits of each in the context of digital library use among polytechnic students in Ondo State, Nigeria, that may influence their interaction with the digital library resources and services.

**Task-Related Knowledge:** Refers to the level of understanding and proficiency of polytechnic students in Ondo state engage the digital library in their academic tasks and subjects.

**Attitude Towards Change:** Represents the overall attitude and feelings of polytechnic students in Ondo state towards using computers and digital technology.

**Computer Self-Efficacy:** Refers to the belief of polytechnic students in Ondo state in their ability to use computers and technology effectively.

**Technology Characteristics:** refers to the specific attributes and features of the digital library system and platform as perceived by polytechnic students in Ondo state. These characteristics play a crucial role in determining how effectively the digital library supports students' academic needs and facilitates their access to information resources.

**Ease of Learning:** This refers to how easily polytechnic students in Ondo state can learn to use the digital library system.

**Functionality:** Refers to the range of tasks and features that the digital library system offers to polytechnic students in Ondo state. Functionality can be evaluated through a systematic analysis of the system's capabilities and its alignment with user needs.

**Feedback and Support:** Represents the availability and effectiveness of support mechanisms, such as error messages, tooltips, and help documentation within the digital library system.

**System Reliability:** This pertains to the stability and consistency of the digital library system's performance.

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## Endnotes

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## **Chapter Two**

### **Literature Review**

This chapter examine existing literature on the subject of this research which is mainly on the use of digital libraries and factors that affect the use of digital libraries. The review explores factors that have been explored by researchers, the approach of researchers and the major findings. This is done with the aim of showing the gap in literature to be filled by the current study. The chapter is organized under the following subheading.

#### **2.1 Conceptual Review**

##### **2.1.1. Motivation to Use Digital Libraries**

##### **2.1.2 Individual Characteristic of Digital Library Users**

##### **2.1.3 Technological Characteristic of Digital Libraries**

#### **2.2. Theoretical Model**

##### **2.2.1 The Technology Acceptance Model (TAM)**

##### **2.2.2 Technology-Task Fit Theory**

#### **2.3. Empirical Review**

##### **2.3.1 Individual Characteristic and Use of Digital Library**

##### **2.3.2 Technological Characteristic and Use of Digital Libraries**

#### **2.4. Conceptual Framework**

## 2.5. Summary of Reviewed Literature

### 2.1. Conceptual Review

#### 2.1.1. Motivation to Use Digital library

Digital library is a concept that has attracted the attention of scholars from diverse backgrounds. This has reflected in various definitions and conceptualisations that means a comprehensive understanding of what a digital library stands for would require a synthesis of various definitions. According to one definition, digital libraries are online repositories that provide access to a vast collection of digital resources, including e-books, journals, articles, multimedia materials, and databases, accessible through electronic devices and the internet<sup>1</sup>. This definition highlights the core features of digital libraries as online repositories of diverse digital content. The implication is that digital libraries leverage technology to democratize access to information, allowing users from various locations to connect and benefit from a wealth of academic and cultural resources. The emphasis on electronic access underscores the importance of internet connectivity in utilizing digital libraries.

From another point of view, digital libraries are described as information systems that facilitate the storage, organization, retrieval, and dissemination of digital content, catering to the needs of specific user communities or academic disciplines<sup>2</sup>. The import of this definition is the emphasis on the role of digital libraries as advanced information systems with the ability to manage and deliver digital content efficiently. It acknowledges that digital libraries can be tailored to serve specific user groups, such as researchers, students, or professionals, and can be designed to meet the unique requirements of various

academic disciplines. The implication is that digital library can be customized to optimize user experiences and support specialized research needs. This points to the dynamic nature of digital library.

Another description of digital library depict them as dynamic platforms that offer a blend of traditional library services and innovative technologies to preserve, curate, and disseminate digital resources for long-term accessibility and usability<sup>3</sup>. This definition highlights the hybrid nature of digital library, incorporating both traditional library practices and cutting-edge technologies. It stresses the importance of digital preservation to ensure long-term access to digital materials. The implication is that digital library are continuously evolving to adapt to technological advancements, ensuring the sustainability and relevance of their collections.

Scholars have also looked at digital library as a product of the interconnected world of informaiton and communication technology. To this schoold of thought, digital library are collaborative networks that bring together libraries, archives, museums, and other cultural institutions, collectively sharing their digital resources for broader public access<sup>4</sup>." This addresses the collaborative aspect of digital library, where institutions collaborate to create a vast network of digital resources. It acknowledges the role of libraries, archives, museums, and other cultural institutions in collectively contributing to the preservation and dissemination of cultural heritage. The implication is that digital library foster a sense of shared responsibility for preserving and making cultural resources accessible to a wider audience.

As an information system built on the principles and philosophy of the traditional library, researchers also view digital library as a tool for empowering people across various divides with knowledge they might otherwise not have access to. In this context, digital library are defined as inclusive platforms that strive to bridge the digital divide, providing equitable access to information, knowledge, and educational resources for all, regardless of geographical location or physical abilities<sup>5</sup>. This definition emphasizes the social impact of digital library in promoting inclusivity and breaking down barriers to access to information resources. It recognizes the potential of digital library to reach underserved populations and individuals with disabilities, empowering them with equal opportunities to engage with educational materials and cultural content. The implication is that digital library have a societal responsibility to ensure that knowledge and information are accessible to everyone, promoting lifelong learning and knowledge dissemination.

Each of these definitions highlights different aspects and perspectives of digital library. As digital library continue to evolve, it is essential to consider these implications to design, develop, and maintain effective and inclusive digital library platforms that cater to the diverse needs of users and contribute to the advancement of knowledge and cultural heritage. Functionally, a digital library is a collection of digital resources, such as e-books, journals, articles, audiovisual materials, and databases, that are stored, organized, and accessible electronically. Unlike traditional libraries, digital library provide online access to a vast array of academic and educational content.

Traditional libraries house physical books and materials, while digital library offer electronic versions of these resources that can be accessed through computers,

smartphones, or other digital devices. Digital library are not limited by physical space, allowing users to access information from anywhere with an internet connection. In term of contents, digital library offer a wide range of content, including academic journals, research papers, textbooks, historical documents, audio recordings, videos, and more. These resources cover diverse subjects and disciplines, catering to the needs of students, researchers, and the general public.

Structure wise, digital library use sophisticated systems to organize and categorize their resources. They often employ metadata, keywords, and tags to enable efficient search and retrieval of content. Some digital library may also have advanced search filters to narrow down results based on specific criteria. Users can typically access digital library through web portals or dedicated library websites. Many digital library require users to create accounts, while others may provide open access to their resources without the need for registration<sup>6</sup>. While digital library play a significant role in academia, they are not limited to academic purposes. They can also serve as repositories of cultural heritage, providing access to historical documents, art collections, and other valuable cultural resources.

Digital library enhance accessibility by eliminating geographical barriers. Users from remote or underserved areas can access valuable information and educational resources through digital library. Additionally, digital formats often support features like text-to-speech, which benefits individuals with visual impairments. Digital library also provide students and researchers with convenient access to a wealth of academic resources, promoting self-directed learning and supporting research endeavors. They offer a diverse range of materials that can complement traditional classroom learning and aid in academic growth<sup>7</sup>.

For academic libraries, digital library is an institution that replicates the role of the traditional library in the digital domain. This is seen in the definition provided by the Digital Library Federation which defined digital library as organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities<sup>8</sup>. In addition, a library-focused organisation also described digital library as possibly virtual organization that comprehensively collects, manages, and preserves for the long term rich digital content, and offers to its user communities specialized functionality on that content, of measurable quality and according to codified policies<sup>9</sup>.

Inherent in these definitions is that digital library are created by organisations and institutions to meet the information needs of specific group of users who are expected to make use of the resources. Indeed, the use of the information resources in digital library have become the most recognised yardstick for measuring the success and predicting the sustainability of digital library<sup>10</sup>. Librarians and information services providers across the world create digital library so that target users groups can make use of the resources to create new knowledge and advance the course of humanity. This is why the concept of use is of major interest in the case of digital library.

The concept of 'use' refers to the practical and active utilization of something for a specific purpose or in a particular context. It implies engaging with an object, resource, or system to achieve intended outcomes or benefits. 'Use' can be applied to various domains, including technology, tools, services, and resources, and it is a fundamental aspect of

human interaction with the world around us<sup>11</sup>. However what is meant by 'use' in the field of library and information has been an elusive subject<sup>11</sup>. This means that when it comes to digital library, 'to use' has a wide connotation.

In the context of digital library, 'use' refers to the act of accessing, interacting with, and making effective use of the digital resources and services provided by the library. Users 'use' digital library to search for and retrieve information, access e-books and academic journals, conduct research, cite sources, and enhance their knowledge and learning. The concept of 'use' is essential in digital library as it signifies the active engagement of users with the available digital content, contributing to the fulfillment of their academic, research, and information needs. The definition of digital library is however as complex as the digital library itself.

To some scholars, the notion of 'use' extends beyond mere access to resources; it encompasses the meaningful utilization of information to support academic pursuits, enhance learning, and facilitate research activities. The level and quality of 'use' can vary among individuals and depend on factors such as the user's information-seeking behavior, technological literacy, and task-specific requirements. To these group of scholar, use of digital library extends beyond merely logging into digital library or downloading information resources. It is expected that the information resources downloaded would be used to create new knowledge. How this can be accurately measured is another matter facing scholars<sup>12, 13</sup>.

In the broader context of technology and systems, 'use' is central to understanding how individuals interact with and benefit from technological innovations. Whether it is the use

of software applications, online platforms, or digital devices, the concept of 'use' helps measure the effectiveness and user-friendliness of technologies and their impact on users' experiences and productivity<sup>14</sup>. Analyzing and evaluating 'use' in digital library can provide valuable insights for librarians and developers to improve the user experience, optimize content accessibility, and tailor services to meet users' diverse needs effectively. By understanding how users 'use' digital library, library administrators can make informed decisions to enhance content curation, user support, and the overall functionality of the library, ultimately fostering a more inclusive and enriching environment for users to engage with information and knowledge resources<sup>15</sup>.

The concept of 'use' can be further broken down into various dimensions that provide a more nuanced understanding of how individuals engage with a particular resource, technology, or service. In the context of digital library, use is often measured by various metrics that encompass different aspects of users' interactions with the library and its resources. Some common metrics for measuring use of digital library include frequency of use, duration or length of use, continuous use, and purpose of use and several others. However, it is more common to find researchers using frequency and purpose of use.

Frequency of use refers to how often users access and utilize the digital library. It helps to identify whether users visit the library regularly or use it sporadically, providing insights into the library's overall relevance and importance to its users. Frequency of use is often measured by interval between visits such as daily, weekly, monthly, etc. It can also be measured by the duration of use in each visit. This dimension measures the length of time users spend interacting with the digital library during each visit. Understanding the duration of use helps assess the level of engagement and the depth of users' interactions

with the available resources. In addition, researcher could also examine the depth of use. This refers to the extent to which users explore the digital library's content. It involves examining the number of resources accessed, the breadth of topics explored, and the level of detail users delve into while utilizing the materials. This also leads to the consideration of purpose of use.

Purpose of use involves identifying the specific reasons why users utilize the digital library. It could include academic research, studying, reference purposes, leisure reading, or professional development, among others. Understanding the purpose of use helps tailor services and resources to meet users' diverse needs. Purpose of use allows scholars to examine task-specific use of digital library. This dimension examines how users' needs and usage patterns vary based on specific tasks or assignments. Users may have distinct requirements when conducting research, completing projects, or preparing for exams, and understanding task-specific use helps optimize the library's support.

It also enables researchers to assess users' overall satisfaction with their experience of using the digital library. It involves gathering feedback on the ease of access, resource relevance, search functionality, and other aspects that contribute to the user experience. It also helps in determining the potential of users to return to the digital library repeatedly over time. It helps identify the library's ability to retain users and sustain their interest in utilizing its resources. By analyzing these dimensions of use, digital library can gain valuable insights into user behavior, preferences, and needs. This information can inform strategic decision-making, content curation, user support, and interface design, leading to an enhanced user experience and increased user engagement with the digital library's resources and services.

Since the early 1990s, a multitude of endeavors have been undertaken with the objective of augmenting the accessibility of scholarly material inside the African continent. These initiatives have yielded noteworthy outcomes, as seen by a substantial rise in the number of African institutions that are now able to avail themselves of digital library resources. Several initiatives have been established to enhance access to digital scientific publications. These initiatives include the International Network for Availability of Scientific Publications (INASP)'s Programme for Enhancement of Research Information (PERI), eIFL net, African Journal Online (AJOL), and schemes such as JSTOR funded by commercial publishers and the United Nations (UN). Specifically, the UN has funded initiatives such as HINARI, AGORA, and OARE<sup>16</sup>.

As a result, the accessibility and utilization of electronic resources at universities have witnessed a rise, while certain African countries remain an exception. The utilization of CD-ROMS during the early 1990s was widely regarded as an initial pioneering initiative in the integration of digital learning resources. Subsequently, throughout the latter part of the 1990s, there was a notable rise in the adoption and widespread use of the internet and its associated resources. This development served as a significant indicator of advancements made in terms of accessibility and utilization of digital educational materials.

There are several studies that have been conducted to evaluate the use of digital library. One of such studies was conducted to ascertain the level of awareness of postgraduate students in Nigerian universities concerning digital library in their various institutions and how this awareness has affected their use of repositories. the study found that majority of the respondents make regular use of digital library<sup>17</sup>. However, in another study

conducted in Kenya, researchers found that postgraduate students usually accessed the digital library on a weekly basis. The study also found that majority of the students found the content very relevant to their study. In terms of purpose of use, majority of the respondents reported that they use the repositories mainly to retrieve research information<sup>18</sup>.

Another study related to conducted in India reported that the purpose of using digital library by scholars would vary to their disciplines. Respondents from Arts and Humanities prefer to use journal articles followed by research, theses & dissertations and conference proceedings. The archived reports are mostly preferred in Social Science followed by Arts & Humanities and Science & Technology. Datasets and administrative records were mostly preferred in Pure Science. Learning resources and question papers were mostly preferred in Science & Technology<sup>19</sup>. This shows that examining the purpose of use of digital library must recognize various subject backgrounds of the respondents.

This was further shown in a study conducted in Nigeria where the finding showed that lecturers in Nigerian universities use the digital library as information source. The breakdown of sources used indicated that published articles and conference papers were mostly accessed with the highest ranking by respondents from the five Universities. Published articles and conference papers were accessed on daily and weekly basis. The least accessed materials by the respondents were manuscripts and administrative documents. They were accessed on quarterly and annually basis. However, the frequency of use of digital library as information source among lectures in Nigerian universities is considered as below expectation by the researchers<sup>20</sup>.

Indeed, a researcher in South Africa included both postgraduate students and members of faculty in a user study investigating factors that affect the use of digital library in a South African University. The findings indicate that a majority of faculty agreed that they find the digital library useful, while of the postgraduate students feel the same<sup>21</sup>. This finding holds promise. The higher percentage of digital library acceptance among faculty compared to postgraduate indicate that more postgraduate students will come to embrace the IR through the encouragement of the lecturers and supervisors who are also using it themselves.

A study conducted in Indonesia approached the use of digital library from the open access point of view and how student researchers in one Indonesian university take advantage of the opportunities offered by digital library. From the study, it can be seen that majority of the respondents often use the digital library, while a few 'very often' use it according to the respondents that access of digital library in Indonesia for their thesis or their research thesis. This led the authors to conclude that the digital library is very useful and gives have impact on students in their research. The students' access all of the open access digital library in Indonesia because there is no restriction to the use of available resources. The study also gathered data to determine the relevance of the information resources available in the repository. Analysis of the data showed that majority considered the contents relevant enough to cite them in their theses and journal articles for publication. On what information resource the students often used in the IR, it can be seen that abstracts are the most frequently used by people who consulted digital library. It is estimated that nearly half of the respondents read the abstract<sup>22</sup>.

Significant use of digital library was also reported in a study which examined the link between accessibility and use of digital library among postgraduate students in Pakistan. The results show that the postgraduate students used the digital library on weekly basis while some of them used it on daily basis. Furthermore, a few student used digital library once a month and others used after every two or three weeks a month<sup>23</sup>.

In Sudan, researchers also evaluated the use of the University of Khartoum Digital library by postgraduate students and their attitudes towards the repository and its contents. Results show that a quarter of the respondents used the library to access the electronic theses and dissertations (ETDs) available. Others indicated that their primary purpose is to access the eBooks collection, whereas a few students said that they access journal articles through the digital library<sup>24</sup>.

A study conducted in Tanzania showed that internet resources are often preferred by students instead of digital library resources such as CD-ROM, e-books, journals, slides and audio clips. Students were asked about their access to digital learning resources and their responses show that majority of them have access to digital library while only a few replied to the contrary. Regarding the frequency of using digital learning resources, results disclose that a third of the students were using them frequently while some reported to use them occasionally and a few of the students have never used them. The findings reveal that most of the students frequently used internet resources and exchanging. The findings also indicate that digital learning resources such as video clips, online references, e-books, e-journals and CD ROMs are occasionally used by students.

Furthermore, the results disclosed that majority of the responding students have never used graphics, online catalogues, images and audio clips for learning purposes<sup>25</sup>.

Researchers from Ghana examined how University of Cape Coast postgraduate students use digital library resources. The research found that the majority of postgraduate students were aware of the library's digital library resources. The results of this study also showed that most postgraduate students preferred to obtain material from web-based databases like Google Scholar and others more frequently than they did from library databases. The respondents mentioned bad internet connection as the biggest barrier preventing efficient access to digital library resources<sup>26</sup>.

The availability and use of digital library resources by postgraduate students in the University of Calabar Library were also examined by Nigerian researchers. The analysis's findings showed that postgraduate students used the Unical Library's electronic resources, which were accessible there. The University of Calabar Library had a wide selection of electronic resources. The University Library offered electronic journals, books, databases, and access to the Internet. As of the time of this research, the following databases may be accessed: Science Direct, Nigerian Virtual Library, HINARI, OARE, AJOL, SAGEOPEN, and TEEAL. The majority of postgraduate students at the University of Calabar frequently used the university library's electronic resources. The most popular electronic resources used by graduate students were electronic journals. Lack of computer skills, a slow network, intermittent internet connectivity, a power outage, and an abundance of unnecessary information were the issues postgraduate students encountered when accessing and using electronic resources<sup>27</sup>.

