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ICT ACCEPTANCE AND ADOPTION AS PREDICTORS OF INFORMATION USE ENVIRONMENT AMONG SECONDARY SCHOOL STUDENTS IN NEWLY UPGRADED STATE UNIVERSITIES, SOUTHWESTERN NIGERIA

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Abstract: This study was designed to investigate ICT acceptance and adoption as predictors of information use environment among secondary school students in newly upgraded state universities Southwest, Nigeria. Survey research design was employed for the study, the population size consisted of 337 students of Senior Secondary School One (SSS I) using total enumeration sampling technique. Questionnaire was the instrument used for data collection; seven research questions and three null hypotheses were formulated for this study. Output format of SPSS based on simple frequency count, percentage distribution, mean, standard deviation, Pearson's Product Moment Correlation (PPMC) and multiple regression were used for data analysis. The findings of this study revealed that there was a significant relationship between ICT acceptance and Information Use Environment as well as a significant relationship between ICT adoption and Information Use Environment. Information sources and information services mostly used are electronic dictionaries, electronic books, educational softwares and internet, mobile phone and television while mobile phone, internet, television and social media respectively are the mostly used ICT resources for information among secondary school students in newly upgraded state universities in Southwest, Nigeria. The location of their information use environment are their homes, school library or school resource centre as well as the parents' offices for academic and entertainment purposes. The major identified problems in the use of information environment are: instability of network services, that is, internet connectivity, information overload, ineffective use of technology, unstable power supply. Part of the recommendations made was that that Government should ensure that ICT policy statements are translated into reality; school management should invest in custom-made digital materials with highly relevant content suitable for secondary school students. These will cub the abuse/ misuse of internet.

Keywords: Ict acceptance, ict adoption, information use environment, secondary school student.

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Introduction and background

Information is identified to be an action that takes place after the search for information has taken place, or after information is acquired or received (Mishra, Allen and Pearman, 2014). Therefore, information use is the final step in the information-seeking process to meet a need or fill an information gap. Information use in the secondary school environment is anchored on three main activities; acquisition of knowledge, cognitive development and application of information which are all aimed at achieving a platform where the multi-related information needs of the students can be met. Students in Nigerian secondary schools use the information for different school works, which may include accessing, collecting, analysing and transferring information for specific tasks like writing assignments, forming notes, further reading in subject areas, as well as project or group works.

Environment can be broadly described as abstract environment (which refers to existing norms and values, purpose, routines, goals, constrains, to mention just a few) and as a concrete environment (it refers to resources such as information sources, personnel and communication media (Khan,2018). Therefore, an environment is the context or domain to which a task belongs and the meaning given to same information differs in different environment. Information environment is the aggregate of individuals, organisations, and systems that collect, process, disseminate or act on information. The utilisation of information in a domain or system where information need arises is described as information use environment (Khan, 2018). Therefore, as the information environment is changing in many dimensions, the information use environment considers the settings and accessing channels of information sources and services. Nevertheless, information to knowledge journey of students must be a supportive and information rich environment in terms of physical or digital gateway to information where information resources and services at the disposal of the students are varied; in multiple media forms. According to Deltor, (2003) cited in Pervez, (2017) "information use environment is a conceptual construct consisting of different elements that affect the flow and use of information in a definable entity" such as secondary schools.

Machumu, Anathe and Almasi (2018) described Information and Communication Technology (ICT) as media which include both software and hardware like radio, television, telephone, podcast and the internet. Therefore, the major feature of the electronic information use environment is the pervasiveness in accessibility and utilisation of electronic resources (Ani, 2013). The types of ICT found in the information use environment of a secondary school students are such that motivate the students, enhance collaboration and offer access to variety of information. This includes various information retrieval systems and mechanisms, textual resources (e-books, e-journals, e-magazines, encyclopedia), tools like computer and its accessories, internet and its facilities, television, radio, projector, e-mail, groupware, video telephony, CD-ROM, mobile communication (GSM/SMS), facsimile among others. Information Communication Technology (ICT) is generic terms that refer to the technologies that are used to collect, store, edit and communicate information in various format (Raji, 2018). The word ICT can be used to encompass all forms of technologies used to handle information and aid its communication in a digital format. It includes multimedia, internet and devices for distribution and exchange of information (Oyinloye and Agbolade, 2019). Apparently, for provision of value added information, ICT is an indispensable tool. Information Communication Technology (ICT) is an important component of the information environment because it is an enabler of various processes; such as, services which support the widespread application of information communication technology.

Accepting ICT is important in predicting the information use environment (Abbasi, 2011). This focuses on the attitude of the users towards using technology and the actual usage of a specific technology or service. ICT acceptance can be described as a construct between secondary school student's attitude and the behavioural intention on usage; which summarises what Technology Acceptance Model (TAM) is all about. This model focuses on the voluntary or intended use of the technology by users in terms of demonstrable willingness of federal university-owned secondary school students to employ ICT for information search. Therefore, whether an individual student will accept and use technology depends on his attitudinal beliefs towards the information system (Osman, 2014). Attitude is a factor that is influenced by the motivation a user derived as a result of the technology or system characteristics. Attitude is a predisposition to act but it is not a guarantee of actual behaviour. It is the

student's like or dislike for ICT as tools in the information use environment.

ICT adoption is analysing the successful ICT implementation which can also be measured in terms of the successful integration of ICT into education and the qualitative measure of ICT accessibility and connectivity on the basis of sound pedagogical ICT use. Some studies considered the concept of adoption as same as acceptance whereas, adoption involves the approbation or embracing of technology to the point of diffusing it for actual usage while acceptance is about the attitude and perception of the users in recognising and acknowledging the usefulness of ICT. Therefore, there will be need for students to adopt technology for improved efficiency and effectiveness of work processes in the school learning environment. The level of students ICT adoption is considered in this study based on the comfort, security, privacy, experiences and frequency of use of the technology for information search and retrieval. These constructs indicate a sustainable use of the technology and effective adoption among students. Some studies considered the concept of adoption as same as acceptance whereas, adoption involves the approbation or embracing of technology to the point of diffusing it for actual usage while acceptance is about the attitude and perception of the users in recognising and acknowledging the usefulness of ICT. Therefore, there will be need for students to adopt technology for improved efficiency and effectiveness of work processes in the school learning environment.