Another study examined the use of digital library among users of agriculture based tertiary institutions in Nigeria. The findings of the study indicate that majority of these institutions have access to digital library. The study additionally documented a substantial proportion of the participants regularly utilizing electronic databases. The primary purpose for utilizing electronic databases was found to be conducting research, staying updated on knowledge within their respective fields of interest, and maintaining current awareness. The study revealed that a majority of respondents, expressed agreement regarding the advantageous nature of electronic databases. These respondents acknowledged the significant utility of electronic information in enhancing both the quantity and quality of field research publications. Furthermore, they recognized the ability of digital library to mitigate the challenges associated with geographical limitations in the dissemination of information<sup>28</sup>.

The studies on the use of digital library have shown different level of use among various users categories. It is of interest that even studies conducted within the same country and among similar users group have shown differing level of digital library use, particularly among students in tertiary institutions.

The impact of perceived usefulness on adaptation intentions is well-documented. It has been suggested that the perceived usefulness of innovations is a key element in determining their adoption. This means that if postgraduate students see higher value in adopting scholarly databases, they are more likely to do so. In line with this, various studies have focused their attention on the perceived usefulness of scholarly databases and other new innovation. These studies are probably motivated by the need to increase the number of library user who make use of scholarly databases by creating necessary

interventions to ensure the use of scholarly databases acquired for the purposes of boosting research and other academic activities.

Researcher examined the perceived usefulness of google scholar database by the postgraduate students of university of Ilorin, Nigeria. The research looked at how postgraduate students at the University of Ilorin in Nigeria viewed Google Scholar's usefulness. The study's sample consisted of postgraduate students drawn at random from the University's 15 faculties. For the purpose of gathering information from respondents, a questionnaire survey was used. The results show that using Google Scholar was deemed useful since it covers a wide range of topics relevant to the respondents' search and usually gives relevant articles based on that search<sup>29</sup>. This perception of usefulness was found to influence the use of google scholar by the students. Similarly, perceived usefulness was also found to affect the use of other scholarly databases.

This was reflected in another study examining how the perception of postgraduate students affected their use of online digital library created by their university libraries. Students in three Nigerian universities were surveyed to identified factors impacting their use of digital library. Students were found to make frequent use of the digital library that they found useful for their studies. The researcher also observed that the main reason for the regular use of the digital library is because the student always found useful and relevant information resources through the databases. It was thus concluded that perceived usefulness would accurately predict the use of scholarly databases<sup>30</sup>.

What has been shown by the studies conducted on perceived usefulness is that when students find scholar databases useful to their needs, they would make use of them. On the other hand, when they have the opinion that the databases are not useful, they would

refrain from using them and look for other information sources. The literature has revealed that some databases are perceived as useful while some are perceived as not useful. However, while the studies indicated what informed the perception of usefulness, they fail to properly outline the factors responsible for negative perceived usefulness which leaves room for further research.

The impact of perceived usefulness of digital library. It has been suggested that the perceived usefulness of digital library is a key element in determining their adoption. This means that if postgraduate students see higher value in adopting scholarly databases, they are more likely to do so. In line with this, various studies have focused their attention on the perceived usefulness of scholarly databases and other new innovation. These studies are probably motivated by the need to increase the number of library user who make use of scholarly databases by creating necessary interventions to ensure the use of scholarly databases acquired for the purposes of boosting research and other academic activities.

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What has been shown by the studies conducted on perceived usefulness is that when students find digital library useful to their needs, they would make use of them. On the other hand, when they have the opinion that the databases are not useful, they would refrain from using them and look for other information sources. The literature has revealed that some digital library are perceived as useful while some are perceived as not useful. However, while the studies indicated what informed the perception of usefulness, they fail to properly outline the factors responsible for negative perceived usefulness which leaves room for further research.

The phenomenon of some users making more use of digital library than others have led to the development of various theories and assumption. The factors that have been examined include individual and system characteristics.

### **2.1.2 Individual Characteristic of Digital Library Users**

System developers and information scientists are acutely aware that the systems they developed should be user-oriented. As a result, information theorists have usually based their research on the potential users of information systems such as digital library. It is assumed that understanding the mindset of technology users would help developers and information service provider to provide acceptable technology and services to various categories of information users. The attention therefore often focuses on the individual characteristics<sup>33</sup>.

Understanding individual characteristics is crucial for technology developers, marketers, and policymakers to design and promote technologies that resonate with users' needs, preferences, and capabilities. Addressing user concerns, providing training and support, and creating user-friendly interfaces can enhance the adoption and successful use of technology across various user groups. Additionally, considering individual characteristics can lead to the development of more inclusive and accessible technologies that cater to a diverse range of users. There are several metrics that can be used to distinguish digital library user and literature is replete with several of these characteristics. Prominent among these characteristics are; task-related knowledge, computer self-efficacy, and attitude towards change<sup>34</sup>. One of the most important personal attributes in the use of digital library is task-related knowledge of the potential users.

Task-related knowledge refers to the level of understanding, expertise, and familiarity a user possesses in relation to a specific task or activity. In the context of digital library, task-related knowledge pertains to a user's familiarity with information-seeking processes, research methodologies, and effective strategies for accessing and utilizing digital library resources to accomplish their academic or research objectives<sup>35</sup>. This means that some

students may understand the tasks that can be performed in using the digital library more than others. This is further shown in the level of other skills such as information literacy skills.

Information Literacy is a multifaceted and essential skill set that empowers individuals to navigate the vast landscape of digital library resources with confidence and discernment. It encompasses a range of abilities, from effectively identifying relevant information to critically evaluating the credibility and reliability of sources. Users who possess high information literacy are equipped with the tools to become discerning consumers and creators of knowledge, making informed decisions and drawing well-founded conclusions<sup>36</sup>.

At the core of information literacy lies the proficiency to efficiently identify pertinent information from the extensive array of digital library resources available. Users with this skill can adeptly pinpoint resources that align with their specific research topics, academic pursuits, or information needs. They are not overwhelmed by the abundance of content but, instead, adeptly harness the digital library's capabilities to efficiently locate valuable resources. Equally significant is the ability to evaluate the information they encounter critically. In an era of abundant information, users with high information literacy possess the acumen to discern credible and authoritative sources from unreliable or misleading ones. They apply evaluative criteria to assess the trustworthiness, accuracy, and objectivity of the sources, ensuring that the information they retrieve is reliable and contributes meaningfully to their knowledge base<sup>37</sup>.

Moreover, users with advanced information literacy skills possess the capacity to weigh the relevance of the information in the context of their research or inquiry. They can discern which resources directly align with their objectives and which ones might be tangential or irrelevant. By distinguishing the most pertinent information, they optimize their research endeavors and arrive at insightful conclusions. Information literacy goes beyond simply accessing and evaluating information; it extends to the strategic and ethical use of the retrieved knowledge. Users proficient in information literacy respect intellectual property rights and employ appropriate citation practices to acknowledge the sources they utilize. They are responsible consumers of information, avoiding plagiarism and upholding academic integrity.

In the digital age, where information is abundant and easily accessible, information literacy serves as a safeguard against misinformation and ensures that users are equipped to navigate the digital library landscape effectively. By promoting information literacy, digital library empower users to become astute information navigators, enabling them to harness the full potential of digital resources, make informed decisions, and contribute to a more knowledgeable and enlightened society. What is most relevant in the information literacy skills of students the critical thinking ability that can help them decided that the digital library is the best source of information.

Task-related knowledge also include having subject-specific expertise. This is a vital dimension of task-related knowledge that showcases the specialized knowledge and proficiency users possess within their respective academic disciplines or research domains. In the dynamic world of digital library, where a vast array of information caters to diverse subjects and fields, users with subject-specific expertise are uniquely

positioned to delve into the depths of their chosen area of study and conduct in-depth research with precision and finesse.

One of the primary advantages of subject-specific expertise is the ability to navigate the digital library's resources with a focused and discerning approach. These users possess a deep understanding of the terminology, concepts, and nuances within their field, enabling them to formulate precise and targeted search queries. Their familiarity with subject-specific keywords, phrases, and terminologies empowers them to retrieve relevant and contextually appropriate resources efficiently, saving valuable time and effort.

Users with subject-specific expertise are adept at utilizing advanced search techniques that go beyond basic keyword searches. They are well-versed in employing specialized search operators, filters, and advanced database functionalities that enhance the precision and scope of their research. By honing their search strategies to suit the intricacies of their subject, these users can uncover hidden gems of information and explore interdisciplinary connections that might elude others. Furthermore, subject-specific expertise enables users to critically evaluate and discern the quality of digital library resources within their domain. With a deep understanding of the scholarly landscape in their field, they can readily identify reputable and authoritative sources from emerging or less-established ones. This discernment ensures that their research is founded on reliable and credible information, reinforcing the validity of their findings and arguments<sup>38</sup>.

Subject-specific experts are not only adept at consuming information; they are also contributors to the digital library community. As active participants in their academic or research fields, they may contribute to user-generated content, scholarly discussions, and knowledge-sharing platforms within the digital library. Their contributions enrich the

repository of subject-specific information and foster a collaborative environment where scholars and researchers can engage in meaningful exchanges. Moreover, users with subject-specific expertise possess the ability to bridge disciplinary boundaries and explore interdisciplinary intersections. They can draw insights from related fields and integrate diverse perspectives into their research, leading to innovative approaches and novel discoveries. Their interdisciplinary approach broadens their understanding of complex problems and facilitates the synthesis of diverse ideas<sup>39</sup>.

In essence, subject-specific expertise elevates users' interactions with digital library resources from mere information consumption to scholarly exploration and creation. It empowers them to navigate the digital library landscape with confidence, precision, and academic rigor, making the most of the wealth of knowledge and resources available to them. In a constantly evolving academic and research landscape, users with subject-specific expertise play a pivotal role in advancing knowledge, fostering collaboration, and contributing to the growth of their disciplines within the digital library ecosystem<sup>34</sup>.

Task-related knowledge extends beyond the ability to efficiently navigate digital library and conduct research; it also encompasses an essential aspect: knowing where to seek assistance and support when navigating unfamiliar territories or encountering challenges. Users' awareness of the diverse services and support systems offered by academic libraries plays a pivotal role in enhancing their task-related knowledge and ensuring a seamless and enriching user experience. In the vast and intricate landscape of academic libraries, users with task-related knowledge understand that they are not alone in their quest for information and understanding. They are aware of the wealth of resources and expertise available to them, should they require guidance or clarification.

One of the critical pillars of task-related knowledge is awareness of reference assistance. These users recognize that skilled librarians and information specialists stand ready to provide personalized guidance, helping them craft effective search queries, refine research topics, and locate authoritative sources. By tapping into this resource, users can unlock the full potential of the digital library, ensuring that their research is grounded in robust and reliable information. This knowledge allows them to explore a broader range of resources and perspectives, enriching their research and enabling them to delve deeper into their subjects of interest.

Furthermore, these users recognize the significance of user training sessions and workshops offered by digital library. They actively engage in learning opportunities that enable them to further develop their information literacy skills, stay updated on new search techniques, and discover innovative research methodologies. By participating in such programs, they continue to expand their task-related knowledge, positioning themselves as adept and savvy users of digital library resources.

Ultimately, users with comprehensive task-related knowledge embrace the ethos of lifelong learning and continual improvement. They understand that the academic library is not just a repository of information but a dynamic and collaborative ecosystem that supports their intellectual pursuits. Armed with the awareness of the diverse support and services available, they confidently explore new horizons, venture into uncharted territories, and tackle complex research questions, knowing that they have a network of support and expertise to guide them on their scholarly journey<sup>40</sup>.

Task-related knowledge is an essential factor that influences users' ability to effectively utilize digital library and achieve successful outcomes in their academic and research pursuits. Digital library can support users in developing and enhancing their task-related knowledge through information literacy programs, research workshops, and user training sessions. By recognizing and addressing users' varying levels of task-related knowledge, digital library can tailor their support and services to meet the diverse needs of their users. Studies have however shown that a significant number of academic library users lack task-related knowledge needed for effective digital library utilization.

One of the foremost challenges encountered by individuals striving to enhance support for students pertains to identifying the optimal approach for facilitating their academic achievement. Studies have identified a need to modify library educational programs and approaches in order to cater to the information needs of undergraduate students. This can be achieved by taking into consideration their individual characteristics<sup>41</sup>. In a study conducted in England, the authors examined the information seeking behaviors of first-generation students in their daily lives. The findings revealed that these students experienced a sense of exclusion when searching for non-academic information related to college life and administrative offices. Furthermore, this feeling of exclusion occasionally extended to their interactions with the library<sup>42</sup>.

Newly-admitted students encountered some obstacles when it came to utilizing the library. However, the presence of an embedded librarian inside a specialized program for these students proved effective in mitigating these barriers. The integration of information literacy teaching into programs specifically tailored for first-generation students has the potential to enhance their academic growth and progress<sup>43</sup>. The literature in the field of

Library and Information Science (LIS) has explored the presence of themes suggesting that students face disadvantages in navigating complex digital library. However, it is worth noting that several studies have also demonstrated the research capabilities of these students<sup>44</sup>. The students who have been found to demonstrate higher task-related than their peers may possess higher computer self-efficacy which is another individual characteristic indicator.

Computer self-efficacy refers to an individual's belief in their ability to successfully use a technology to achieve desired outcomes. Higher self-efficacy can lead to greater technology adoption and more effective use. Prior Experience: Past experiences with similar technologies or related digital tools can shape users' perceptions and expectations, influencing their readiness to adopt new technologies. Computer self-efficacy pertains to an individual's assessment of their own capacity to effectively utilize a computer. The focus lies not on previous actions, but on assessments of potential future actions. Furthermore, it does not pertain to rudimentary constituent sub-skills, such as the act of formatting diskettes or inputting formulas into a spreadsheet. In addition, it encompasses assessments of the capacity to utilize those skills in more expansive endeavors, such as composing written reports or scrutinizing financial data.

The existing body of literature exhibits a degree of uncertainty and division on the distinction between general computer self-efficacy and task-specific computer self-efficacy. There are two distinct models of computer self-efficacy, namely task-specific and application-specific. Task-specific self-efficacy is highly congruent the original construct of self-efficacy<sup>45</sup>. The concept of general computer self-efficacy is characterized by its lack of specificity and its tendency to include a wide range of

computer application disciplines. The concept of general computer self-efficacy can be conceptualized as a compilation of various computer self-efficacies that have been acquired and developed over a period of time. Consequently, the utility of general computer self-efficacy in assessing immediate fluctuations is limited. Nonetheless, it may serve as a valuable prognosticator for future levels of overall performance across a wide range of computer-related tasks in the long run<sup>46</sup>.

In certain instances, the construct of general computer self-efficacy is alternatively labeled as technology self-efficacy, denoting a broader scope encompassing several technological domains. This refers to an individual's level of proficiency and familiarity with technology. Users with higher technology literacy are more comfortable and confident in using various digital tools and devices, making them more likely to adopt new technologies. Computer self-efficacy can be described as an individual's confidence in their capacity to effectively execute a technologically advanced task<sup>47</sup>.

Computer self-efficacy is an important factor in the use of digital library resources by Nigerian polytechnic students. However, studies that have been conducted in Nigeria have reported contradicting results on the level of computer self-efficacy among Nigerian students. One of such studies examines the assessment of normative influences on the computer self-efficacy levels among undergraduate students in federal universities located in the southwestern region of Nigeria. The findings revealed that the levels of computer self-efficacy among undergraduate students in federal universities located in the south-west region of Nigeria is classified as high<sup>48</sup>.

The findings of this study align with those of another scholar who reported that a significant proportion of undergraduate students expressed a strong sense of computer

self-efficacy when using the Online Public Access Catalog (OPAC)<sup>49</sup>. The findings also align with those of another scholar, whose research indicated that a significant proportion of the participants had a proficient level of ICT abilities and computer self-efficacy<sup>50</sup>.

The study's findings indicate that there is a significant relationship between the level of computer self-efficacy and the usage of electronic learning resources (ELRs) among undergraduate students. The claim is posited on the underlying assumption that computer self-efficacy pertains to the evaluations and level of confidence associated with one's ability to perform tasks using computers. This suggests that in order to achieve effective and efficient utilization of electronic learning resources (ELRs), it is necessary for undergraduate students to acquire a high level of computer self-efficacy.

Consequently, it is imperative for university libraries to offer comprehensive training programs that focus on developing technical competencies to enhance the utilization of Electronic Learning Resources (ELRs). The findings suggest that the polytechnic students had moderate computer anxiousness, medium attitudes toward the Internet, and high computer self-efficacy and used the Internet extensively for educational purposes such as doing research, downloading electronic resources and e-mail communications. However, the effort of tertiary institutions and academic libraries may not yield the desired fruit unless the students possess the right attitude towards change.

Users' general attitudes towards technology, such as enthusiasm, curiosity, or skepticism, can impact their willingness to adopt new technologies. The willingness to embrace new and innovative technologies varies among individuals. Those with a higher level of innovation acceptance are more open to trying and adopting novel technologies. Users' general attitudes towards technology play a pivotal role in shaping their interactions with

digital innovations and influencing their willingness to embrace new technologies<sup>51</sup>. These attitudes encompass a spectrum of emotions, ranging from enthusiasm and curiosity to skepticism and reluctance. Such attitudes are deeply ingrained in individuals' beliefs, values, and past experiences, and they significantly impact their decision-making process when it comes to adopting novel technological advancements within the digital realm.

Enthusiasm and curiosity towards technology are traits of users who possess a sense of wonder and eagerness to explore the possibilities offered by digital innovations. These individuals exude a positive outlook and are open to experimenting with new tools and functionalities within the digital library environment. Their innate curiosity fuels a desire to discover cutting-edge features, test emerging applications, and stay abreast of the latest trends in digital information retrieval. Embracing technology with excitement, they view it as an opportunity for personal and professional growth, driving them to push the boundaries of their knowledge and skills<sup>52</sup>.

On the other hand, some users exhibit skepticism towards technology, expressing caution and reservation when encountering new digital offerings. Their inclination to approach innovations with a critical eye stem from concerns about potential risks, uncertainties, or disruptions that new technologies may entail. Skeptical users may seek additional evidence or assurance before fully embracing a digital tool, as they prioritize stability, security, and proven benefits. Addressing their reservations and building trust are crucial for encouraging their adoption and ensuring that their journey into the digital library ecosystem is met with reassurance and reliability<sup>53</sup>.

A critical dimension of users' attitudes is their level of innovation acceptance. This refers to the extent to which individuals are receptive to novel and ground-breaking technologies. Those with a higher level of innovation acceptance exhibit a natural predisposition to explore and integrate new digital tools into their daily routines. Their proactive approach to embracing technological advancements empowers them to be early adopters, eagerly experimenting with emerging features and functionalities. This innate willingness to try new technologies facilitates a smooth integration of digital library innovations into their research and learning experiences, maximizing the benefits they derive from these novel resources.