The objectives of this study are to: examine the level of ICT acceptance among secondary school students in the newly upgraded state university-owned secondary schools in South-West, Nigeria; find out the level of adoption of ICT among senior secondary students in newly upgraded state university-owned secondary schools in South-West, Nigeria; examine the information use environment of students in in newly upgraded state university-owned secondary schools in South-West, Nigeria in terms of information sources and services being used, the frequency of usage, purpose of use and problems encountered; and establish the relationship between independent variables (ICT acceptance and adoption) and dependent variable (information use environment) of students in newly upgraded state university-owned secondary schools in South-West, Nigeria.

This study examined the extent to which ICT acceptance and adoption predict the information use environment of senior secondary school students in University-owned secondary schools in South-West, Nigeria. The information use environment to be studied includes senior secondary school students in newly upgraded state university-owned school's information sources in electronic format such as CD-ROMs, online databases, electronic journals, electronic books, digitized materials, internet, web 2.0 application, internet resources such as social media tools (for example blogs, e-mail, hangout, online chat, Skype, Facebook, LinkedIn, to mention just a few). Information use environment also includes information services (like newsgroups, audio streaming, social network services, slide share, feedback systems, and referral services) for instance the print, non-print and electronic formats of information sources that is available and use by students, as well as the purpose of use to be attached to the sources and format by the students in the university-owned secondary schools. The scope of ICT acceptance in this study includes the attitude of the students, perception towards using technologies, and facilitating conditions.

Meanwhile, ICT adoption examines the frequency of use of ICT among the students, the privacy, security and comfort as it contributed to ICT adoption among the secondary school students of the newly upgraded state university-owned schools in the South-West, Nigeria. The geographical scope for this study comprised of secondary school students of University Demonstration Secondary School, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti. Adeniran Ogunsanya International School, Lagos State University of Education, Ijanikin and Emmanuel Alayande Model High School, Emmanuel Alayande University of Education, Oyo, Oyo State. Students considered for this study are those in SSS II across the three arms (Science, Commercial and Arts). The following research questions guided the study:

- 1. What is the level of ICT acceptance among students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?
- 2. What is the level of ICT adoption among students in the newly upgraded state university-owned secondary schools in the South-West, Nigeria?
- 3. What are the sources of information and information services used by students in the information environment of the newly upgraded state university-owned secondary schools in the South-West, Nigeria?
- 4. How frequently do students in the newly upgraded state university-owned secondary schools in South-West, Nigeria use ICT resources in their information use environment?
- 5. Where is the location of utilisation of information by students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?
- 6. For what purposes do students in the newly upgraded state university-owned secondary schools in South-West, Nigeria rely on the use of information environment?
- 7. What are the problems being encountered by students in their information use environment?

The study was also used to test three hypotheses that was formulated at 0.05 level of significance:

H0₁: There is no significant relationship between ICT acceptance and information use environment of students in the newly upgraded state university-owned secondary schools in South-West, Nigeria.

H0₂: There is no significant relationship between ICT adoption and information use environment of students in the newly upgraded state university-owned secondary schools in South-West, Nigeria

H0₃: ICT acceptance and adoption do not have relative contribution to the information use environment of students in the newly upgraded state university-owned secondary schools in South-West, Nigeria.

STATEMENT OF THE PROBLEM

The information use environment is in constant fluctuation; a restless state that keep changing due to advances in ICTs. In almost every sphere of human endeavour, ICT is changing the pace and trends of individual and cooperate adventures, this does not exclude secondary schools. With the emergence of COVID-19 which caused different disruptions in the education sector, attention was partly or fully shifted from traditional to virtual mode. However, this development appears to have caught many stakeholders in the post-primary education unaware, as no plans were thought to have been made prior to the societal adjustment to the dictates of corona virus pandemic. Therefore, as virtual learning seems to be attracting global attention and many schools are embracing it, there is the need to examine the state of ICT acceptance and adoption in predicting information use environment among secondary schools in Southwest, Nigeria. Hence, it appears many studies have not examined the acceptance and adoption of ICT for academic activities in information environment by secondary school students in newly upgraded Colleges of Education in Southwest, Nigeria.

In addition, it seems there are no enough studies to reveal the level of ICT availability and use within the geographical areas to be covered by this study. If these concerns are not scholarly examined, it may affect the academic performances of the students within the area of this study and thus adversely affect them for global competitive advantage. Moreover, it appears that major stakeholders in secondary education do not have quantitative data that could help in developing required strategies to address the problem. With the trend of university education activities migrating to virtual operations, there is a need to know the level of acceptance and adoption of ICT in information use environment of the secondary students to identify areas of insufficiencies and inadequacies that can inform policy formulation and implementation by necessary educational stakeholders.

In the quest to improve students' academic performance and prepare them for university education that is ICT driven, there is a need to investigate ICT acceptance and adoption as predictors of information use environment among secondary school students in newly upgraded state universities in southwestern Nigeria.

Literature review

Theoretical Foundation

The Unified Theory of Acceptance and Use of Technology (UTAUT-2), formulated by Venkatesh, Ajzen, and Davis in 2003, amalgamates eight technology acceptance and motivational models to comprehend individual behaviour towards embracing and utilizing technologies. UTAUT-2 aims to serve as a tool for evaluating the potential success of technology implementation, understanding the determinants of acceptance, and guiding intervention strategies. Core constructs in UTAUT include performance expectancy, effort expectancy, social influence, and facilitating conditions, while UTAUT-2 integrates hedonic motivation alongside performance expectancy as a significant predictor of behavioural intention. Effort expectancy is linked with price value, and social influence plays a vital role in determining students' intention to adopt new technology.