Conversely, individuals with lower innovation acceptance may take a more cautious approach, preferring to wait and observe how new technologies unfold and prove their efficacy before incorporating them into their digital library practices. Patient and thoughtful in their approach, these users may adopt a "wait and see" strategy, seeking evidence of the tangible benefits that a technology can offer before fully committing to its adoption. Building a compelling case for the value and impact of new digital library features can sway their opinion and encourage them to explore the possibilities that these innovations present<sup>43</sup>.

Understanding users' general attitudes towards technology is pivotal for digital library to tailor their offerings and user experiences to meet the diverse needs and preferences of their user base. By recognizing the spectrum of attitudes that exist, digital library can design user-friendly interfaces, comprehensive user training programs, and proactive support services that cater to the distinct needs and motivations of each user group. Embracing user diversity and catering to varied attitudes towards technology fosters an

inclusive digital library environment that empowers all users to harness the full potential of digital resources for academic pursuits and lifelong learning<sup>41</sup>.

The significance of attitude as a predictor of future behavior has been shown in previous research<sup>54</sup>. Furthermore, the attitudes held by students have a direct impact on their level of acceptance towards digital library. Researchers posit that the concept of attitude toward change, which encompasses an individual's cognitive perceptions, affective responses, and behavioral inclinations towards change, holds significance in elucidating the acceptance of technology<sup>55</sup>. The concept of attitude towards change pertains to an individual's beliefs and intentions with regards to the necessity of change and the organizational capability to effectively implement such change<sup>56</sup>. Several research on technological acceptance have focused on analyzing changes at a broader level. For instance, these studies have explored how organizations adapt to environmental influences and alter their approach towards change.

A study found that the attitudes of employees towards change might have an impact on their reactions to the adoption of new IT, as it is often perceived as a big organizational change. The same is true for undergraduate students who might be experiencing scholarly digital library for the first time. The significance of comprehending students' attitudes towards change has been acknowledged in the literature on organizational change and development. This body of research suggests that the response of organizational members to changes within the organization plays a crucial role in the successful execution of such changes<sup>57</sup>. Numerous organizations allocate resources towards training and educating its members as a means of fostering a sense of ease and adaptability in response to novel developments occurring both internally and externally inside the organization. The

attitudes of employees towards change serve as a foundational element for the establishment of support for change initiatives and the mitigation of potential resistance.

### **2.1.3 Technological Characteristic of Digital library**

The use of digital library is influenced by several critical factors that directly impact users' experiences and interactions within the digital library environment. These factors play a significant role in shaping users' perceptions, attitudes, and overall satisfaction with the digital library platform. Those factors that are specific to the digital library, or the users perception of it are called system characteristics. The main system characteristics considered in this study include; functionality, ease of learning, system reliability, feedback and support<sup>58</sup>.

One of the foremost factors influencing the use of digital library is the functionality they offer. Users expect digital library to provide a comprehensive set of features and tools that facilitate efficient information retrieval, navigation, and organization of resources. A user-friendly interface, advanced search capabilities, personalized user accounts, and seamless integration with various devices are all aspects that enhance the functionality of a digital library. When users find the platform intuitive and capable of meeting their diverse needs, they are more likely to engage with it regularly, thereby increasing the overall usage and adoption rates<sup>59</sup>. Functionality is also represented in term of system quality.

System quality pertains to the degree to which systems exhibit a high level of user-friendliness and may be utilized without encountering significant difficulties<sup>60</sup>. Additionally, it signifies the quality of the information system, which is frequently

influenced by the utilization of system software and hardware<sup>61</sup>. Digital library system quality refers to the overall excellence and effectiveness of a digital library's technological infrastructure, services, and resources provided to users. It encompasses various aspects of the system that contribute to users' satisfaction, usability, and overall experience within the digital library environment. The quality of a digital library system is a critical factor that directly influences users' perceptions, engagement, and long-term adoption of the platform.

The assessment of system quality is commonly conducted based on various aspects, including flexibility, reliability, functionality, simplicity of use, data importance, integration, and quality<sup>62</sup>. Researchers commonly employ the concept of ease of use as a metric to assess system quality, thereby establishing the fundamental basis for evaluating system quality.

A scholar proposed that the evaluation of system quality can be enhanced by including ease of use as an additional contributing factor<sup>63</sup>. This can be made possible through various functionalities of the digital library. For instance, digital library can be judged by their search and discovery capabilities. Effective search and discovery functionalities are essential components of a high-quality digital library system. Advanced search features, filters, and relevant metadata allow users to efficiently locate and access relevant resources. A well-implemented search system empowers users to explore the digital library's vast repository with ease and precision<sup>64</sup>.

A high-quality digital library system should also be accessible to users with diverse needs and abilities. It should comply with accessibility standards, making it usable for

individuals with disabilities. Ensuring inclusivity through features like screen readers, alternate formats, and multilingual support enhances the digital library's usability and user satisfaction. In addition, a quality digital library system often offers personalization options, allowing users to customize their experience based on their preferences and research interests. Features such as personalized user accounts, saved searches, and personalized content recommendations enhance users' engagement and foster a sense of ownership over their interactions with the platform.

Another critical factor relating to the functionality of digital libraries is the user interface. The user interface is a fundamental element of digital library system quality. A well-designed and intuitive interface enhances users' ease of navigation, resource discovery, and interaction with the platform. An aesthetically pleasing and user-friendly interface facilitates efficient information retrieval and ensures that users can quickly access the resources they seek.

The quality and diversity of content available within the digital library significantly impact its value to users. A comprehensive and diverse collection of resources, including academic papers, e-books, journals, multimedia content, and databases, enriches users' research and learning experiences. The credibility and relevance of the content influence users' perception of the digital library's value as an authoritative and trustworthy information source. The concept of information quality pertains to the perceived value of the system's output by its particular user<sup>65</sup>. Typically, the assessment of information quality is based on criteria such as accuracy, timeliness, completeness, relevance, and consistency.

Furthermore, the significance of content quality as a determining factor for overall digital library effectiveness has been demonstrated, notably in the realm of web-based systems<sup>66</sup>. The existing body of literature in the field of Information Systems (IS) indicates that there is a relationship between content quality and information satisfaction<sup>67</sup>. Several research have indicated that the concept of information quality has been viewed as a holistic user satisfaction construct, rather than being treated as a distinct component<sup>68</sup>. Alternatively, it has been defined as the level of satisfaction experienced by users in relation to the information provided. Researchers have collectively established a correlation between content quality and user satisfaction, as well as the behavioral intention to use digital library and other types of information systems. Their findings indicate that the quality of information resources obtained from a digital library has a substantial impact on users' satisfaction levels and their inclination to utilize online learning systems<sup>69</sup>.

By addressing these dimensions of digital library system quality, digital library can create a user-centric environment that fosters meaningful engagement, supports users' academic and research endeavors, and establishes the digital library as a valuable and indispensable resource in the scholarly community. The pursuit of excellence in system quality enables digital library to continuously evolve and adapt to meet users' evolving needs and expectations in the digital age. System characteristics also cover the reliability of the digital library which is driven by the technical capacity of the digital library.

The technical performance of a digital library system refers to its reliability, speed, and responsiveness. A robust and stable system ensures consistent access to resources, minimal downtime, and quick response times when users interact with the platform.

Technical excellence contributes to users' trust in the system's dependability, making them more likely to utilize the digital library regularly for their information needs<sup>63</sup>. The reliability and stability of the digital library system significantly influence user trust and satisfaction. Users depend on digital library to provide seamless access to resources, and any system downtime or technical glitches can disrupt their research or learning activities. A reliable and robust system that ensures consistent availability and performance of the digital library resources is essential for building user confidence. When users can rely on the system to be available whenever they need it, they are more likely to view the digital library as a dependable resource and incorporate it as an integral part of their academic endeavors<sup>65</sup>. In addition to this, the system must be easy to learn.

The ease of learning to navigate and utilize the digital library is another crucial determinant of its usage. Users expect the platform to be user-friendly and straightforward, minimizing the learning curve required to access and leverage its resources. A well-designed user interface, clear instructions, and accessible help resources contribute to users' comfort and confidence in utilizing the digital library effectively. When users can quickly adapt to the platform and effortlessly find the information they need, they are more inclined to use the digital library consistently and incorporate it into their academic or research workflows<sup>70</sup>.

The provision of informative feedback and reliable user support services is a critical aspect of the digital library's success. The availability of responsive and helpful user support services is crucial for digital library system quality. Efficient user support, such as live chat, email assistance, or knowledge base resources, ensures that users receive prompt assistance with technical issues, information retrieval challenges, or any other

queries they may have. Users appreciate timely and accurate responses to their queries and concerns, whether through chat support, email assistance, or knowledge base resources. Access to user support that addresses technical issues or helps with information retrieval challenges enhances users' experiences and fosters a sense of trust and engagement. The availability of helpful feedback and support resources empowers users to navigate the digital library confidently, knowing they have assistance available whenever needed.

Scholars have examined user satisfaction by focusing on system quality, namely system accuracy and simplicity of use. In another study the focused system characteristics include the inclusion of certain user interface elements, such as navigation, terminology, and screen design, can have a positive impact on users' intention to use a system. Studies have shown that users highly concerned over system quality in information systems such as digital library<sup>71</sup>. The presence of compatibility and system quality can have a positive impact on the satisfaction levels of students. According to findings, there exists a favorable correlation between system quality and both behavioral usage intents and user satisfaction in relation to the utilization of the learning system<sup>72, 73</sup>.

The functionality, ease of learning, system reliability, and feedback and support are integral factors that influence the adoption and usage of digital library. Digital library that prioritize user-centric design, ease of use, and robust support services create an environment where users feel empowered to explore, discover, and utilize the wealth of digital resources available to enhance their academic and research pursuits. By continually improving these factors, digital library can enrich users' experiences and

cultivate a loyal and engaged user base, driving the success and impact of these valuable knowledge repositories.

## **2.2 Theoretical Framework**

### **2.2.1 Stimulus Theoretical Framework**

The stimulus theoretical framework is a framework developed by a Malaysian scholar named PC Lai in 2017. The frame was a theoretical framework that helps explain the motivation to use digital technologies. It was developed out of the technology acceptance model (TAM) and the main constructs; perceived ease of use and perceived usefulness were actually adapted from TAM model developed by Fred Davis in the 1980s<sup>74</sup>.

The stimulus framework proposes that two key factors influence an individual's acceptance and usage of technology: perceived ease of use and perceived usefulness. Perceived ease of use refers to how easy a person believes it is to learn and use the technology. If individuals find a technology intuitive and uncomplicated, they are more likely to accept and use it. Perceived usefulness, on the other hand, relates to the extent to which individuals believe that the technology will enhance their performance, productivity, or overall effectiveness. When individuals see a technology as beneficial to their tasks or goals, they are more inclined to adopt it.

The interplay between these two factors directly affects users' attitudes and intentions towards using the technology. In the context of digital library, for instance, if users perceive the library's interface as user-friendly and its resources as valuable for their research or learning needs, they are more likely to accept and embrace the digital library. Regarding its ability to explain variations, Researchers have extensively validated both

perceived ease of use and perceived usefulness over time, to the extent that it can be asserted that a favorable perception of ease of use and usefulness significantly enhances the likelihood of technology adoption<sup>70</sup>.

Drawing parallels between framework and the context of polytechnic students' motivation to use digital library, it is possible to say that a positive perception of the library's usefulness, coupled with an uncomplicated and user-friendly experience, can significantly enhance students' motivation to utilize digital library resources. By addressing these factors and ensuring that the digital library aligns with students' academic needs and expectations, academic libraries can foster a stronger motivation among polytechnic students to actively engage with and benefit from the digital library's offerings.

### **2.2.2 Task Technology Fit (TTF) theory**

Task Technology Fit (TTF) theory was developed by Dale Goodhue and Ronald Thompson in 1995 is a framework that describes the relationship between technology and task performance<sup>75</sup>. The theory suggests that the fit between a technology and a task can influence the effectiveness and efficiency of task performance, as well as the user's overall satisfaction with the technology. According to TTF theory, there are three main components that influence the fit between technology and task: task characteristics, technology characteristics and individual characteristics. Task Characteristics are the unique attributes of a task, such as its complexity, the level of interdependence between different aspects of the task, and the degree of novelty or familiarity.

Technology characteristics are the attributes of the technology being used, such as its functionality, ease of use, system reliability and flexibility<sup>30</sup>. In essence, technology characteristics encompass the features and attributes of the digital library system used by polytechnic students. This includes evaluating the functionality of the digital library, assessing its ease of use and user-friendliness, determining the reliability and performance of the system, and understanding its flexibility in accommodating various research needs and preferences.

Individual characteristics are the characteristics of the user, such as their level of experience with the technology and their attitudes towards it<sup>30, 76</sup>. Individual characteristics in this study focus on the specific traits and attributes of polytechnic students as users of the digital library. This includes considering their level of experience with technology and digital resources, understanding their attitudes towards using the digital library for academic purposes, and gauging their openness to adopting and integrating new technologies into their academic practices.

TTF theory suggests that a good fit between technology and task occurs when the technology characteristics align with the task characteristics and the user's individual characteristics. In other words, the technology should be designed in a way that is appropriate for the specific task being performed and for the user's abilities and preferences. When the fit between technology and task is good, TTF theory suggests that users will experience a number of positive outcomes, including improved performance, increased efficiency, and greater satisfaction with the technology. On the other hand, when the fit is poor, users may experience frustration, difficulty in performing the task, and reduced overall satisfaction with the technology. TTF theory has been applied in a

variety of contexts, including healthcare, education, and business, and has been used to inform the design and implementation of technology systems to better meet the needs of users. By taking into account the unique characteristics of tasks, technologies, and users, designers and developers can create technology systems that are more effective, efficient, and user-friendly.

The Task-Technology Fit (TTF) theory was expanded by scholars through its integration with the Technology Acceptance Model (TAM)<sup>77</sup>. TAM proposes that the use of technology influences cognitive evaluation in the form of perceived ease of use and perceived usefulness, subsequently motivating behavioral intention and actual use behavior<sup>70</sup>. Perceived ease of use refers to the extent to which technology usage requires minimal effort, while perceived usefulness indicates the degree to which users believe that technology enhances their performance<sup>78</sup>. The purpose behind this extension was to combine the two dominant theories of technology acceptance to enhance TTF's predictive capacity<sup>72</sup>.

Both TAM and TTF adopt a user-centric perspective on technology use and explore outcomes such as adoption, acceptance, and performance. However, they provide complementary insights into technology utilization, with TAM focusing on intention to use and TTF concentrating on actual use outcomes. In the extension, the relationships between variables within TAM and the TTF model remained unchanged. TAM represents the interaction between perceived usefulness and perceived ease of use, affecting attitude, intention, and use behavior<sup>73</sup>. TTF examines actual tool use, influenced by TTF and tool experience, where the former is affected by tool functionality and task requirements.

The TTF-TAM integration contributes to the literature by providing a theory that explains technology acceptance based on attitude/behavior mechanisms and rational determinants of acceptance, such as fit and job performance<sup>72</sup>. This combination addresses research gaps, acknowledging that individuals may not hold a favorable attitude toward the technology but accept it if it enhances their performance<sup>79</sup>.

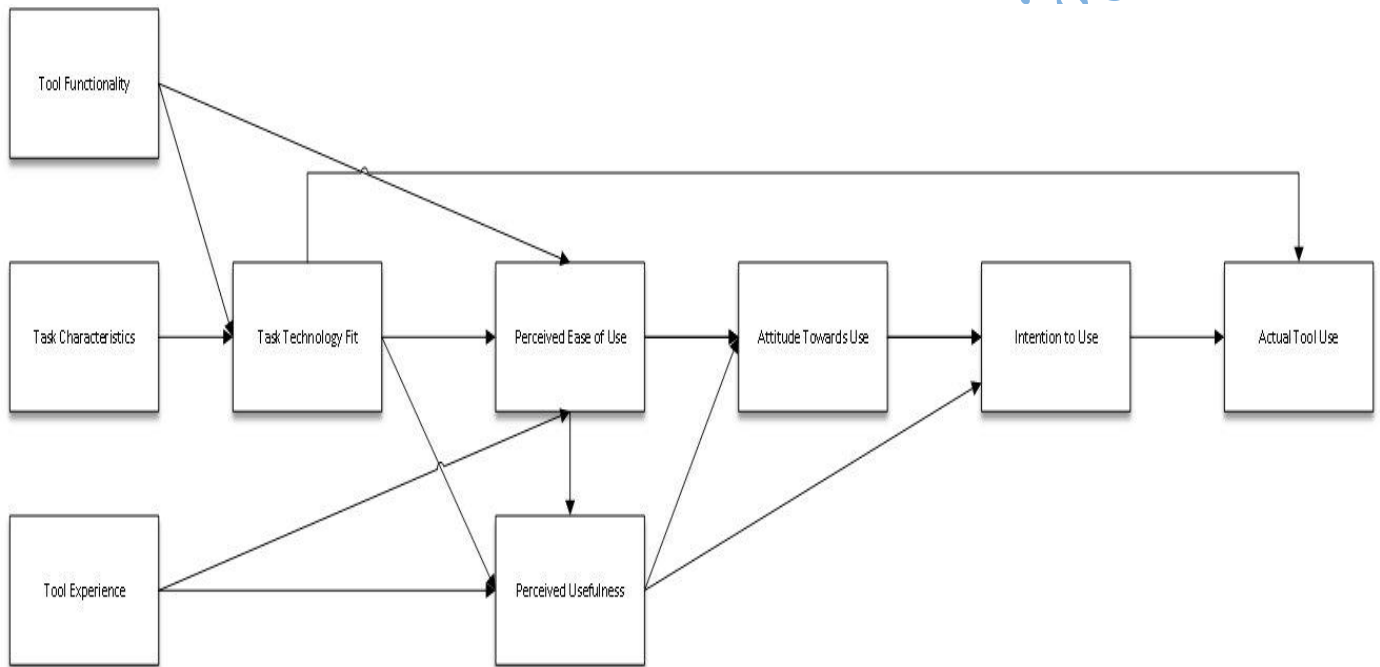


Figure 2.1: Task Technology Fit (TTF)<sup>75</sup>

### 2.3 Review of Empirical Studies

#### 2.3.1 Individual Characteristic and Motivation to Use Digital library

Researchers from Pakistan investigated the acceptance and importance of digital library among female students at International Islamic University, Islamabad, Pakistan. The

study also highlighted the problems female students confronted in completing their research work because of limited access to DL in the university. Data was collected from 315 female students. Findings reveal that the students were unable to meet their information needs as digital library access was limited and the quality and quantity of their research were affected due to the restriction of digital resources. Lack of information literacy programs, Information Technology (IT) training workshops, availability of IT literate staff and electricity failure were identified as the main barriers to having access to digital library, and also admitted that digital library accessibility was indispensable to the completion of their research studies<sup>80</sup>.