Additionally, facilitating conditions and behavioural intention influence technology adoption, and habit is identified as another crucial predictor. Studies, such as Rho (2009) examination of Elearning technology acceptance in secondary schools, underscore the significance of factors like social influence. UTAUT-2 validation exhibits substantial variances in both behavioural intention and technology use, surpassing those of UTAUT. While UTAUT has been widely utilized in various contexts, some studies have tailored it by eliminating irrelevant constructs. UTAUT-2 strives to offer a comprehensive perspective on user acceptance and usage of information technology. In studies concerning ICT acceptance, and adoption among senior secondary school students, factors like age, gender, and experience are often omitted, given the homogeneous background of the participants and their perceived insignificance to the study.

Empirical Review

Concept of Information Technology

The advent of ICT stands as a remarkable contribution from modern science and technology, significantly transforming the landscape of teaching and learning worldwide. This transformation has been particularly pronounced since the onset of the COVID-19 pandemic that swept across the globe. The integration of information and communication technology (ICT) into educational practices has fundamentally reshaped conventional approaches to learning. It marks a new era in educational communication, breaking down geographical barriers and enabling widespread access to educational information on a global scale.

Information and technology play a crucial role in shaping the global economy and societal changes. The rapid evolution of information and communication technology (ICT) in the last decade has created a communication and connectivity gap between developing and developed countries. A comprehensive understanding of ICT is considered essential in education (UNESCO, 2002). Ratheeswari K. (2018) notes that ICT has a pervasive impact on work environments, businesses, education, and entertainment. ICTs are catalysts for transformative change, influencing work dynamics, information management, teaching methods, learning strategies, scientific research, and access to these technologies. In the digital age, integrating ICT into classrooms is crucial for students to acquire skills essential for the 21st century.

The term 'Information and Communication Technology' (ICT) originated in the mid-1980s, defined as "All types of electronic systems used for broadcasting telecommunications and mediated communications." Examples include personal computers, video games, cell phones, the internet, electronic payment systems, and computer software. ICT encompasses both computer technology, a tool for storing and processing digital information, and communication technology, facilitating the transfer and dissemination of digital data.

ICT involves various technological applications in information processing and communication, integrating computing, networking, and information processing technologies. Essentially, ICT combines computer applications and communication technology for gathering, processing, storing, and disseminating information. It is a broad term referring to technologies employed for collecting, storing, editing, and communicating information in different formats. ICT utilizes computer-based technology and the internet to provide information and communication services. enabling the creation. collection. consolidation. and communication of information in multimedia formats for various purposes.

As a pivotal force in current and future societal development, ICT impacts all aspects of life, including libraries. Information and Communication Technology (ICT) comprise a diverse set of technological tools and resources used for communication, creation, dissemination, storage, and information management.

ICT, an acronym for Information and Communication Technology, is a fusion of computer and communication technologies Tangirov (2020). Computer technology involves the storage and processing of digital information, while communication technology facilitates enhanced interaction with key stakeholders. These tools provide opportunities for connectivity and engagement, allowing organizations to efficiently identify, analyze, and target stakeholders with tailored messages across preferred channels (Alhumaid, Ali, Waheed, Zahid, and Habes 2020) in Molla and Seyoum (2022). The realm of ICT encompasses computing, networking, information processing technologies, and their applications (Morrone, Raimo,nTarulli, and Vitolla 2021). It encompasses both the hardware and software components of electronic devices, such as computers, radios, televisions, digital cameras, and phones. ICT catalyzes progress in society, the economy. education, and scientific and technological advancements. Its profound impact extends to teaching, learning, and research within the field of education.

LIS Education Network (2013) submitted that transforming various aspects of life, ICT includes computer hardware, software, telecommunication technologies, projection devices, Local Area Networks (LAN), Wide Area Networks (WAN), digital cameras, Compact Disks (CDs), Digital Video Disks (DVDs), cell phones, satellites, and fiber optics. Digital Technologies are combinations of two or more technologies within a system. Examples of these new ICT and digital technologies include multimedia PCs, laptops, notebooks with internet connectivity, digital cameras and videos connected to PCs and laptops, LANs and WANs, the World Wide Web (WWW), online databases, video conferences, e-mail, discussion lists, newsgroups, chat, digital libraries, e-books, ejournals, e-databases, floppies, CDs, DVDs for offline databases, cell phones with internet connections, digital cameras, moving pictures, e-books, e-journals, e-databases, computer-mediated conferences, video conferencing, telemedicine, virtual reality, telecommunication satellites, interactive TV, and radio.

This integration provides an advanced learning environment, enabling students to develop diverse skill sets crucial for success. Critical thinking, research, and evaluation skills progress as learners engage with expanding information from various sources. The use of ICT in the instructional process is a platform for implementing various methodologies and pedagogical theories. However, using ICT as a teaching tool is intricate and complex, requiring a positive attitude from educators (Salehi & Salehi, 2012).

Acceptance of Information and Communication Technology by secondary school students

The integration of ICT in education has sparked a global trend towards equipping schools with computer facilities and trained personnel to foster technologically proficient students (Aduwa, 2005). The success of technology in education hinges on user acceptance and utilization, as emphasized by Fatema (2013, in Halili and Sulaiman, 2018). Mikre (2011) underscores the role of schools as custodians of information and advocates for ICT as a fundamental tool across all educational levels. ICT, as highlighted by Mechurkarp and Fletcher (2014), forms an ecosystem fostering innovation, critical thinking, communication, and leadership skills among students.

In today's digital landscape, students are immersed in technology both inside and outside the classroom, shaping them into adaptable users of various digital technologies (Gu, Zhu, and Guo, 2013). However, African students face challenges in accessing and effectively utilizing technology in their learning processes (Zain and Mahmud, 2018). To address these challenges, Nigeria introduced various reforms, such as the "Ministerial Initiative on Eeducation" in 2004, aimed at enhancing access to quality education and optimizing ICT resources (Federal Ministry of Education, 2004). Initiatives like the Nigeria Communication Commission's provision of ICT centers to schools and the One Laptop per Child program further bolstered ICT integration in education.