Similarly, a group of scholars studied users' acceptance and use of digital library system in 16 institutions in Africa, Asia, and Central/Latin America. The study examined the factors that influenced people's adoption and use of a digital library system and tested the applicability of the Technology Acceptance Model (TAM) in the context of developing countries. The study also identified similarities and differences in the significance predictors of the digital library acceptance across countries and continents. Data was collected from 1082 respondents. The path analysis results reveal that perceived ease of use of the library system had a significant impact on perceived usefulness which led to behavioural intention to use it. Hence, perceived ease of use and perceived usefulness were identified as factors that could influence use of digital library by the study. The study concludes that some other factors that affect perceived ease of use and usefulness of digital library need to be considered in the process of designing, implementing and operating digital library systems. This could help decrease the mismatch between system

design and users' realities, and further facilitate the successful adoption of digital library systems in developing countries<sup>81</sup>.

In India, researcher examined the perceptions of undergraduate students towards the digital library of the Cochin University of Science and Technology (CUSAT), India, with a view to determine the sources consulted and the general pattern of information gathering by the students. The study adopted a descriptive survey design and data was collected using a questionnaire administered to 225 respondents randomly selected from seven branches of engineering faculty in the CUSAT. Findings reveal that almost all students used the digital library for learning. They frequently accessed the digital library for getting previous examination question papers, syllabi and other materials pertaining to their studies, and were satisfied with the digital library features and functionalities available. The students recommended the addition of more documents related to their courses and useful links to the digital library so the technology could provide the best fit with their tasks<sup>82</sup>.

A Chinese scholar also conducted a comparative study of the extent to which undergraduate and graduate students in China differ in their use of digital library. The undergraduate and graduate students had positive attitudes about use of digital library, but polytechnic students were unfamiliar with digital library use. The study shows that the motivation to use digital library was influenced by a combination of various factors; remote access and faster access identified as important factors. Unlike the factors promoting use of digital library, nonuse factors (perceived influences, and degree of satisfaction) were quite different between undergraduate and graduate students due to their differing tasks, emphases and expectations for information. The study concludes that

the students would use digital library services, if suppliers integrate system characteristics, navigation features, natural language capacity into the system, as well as make available detailed tutorials and more full text options to support the students' tasks<sup>83</sup>.

A related study provides an overview of a case study research that investigated the use of digital library resources in two undergraduate classes and also explored faculty and students' perceptions of educational digital library. The study found that students and faculty used the academic digital library primarily for textual resources, but turned to the open web for visual and multimedia resources because they did not perceive academic libraries as a useful source of digital images. They rather preferred using search engines when searching for visual resources. The study also found limited use of digital library resources for teaching and learning by the respondents because they perceived library system as not user-friendly and as a place which contain only primarily textual resources. This perception had a negative effect on user intention to use digital library and thus discouraged them from trying to use the digital library provided by the institution, especially for searching visual resources<sup>84</sup>. The study was, however, able to establish that user perceptions of usefulness and usability, especially perceived ease of use, play an important role in user intentions to adopt and use digital collections for academic learning and teaching.

In Malaysia, scholars examined the perception of students towards the digital library services in the International Islamic University, Malaysia. The results of the study reveal a high level of awareness of digital library services among the students. The students also showed positive attitude towards use of the digital library services even though the level

of usage was low. The study was able to reveal awareness of digital library among the students, but did not consider the factors that influenced use by the students<sup>85</sup>.

In addition, a scholar studied the perceptions of university students in regard to use of digital library by three selected faculties in Ankara University, Turkey. The study explored the purpose of use, usage frequency and use tools for digital library among the students. Findings show that, whereas the students used Internet resources, digital library was not yet placed as their first priority because they were not yet aware of how to use the university digital library. Consequently, the students found their own resources sufficient for their researches. This study also did not consider the factors that influence use among the students<sup>86</sup>.

A study in Nigeria on availability and use of digital information resources by polytechnic students of universities in Delta and Edo states, Nigeria found that digital information resources were available at the university libraries. However, usage of these resources was low. Some constraints encountered by students towards accessibility of digital information resources in the libraries are epileptic power supply, none availability of online databases, lack of formal training in Internet skills for students, slow bandwidth, network problems and server slowness. The study, however, did not identify factors that influence use of these digital information resources<sup>87</sup>.

A study conducted in India examine the attitude of users and use of digital library services. The frequency of use of the digital library is a crucial factor in understanding how users engage with the platform. Among the respondents, it was observed that some use the digital library occasionally, others use it whenever they need information, followed by those who use it on a weekly basis. Additionally, some of respondents use

the digital library daily, while the least number use it on a monthly basis. Regarding the purpose of use, respondents were asked to indicate their reasons for utilizing the digital library. Based on the data collected, majority stated that they use it for research and reference purposes, while a few use it for teaching and personal enrichment. Furthermore, some of respondents use the digital library for decision-making and professional needs, and a few use it for leisure and entertainment. In assessing respondents' attitude toward digitization of rare and old collections in the library, the results showed that majority of respondents consider digitization to be highly useful. Additionally, some respondents indicated that the digitization process is moderately useful, while a small number expressed that it is not useful<sup>88</sup>.

These findings demonstrate a link between the frequency of use, purpose of use, and attitude of the users towards the digital library. The data highlights the diverse patterns of usage based on different frequencies and purposes, along with varying attitudes towards digitization. Understanding these links can provide valuable insights for digital library providers to tailor their services and improve user experiences accordingly.

A related study also examined attitude of students towards the use of Online Public Access Catalogue by students. The objective of this study is to present a comprehensive analysis of two law university libraries located in the Karnataka state of southern India, focusing specifically on their web-based online public access catalogue (web OPAC). This study presents the findings of a survey conducted to assess the opinions of library users regarding the utilization of the web OPAC, the strategies employed to acquire knowledge on its usage, the assistance sought to navigate the web OPAC, and the

frequency of utilizing the web OPAC search features in certain law school libraries located in Karnataka.

This study sample encompassed law students from various categories, including Bachelor of Legislative Law students, Master of Laws students, research researchers. The study findings revealed that a significant majority of respondents reported utilizing the web OPAC. The majority of users of the web OPAC expressed a high level of agreement with their acquisition of web OPAC skills through participation in a library orientation course. The research revealed that individuals possess favorable attitude regarding the web OPAC search feature. The student however revealed that the search page of the web OPAC has failed to provide adequate guidance to users of the web OPAC<sup>89</sup>. This indicates that positive attitude can influence the use of digital library, even in the face of other shortcomings

Researchers examines the various factors that influence the willingness of undergraduate students to engage in library digital services. The study found that the level of college users' inclination to engage in smart services offered by academic libraries is directly and positively influenced by several factors, including the information needs of users, the innovative mindset of users, the performance of the service platform, user happiness, the promotion and advice provided by the library, and external incentives. The factors of information quality, service platform performance, service quality, and service value have been found to have a notable and favorable influence on user satisfaction.

Moreover, these factors indirectly contribute to users' inclination to engage in digital services offered by academic libraries, mostly through the mediation of user pleasure.

The study findings additionally indicate that the primary motivation for college students and teachers to engage with smart services is to fulfill their information requirements.

The study however found that self-efficacy does not influence the decision to enjoy digital library services among the students. The comprehension of elements that influence users' inclination to engage in smart services provided by academic libraries necessitates a reevaluation of several aspects that have been overlooked in previous studies on smart libraries and smart services. There is a limited body of research that specifically examines the patterns of user engagement in the context of digital library services<sup>90</sup>.

Researchers in Nigeria also found that users' self-efficacy is a factor in the use of digital library. The objective of this study is to investigate the relationship between computer self-efficacy and the utilization of electronic library resources among undergraduate students in federal universities located in the south-west region of Nigeria.

The researchers decided to utilize the descriptive survey study design. The researchers focused on undergraduate students from ix federal universities located in the south-west region of Nigeria. The data in this study were obtained by the administration of a questionnaire. A statistically significant correlation was observed between computer self-efficacy and the utilization of electronic library resources. The findings of the analysis indicated that the level of computer self-efficacy had a significant impact on the utilization of electronic library resources among undergraduate students in federal universities located in the south-west region of Nigeria<sup>44</sup>.

A similar study conducted in Nigeria also examined the impact of computer self-efficacy, computer anxiety, and cognitive skills on the utilization of electronic library resources

among undergraduate students majoring in social sciences at a tertiary institution located in Nigeria. The study employed a survey research design and utilized a stratified random sampling technique to choose a sample size of 869 undergraduate students majoring in social science across five distinct departments. The study's results indicated that there were significant correlations between computer self-efficacy, computer anxiety, cognitive skills, and the utilization of electronic library resources by the participants. The respondents' utilization of electronic library resources was significantly influenced by computer self-efficacy, computer anxiety, and cognitive skills, both separately and in combination<sup>91</sup>. Hence, when devising strategies to improve the utilization of electronic library resources, library management in tertiary institutions should take into account the computer self-efficacy, computer anxiety, and cognitive skills of the individuals involved.

The consideration of computer self-efficacy is crucial when examining the utilization of computer-based e-resources. The study employed a survey research design. The study employed a multi-stage sampling technique. The data for this study were obtained by the administration of a structured questionnaire. The focus of the study was to investigate the impact of computer self-efficacy on the utilization of electronic information resources among students enrolled in polytechnic institutions in Ogun State, Nigeria. The data was analyzed using frequency counts, percentages, mean, and standard deviation. The findings indicate that the Internet, YouTube, search engines, and e-mail emerged as the primary electronic sources of information. The findings suggest that the screen menu, data file, and the ability to confidently enter and save data file were identified by the participants as aspects of their computer self-efficacy. The findings indicate that the utilization of electronic information resources among the participants of the study is

limited due to many factors. The research findings indicate that students are more likely to make use of electronic information resources when they possess a sufficient level of computer self-efficacy. The study suggests that it is imperative for the management of polytechnic institutions to ensure the availability of electronic information resources<sup>92</sup>.

### **2.3.2 Technological Characteristic and Motivation to Use Digital library**

Researchers examined factors determining the use of library website among LIS students in Nigeria. The findings indicate a significant association between the perception of website quality, website interactivity, website aesthetic and website satisfaction and the initial impression of the university library website among LIS students. The combined influence of the five independent variables, namely Website quality, Website interactivity, Website aesthetic perception, Website prototypicality, and Website satisfaction, was found to account for 66% of the observed variation in LIS students' initial perception of university library websites, as indicated by the R-square value.

The primary factor influencing LIS students' initial impression of a library website is the aesthetic perception of the website. This is followed, in decreasing order of significance, by the interaction, satisfaction, and overall quality of the website. However, while prototypicality is indeed connected with initial impressions, its impact is not substantial.

A noteworthy constraint of this study is to the fact that the data was only gathered from undergraduate students attending two colleges, with a specific focus on students within the field of Library and Information Science. The findings necessitate significant endeavors to enhance user experience on the internet, as the initial impression has

considerable importance. The findings of this study have consequences for those who utilize university library websites. The findings indicate that the aesthetic perception of a library website has the greatest influence on the initial impression formed by students studying Library and Information Science (LIS) towards the website of a university library. This is closely followed by the level of interactivity offered by the library website. The generalizability of these findings to other university library websites may be limited, contingent upon the users' individual experiences<sup>93</sup>.

Researchers in Swaziland investigated the use of digital resources for teaching and learning Secondary School Agriculture in the country. The study adopted a survey research methodology. The research population comprised all secondary school Agriculture instructors in Swaziland. The study found that complexity respondents marginally agreed ICT utilisation and incorporation is much less complicated to employ in teaching with a mean of 4.31. Respondents also agreed that computers make the teaching of complicated ideas easier while noting that computers fit well with the curricular goals of the subject of agriculture. They however believed learning to utilize ICT tools in education was somehow difficult<sup>94</sup>.

Functionality of digital library was also found relevant as a predictor of digital library adoption and use in Uganda. Researchers from Makerere examined the use of electronic learning applications by students. The study employed a quantitative technique, descriptive research, and a cross-sectional survey for the research design. The sample included a total of 5438 students from three Faculties of Makerere University Business School (MUBS). In reference to data analysis, factor analysis and assessment of reliability and validity of the measures' items were done. The analysis of data showed

that complexity had a significant negative impact on the students' desire to utilize e-learning services at the University. It indicates an inverse association with e-learning adoption and use<sup>95</sup>. This is a further validation of the construct of complexity as a predictor of technology adoption and use in various contexts and across various types of technology

Researchers in Malaysia also examined technological factors responsible for the use of digital library. The purpose of this study is to conduct an exploratory analysis in order to develop a model that can predict the factors that influence the actual usage of a digital library system. The results indicated that the quality aspects of digital library systems significantly impact satisfaction, behavioral intention, and variance in actual usage.

The strongest predictor for measuring user satisfaction is the quality of information, and the satisfaction experienced by users has a significant impact on the behavioral intention of students to utilize the system. Furthermore, it is worth noting that there exists a significant positive correlation between user happiness, behavioral intention to use the system, and the actual utilization of a digital library system. In summary, behavioral intentions are significantly impacted by the quality of the system, the quality of information, and the quality of service<sup>96</sup>.

Researchers from China investigate the adoption of mobile library applications through the utilization of a proposed model derived from the technological acceptance model (TAM). The findings of the study indicate that the perceived usefulness and perceived simplicity of use of mobile library applications have a direct and significant impact on the intention to use it. Additionally, the quality of the system and the habit of using mobile

library applications were identified as influential factors in determining the intention to use mobile library applications. The results of this study serve as a valuable resource for informing decision-making processes related to the design and development of mobile library applications. Moreover, the results might be employed in the process of resource allocation to ensure the achievement of the library's vision and mission<sup>97</sup>.

Another study conducted in China also show the influence of system characteristics on the use of digital library. The objective of this study is to analyze the various elements that impact the intention of undergraduate students to utilize digital library provided by universities. The findings of the study suggest that there is a substantial relationship between system quality and the affinity towards digital library (DLs), and how this impacts the user satisfaction of undergraduate students. However, the quality of information and the quality of service do not align. The level of user satisfaction plays a crucial role in shaping the intention of undergraduate students to utilize digital library provided by universities. It is recommended that librarians and service providers prioritize efforts to enhance the system quality of digital library and strengthen the affinity of users towards these libraries<sup>98</sup>. This will ultimately lead to increased user satisfaction among undergraduate students, hence further inspiring them to utilize university digital library.

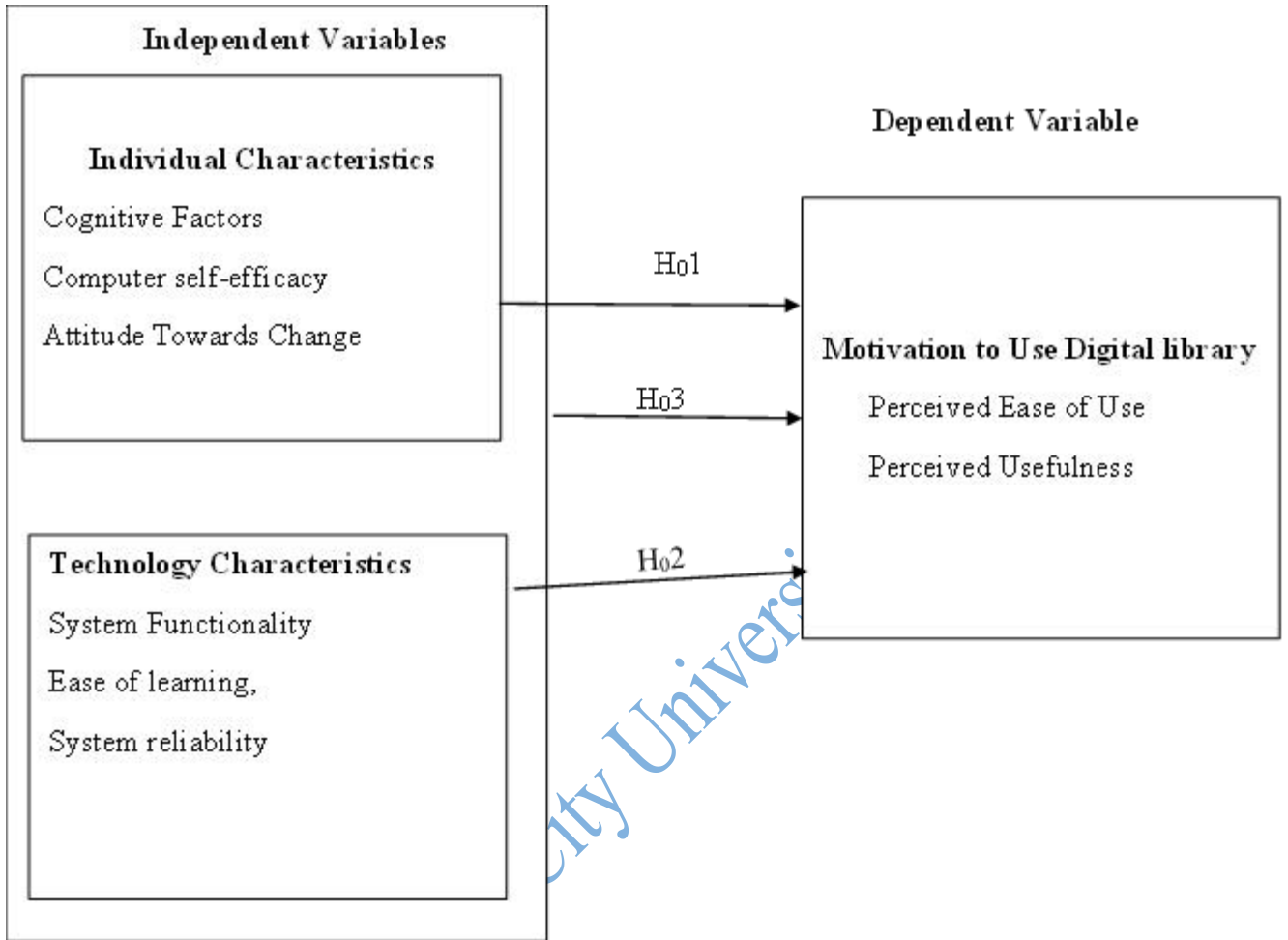
Researchers also examined the factors influencing user satisfaction with digital library among university students in Iran. The theoretical framework of the study drew upon information system success theory, technology acceptance model (TAM), media affinity theory, satisfaction-loyalty theory, and engagement theory. By integrating these theories, eight hypothesized relationships were formulated to create the conceptual model.

The findings of the study revealed that the generic usability of the digital library and the quality of digital resources play pivotal roles in predicting and understanding the factors that contribute to user satisfaction with digital library. Moreover, the increased user satisfaction with the digital library can lead to various implications, such as positive recommendations, higher chances of reuse, and increased engagement and integration with the digital library platform. Notably, system quality, service quality, and information quality were found to be crucial in shaping users' perceptions of usefulness, ease of use, and affinity towards digital library<sup>99</sup>.

A study conducted in Lagos, Nigeria also show the link between system functionality and the use of digital library. The study assess the usage of online public access catalogue (OPAC) among library patrons in a number of chosen tertiary institutions in Lagos State. The study's results indicate that the rate of OPAC utilization among library users in selected tertiary institutions in Lagos State is rather low. A significant proportion of the participants expressed a moderate level of success in accessing documents using the Online Public Access Catalog (OPAC). It has been observed that a significant portion of users lack awareness of the full range of features offered by the Online Public Access Catalog (OPAC) and thus face difficulties during their search process. Several issues were identified in the study, including challenges in formulating queries, instances of unsuccessful searches within the allotted time, absence of spelling correction capabilities, insufficient teaching on the use of the OPAC software, malfunctioning of the OPAC system, and inadequate advice provided by library staff<sup>100</sup>.

## 2.4 Conceptual Model

*Do Not Copy, Lead City University, Nigeria*



**Figure 2.2: Conceptual model on the influence of individual and technological characteristics on the use of digital library by polytechnic students**

**Source: Researcher, 2023**

The conceptual model shows the relationship between the variables of the study. It also shows the main focus or basic assumptions of the study. The independent variable is motivation to use digital library. It is measured by metrics obtained from the technology acceptance model (TAM) namely perceived ease of use and usefulness<sup>70</sup>. The first independence variable is individual characteristics. The metrics for this variable were adapted from the Task-Technology Fit theory<sup>73</sup>. The metrics are; task-related knowledge,

computer self-efficacy, and attitude towards change. The second independent variable is technology characteristics. It is also measured by metrics adapted from the Task-Technology Fit theory<sup>70</sup>. These metrics are; system functionality, ease of learning, system reliability and, feedback and support

The study assumes that the frequency and purpose of using the digital library among polytechnic students in Ondo states can be influenced by their level of task-related knowledge, computer self-efficacy and attitude towards change. In essence, students with task-related knowledge may be able to use the digital library for a wide range of purposes than those without task-related knowledge. This is also expected to reflect in the frequency of use. The same is true for computer self-efficacy and attitude towards change. These metrics are unique to each individual which mean that polytechnic student may not possess them in equal levels.

The second independent variable is system characteristics made up of system functionality, ease of learning, system reliability and, feedback and support. The assumption is that digital library with the best qualities is more likely to attract polytechnic students. This is based on the assumption that when the digital library has good functionalities such as good interface, interactive features and is consistently available online, polytechnic student may be encouraged to use it and continue using it.

In addition, the study also hypothesise that the combination of individual and system characteristics would influence the use of digital library by polytechnic students. This can be explained in the sense that; when polytechnic students have favourable individual characteristics, it and the digital library possess good system characteristics, it would

encourage the students to use the digital library. In the case that of shortcomings in either variable, the combination of the best of the two variables can also be combined to ensure the use of digital library by polytechnic students. All of these will be determined with systematic collection and analysis of data.

## **2.5 Summary of Reviewed Literature**

This literature review explores the relationship between individual, system characteristics and the motivation to use digital library and other similar information systems. The main focus of the review revolves around two key factors: individual characteristics and technology characteristics. TTF is a concept that assesses how well the characteristics of a technology align with the tasks or activities that individuals need to perform. In the context of digital library usage, it refers to how well the features and functionalities of the digital library platform match the specific needs and preferences of polytechnic students.

The review of literature from global and Nigerian perspective have shown that the concept of digital library is a complex one which is often oversimplified and confused by some scholars. It is however obvious that digital library, from the perspective of librarians and information professional, is an extension of the traditional library. This means that the operation of the digital library is guided by the philosophy and ethics guiding the practice of librarianship all over the world. In addition, digital library use is a major issue among librarians which has led to various users' surveys to measure use of digital library.

The concept of motivation to digital library also covers various dimensions such as perceived usefulness and perceived ease of use among others. However, purpose of use

and frequency of use have also been used by researcher far and wide that it has almost assumed a validated status. The study on the use of digital library however revealed contrasting findings. Some digital libraries are being used regularly while others are not. One report that is constant however, is the preference of student of internet sources instead of the quality resources in digital library.

The first aspect of the review centers on individual characteristics. Researchers have examined the impact of factors such as age, gender, prior experience with technology, information literacy, and academic proficiency on the students' willingness to embrace digital library. Understanding how these individual traits influence students' interaction with the digital library can help in developing more tailored interventions and support systems. The findings have varied with some researchers for instance, finding that computer self-efficacy affects the use of digital library while others found that it does not.

The second aspect of the review delves into Technology Characteristics. This section explores the attributes and functionalities of the digital library platform itself. Factors such as ease of use, content relevance, accessibility, and overall user experience have been studied to determine their impact on students' adoption and continued use of digital library resources. The literature review synthesizes various studies conducted within the Nigerian context, and other parts of the world to gain insights into the challenges and opportunities associated with digital library usage among polytechnic students. The findings suggest that when there is a strong fit between the technological capabilities of the digital library and the specific tasks students need to accomplish, there is a higher likelihood of increased usage and satisfaction.

The review concludes by emphasizing the significance of considering both Individual characteristics and technology characteristics in designing and implementing digital library systems among students. Understanding students' preferences, needs, and competencies is essential for creating user-friendly and effective digital library environments that can positively impact learning outcomes and academic success.

Overall, this literature review contributes to the existing body of knowledge on digital library adoption and usage in the Nigerian educational context and offers valuable insights for educators, administrators, and policymakers. It also shows a major gap which is that there is a shortage of literature on digital library use among polytechnic students in Nigeria and Ondo state in particular. The therefore justify the decision of the researcher to examine the motivation to use digital library by polytechnic students in Ondo State, Nigeria.

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## Chapter Three

### Methodology

This chapter presents the research design and outlines the study population, the sample as well as how the study sample was obtained. It also describes the research instrument and the mode of administration as well as the method employed in analysis the research data.

#### 3.1 Research Design

Descriptive survey research design was adopted for the study. This method is considered appropriate for the flexibility it provides researchers to gather data through appropriate instruments such as questionnaire in order to measure attitudes, opinions, and the dynamics of a particular phenomenon.

#### 3.2 Population of the Study

The population for this study will consist of 13,407 students from two government owned polytechnic in Ondo State namely; Rufus Giwa Polytechnic, Owo and Federal Polytechnic, Ile-Oluji. These two institutions were selected because they have various digital libraries accessible online. The breakdown of the population is provided in Table 3.1

**Table 3.1: Population Distribution**

<b>Polytechnics</b>	<b>Population</b>
Rufus Giwa Polytechnic, Owo	3,400
Federal Polytechnic, Ile-Oluji	10,107
<b>Total</b>	<b>13,407</b>

Sources: Registrar's Office

### 3.3 Sample and Sampling Technique

The sample size for the study is 375 polytechnic students. This is gotten from the sample size table developed by Krejcie and Morgan (figure 3.1)

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size  
"S" is sample size.

Source: Krejcie & Morgan, 1970

From the table, it can be seen that the appropriate sample size for the current study is 375. Having determined the sample size which, proportionate sampling technique will be used to select from each institution to ensure that the sample drawn is proportionate to the population of each institution. This has led to a sample of 375 (Table 3.2) which is considered adequate.

Rufus Giwa Polytechnic, Owo :  $3,400/(13,307) \times 100/1 = 25\%$

Rufus Giwa Polytechnic, Owo:  $10,107/(13,307) \times 100/1 = 75\%$

**Table 3.2: Sample size**

Institution	Population (PG)	Sample
1 Rufus Giwa Polytechnic, Owo	3,400	$\frac{25}{100} \times \frac{375}{1} = 94$
2 Rufus Giwa Polytechnic, Owo	10,107	$\frac{75}{100} \times \frac{375}{1} = 281$
Total	13,407	<b>375</b>

### 3.4 Description of Research Instruments

A structured questionnaire was used to gather data from the respondents. The questionnaire was adapted from related studies and it is divided into four sections as follows.

Section A contains the demographic information of respondents which is self-developed. The bio-data of respondents was measured through six (6) factors such as: Name of Institution, , Age and Gender.

Section B: Motivation to Use Digital Library scale. Items from this section was adapted from related studies based on perceived ease of use and perceived usefulness<sup>1</sup>. Example of statement is; 'I typically find interacting with the digital library easy; 'Getting any desired information from the digital library is easy for me'. The respond option provided in this study's questionnaire followed the 4-point Likert type scale of 4= Strongly Agree (SA), 3= Agree (A), 2= Disagree (D) and 1= Strongly Disagree (SD).

Section C: Individual Characteristics Scale. Section is also adapted from a relevant study based on the Task-Technology Fit Theory<sup>2</sup>. All statements are rated on a 4- point Likert

Scale ranging from 4= Strongly Agree (SD), 3 = Agree (A), 2= Disagree (D) , 1= Strongly Disagree( SD). Examples of statements includes: I usually understand the tasks and activities involved in using a digital library for my academic work; I am proactive in seeking out relevant academic resources and information using digital library tools

Section D: Technology Characteristics Scale. Section is also adapted from a relevant study based on the Task-Technology Fit Theory<sup>2</sup>. All statements are rated on a 4- point Likert Scale ranging from 4= Strongly Agree (SD), 3 = Agree (A), 2= Disagree (D) , 1= Strongly Disagree( SD). Examples of statements includes: I can get quickly and easily learn to use a new digital library; I will find the digital library to be flexible to interact with

### **3.5 Validity of the Research Instrument**

The questionnaire for this study was checked for face and content validity by the supervisor and other experts in the field of Library and Information Science. Correction made were incorporated into the final questionnaire which was administered on the study respondents.

### **3.6 Reliability of the Instrument**

The reliability of the instrument was tested through a pilot study using thirty (30) students from the Federal Polytechnic, Ede which is not a part of the study. The questionnaire was analysed and data obtained was subjected to Cronbach's alpha reliability test to establish the internal consistency of the items. The results of the test is presented in Table

3.3

**Table 3.3: Reliability Statistic**

<b>Variables</b>	<b>Cronbach's Alpha Coefficient</b>
Motivation to Use Digital Library scale	0.721
Individual Characteristics Scale	0.814
Technology Characteristics Scale	0.708

Source: Fieldwork, 2023

### **3.7 Method of Data Collection**

A letter of introduction was obtained from the Department of information Management, Lead City University which was used to gain permission to conduct the survey from the students of the selected polytechnics. After due approvals have been obtained, the researcher administered copies of the questionnaire physically with the aid of two (2) research assistants who were trained for a period of one week by the researcher. The administration of the instrument on the students took place in the library and classroom between breaks in lectures. The whole data collection exercise from the two institutions lasted a combined period of two weeks.

### **3.8 Method of Data Analysis**

The data collected from questionnaires was coded and analysed using the IBM SPSS Statistics Software. The demographic data and the research questions was analysed using descriptive statistics (simple frequencies and percentages as well as means, and standard deviations) while the research, hypotheses 1 - 2 were analysed using simple linear regression and hypothesis 3 using multiple regression which was tested at 0.05 level of significance.

## Endnotes

1. A., Tahar, H. A., Riyadh, Sofyani, H., & W. E. Purnomo, *Perceived Ease Of Use, Perceived Usefulness, Perceived Security And Intention To Use E-Filing: The Role Of Technology Readiness*. **The Journal Of Asian Finance, Economics And Business (JAFEB)**, 7(9), 2020, 537-547.
2. Marikyan, D. & Papagiannidis, S. Task-Technology Fit: A Review. In S. Papagiannidis (Ed), **Theoryhub Book**. (2023) Available At [Http://Open.Ncl.Ac.Uk /](http://Open.Ncl.Ac.Uk/)

## Chapter Four

### Results and Discussion of Findings

This chapter presents the result of data collected in the course of the study. A structured questionnaire was used to collect quantitative data to achieve the aim of the study. In all, 375 copies of the questionnaire were administered on students from two government owned polytechnic in Ondo State namely; Rufus Giwa Polytechnic, Owo and Federal Polytechnic, Ile-Oluji. At the end of the exercise, 315 copies of the questionnaire duly filled and were returned. This about 84% return rate. The researcher has set the following decision rule for the descriptive analysis: 0.0.-1.49 = very low, 1.50-2.49 – low, 2.50 - 3.49 = High, 3.50-4.00 = Very high. Hypothesis will be test at 0.05 level of significance.

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#### 4.1. Demographic Analysis

**Table 4.1: Demographic Distribution of the Respondents**

Demographics	Items	Frequency	Percent
<b>Name of Institution</b>			
	Federal Polytechnic, Ile-Oluji	83	26.3
	Rufus Giwa Polytechnic, Owo	232	73.7
	<b>Total</b>	<b>315</b>	<b>100</b>
<b>Gender</b>			
	Male	129	41.0
	Female	186	59.0
	<b>Total</b>	<b>315</b>	<b>100.0</b>
<b>Level</b>			
	ND 2	177	56.2
	HND 1	93	29.5
	HND 2	45	10.5
	<b>Total</b>	<b>315</b>	<b>100.0</b>
<b>Age Range</b>			
	16–20 years	150	47.6
	21-25 years	147	46.7
	26–30 years	15	4.8
	Above 30 years	3	1.0
	<b>Total</b>	<b>315</b>	<b>100.0</b>

n of the study respondents who are all polytechnic students. The first section of the demographic analysis presents data related to the name of the institution. The data

showed that 83 of the respondents (26.3%) were from Federal Polytechnic, Ile-Oluji, while the majority (73.7%) were from Rufus Giwa Polytechnic, Owo. This breakdown highlights the representation of each institution within the dataset. The next category in the analysis addresses the gender distribution of the participants. The data reveals that among the 315 participants, 129 students (41.0%) are male, while 186 students (59.0%) are female. This information provides an understanding of the gender balance or imbalance within the sample, which can be useful for gender-related analyses. The analysis further show that, among the 315 participants, 56.2% of the respondents are enrolled in ND 2, 29.5% are in HND 1, and 14.3% are in HND 2. This breakdown offers insights into the distribution of students across different academic levels within the institutions, aiding in understanding the educational background of the participants.

The demographic analysis also includes an age range category, which provides information about the age distribution among the participants. The data shows that the majority of participants fall into the 16–20 years age group, with 150 students (47.6%). The 21-25 years category includes 147 students (46.7%), while a smaller percentage falls into the 26–30 years (4.8%) and Above 30 years (1.0%) categories. This data illustrates the age diversity among the participants, which can be valuable for understanding the generational composition of the student body.

This demographic analysis provides a comprehensive overview of the population within the educational institutions under study. By examining the name of the institution, gender, level of education, and age range, researchers and analysts can gain valuable insights into the composition, diversity, and characteristics of the student population, which can inform various research and policy-related decisions.

## 4.2 Research Questions

4.2.1 What is the level of motivation to use digital library among polytechnic student in Ondo State, Nigeria?

**Table 4.2 Level of Motivation to Use Digital Library Among Polytechnic Student in Ondo State, Nigeria?**

Statement	SA	A	D	SD	Mean
<b>Perceived Ease of Use</b>					
I typically find interacting with the digital library easy.	101 (32.2%)	147 (47.5%)	51 (15.8%)	14 (4.5%)	3.07
Getting any desired information from the digital library is easy for me.	136 (41.1%)	108 (35.1%)	23 (10.4%)	42 (13.4%)	3.04
I have no difficulty understanding my interactions with the digital library.	35 (11.4%)	221 (71.8%)	34 (10.9%)	9 (5.9%)	2.89
I rarely make errors when using the digital library.	72 (35.6%)	88 (43.6%)	31 (15.3%)	17 (5.5%)	3.19
Overall, I consider the digital library to be user-friendly.	31 (9.9%)	157 (50.0%)	97 (30.2%)	31 (9.9%)	2.60
<b>Weighted Mean</b>					<b>2.96</b>
<b>Perceived Usefulness</b>					
Using digital libraries enhances my effectiveness in academic work.	97 (30.2%)	159 (50.5%)	44 (14.4%)	16 (5.0%)	3.06

The quality of my academic work improves when I use digital libraries.	38 (18.8%)	57 (28.2%)	56 (27.7%)	51 (25.2%)	2.59
Resources from digital libraries enable me to complete academic tasks more efficiently.	62 (19.8%)	113 (36.1%)	119 (38.6%)	17 (5.4%)	2.70
Using digital libraries make it easier to do my academic work	119 (38.6%)	117 (38.1%)	59 (18.3%)	16 (5.0%)	3.10
Overall, I find the digital library useful in my academic tasks	101 (34.7%)	152 (47.0%)	51 (15.8%)	9 (2.5%)	3.14
<b>Weighted Mean</b>					2.92
<b>Aggregate Mean 2.94</b>					2.94

Source: Fieldwork, 2023

Table 4.2 presents the analysis of the level of motivation to use digital libraries among polytechnic students in Ondo State Nigeria. Level of motivation to use digital libraries in this study was examined under two subheadings; "Perceived Ease of Use" and "Perceived Usefulness," each aiming to gauge the students' opinion about the digital library and their expectations in using it.

In the "Perceived Ease of Use" section, students were asked to assess their comfort and proficiency in navigating the digital library. The data reveals that for the statement "I typically find interacting with the digital library easy," a significant percentage of students, 32.2% strongly agreed and 47.5% agreed. On the other hand, 15.8% of the respondent disagreed with this while 4.5% strongly disagreed. This indicated a positive perception of the ease of interaction. This suggests that a considerable proportion of

students find the digital library user-friendly. The mean score of 3.07 further reinforces this notion, indicating a moderately positive perception of the digital library's user-friendliness among the students.

Similarly, the responses to the statement "Getting any desired information from the digital library is easy for me" indicates that 41.1% of the respondents strongly agreed and 35.1% agreed that they find it easy to access information from the digital library. Meanwhile, a few disagreed (10.4%) and strongly disagreed (13.4%) respectively. This underscores the students' positive perception of the digital library's accessibility. The mean value of 3.04 reaffirms this sentiment, suggesting a relatively positive perception of the library's ease of access.

Furthermore, the responses to the statement "I have no difficulty understanding my interactions with the digital library," shows that 11.4% of the respondents strongly agreed, 71.8% agreed while only 10.9% disagreed and 5.9% strongly disagreed that they did not face any difficulty in understanding their interactions with the digital library. Nevertheless, the presence of 10.9% who disagreed and 5.9% who strongly disagreed suggests that there is a segment of students who encountered challenges in comprehending their interactions. The mean score of 2.89 further emphasizes the mixed perception among students regarding their understanding of the digital library.