Despite these efforts, obstacles to technology acceptance persist. Factors such as low computer literacy, inadequate infrastructure, and power failures hinder ICT adoption (Yusuf, 2005; Becta, 2004; Aji, 2010). Scholars like Kamara (2010), Ukpebor (2010), and Kalejaiye, Fabunmi, and Adeoye (2011) advocate for measures such as increased computer availability, comprehensive training, and stable internet connectivity to enhance ICT acceptance in secondary schools. Orji and Ozkan (2010) emphasize the importance of facilitating conditions and effort expectancy for technology acceptance, while Egbe (2014) highlights the psychological aspect of technology acceptance. Chen (2011) stresses the significance of educational compatibility alongside technology acceptance in educational settings. The successful integration of ICT in education relies on addressing barriers to technology acceptance and ensuring compatibility with educational goals.

Adoption of Information and Communication Technology by secondary school students

Chege (2014) expands on adoption as an individual's decision to utilize an innovation, encompassing the entire process from initial awareness to full utilization. In education, the integration of ICT is revolutionizing traditional processes. UNESCO (2002) emphasizes the crucial role of ICT in education, noting its potential for innovation. While initially used for accessing information, ICT in Nigerian secondary schools now facilitates collaborative learning, automation, and social communication (Sswanyana and Buster, 2010). Recent studies indicate a growing familiarity with ICT among Nigerian students, evidenced by their proficiency in tasks such as exam registration, result checking, and examination writing.

However, the adoption of ICT in Nigeria lags behind that of developed countries, with diffusion being notably slow (Oye, Alahad, and Abrahim, 2013). Technology adoption involves three stages: adoption, implementation, and continuation (Roger, 2003; Fullan, 2001). Barriers to adoption, identified by Ali and Magalhaes (2008), include both technical and organizational challenges. Technical barriers encompass system crashes, infrastructure limitations, and usability issues, while organizational barriers include training constraints, cost concerns, and lack of strategic planning.

Despite the importance of ICT, many teachers still prefer traditional teaching methods. However, it's essential for educators and parents to encourage and supervise ICT use among students (Ukpebor and Emwnanta, 2012). Stakeholders' perceptions of ICT's role in education significantly influence adoption, alongside personal characteristics, attitudes, and perceptions. Additionally, students' enjoyment and comfort with technology positively impact adoption (Qu et al., 2017).

Misconceptions about ICT, such as equating it solely with the internet, hinder its adoption in education (Fatoumata, 2016).

Adoption is seen as a process rather than an event, requiring more than just acquiring hardware and software (Semenov, 2005, in Richard et al., 2019). Globally, adoption processes unfold in three phases: pre-adoption, adoption-decision, and post-adoption (Beyrouthy, 2017; Hameed et al., 2012). Successful ICT adoption necessitates integration into daily practices and a supportive environment characterized by open communication (Mechurkarp and Fletcher, 2014).

Information Use Environment of Secondary school students

The information use environment in secondary schools encompasses the sources available to students, their information needs, seeking behavior, and the methods employed to access and exploit these sources (Liew, Foo, and Chennupati, 2001; Oladokun, 2009; Suater, 2000). It represents a complex activity surrounding the functioning of information systems and the application of information technology (Igwe, Aliyu, and Ukah, 2013; Jabur and Bouazza, 2014). Traditional learning approaches struggle to adapt to this dynamic environment (Thomas and Brown, 2011), requiring students to engage with information in various forms and channels (Yusuf, 2007; Grout, 2001). Understanding students' information activities is essential for capturing the essence of the information environment in schools (Yusuf, 2007).

The success of educational institutions relies on providing information resources to both staff and students (Oladunjoye, Omiunu, & Yomi-Owojori, 2018; Akinsolu & Olatoun, 2011). Sources are essential tools in education, encompassing materials capable of conveying information and engaging students (Afolabi, 2014; Mazgon & Stetanc, 2012). Madden (2011) categorized information sources in secondary schools as artifact-based and people-based, while Mubashrah et al. (2013) distinguished between printed and electronic sources. Choo (2002) previously divided sources into textual, online, and human categories. Each type has its advantages and disadvantages, and their selection should align with information needs and objectives (Choo, 2002). With the prevalence of electronic resources, students now have access to various online materials like journals, articles, and e-books (Dhanavandan, Esmail, & Nagarajan, 2012).

The use of these sources varies based on individual purposes, with students predominantly accessing resources supporting subject areas through teachers, books, and the internet. Oji and Abana (in Suleimam, Hanafi, & Tanslikhan, 2018) emphasized that students' intellectual development is linked to constant use of information resources beyond the classroom. Electronic information sources, such as e-books, e-journals, and databases, are recognized as powerful tools in education (Adeniran, 2013). Information services play a crucial role in enhancing quality education by providing access to resources and supporting user needs (Ogundele & Simon, 2017). Akanwa and Mbagwu (2016) noted that information services encompass user education, reference assistance, and extension activities. The goal is to facilitate access to quality information and meet users' needs (Stojannovski & Papic, 2012; IFLA, 2003).

Information is vital for secondary school students, serving purposes like research, leisure, and exam preparation (Zabel et al., 2010). Khan (2016) emphasizes the importance of information sources for various study purposes, including knowledge updating. Clabo (2002) notes that students utilize school information resources for recreational reading, homework, meeting teacher requirements, and staying informed through newspapers. Additionally, Head and Eisenberg (2010) highlight two main uses of information by students: subject-related assignments and everyday life needs such as news consumption, product research, and social interactions. Regarding Information and Communication Technology (ICT), its role in aiding students' success is significant. However, its effectiveness hinges on user acceptance and utilization. Roger (2003) suggests that technology acceptance is influenced by the social system, including values, school culture, and leadership within secondary schools.