Moreover, the responses to the statement "I rarely make errors when using the digital library" shows that 35.6% of the respondents strongly agreed and 43.6% agreed that they rarely made errors when using the digital library, demonstrating a high level of trust in the reliability of the digital library. However, 15.3% of the respondents disagreed while

about 5% strongly disagreed. The mean score of 3.19 supports this perception, indicating that most students have confidence in the accuracy and functionality of the digital library.

In addition, the responses to the item; "Overall, I consider the digital library to be user-friendly," reveals that 9.9% of the respondents strongly agreed and 50.0% agreed that the digital library is user-friendly. However, the presence of 30.2% who disagreed and 9.9% strongly disagreed suggests that a considerable number of students do not find the digital library user-friendly. The mean score of 2.60 indicates a slightly lower perception of the library's overall user-friendliness compared to the previous statements.

The second section of the table deals with the perceived usefulness of the digital library. The results indicates that students perceive the digital library as a valuable tool in enhancing their academic performance. For the statement "Using digital libraries enhances my effectiveness in academic work," 30.2% of the respondents strongly agreed and 50.5% agreed that digital libraries enhance their effectiveness in academic work. On the other hand, 14.4% of the respondents disagreed and 5% strongly disagreed indicating that some of the respondents feel otherwise. However, the mean score of 3.06 emphasizes the positive impact of digital libraries on majority of students' academic performance.

Furthermore, the responses to the statement "The quality of my academic work improves when I use digital libraries" reflects mixed opinions, with 18.8% of the respondents strongly agreed and 28.2% of agreed that their academic work quality improves. However, the presence of 27.7% of the respondents who disagreed and 25.2% who strongly disagreed suggests that many students remain uncertain about the impact of digital libraries on the quality of their academic work. The mean score of 2.49 indicates a relatively moderate perception of the library's impact on academic work quality.

Furthermore, 19.8% of the respondents strongly agreed that "Resources from digital libraries enable me to complete academic tasks more efficiently" to which 36.1% also agreed. However, 38.6% of the respondents disagreed and 5.4% strongly disagreed showing that a significant number of the respondents do not fully agree with this perspective. The mean score of 2.70 signifies a relatively mixed perception among students regarding the efficiency of completing academic tasks using digital library resources.

In addition, the statement "Using digital libraries make it easier to do my academic work" suggests that 38.6% strongly agreed and 38.1% of them agreed that they find it easier to accomplish their academic work with the help of digital libraries. However, 18.3% disagreed and 5.0% strongly disagreed indicating that a considerable number of students still face challenges in using digital libraries to facilitate their academic work. The mean score of 3.10 indicates a moderately positive perception of the ease of academic work with the aid of digital libraries.

Also, 34.7% of the respondents strongly agreed and 47.0% of them agree that, "Overall, I find the digital library useful in my academic tasks. Conversely, 15.8% of them disagreed and 2.5% strongly disagreed. The mean score of 3.14 however suggests an overall positive perception of the utility of the digital library in students' academic tasks.

Overall, the aggregate mean level of motivation to use digital libraries is 2.94, signifying an overall moderately level of motivation to use digital libraries among polytechnic students in Ondo State, Nigeria. While the data reflects a generally positive sentiment, the presence of varying perceptions and experiences among students underscores the importance of understanding individual challenges and needs. This analysis emphasizes

the need for tailored improvements and enhancements to optimize the digital library's effectiveness and accessibility for the diverse student population.

**Table 4.3 Individual Characteristics Related to Motivation to Use Digital Library Among Polytechnic Student in Ondo State, Nigeria**

<b>Cognitive factors</b>	<b>VHE</b>	<b>HE</b>	<b>LE</b>	<b>VLE</b>	<b>Mean</b>
I usually understand the tasks and activities involved in using a digital library for my academic work	158 (50.5%)	84 (26.7%)	55 (17.3%)	18 (5.4%)	3.22
I am proactive in seeking out relevant academic resources and information using digital library tools	77 (24.8%)	115 (38.1%)	99 (32.2%)	16 (5.0%)	2.83
I am familiar with the tasks and assignments that require the use of digital library resources	101 (32.7%)	139 (45.0%)	63 (19.8%)	9 (2.5%)	3.08
Weighted Mean					3.04

<b>Computer Self-Efficacy:</b>	<b>VHE</b>	<b>HE</b>	<b>LE</b>	<b>VLE</b>	<b>Mean</b>
I am confident in my ability to use computers and digital devices effectively for academic purposes	39 (19.3%)	105 (52.0%)	48 (23.8%)	10 (5.0%)	2.86
I feel comfortable using digital technologies and navigating online platforms for research and learning	67 (33.2%)	75 (37.1%)	34 (16.8%)	26 (12.9%)	2.91
I believe that using the digital library system will be easy and straightforward for me	164 (51.5%)	101 (33.2%)	41 (12.9%)	9 (2.5%)	3.34
I have experience in using computers and digital tools for academic purposes	79 (25.7%)	182 (58.4%)	43 (13.4%)	9 (2.5%)	3.07
<b>Weighted Mean</b>					3.05
<b>Attitude Towards Technology</b>					
I enjoy trying out new technologies or digital tools in my academic tasks?	122 (38.6%)	141 (44.6%)	35 (10.9%)	37 (5.9%)	3.16
I am willing to adjust my work habits and routines to accommodate the use of digital library resources?	64 (19.8%)	114 (36.1%)	117 (38.6%)	18 (5.4%)	2.70
I can easily adapt to changes in technology and incorporate new tools into my academic workflow	143 (45.5%)	88 (28.2%)	41 (12.9%)	43 (13.4%)	3.06
<b>Weighted Mean</b>					2.97
<b>Aggregate Mean</b>					3.02

Source: Fieldwork, 2023

Table 4.2 offers a detailed analysis of the individual characteristics related to the motivation of polytechnic students in Ondo State, Nigeria, when it comes to using digital

libraries. Individual characteristics is measured under three dimensions: Cognitive Factors, Computer Self-Efficacy, and Attitude Towards Technology.

In the cognitive factors category, the first statement, I usually understand the tasks and activities involved in using a digital library for my academic work, shows that a significant majority of students, with 50.5% falling into the Very High category and 26.7% in the High category, typically comprehend the tasks associated with using digital libraries for academic work. The resulting mean score of 3.22 indicates that students generally possess a high level of understanding and competence in this aspect. Similarly, for the statement; I am proactive in seeking out relevant academic resources and information using digital library tools, the data reveals that 38.1% of students consider themselves High in terms of proactivity. Nevertheless, the mean score of 2.83 suggests that there might be room for improvement in encouraging more proactive behavior among the students.

Furthermore, I am familiar with the tasks and assignments that require the use of digital library resources suggests that a significant portion of students (45.0% in the High category) are familiar with tasks that necessitate the use of digital library resources. The resulting mean score of 3.08 indicates a positive perception of the students' familiarity with such tasks.

In the Computer Self-Efficacy category, the responses to the first statement, I am confident in my ability to use computers and digital devices effectively for academic purposes, highlights that more than half of the students (52.0%) are High in terms of confidence in using computers effectively. However, the mean score of 2.86 indicates that there is potential for enhancing the confidence levels of a substantial portion of

students in this area. The statement I believe that using the digital library system will be easy and straightforward for me portrays a highly positive perception among students, with 51.5% categorizing themselves as Very High in this aspect. The mean score of 3.34 further substantiates this belief in the ease of using digital library systems. To the statement; I have experience in using computers and digital tools for academic purposes, the data indicates that 58.4% of students possess High levels of experience in using digital tools for academic purposes. The resulting mean score of 3.07 highlights a generally positive perception of students' experience in this area.

In the Attitude Towards Technology category, the statement I enjoy trying out new technologies or digital tools in my academic tasks suggests that a significant portion of students (44.6% in the High category) have a positive attitude towards adopting new technologies in their academic work, supported by a mean score of 3.16. Conversely, the statement I am willing to adjust my work habits and routines to accommodate the use of digital library resources shows that a substantial number of students (38.6% in the Low category) are willing to adapt their work habits for digital library usage. However, the mean score of 2.70 suggests that attitudes vary among students regarding adjusting their routines to accommodate digital library resources. The final statement, I can easily adapt to changes in technology and incorporate new tools into my academic workflow, illustrates that 45.5% of students are Very High in their belief that they can adapt to technological changes and incorporate new tools into their academic workflow. The mean score of 3.06 supports this notion.

The aggregate mean across all categories is 3.02. This indicates that, on average, students exhibit moderately positive individual characteristics related to their motivation to use

digital libraries. The data highlights the importance of recognizing and leveraging these individual traits and experiences to further encourage student engagement with digital library resources, while also identifying areas where additional support and encouragement may be necessary.

4.2.3: What are the technology characteristics of digital library available to polytechnic students in Ondo State, Nigeria?

**Table 4.4: Technology Characteristics of Digital Library Available to Polytechnic Students in Ondo State, Nigeria**

Statements	SA	A.	D	SD	Mean
<b>Functionality of Digital Library</b>					
The digital library gives me access to needed information resources for my academic work.	64 (20.8%)	55 (16.3%)	171 (55.4%)	23 (7.4%)	2.39
The layout and design of the digital library is visually appealing and easy to navigate	169 (55.0%)	102 (31.7%)	27 (8.4%)	16 (5.0%)	3.37
The search feature is effective in helping me find the resources I need	119 (38.6%)	146 (46.0%)	31 (9.9%)	17 (5.4%)	3.18
The digital library function on mobile devices like smartphones and tablets	87 (27.7%)	193 (55.9%)	40 (13.9%)	8 (2.5%)	3.09
Weighted Mean					<b>3.00</b>

	SA	A	D	SD	SA
<b>Ease of Learning Digital Library</b>					
I can quickly and easily learn to use a new digital library	93 (29.7%)	157 (50.0%)	47 (14.9%)	18 (5.4%)	3.04
I will find the digital library to be flexible to interact with	101 (35.6%)	110 (38.6%)	579 (25.2%)	2 (.5%)	3.09
I can easily ask a colleague for help in understanding the digital library	67 (21.3%)	138 (44.6%)	74 (23.8%)	34 (10.4%)	2.77
It is easy to find out what the digital library maintains on a given subject	128 (42.1%)	131 (43.1%)	46 (14.9%)	--	3.27
<b>Weighted Mean</b>					<b>3.04</b>
<b>System Reliability of Digital Library</b>					
The digital library does not experience frequent system problems and crashes.	108 (37.1%)	106 (34.2%)	48 (15.8%)	45 (12.9%)	2.96
I can rely on my school's digital library to be up and available when I need it	45 (12.9%)	172 (54.0%)	79 (25.7%)	24 (7.4%)	2.72
I am confident that the digital library has the information I need for my academic work	114 (37.1%)	129 (41.6%)	50 (16.3%)	16 (5.0%)	3.11
The digital library's support team are always ready to address user inquiries	45 (14.4%)	128 (40.6%)	93 (30.2%)	47 (14.9%)	2.54
<b>Weighted Mean</b>					<b>2.83</b>
<b>Feedback and Support</b>					
There is enough training on how to find, understand, access, or use digital library in my school	131 (42.6%)	111 (36.1%)	43 (13.9%)	24 (7.4%)	3.14
I usually get the help I need in accessing and understanding the digital library	64 (20.8%)	128 (41.1%)	72 (22.8%)	47 (15.3%)	2.67
The digital library usually display	154	112	32	13	3.33

users instructions in a readable and understandable form	(48.5%)	(38.6%)	(9.9%)	(3.0%)	
Support resources, such as FAQs or help documentation, to assist users in case of issues are readily available	84 (26.7%)	143 (45.5%)	63 (20.3%)	24 (7.4%)	2.92
<b>Weighted Mean</b>					3.01
<b>Aggregate Mean</b>					2.97

Source: Fieldwork, 2023

Table 4.4 presents the result of the responses on the technology characteristics of digital libraries available to polytechnic students in Ondo State, Nigeria. The technology characteristics is measured under four categories, each focusing on different aspects of the digital library experience, namely Functionality of Digital Library, Ease of Learning Digital Library, System Reliability of Digital Library, and Feedback and Support.

In the first category, functionality of digital library, only 20.8% of the respondents strongly agreed that the digital library gives them access to needed information resources for their academic work to which 16.3% of them also agree. However, 55.4% disagreed with this statement while a further 7.4% strongly disagreed resulting in a mean score of 2.39, which is relatively low. However, 55.0% of the respondents strongly agreed that the layout and design of the digital library is visually appealing and easy to navigate, a further 31.7% of the respondents also agreed to this leaving only 8.4% and 5% to disagreed and strongly disagreed respectively. This is further indicated by a mean score of 3.37. Additionally, 38.6% of the respondents strongly agreed that the search feature is effective, another 46.0% of the respondents also agreed, contributing to a moderate mean score of 3.18. It is noteworthy that the digital library's functionality on mobile

devices is also well-received, with 27.7% of the respondent strong agreed and 55.9% of them agreed that it is accessible on smartphones and tablets, yielding a mean score of 3.09.

Moving on to the Ease of Learning Digital Library category, the responses indicate that students generally feel capable of quickly and easily learning to use a new digital library. This is shown in 29.7% of the respondents strongly agreeing that they can quickly and easily learn to use a new digital library to which 50% also agreed. Meanwhile, only 14.9% disagreed and 5% strongly disagreed. This high level of this is indicated with a mean score of 3.04. They also find the digital library flexible to interact with, as demonstrated by 35.6% of the respondents who strongly agreed and 38.6% who agreed putting those who agreed in the majority. However, 25.2% of the respondents disagreed with this resulting in a mean score of 3.09. Furthermore, students express their willingness to seek help from colleagues, when necessary, with 21.3% strongly agreeing and 44.6% of the respondents agreeing to this statement. however, 23.8% of them disagreed and 10.4% strongly disagreed leading to a moderate mean score of 2.77. It is relatively easy for students to find out what the digital library maintains on a given subject, as supported by 43.1% agreement and a mean score of 3.27.

The System Reliability of Digital Library category reflects students' experiences with the digital library's reliability. While 37.1% of students strongly agreed, another 34.2% also agreed that the digital library does not frequently encounter system problems and crashes. However, this is not true for some of the respondents as 15.8% of them disagreed and 12.9% strongly disagreed. The mean score of 2.96 suggests that there is room for improvement in this area. A similar pattern emerges in the statement regarding the digital

library's regular availability. Only 12.9% of the respondents strongly agreed that the digital library can be relied on to be always available while 54.0% of students express confidence in its availability when needed. However, about a quarter of the respondents (25.7%) disagreed while a further 7.4% strongly disagreed leading to a moderate mean score of 2.72. However, when it comes to students' confidence in the digital library's ability to provide necessary academic resources, 37.1% strongly agreed, 41.6% agree, 16% disagreed and only 5% strongly disagreed resulting in a mean score of 3.11. Students appear less certain about the support team's readiness to address user inquiries as on 14% strongly agreed and 40% agreed. Meanwhile, 30% disagreed and 14.9% strongly disagreed which combined, is nearly half of the total respondents. This led to a mean score of 2.54.

The final category, Feedback and Support, examines the training and support provided to students. A majority of the respondents (42.6%), strongly agreed that there is enough training on how to find, understand, access, or use the digital library in their school, 36% also agreed with this while only 13.9% disagreed and 7% strongly disagreed. This acceptance of this item is supported by a mean score of 3.14. However, when it comes to receiving help in accessing and understanding the digital library, the agreement stands at 41.1%, with a relatively moderate mean score of 2.67. The digital library's display of user instructions in a readable and understandable form is well-received, as 48.5% of students agree, contributing to a high mean score of 3.33. Furthermore, support resources like FAQs or help documentation are readily available to assist users, with 45.5% in agreement and a moderate mean score of 2.92.

The aggregate mean for technological characteristics is 2.97. This suggests that, on average, students have a moderately positive perception of the technology characteristics related to digital libraries in their academic environment. While there are areas that require improvement, the analysis underscores the significance of enhancing functionality,

### 4.3 Presentation of Hypotheses

**4.4. H<sub>01</sub>:** There will be no significant influence of individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria.

**Table 4.5 (a –c) Influence of Individual Characteristics on Motivation to Use Digital Library Among Polytechnic Student in Ondo State, Nigeria**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.498 <sup>a</sup>	.248	.244	.42223

. Predictors: (Constant), Individual Characteristics

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.730	1	11.730	65.795	.000 <sup>b</sup>
	Residual	35.656	312	.178		
	Total	47.386	313			

a. Dependent Variable: Motivation to Use DL

b. Predictors: (Constant), Individual Characteristics

**Coefficients<sup>a</sup>**

Model		Unstandardized		Standardized	T	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	1.446	.184		7.849	.000
	Individual Characteristics	.490	.060	.498	8.111	.000

a. Dependent Variable: Individual Characteristics

Table 4.5a-c presents the results of the simple regression analysis for the influence of individual characteristics on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. From the results in Table 4.5a, individual characteristics has a significant but weak influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. (Adj.  $R^2 = 0.244$ ,  $p < 0.05$ ). The coefficient of determination (Adj.  $R^2$ ) of 0.244 also shows that individual characteristics explains only 24.4% of the motivation to use digital library among polytechnic student in Ondo State, Nigeria.

Table 4.5b presents the results of ANOVA (overall model significance) of regression test which revealed that individual characteristics has a significant influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. This can be explained by the F-value (65.795) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that individual characteristics of the respondents has a significant but weak influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria

In addition, the results of regression coefficients in table 4.5c, revealed that at 95% confidence level, a unit change in individual characteristics will lead to a 0.490 increase in the motivation to use digital library among polytechnic student in Ondo State, Nigeria, given that all other factors are held constant. On the strength of this result (Adj.  $R^2 = 0.244$ ,  $F(1, 200) = 65.795$ ,  $p = 0.000$ ), the null hypothesis one ( $H_{01}$ ) which states that there will be no significant influence of individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria.