Mikre (2011) advocates for the integration of information and communication technology (ICT) in schools as a fundamental tool for managing information across educational levels. ICT is viewed as an educational ecosystem that fosters students' skills in innovation, critical thinking, communication, and leadership (Mechurkarp and Fletcher, 2014). Despite students' immersion in digital tools, especially in today's tech-rich environments, African students may face challenges due to lack of prior skills (Zain and Mahmud, 2018). Technology acceptance hinges on perceived usefulness and ease of use (Osman, 2014). Individuals' willingness to engage with new technologies, such as ICT, is influenced by these factors (Teo, 2011). Chen and Chan (2011) describe technology acceptance as the favorable reception and continual use of newly introduced systems. Before widespread application, new technologies undergo a process of experimentation and refinement to prove their effectiveness. Acceptance of ICT in schools can be categorized based on deterrent and promoter elements. Yusuf (2007) highlighted inadequate preparations for ICT use in Nigeria's secondary schools from 1988 to 2001, impacting acceptance levels negatively. Tiamiyu (2000) identified obstacles to ICT acceptance in Nigeria, emphasizing the importance of access beyond physical entry, including training and resources in the user's language, which influence user benefit. Access to computers and the internet was noted as crucial for technology use in instruction, with low access rates observed in Africa (Yusuf, 2005).

Challenges persist in realizing ICT benefits in education in developing countries. Rabiu et al. (2016) recognized technology's growing importance in adolescents' lives, affecting academic performance and lifestyle. Oyebisi (2013) highlighted the lack of social amenities, including information technology, in rural areas where a significant portion of Nigeria's population resides. Despite stakeholders' efforts, inadequate implementation of the National ICT Policy in Education 2006 was noted (Laaria, 2013). Factors such as an adequate number of computers, early and thorough training, internet access, network stability, and power supply were identified as crucial for ICT acceptance in secondary schools (Kamara, 2010; Ukpebor, 2010; Kalejaiye et al., 2011). Orji and Ozkan (2010) emphasized facilitating conditions, effort expectancy, performance expectancy, and social influence on electronic library acceptance. Egbe (2014) stressed the link between attitude and behaviour, asserting that positive attitudes result when new technology aligns with students' needs and characteristics.

Methodology

Introduction:

This focused on methods and procedures adopted to gather and analyze data for this study. The methodology covers the following:

research design, population, sample and sampling technique, data collection instrument, reliability and validity of instruments, data collection procedure and method of data analysis.

Research Design:

This is a descriptive study using survey research design. The survey research design was considered for this study because it is meant to find facts on ICT acceptance and adoption as predictors of information use environment among secondary school students in newly upgraded state university-owned secondary schools in South-West, Nigeria. Survey research design was considered appropriate because it focuses on the perception of existing situation as well as belief and attitude that are held. It requires systematic and scientific collection of data from the population, through the use of interview, questionnaire, direct observation or combination of the stated methods.

Population for the study:

This study focuses on a population of 354 students enrolled in Senior Secondary School 1 within the newly upgraded state-owned university secondary schools in Southwest Nigeria. The selection of this population aims to investigate the information environment, considering that these students have at least two years remaining before they sit for the WAEC and NECO Examinations. The schools included in the study, along with their respective student populations, are as follows: University Demonstration Secondary School, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti - 101 students; Adeniran Ogunsanya International School, Lagos State University of Education, Ijanikin - 86 students; and Emmanuel Alayande Model High School, Emmanuel Alayande University of Education, Oyo, Oyo State -167 students.

Sampling Technique and Sampling Size:

The study employed a probability sampling method known as the total enumeration method. This approach ensured that every item within the population had an equal opportunity to be included in the sample and studied. Specifically, all students in SSS1 were selected using this method. The office of the Vice Principal Administration provided a sampling frame, and samples of all SSS1 students were then chosen from the population using the probability proportional to size method, resulting in a total of forty-seven (354) students. The rationale for using this sampling technique was its suitability for managing the study's size in terms of resources and time. Additionally, it was deemed appropriate due to the heterogeneous nature of the population, the known size of the population, and the availability of a sampling frame.

Research Instrument, Validity and Reliability:

In this study, data were collected using a questionnaire to examine the predictors of information use environment among secondary school students in newly upgraded state universities in Southwestern Nigeria, specifically focusing on ICT acceptance and adoption. The researchers utilized a self-developed questionnaire consisting of four sections: background information, ICT Acceptance Scale (ICTACS), ICT Adoption Scale (ICTADS), and Information Use Environment Scale (IUES). To enhance interaction, a structured discussion session was conducted with two students (one male and one female) from each school. The instruments underwent both face and content validity checks. Face validity involved submitting three copies of the questionnaire to a panel of judges, consisting of senior lecturers from the departments of Library and Information Science and Psychology at the University of Ibadan and Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti, Nigeria. This aimed to ensure logical arrangement, mechanical accuracy, clarity, and correct interpretation of the questionnaire items. For content validity, a test-retest method was employed. A minimum of 40 revised questionnaire copies were administered to respondents from Delta State University Secondary School, Agbor, which is one of the newly upgraded universities in the South-South geopolitical zone of Nigeria. The analysis revealed a Cronbach's Alpha reliability coefficient of 0.71 for ICT Acceptance, 0.70 for ICT Adoption, and 0.77 for Information Use Environment. These results affirmed the instruments' strength and adequacy for the study.

Method of Data Analysis:

The data gathered through the questionnaire underwent analysis employing descriptive statistical methods. Demographic characteristics of the respondents were examined using frequency count and simple percentages. Pearson's Product Moment Correlation (PPMC) was utilized for addressing research questions 1 and 2, while multiple regression was applied to tackle research questions 3 and 4. Descriptive statistics were employed for the analysis of research questions 5 to 7. The hypotheses were subjected to testing using multiple regression with a significance level set at 0.05. The collected data was compiled and analysed utilizing descriptive statistical tools.