**4.4.  $H_{02}$ :** There will be no significant influence of technology characteristics on the motivation to use digital library among polytechnic student in Ondo State, Nigeria

**Table 4.6 (a –c) Influence of Technology Characteristics on Motivation to Use Digital Library Among Polytechnic Student in Ondo State, Nigeria Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.573 <sup>a</sup>	.328	.325	.39896

. Predictors: (Constant), Technology Characteristics

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.552	1	15.552	97.711	.000 <sup>b</sup>
	Residual	31.833	312	.159		
	Total	47.386	313			

a. Dependent Variable: Motivation to Use DL

b. Predictors: (Constant), Technology Characteristics

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.362	.160		8.508	.000
	Technology Characteristics	.508	.051	.573	9.885	.000

Dependent Variable: Technology Characteristics

Table 4.5a-c presents the results of the simple regression analysis for the influence of technology characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria. From the results in Table 4.6a, technology characteristics has a significant influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. ( $R = 0.573$ ,  $p < 0.05$ ). The coefficient of determination (Adj.  $R^2$ ) of 0.325 also shows that technology characteristics accounts for 32.5% variation in the motivation to use digital library among polytechnic student in Ondo State, Nigeria.

Table 4.6b presents the results of ANOVA (overall model significance) of regression test which revealed that technology characteristics has a significant influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. This can be explained by the F-value (97.711) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that technology characteristics has a significant influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria

In addition, the results of regression coefficients in table 4.6c, revealed that at 95% confidence level, a unit change in technology characteristics will lead to a 0.508 increase in the motivation to use digital library among polytechnic student in Ondo State, Nigeria, given that all other factors are held constant. On the strength of this result (Adj.  $R^2 = 0.325$ ,  $F(1, 200) = 97.711$ ,  $p = 0.000$ ), the null hypothesis two ( $H_{02}$ ) which states that there will be no significant influence of technology characteristics on the motivation to use digital library among polytechnic student in Ondo State, Nigeria, is rejected.

**4.3.3** There will be no significant combined influence of technology and individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria

**Table 4.7 (a –c) Combined Influence of Technology and Individual Characteristics on Motivation to Use Digital Library Among Polytechnic Student in Ondo State, Nigeria**

**Model Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.708a	.501	.488	.34741

a. Predictors: (Constant), Technology Characteristics, Individual Characteristics

**ANOVA<sup>a</sup>**

<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	23.730	2	4.746	39.323	.000b
	Residual	23.656	311	.121		
	Total	47.386	313			

a. Dependent Variable: Motivation to Use DL

b. Predictors: (Constant), Technology Characteristics, Individual Characteristics

**Coefficients<sup>a</sup>**

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>T</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
	(Constant)	.940	.179		
Technology Characteristics,	.333	.056	.411	5.952	.000
Individual Characteristics	.249	.067	.277	3.698	.000

a. Dependent Variable: Database Use

Table 4.7a-c presents the results of the multiple regression analysis for the combined influence of technology characteristics and individual characteristics on the motivation to use digital library among polytechnic student in Ondo State, Nigeria. From the results in Table 4.7a, the technology characteristics and individual characteristics have a positive and significant combined influence on the motivation to use digital library among polytechnic student in Ondo State, Nigeria ( $R = 0.708$ ,  $p < 0.05$ ). The coefficient of determination (Adj.  $R^2$ ) of 0.488 shows that technology characteristics and individual characteristics explains 48.8% of the variation in motivation to use digital library among polytechnic student in Ondo State, Nigeria.

Furthermore, table 4.7b presents the results of ANOVA (overall model significance) of regression test which revealed that technology characteristics and individual characteristics have a significant influence on motivation to use digital library among polytechnic student in Ondo State, Nigeria. This can be explained by the F-value (39.323) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that technology characteristics and individual characteristics significantly influenced the motivation to use digital library among polytechnic student in Ondo State, Nigeria.

In addition, the results of regression coefficients in table 4.7c, revealed technology characteristics and individual characteristics had a significant influence on the motivation to use digital library among the respondents. Specifically, the analysis showed that at 95% confidence level, a unit change in technology characteristics will lead to a 0.333 increase in the motivation to use digital library among the respondents, given that all other factors are held constant. Also, at 95% confidence level, a unit change in individual characteristics will lead to a 0.249 increase in the motivation to use digital library among the respondents given that all other factors are held constant. It is on the strength of this result (Adj.  $R^2 = 0.488$ ,  $F(2,311) = 39.323$ ,  $p = 0.000$ ), the null hypothesis three ( $H_03$ ) which states that there will be no significant combined influence of technology and individual characteristics on motivation to use digital library among polytechnic student in Ondo State, Nigeria, is hereby rejected.

#### **4.5 Discussion of Findings**

The study examined the influence of individual and technology characteristics on the motivation to use digital libraries among polytechnic students. The first research question is on the level of motivation to use digital libraries the respondents. The study found a moderate level of motivation to use digital libraries among the respondents.

The study's finding of an overall moderate level of motivation to use digital libraries among polytechnic students in Ondo State, Nigeria, represents a crucial insight into the state of digital library utilization in this academic context. This finding indicates that, on average, students demonstrate a certain degree of motivation to engage with digital libraries, although it falls within the moderate range. This level of motivation suggests that there is room for improvement and that the factors influencing student motivation in this particular setting merit further examination and enhancement.

In the context of educational technology research, a study conducted explored the factors affecting students' motivation to use digital learning resources. Their research emphasized the importance of identifying these factors and tailoring digital resources to better align with students' expectations. The finding of a moderate level of motivation in the current study aligns with the authors' emphasis on understanding and optimizing motivation-related factors to enhance the effectiveness of digital resources in education<sup>1</sup>.

The study's result also resonates with the work of scholars who introduced the Technology Acceptance Model (TAM) that focuses on perceived ease of use and perceived usefulness as key determinants of technology adoption. The moderate level of motivation suggests that students' perceptions of the ease of use and usefulness of digital libraries in Ondo State could be further explored and improved to increase their willingness to accept digital libraries and make use of its resources<sup>2</sup>. Moreover, the

emphasizes that motivation is influenced by factors like autonomy, competence, and relatedness. The moderate level of motivation identified in the study may indicate that students may either lack the skills to engage the digital libraries or find it hard to relate to its due to the perceived low ease of use. This is why studies have suggested enhancing these factors, such as providing students with more autonomy and a sense of competence when using digital libraries, could lead to a higher level of motivation and engagement<sup>3</sup>.

The findings of the study align with the principles of user-centered design and continuous improvement in digital library services. This approach emphasizes the need to adapt digital library services to better meet user needs and expectations. The moderate level of motivation suggests that student expectations and needs should be further understood and addressed to create a more motivating digital library experience. It means that students may be comparing the digital library to the internet which could be comparatively easier to use than digital libraries. The implication therefore is to further simplify the use of digital libraries so that users can obtain quality information with comparably less effort<sup>4</sup>.

The study's finding of an overall moderate level of motivation to use digital libraries among polytechnic students in Ondo State, Nigeria, underscores the importance of ongoing research and development to enhance student motivation and engagement with digital library resources. It is crucial to explore the specific factors affecting motivation and to tailor digital library services to better align with the expectations and needs of students in this context. This finding provides a foundation for further investigation and improvement in digital library services to better serve the educational needs of polytechnic students in Ondo State.

The second research question is on the individual characteristics of the respondents. The study found that, on average, students exhibit moderately positive individual characteristics related to their motivation to use digital libraries represents a significant insight into the educational landscape. This observation suggests that students generally possess a reasonably positive disposition towards the use of digital library resources in their academic pursuits. It also means that individual characteristics is more amenable to using the digital library if given the proper motivation. This finding aligns with numerous studies that have explored the factors influencing students' motivation to engage with digital libraries.

Researchers emphasized the importance of identifying individual factors for using digital libraries. Their research underscores the idea that a positive attitude and willingness towards digital library usage are crucial for effective educational outcomes. The moderately positive individual characteristics found in the current study support the notion that understanding and enhancing these motivating factors can contribute to more effective and engaging digital library experiences<sup>5</sup>. It means that once students have positive orientation toward exploring new avenues, are willing to use technology and can easily learn new skills, they can be more easily convinced to use digital libraries.

Furthermore, a study focused on factors affecting the use of digital libraries. It recognized the significance of user motivation and the usability of digital libraries. The moderately positive characteristics related to motivation in the present study correspond with the idea that factors like accessibility and user-friendliness play a pivotal role in shaping students' motivation to utilize digital library resources. The research highlights the importance of addressing these factors to enhance motivation among students<sup>6</sup>. In this study, a careful

look at the results shows that some students still face challenge in the use of digital libraries even though they find digital library resources useful.

Another researcher investigated the impact of individual characteristics on e-learning system use. The finding of moderately positive individual characteristics related to motivation aligns with the study's emphasis on the role of individual traits in technology adoption. Understanding these characteristics is essential for institutions to tailor digital library services to better meet students' needs and foster a more positive and motivating user experience<sup>7</sup>. In the same vein, scholars conducted a longitudinal study of student behavior in relation to digital libraries. Their research highlighted the dynamic nature of motivation and its sensitivity to changes in digital library features. The moderately positive individual characteristics related to motivation in the current study support the idea that continuous improvements in digital library features can positively influence students' motivation over time, enhancing their engagement with these resources<sup>8</sup>.

Scholars from India also explored the challenges faced by students and faculty in using digital libraries. The finding of moderately positive individual characteristics related to motivation can be linked to the challenges identified in their study. Addressing these challenges, such as improving ease of use and system reliability, is crucial for fostering higher motivation among users and ensuring a more seamless experience with digital library resources<sup>9</sup>. The finding of moderately positive individual characteristics related to motivation to use digital libraries emphasizes the need for educational institutions and libraries to prioritize user experience, usability, and support. Addressing these aspects, as highlighted in the relevant studies, can lead to enhanced motivation, increased user satisfaction, and more effective utilization of digital library resources, ultimately

contributing to better educational outcomes. Recognizing the dynamic nature of user motivation is also essential for ongoing improvements in digital library services and continued engagement among students.

The third research question in the study examine the technology characteristics of digital libraries. It was found that the respondents have a moderately positive perception of the technology characteristics related to digital libraries in their institutions. This finding provides an important insight into the current state of digital library services and their alignment with student expectations. This observation indicates that, as a whole, students generally view the technological aspects of digital libraries in a favorable light, but there are areas that warrant attention and enhancement. The study's results align with and expand upon existing literature in this field, shedding light on the importance of continuous improvement and user-centered design in digital library services.

In a study conducted by researchers concerning the factors influencing students' use of digital libraries, it was reported that usability is often the determinant factor in the adoption of digital libraries in academic settings. A scholar proposed that the evaluation of system quality can be enhanced by including ease of use as an additional contributing factor<sup>10</sup>. This can be made possible through various functionalities of the digital library. For instance, digital library can be judged by their search and discovery capabilities. Effective search and discovery functionalities are essential components of a high-quality digital library system. Advanced search features, filters, and relevant metadata allow users to efficiently locate and access relevant resources. A well-implemented search system empowers users to explore the digital library's vast repository with ease and precision<sup>11</sup>.

A high-quality digital library system should also be accessible to users with diverse needs and abilities. It should comply with accessibility standards, making it usable for individuals with disabilities. Ensuring inclusivity through features like screen readers, alternate formats, and multilingual support enhances the digital library's usability and user satisfaction. In addition, a quality digital library system often offers personalization options, allowing users to customize their experience based on their preferences and research interests. Features such as personalized user accounts, saved searches, and personalized content recommendations enhance users' engagement and foster a sense of ownership over their interactions with the platform.

Scholars have examined user satisfaction by focusing on system quality, namely system accuracy and simplicity of use. In another study the focused system characteristics include the inclusion of certain user interface elements, such as navigation, terminology, and screen design, can have a positive impact on users' intention to use a system. Studies have shown that users highly concerned over system quality in information systems such as digital library<sup>12</sup>. The presence of compatibility and system quality can have a positive impact on the satisfaction levels of students. According to findings, there exists a favorable correlation between system quality and both behavioral usage intents and user satisfaction in relation to the utilization of the learning system<sup>13, 14</sup>.

Another critical factor relating to the functionality of digital libraries is the user interface. The user interface is a fundamental element of digital library system quality. A well-designed and intuitive interface enhances users' ease of navigation, resource discovery, and interaction with the platform. An aesthetically pleasing and user-friendly interface facilitates efficient information retrieval and ensures that users can quickly access the

resources they seek. Their findings underscored the importance of user satisfaction with the functionality and usability of digital library platforms. The moderately positive perception of technology characteristics in the current study resonates with scholars emphasis on the user experience. It highlights that, while students have a generally positive perception, there is room for optimizing digital library functionality to further enhance their experience and engagement<sup>15</sup>.

Similarly, the work of another scholars explored the influence of digital library attributes on students' motivations and usage. The study found that user-friendly interfaces and efficient search features were crucial for user engagement. The moderately positive perception of technology characteristics identified in the current study aligns with Prinsloo's findings and emphasizes the significance of addressing usability and search functionality to maintain and increase student motivation and usage<sup>16</sup>.

The test of the first hypothesis revealed that individual characteristics of polytechnic students in Ondo State have a significance influence on their motivation to use digital libraries. This finding suggests that students who learn easily, have positive computer self-efficacy and are open to exploring new technology are more likely than others to make use of digital libraries. This finding resonates with other studies that have been conducted across the world.

Researchers from Pakistan investigated the acceptance and importance of digital library among female students at International Islamic University, Islamabad, Pakistan. The study also highlighted the problems female students confronted in completing their research work because of limited access to DL in the university. Findings reveal that the

students were unable to meet their information needs as digital library access was limited and the quality and quantity of their research were affected due to the restriction of digital resources. Lack of information literacy programs, Information Technology (IT) training workshops, availability of IT literate staff and electricity failure were identified as the main barriers to having access to digital library, and also admitted that digital library accessibility was indispensable to the completion of their research studies<sup>17</sup>.

Similarly, a group of scholars studied users' acceptance and use of digital library system in 16 institutions in Africa, Asia, and Central/Latin America. The study examined the factors that influenced people's adoption and use of a digital library system and tested the applicability of the Technology Acceptance Model (TAM) in the context of developing countries. The study also identified similarities and differences in the significance predictors of the digital library acceptance across countries and continents. The path analysis results reveal that perceived ease of use of the library system had a significant impact on perceived usefulness which led to behavioural intention to use it. Hence, perceived ease of use and perceived usefulness were identified as factors that could influence use of digital library by the study. The study concludes that some other factors that affect perceived ease of use and usefulness of digital library need to be considered in the process of designing, implementing and operating digital library systems. This could help decrease the mismatch between system design and users' realities, and further facilitate the successful adoption of digital library systems in developing countries<sup>18</sup>.

In India, researcher examined the perceptions of undergraduate students towards the digital library of the Cochin University of Science and Technology (CUSAT), India, with a view to determine the sources consulted and the general pattern of information

gathering by the students. Findings reveal that almost all students used the digital library for learning. They frequently accessed the digital library for getting previous examination question papers, syllabi and other materials pertaining to their studies, and were satisfied with the digital library features and functionalities available. The students recommended the addition of more documents related to their courses and useful links to the digital library so the technology could provide the best fit with their tasks<sup>19</sup>.

A Chinese scholar also conducted a comparative study of the extent to which undergraduate and graduate students in China differ in their use of digital library. The undergraduate and graduate students had positive attitudes about use of digital library, but polytechnic students were unfamiliar with digital library use. The study shows that the motivation to use digital library was influenced by a combination of various factors; remote access and faster access identified as important factors. Unlike the factors promoting use of digital library, nonuse factors (perceived influences, and degree of satisfaction) were quite different between undergraduate and graduate students due to their differing tasks, emphases and expectations for information. The study concludes that the students would use digital library services, if suppliers integrate system characteristics, navigation features, natural language capacity into the system, as well as make available detailed tutorials and more full text options to support the students' tasks<sup>20</sup>.

A related study provides an overview of a case study research that investigated the use of digital library resources in two undergraduate classes and also explored faculty and students' perceptions of educational digital library. The study found that students and faculty used the academic digital library primarily for textual resources, but turned to the open web for visual and multimedia resources because they did not perceive academic

libraries as a useful source of digital images. They rather preferred using search engines when searching for visual resources. The study also found limited use of digital library resources for teaching and learning by the respondents because they perceived library system as not user-friendly and as a place which contain only primarily textual resources. This perception had a negative effect on user intention to use digital library and thus discouraged them from trying to use the digital library provided by the institution, especially for searching visual resources<sup>21</sup>. The study was, however, able to establish that user perceptions of usefulness and usability, especially perceived ease of use, play an important role in user intentions to adopt and use digital collections for academic learning and teaching.

In Malaysia, scholars examined the perception of students towards the digital library services in the International Islamic University, Malaysia. The results of the study reveal a high level of awareness of digital library services among the students. The students also showed positive attitude towards use of the digital library services even though the level of usage was low. The study was able to reveal awareness of digital library among the students, but did not consider the factors that influenced use by the students<sup>22</sup>.

In addition, a scholar studied the perceptions of university students in regard to use of digital library by three selected faculties in Ankara University, Turkey. The study explored the purpose of use, usage frequency and use tools for digital library among the students. Findings show that, whereas the students used Internet resources, digital library was not yet placed as their first priority because they were not yet aware of how to use the university digital library. Consequently, the students found their own resources

sufficient for their researches. This study also did not consider the factors that influence use among the students<sup>23</sup>.

A study in Nigeria on availability and use of digital information resources by polytechnic students of universities in Delta and Edo states, Nigeria found that digital information resources were available at the university libraries. However, usage of these resources was low. Some constraints encountered by students towards accessibility of digital information resources in the libraries are epileptic power supply, none availability of online databases, lack of formal training in Internet skills for students, slow bandwidth, network problems and server slowness. The study, however, did not identify factors that influence use of these digital information resources<sup>24</sup>.

A study conducted in India examine the attitude of users and use of digital library services. The frequency of use of the digital library is a crucial factor in understanding how users engage with the platform. Among the respondents, it was observed that some use the digital library occasionally, others use it whenever they need information, followed by those who use it on a weekly basis. Additionally, some of respondents use the digital library daily, while the least number use it on a monthly basis. Regarding the purpose of use, respondents were asked to indicate their reasons for utilizing the digital library. Based on the data collected, majority stated that they use it for research and reference purposes, while a few use it for teaching and personal enrichment. Furthermore, some of respondents use the digital library for decision-making and professional needs, and a few use it for leisure and entertainment. In assessing respondents' attitude toward digitization of rare and old collections in the library, the results showed that majority of respondents consider digitization to be highly useful. Additionally, some respondents

indicated that the digitization process is moderately useful, while a small number expressed that it is not useful<sup>25</sup>.

These findings demonstrate a link between the frequency of use, purpose of use, and attitude of the users towards the digital library. The data highlights the diverse patterns of usage based on different frequencies and purposes, along with varying attitudes towards digitization. Understanding these links can provide valuable insights for digital library providers to tailor their services and improve user experiences accordingly.