PRESENTATION OF RESULTS

Questionnaire Administration and Return Rate

Table 1: Questionnaire Administration and Return Rate by School

Name of school	Number of Administered Questionnaire	Number of Returned Questionnaire	Percentage (%)
University Demonstration Secondary School, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti	101	100	99.9%
Adeniran Ogunsanya International School, Lagos State University of Education, Ijanikin	86	81	94.1%
Emmanuel Alayande Model High School, Emmanuel Alayande University of Education, Oyo, Oyo State	167	156	93%
Total	354	337	95.2%

From table 1, a total number of three hundred and fifty four (354) copies of questionnaire were administered in three newly upgraded state university-owned secondary schools in South-West, Nigeria. However, only three hundred and thirty seven (337) copies were dully filled and returned by the respondents giving 95.2% response rate.

Research Question One: What is the level of ICT acceptance among students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?

Table 2: Level of ICT acceptance among students in the newly upgraded state university-owned secondary schools in South-West, Nigeria

	Attitude towards ICT	NA	А	HA	\overline{x}	S.D
1.	I maintain a reasonable level of tolerance for frustration when dealing	95	155	87	1.98	0.74
	with issues on computers or other ICT devices.	28.2%	46.3%	25.8%		
2.	I like to use the internet to read and seek for information.	14	83	240	2.67	0.55
		4.2%	24.6%	71.2%		
3.	I like picking up new technological and technical skills.	17	95	225	2.62	0.58
		5.0%	28.2%	66.8%		
4.	I feel more at ease and self-assured while using technology for	82	114	141	2.17	0.80
	purposes other than school work.	24.3%	33.8%	41.8%		
	Weighted average mean $= 2.36$					
	Perceived Ease of Use.	NA	А	HA	\overline{x}	S.D
5.	I can obtain information from numerous websites and e-books for free	21	88	228	2.61	0.60

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	when I use technology, which helps me save money. ICT boosts production and efficiency.	6.2%	26.1%	67.7%		
6.	I find that remembering how to complete jobs utilizing ICT is easier.	25	121	191	2.49	0.63
		7.4%	36.1%	56.5%		
7.	Utilizing computer and internet technology is simple.	14	109	214	2.59	0.57
			32.3%	63.5%		
8.	Utilizing technology demands a lot of brain work, which makes it	156	110	71	1.75	0.78
	laborious and challenging.	46.3%	32.6%	21.1%		
	Weighted average mean = 2.36					
	Perceived Usefulness	NA	А	HA	\overline{x}	S.D
9.	Technology is a distraction when it comes to academic work and	166	100	71	1.72	0.79
	reduces efficiency.	49.3%	29.7%	21.0%		
10.	Information and communication Technology establishes an atmosphere	18	118	201	2.54	0.60
	for voluntary learning.	5.3%	35.0%	59.6%		
11.	I consider computers, the internet, and other ICT devices useful for	15	84	238	2.66	0.56
	obtaining information that I need for my academic work.	4.4%	25.0%	70.6%		
12	When the learning process incorporates technology, the likelihood of	24	95	218	2.57	0.63
	getting a better outcome increases.	7.1%	28.2%	64.7%		
	Weighted average mean = 2.37					
	Facilitating condition					
16.	Give the thumbs down to use of ICT resources.	67	131	139	2.21	0.75
		19.9%	38.9%	41.2%		
17	At home, I utilize a computer and other ICT equipment.	48	99	190	2.42	0.73
		14.2%	29.4%	56.4%		
	Weighted average mean	= 2.32				
	Overall Weighted mea	n= 2.31				
	Total mean score = 39.41	Criterion m	ean = 2.0			

Key: NA= Not Acceptable, A= Acceptable, HA= Highly Acceptance

The findings on ICT acceptance indicated that a majority of respondents showed a positive attitude towards ICT, particularly in using the internet to read and seek for information. ($\bar{x} = 2.67$) and picking up new technological and technical skills. ($\bar{x} = 2.62$), which ranked highest among attitude indicators. Conversely, a few respondents expressed a negative attitude when dealing with issues on computers or other ICT devices, ranking this item lowest in the attitude indicator.

Regarding the second indicator, "perceived ease of use," the majority of respondents confirmed positive perceptions, such as finding technology easy for saving expenses ($\bar{x} = 2.61$) and using computer and internet technology with ease ($\bar{x} = 2.59$). Only a small number express negative perceptions, emphasizing brain work requirement ($\bar{x} = 1.75$). With a weighted mean of 2.36 exceeding the criterion mean of 2.00, there is a high level of perceived ease of use among students.

The perceived usefulness indicator showed that most respondents affirmed the usefulness of ICT gadgets in gathering information for academic work ($\bar{x} = 2.66$) and enhancing academic performance through technology use = ($\bar{x} = 2.57$). A minority views technology for academic work as a distraction and reduction in efficiency ($\bar{x} = 1.72$). Overall, the weighted mean of 2.37 surpasses the criterion mean of 2.00, indicating a high level of perceived usefulness.

In terms of facilitating conditions, respondents with the ability to use resources at home exhibit a high level ($\bar{x} = 2.42$), while those denied access to ICT tools show a low level ($\bar{x} = 2.21$).

Overall, the indicators record weighted means of 2.36, 2.36, 2.37, and 2.32, all exceeding the criterion mean of 2.00. This suggests a positive attitude and perception towards ICT, with high levels of social influence and facilitating conditions among the sampled secondary school students.

Research Question Two: What is the level of ICT adoption students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?

Table 3: Level of adoption am	ong students in the newly	upgraded state university	-owned secondary	y schools in South-West, Nigeria
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S/N	Comfort	SD	D	А	SA	\overline{x}	S.D
1.	The usage of information technology has enhanced,	24	30	134	149	3.21	0.88
	motivated, and raised my interest in and performance in my academic fields.	7.1%	8.9%	49.8%	44.2%		
2.	My ability to learn at my own speed has improved	20	22	140	155	3.28	0.83
	thanks to computer tools.	6.0%	6.5%	41.5%	46.0%		
3.	When ICT is employed, I can understand complex or	23	37	120	157	3.22	0.90
	abstract concepts easier.	6.8%	11.0%	35.6%	46.6%		
4.	Information technology makes it simpler for me to	18	31	140	148	3.24	0.83
	discuss my topic areas with my peers.	5.3%	9.2%	41.5%	43.9%		
	Weighted average mean = 2	3.24	_	1	1	1	1
	Privacy	SD	D	А	SA	\overline{x}	S.D
5	When utilizing ICT, the user's privacy is safeguarded.	42	52	115	128	2.97	1.02
		12.5%	15.4%	34.1%	38.0%		
6	I am sure we can get the system under control.	35	24	133	145	3.15	0.94
		10.4%	7.1%	39.5%	43.0%		
7.	It will be a fantastic option if parents and the school	25	25	114	173	3.29	0.90
	support pupils in using the ICT tools.	7.4%	7.4%	33.8%	51.3%		
8	I find it difficult to finish my assignments without	82	87	97	71	2.47	1.08
	ICT.	24.3%	25.8%	28.8%	21.1%		
	Weighted average mean	= 2.97			-1	1	
	Security	SD	D	А	SA	\overline{x}	S.D
9	Investment in ICT tools brings competitive	32	36	150	119	3.05	0.92
	advantage.	9.5%	10.7%	44.5%	35.3%		
10.	I don't feel secure obtaining information from the	104	97	92	44	2.23	1.03
	internet since I cannot be sure it will be accurate.	30.9%	28.8%	27.3%	13.0%		
11.	I would only use ICT resources if they were offered	74	104	86	73	2.47	1.06
	without charge.	22%	30.9%	25.5%	21.6%		
12	Technology always fails at the worst possible time: I	108	103	74	52	2.21	1.06
	feel the old method without technology works just as well today.	32.0%	30.6%	22.0%	15.4%		
	Weighted average mea	n = 2.49					
	Overall W	eighted mea	n =2.90				
	Total mean score= 3	4.78 Cr	iterion mea	an =2.5			

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

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Respondents were asked to express their level of ICT adoption. In terms of the Comfort indicator, a majority highlighted that utilizing computer resources facilitated self-paced studying ($\bar{x} = 3.28$), and communication with classmates became easier ($\bar{x} = 3.24$). Additionally, some respondents mentioned that ICT usage contributed to improvements, motivation, and increased performance in subject areas ($\bar{x} = 3.21$).

Concerning the Privacy construct for ICT adoption, most respondents indicated that if schools and parents endorse ICT use, it would be a favourable option ($\bar{x} = 3.29$), and they expressed confidence in keeping ICT tools under control = (3.15). A few respondents mentioned struggling to complete homework without ICT ($\bar{x} = 2.47$).

The Security indicator in this study revealed that respondents believed investing in ICT tools provides a competitive advantage ($\bar{x} = 3.05$). However, the free use of available ICT facilities ($\bar{x} = 2.47$) and the occasional failure of technology at crucial moments ($\bar{x} = 2.21$) were rated lower.

The study highlighted that Comfort (Weighted average mean = 3.24) was the highest-rated indicator of ICT adoption, while Security (Weighted average mean = 2.49) was rated the lowest.

Research Question Three: What are the sources of information used in the information environment of students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?

.Table 4: Information sources used	by students in the newly	v upgraded state universit	y-owned secondary	schools in South-West, Nigeria.
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S/N	Sources of information	NU	U	HU	VHU	\overline{x}	S.D
	Electronic devices						
SOCI	AL MEDIA						
1.	Twitter	199	39	30	69	1.91	1.22
		59.0%	11.6%	8.9%	20.5%		
2.	Google+	168	45	38	86	2.13	1.27
		49.9%	13.3%	11.3%	25.5%		
3.	Blog	211	37	28	61	1.82	1.19
		62.6%	11%	8.3%	18.1%		
4.	YouTube	180	45	35	77	2.03	1.25
		53.4%	13.4%	10.4%	22.8%		
5.	Instagram	150	48	37	102	2.27	1.30
		44.5%	14.2%	11.%	30.3%		
6.	Facebook	187	44	34	72	1.97	1.23
		55.5%	13.0%	10.1%	21.4%		
7.	Messenger (WhatsApp, 2go)	169	46	31	91	2.13	1.29
		50.1%	13.6%	9.2%	27.0%		
		Weighte	d Mean $= 2.0$	03			
8.	Mobile phone	39	36	54	208	3.28	1.05
		11.6%	10.7%	16.0%	61.7%		
9.	Online database	120	78	72	67	2.25	1.14
		35.6%	23.1%	21.4%	19.9%		
10.	Television	22	74	68	172	3.16	0.98
		6.5%	22.0%	20.2%	51.2%		
11.	Electronic dictionary	59	104	79	95	2.62	1.07
		17.5%	30.9%	23.4%	28.2%		
12.	Educational software	86	85	78	88	2.50	1.13
		25.5%	25.2%	23.1%	26.1%		

	Weighted mean = 2.74						
		23.1%	25.8%	21.1%	30.0%		
15.	Electronic books	78	87	71	101	2.58	1.14
		38.9%	23.1%	19.3%	18.7%		
14.	Electronic- magazine	131	78	65	63	2.18	1.14
		6.2%	8.3%	22.8%	62.6%		
13.	Internet	21	28	77	211	3.42	0.89

Key: NU = Not Utilised, U = Utilised, HU = Highly Utilised, VHU = Very Highly Utilised

Table 4 displays the findings concerning social media sources used in their information environment as indicated by the respondents revealed, that Instagram ($\bar{x} = 2.27$), Google+ ($\bar{x} = 2.13$) and Messenger ($\bar{x} = 2.13$) were rated high whereas blogs ($\bar{x} = 1.82$) and Twitter ($\bar{x} = 1.91$) were not highly utilized for academic purposes when compared to others. One can deduce that among the students in the newly upgraded state university-owned secondary schools in South-West, Nigeria, the rate of utilisation of electronic sources was higher with the weighted mean of 2.74. Meanwhile, the information sources utilized by students at the Federal University-owned secondary school. The results indicated that the students extensively used electronic devices, with the Internet ($\bar{x} = 3.42$), Mobile phones ($\bar{x} = 3.28$), and Television ($\bar{x} = 3.16$) being the most highly utilized. In contrast, Online databases ($\bar{x} = 2.25$) and Online magazines ($\bar{x} = 2.18$) are not extensively utilized by the respondents. There is a low rate of utilisation for social media sources with weighted mean of 2.03 which is lower than the criterion mean of 2.5.