The second research hypothesis revealed that technological characteristics have a significant influence on the motivation to use digital library among polytechnic students in Ondo State. The import of the finding is that when digital library is easy to learn, have friendly user-interface, provides technical support and opportunities for feedback and suggestions, students would be motivated to use it. on the other hand, if all of these are absent, the students would not be motivated to use such digital library. This finding is in line with what has been reported in previous studies.

Researchers examined factors determininig the use of library website among LIS students in Nigeria. The findings indicate a significant association between the perception of website quality, website interactivity, website aesthetic and website satisfaction and the initial impression of the university library website among LIS students. The combined influence of the five independent variables, namely Website quality, Website interactivity, Website aesthetic perception, Website prototypicality, and Website satisfaction, was found to account for 66% of the observed variation in LIS students' initial perception of university library websites, as indicated by the R-square value.

The primary factor influencing LIS students' initial impression of a library website is the aesthetic perception of the website. This is followed, in decreasing order of significance, by the interaction, satisfaction, and overall quality of the website. However, while prototypicality is indeed connected with initial impressions, its impact is not substantial. A noteworthy constraint of this study is to the fact that the data was only gathered from undergraduate students attending two colleges, with a specific focus on students within the field of Library and Information Science.

The findings necessitate significant endeavors to enhance user experience on the internet, as the initial impression has considerable importance. The findings of this study have consequences for those who utilize university library websites. The findings indicate that the aesthetic perception of a library website has the greatest influence on the initial impression formed by students studying Library and Information Science (LIS) towards the website of a university library. This is closely followed by the level of interactivity offered by the library website. The generalizability of these findings to other university library websites may be limited, contingent upon the users' individual experiences<sup>26</sup>.

Researchers in Swaziland investigated the use of digital resources for teaching and learning Secondary School Agriculture in the country. The study adopted a survey research methodology. The research population comprised all secondary school Agriculture instructors in Swaziland. The study found that complexity respondents marginally agreed ICT utilisation and incorporation is much less complicated to employ in teaching with a mean of 4.31. Respondents also agreed that computers make the teaching of complicated ideas easier while noting that computers fit well with the

curricular goals of the subject of agriculture. They however believed learning to utilize ICT tools in education was somehow difficult<sup>27</sup>.

Functionality of digital library was also found relevant as a predictor of digital library adoption and use in Uganda. Researchers from Makerere examined the use of electronic learning applications by students. The study employed a quantitative technique, descriptive research, and a cross-sectional survey for the research design. The analysis of data showed that complexity had a significant negative impact on the students' desire to utilize e-learning services at the University. It indicates an inverse association with e-learning adoption and use<sup>28</sup>. This is a further validation of the construct of complexity as a predictor of technology adoption and use in various contexts and across various types of technology

Researchers in Malaysia also examined technological factors responsible for the use of digital library. The purpose of this study is to conduct an exploratory analysis in order to develop a model that can predict the factors that influence the actual usage of a digital library system. The results indicated that the quality aspects of digital library systems significantly impact satisfaction, behavioral intention, and variance in actual usage.

The strongest predictor for measuring user satisfaction is the quality of information, and the satisfaction experienced by users has a significant impact on the behavioral intention of students to utilize the system. Furthermore, it is worth noting that there exists a significant positive correlation between user happiness, behavioral intention to use the system, and the actual utilization of a digital library system. In summary, behavioral

intentions are significantly impacted by the quality of the system, the quality of information, and the quality of service<sup>29</sup>.

Researchers from China investigate the adoption of mobile library applications through the utilization of a proposed model derived from the technological acceptance model (TAM). The findings of the study indicate that the perceived usefulness and perceived simplicity of use of mobile library applications have a direct and significant impact on the intention to use it. Additionally, the quality of the system and the habit of using mobile library applications were identified as influential factors in determining the intention to use mobile library applications. The results of this study serve as a valuable resource for informing decision-making processes related to the design and development of mobile library applications. Moreover, the results might be employed in the process of resource allocation to ensure the achievement of the library's vision and mission<sup>30</sup>.

Another study conducted in China also shows the influence of system characteristics on the use of digital library. The objective of this study is to analyze the various elements that impact the intention of undergraduate students to utilize digital library provided by universities. The findings of the study suggest that there is a substantial relationship between system quality and the affinity towards digital library (DLs), and how this impacts the user satisfaction of undergraduate students. However, the quality of information and the quality of service do not align. The level of user satisfaction plays a crucial role in shaping the intention of undergraduate students to utilize digital library provided by universities. It is recommended that librarians and service providers prioritize efforts to enhance the system quality of digital library and strengthen the affinity of users towards these libraries<sup>31</sup>. This will ultimately lead to increased user

satisfaction among undergraduate students, hence further inspiring them to utilize university digital library.

Researchers also examined the factors influencing user satisfaction with digital library among university students in Iran. The theoretical framework of the study drew upon information system success theory, technology acceptance model (TAM), media affinity theory, satisfaction-loyalty theory, and engagement theory. By integrating these theories, eight hypothesized relationships were formulated to create the conceptual model.

The findings of the study revealed that the generic usability of the digital library and the quality of digital resources play pivotal roles in predicting and understanding the factors that contribute to user satisfaction with digital library. Moreover, the increased user satisfaction with the digital library can lead to various implications, such as positive recommendations, higher chances of reuse, and increased engagement and integration with the digital library platform. Notably, system quality, service quality, and information quality were found to be crucial in shaping users' perceptions of usefulness, ease of use, and affinity towards digital library<sup>32</sup>.

A study conducted in Lagos, Nigeria also show the link between system functionality and the use of digital library. The study assess the usage of online public access catalogue (OPAC) among library patrons in a number of chosen tertiary institutions in Lagos State. The study's results indicate that the rate of OPAC utilization among library users in selected tertiary institutions in Lagos State is rather low. A significant proportion of the participants expressed a moderate level of success in accessing documents using the Online Public Access Catalog (OPAC). It has been observed that a significant portion of

users lack awareness of the full range of features offered by the Online Public Access Catalog (OPAC) and thus face difficulties during their search process. Several issues were identified in the study, including challenges in formulating queries, instances of unsuccessful searches within the allotted time, absence of spelling correction capabilities, insufficient teaching on the use of the OPAC software, malfunctioning of the OPAC system, and inadequate advice provided by library staff<sup>33</sup>.

Finally, the third hypothesis examined the combined influence of both individual and technology characteristics on the motivation of polytechnic students in Ondo State to use digital libraries. The results showed that both individual and technology characteristics have a significant combined influence on the motivation of polytechnic students in Ondo State to use digital libraries. The finding suggests that when students with positive attitudes towards technology are introduced to digital libraries with the right technological characteristics, the motivation to use will be high. This finding has also been echoed by existing studies.

The results of the study, which demonstrated that both individual and technology characteristics collectively exert a significant influence on the motivation of polytechnic students in Ondo State to use digital libraries, reveal a multifaceted relationship that underscores the importance of considering both user-related and technological aspects in the design and delivery of digital library services. This finding emphasizes that to enhance student motivation and engagement with digital libraries, it is imperative to address and optimize these dual dimensions effectively.

In the realm of educational technology and user motivation, the study aligns with research conducted by scholars who developed the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT model underscores the role of individual characteristics, including performance expectancy (perceived usefulness), effort expectancy (perceived ease of use), and social influence, in technology adoption. The finding that individual characteristics significantly influence motivation corresponds with the UTAUT framework, emphasizing the significance of addressing these aspects to foster motivation among students<sup>34</sup>.

Researchers have also pointed out that individual characteristics such as computer self-efficacy, computer anxiety, and cognitive skill are important factors in the utilization of digital library resources by the students. The study found that respondents' utilization of electronic library resources was significantly influenced by computer self-efficacy, computer anxiety, and cognitive skills, both separately and in combination<sup>35</sup>. Furthermore, the study's findings support the principle of user-centered design, which emphasizes the importance of tailoring digital library services to meet user needs and expectations effectively. This approach aligns with the combined influence of individual and technology characteristics on motivation. Recognizing that both aspects significantly affect motivation underscores the need for continuous improvement and adaptation to create a motivating digital library experience that addresses user preferences and technological requirements.

In summary, the study's results, which indicate that both individual and technology characteristics have a significant combined influence on the motivation of polytechnic students in Ondo State to use digital libraries, emphasize the interplay between user-

related traits and technological attributes in shaping motivation. These findings underscore the importance of a holistic approach that considers and optimizes both aspects to enhance user motivation, engagement, and effective utilization of digital library resources in the educational context. This insight can guide future efforts to design and deliver digital library services that better serve the needs of students in Ondo State, ultimately contributing to improved educational outcomes.

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## Chapter Five

### Conclusion

This chapter concludes the research report. It presents the summary of findings, the conclusions drawn from the findings and proposes relevant recommendations. The chapter also highlights the contribution of the study to existing knowledge and suggests areas for further studies.

#### 5.1 Summary of Findings

The findings of this study are summarized as follows;

1. The study found an overall moderate level of motivation to use digital libraries among polytechnic students in Ondo State, Nigeria
2. The study found that, on average, students exhibit moderately positive individual characteristics related to their motivation to use digital libraries.
3. The study also found that, on average, students have a moderately positive perception of the technology characteristics related to digital libraries in their academic environment. While there are areas that require improvement, the analysis underscores the significance of enhancing functionality of digital libraries.
4. The test of the first hypothesis revealed that individual characteristics of polytechnic students in Ondo State have a significance influence on their motivation to use digital libraries.
5. The test of the second hypothesis also showed that technological characteristics of digital libraries provided for polytechnic students in Ondo State have a significance influence on their motivation to use the digital libraries.

6. The results of the third hypothesis showed that both individual and technology characteristics have a significant combined influence on the motivation of polytechnic students in Ondo State to use digital libraries.

## **5.2 Conclusion**

The study delved into the motivation of polytechnic students in Ondo State, Nigeria, to use digital libraries, exploring both individual and technology-related characteristics. The findings reveal a nuanced picture of the current state of digital library utilization among these students. Overall, the level of motivation is moderate, indicating room for improvement. Students display moderately positive individual characteristics related to motivation and hold a similarly moderate perception of the technology characteristics related to digital libraries. This underscores the need to enhance functionality and user-centered aspects of digital libraries. Importantly, the study identified that both individual and technology-related characteristics significantly influence student motivation.

In conclusion, the study's finding that students have a moderately positive perception of the technology characteristics related to digital libraries in their academic environment underscores the importance of user satisfaction and engagement. It highlights the need for digital libraries to continuously enhance their functionality, usability, and support features to maintain and increase student motivation and usage. The alignment of this finding with prior research emphasizes the ongoing significance of user-centered design and the importance of adapting to changing user needs in the digital library landscape.

### 5.3 Recommendations

Based on the finding and conclusion reached in this study, the following recommendations are considered relevant.

1. The study found a moderate level of motivation to use digital libraries. So in order to boost motivation, it is important for polytechnic libraries to provide comprehensive training on how to effectively use digital libraries. Additionally, they should ensure that readily accessible user support resources, such as FAQs and help documentation, are available to assist students in case of issues.
2. In order to also improve the individual factors, it is important to emphasize perceived usefulness of digital libraries. Polytechnic libraries should promote the perceived usefulness of digital libraries by highlighting their role in enhancing students' academic work and the quality of their assignments. Emphasize how digital libraries contribute to efficient completion of academic tasks.
3. In the aspect of technological characteristics, it is necessary to improve digital library functionality. Polytechnic libraries should address the functionality of digital libraries, focusing on providing easy access to needed information resources, visually appealing and user-friendly layouts, effective search features, and compatibility with mobile devices.
4. In view of the importance of individual factors on the motivation to use digital libraries, polytechnic libraries should prioritize user-centered design principles in the development and enhancement of digital library services. They should also continuously seek feedback from students to understand their needs and preferences.

5. Polytechnic libraries should also do more to make the digital library easy to use and facilitate students' autonomy by allowing them to personalize their digital library experiences, such as customizing search preferences and saved resources. This autonomy can enhance their motivation.
6. Polytechnic libraries should also recognize that motivation to use digital libraries is dynamic and subject to change. It is therefore important to regularly assess the evolving needs and expectations of students and adapt digital library services accordingly to maintain and increase motivation to use digital libraries.

#### **5.4 Contributions to Knowledge**

The current study has made some contribution to knowledge, particularly in the theory and practice of library and information science. The contributions can be grouped into empirical, conceptual and theoretical contributions. In the context of empirical contributions, this study provides valuable insights into the current state of digital library usage and the motivation of polytechnic students in Ondo State, Nigeria. It offers empirical evidence of the moderate level of motivation among these students, which can inform future research and interventions. In the contextual aspect, the study sheds light on the specific challenges and opportunities faced by polytechnic students in Ondo State when engaging with digital libraries. This context-specific knowledge can guide local educational institutions and libraries in tailoring their digital library services to better meet the needs of the student population.

Theoretical contributions emerge in the form of hypothesis testing, where the study confirms the significance of both individual and technology-related characteristics in influencing student motivation. This contributes to the existing body of knowledge on motivation in educational technology contexts. The study underscores the need for a holistic approach that considers and optimizes both individual and technological factors in promoting user motivation. These findings can inform future theoretical frameworks and models aimed at understanding and enhancing user motivation in digital library environments.

### **5.5 Suggested Areas for Further Studies**

- i. Relationship between digital literacy skills and motivation to use digital libraries.
- ii. The impact of mobile-friendly interfaces on user motivation and the use of digital library resources.
- iii. investigate how access to digital resources motivates individuals to continue learning beyond formal education

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## Appendix

### Lead City University Ibadan Faculty of Communication and Information Science Department of Information Management

#### Questionnaire on the Influence of Individual Characteristics and Technology Characteristics on the Use of Digital Library among Polytechnic Student in Ondo State, Nigeria

Dear Respondents,

This questionnaire is designed to collect data on master's thesis. Your response to the questions and statements in this questionnaire is high important to the success of the study. I therefore seek your indulgence to fill the questionnaire as accurately as possible. I assure you that your responses will be treated with the utmost confidentiality and used only for research purposes.

Thank you.

#### Section A: Demographic information:

1. **Name** ..... **of**  
**institution:**.....
2. **Gender:** Male [ ] Female [ ]
3. **Level:** ND 2 [ ]; HND 1 [ ]; HND 2 [ ];
4. **Age:** 16–20 years [ ], 21–30 years [ ] 31–35 years [ ], above 35 years [ ],
5. **Faculty:** .....

#### 6. Section B : Motivation to Use Digital Libraries

**Instruction: Please respond to the following statements as they apply to you**

**Key: SA=strongly agree, A=Agree, D=Disagree, SD=strongly disagree).**

S/N	Statement	SA	A	D	SD
	<b>Perceived Ease of Use</b>				
1.	I typically find interacting with the digital library easy.				
2.	Getting any desired information from the digital library is easy for me.				
3.	I have no difficulty understanding my interactions with the digital library.				
4.	I rarely make errors when using the digital library.				
5.	Overall, I consider the digital library to be user-friendly.				
	<b>Perceived Usefulness</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>
6.	Using digital libraries enhances my effectiveness in academic work.				
7.	The quality of my academic work improves when I use digital libraries.				
8.	Resources from digital libraries enable me to complete academic tasks more efficiently.				
9.	Using digital libraries make it easier to do my academic work				
10.	Overall, I find the digital library useful in my academic tasks				

### Section C: Individual Characteristics

**Instruction: Please respond to the following statements as they apply to you**

Key: VHE= Very High Extent; HE = High Extent, LE = Low Extent, VLE= Very Low Extent .

S/N	Cognitive factors	VHE	HE	LE	VLE
1.	I usually understand the tasks and activities involved in using a digital library for my academic work				
2.	I am proactive in seeking out relevant academic resources and information using digital library tools				
3.	I am familiar with the tasks and assignments that require the use of digital library resources				
	<b>Computer Self-Efficacy:</b>				
4.	I am confident in my ability to use computers and digital devices effectively for academic purposes				
5.	I feel comfortable using digital technologies and				

	navigating online platforms for research and learning				
6.	I believe that using the digital library system will be easy and straightforward for me				
7.	I have experience in using computers and digital tools for academic purposes				
	<b>Attitude</b>				
8.	I enjoy trying out new technologies or digital tools in my academic tasks?				
9.	I am willing to adjust my work habits and routines to accommodate the use of digital library resources?				
10.	I can easily adapt to changes in technology and incorporate new tools into my academic workflow				

### Section D : System Characteristics

**Instruction:** Please select the most appropriate response

Key: 4=strongly agree, 3=Agree, 2=Disagree, 1=strongly disagree

S/N	Statement	4	3	2	1
	<b>Functionality</b>				
1.	The digital library gives me access to needed information resources for my academic work.				
2.	The layout and design of the digital library is visually appealing and easy to navigate				
3.	The search feature is effective in helping me find the resources I need				
4.	The digital library function on mobile devices like smartphones and tablets				
	<b>Ease of Learning</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>
5.	I can get quickly and easily learn to use a new digital library				
6.	I will find the digital library to be flexible to interact with				
7.	I can easily ask a colleague for help in understanding the digital library				
8.	It is easy to find out what the digital library maintains on a given subject				
	<b>System Reliability</b>	<b>SA</b>	<b>A</b>	<b>D</b>	<b>SD</b>
9.	The digital library does not experience frequent system problems and crashes.				
10.	I can rely on my school's digital library to be up and available when I need it				
11.	I am confident that the digital library has the information I need for my academic work				
12.	The digital library's support team are always				

	ready to address user inquiries				
13.	<b>Feedback and Support</b>				
14.	There is enough training on how to find, understand, access, or use digital library in my school				
15.	I usually get the help I need in accessing and understanding the digital library				
16.	The digital library usually display users instructions in a readable and understandable form				
17.	Support resources, such as FAQs or help documentation, to assist users in case of issues are readily available				

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**Bio-data**

**A. Personal Data**

1. **Full Name:**
2. **Address:**
3. **Email:**
4. **Date and Place of Birth:**
5. **Nationality:** - Nigerian
6. **Name and Address of Next of Kin:**

**Add.** Same as above

**A. Educational Background**

**Educational Institutions attended with dates and Qualifications:**

- i. **Primary Education:**
  
- ii. **Secondary Education:**
  
- iii. **Higher Educational Institutions:**

a.

**B. Working Experience with Dates**

a. **Organisation:**

**Role:**

**Date:**

**C. Working Experience with Dates**

b. **Organisation:**

**Role:**

**Date:**

c. **Organisation:**

d. **Role:**

**Date:**

**D. Awards and Fellowships:**

i. .

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

### University Compliance Certificate

This is to certify that this thesis by Cyril Iloba IJEH with Matriculation Number LCU/PG/002863 in the Department of Information Management, Lead City University, Ibadan, is in FULL compliance with the approved university format and style.

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**Name**

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**Signature**