Research Question Four: What are the information services used by students in the newly upgraded state university-owned secondary schools in South-West, Nigeria in their information environment?

Table 5: Information services used by students in the newly upgraded state university-owned secondary schools in South-West, Nigeria in their
information environment

	INFORMATION SERVICES	NU	U	HU	VHU	\overline{x}	S.D
1.	Audio streaming	141	70	52	74	2.17	1.19
		41.8%	20.8%	15.4%	22%		
2.	Referral service	165	74	50	48	1.94	1.10
		49.0%	22.0%	14.8%	14.2%		
3.	CD-ROM facility	138	83	56	60	2.11	1.13
		40.9%	24.6%	16.6%	17.8%		
4.	Newsgroup	134	74	65	64	2.18	1.15
		39.8%	22.0%	19.2%	19%		
5	Slide share	150	73	59	55	2.06	1.13
		44.5%	21.7%	17.5%	16.3%		
6.	Current awareness service-online	148	68	59	62	2.11	1.16
		43.9%	20.2%	17.5%	18.4%		
7.	Feedback system	156	72	57	52	2.01	1.12
		46.3%	21.4%	16.9%	15.4%		
	Overall Weighted mean = 2.08	С	riterion mear	n = 2.5			

The results regarding information services within the information environment of students at the Federal University-owned secondary school indicate that a majority of respondents utilize newsgroup ($\overline{x} = 2.18$) and audio streaming ($\overline{x} = 2.17$). In contrast, very few indicated using referral services ($\overline{x} = 1.94$), and a small number utilized the feedback system ($\overline{x} = 2.01$). Overall, the findings suggest a low level of information services utilization among students at Federal University-owned secondary schools, as the weighted mean of 2.08 is below the criterion mean of 2.5.

Research Question Five: How frequent do students in the newly upgraded state university-owned secondary schools in South-West, Nigeria?

 Table 6: Frequency of use of ICT resources among students in the newly upgraded state university-owned secondary schools in South-West, Nigeria

S/N	Frequency of Use	Yearly	Monthly	Weekly	Daily	\overline{x}	S.D
1.	Internet	13	35	92	197	3.41	0.83
		3.9%	10.4%	27.3%	58.4%		
2.	Mobiles phones	27	33	41	236	3.44	0.96
		8.0%	9.8%	12.2%	70.0%		
3.	Televisions	17	41	81	198	3.37	0.88
		5.0%	12.2%	24.0%	58.8%		
4.	E-encyclopaedia (Webopedia, Wikipedia)	50	66	116	105	2.82	1.03
		14.8%	19.6%	34.4%	31.2%		
5.	Electronic dictionary/Thesaurus	6	67	109	105	2.78	1.06
		2.1%	23.3%	38.0%	36.6%		
6.	Radio	90	62	68	117	2.63	1.21
		26.7%	18.4%	20.2%	34.7%		
7.	Electronics books	72	65	99	101	2.68	1.12
		21.4%	19.3%	29.4%	30.0%		
8.	Computer Tablets	88	40	73	136	2.76	1.23
		26.1%	11.9%	21.7%	40.4%		
9.	Educational softwares	89	70	86	92	2.55	1.16
		26.4%	20.8%	25.5%	27.3%		
10.	Social media: Facebook	67	58	70	142	2.85	1.17
		19.9%	17.2%	20.8%	42.1%		
11.	WhatsApp and other Messenger	143	32	36	126	2.43	1.36
		42.4%	9.5%	10.7%	37.4%		
12	Computer Laptops	144	28	55	110	2.39	1.32
		42.7%	8.3%	16.3%	32.6%		
13.	Blog	206	39	41	51	1.81	1.14
		61.1%	11.6%	12.2%	15.1%		
14.	You tube	144	37	46	110	2.36	1.32
		42.7%	11.0%	13.7%	32.6%		
15.	Instagram	161	31	47	98	2.24	1.31
		47.8%	9.2%	13.9%	29.1%		
16.	Twitter	211	32	31	63	1.84	1.20
		62.6%	9.5%	9.2%	18.7%		
17.	CD-ROM	127	74	80	56	2.19	1.11
		37.7%	22.%	23.7%	16.6%		
18.	Google	170	31	40	96	2.18	1.32
		50.4%	9.2%	11.9%	28.5%		
19.	Computer Desktop	166	40	57	74	2.12	1.24
		49.3%	11.9%	16.9%	22.0%		
		Total	mean score = 48	.85			
		Overall v	veighted Mean =	= 2.57			

The frequency of ICT resource utilization by students in secondary schools controlled by universities in the South-West region of Nigeria is shown by data taken from Table 4.2.5. Mobile phones are the resource with the highest ranking ($\bar{x} = 3.44$), followed by televisions ($\bar{x} = 3.37$) and

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the internet ($\bar{x} = 3.41$). Conversely, the lowest ranking is attributed to the blog ($\bar{x} = 1.81$), which is followed by Twitter ($\bar{x} = 1.84$), and Computer Desktop ($\bar{x} = 2.12$).

Research Question Five: Where is the location of utilisation of information by students in university owned secondary school in South-West, Nigeria?

Table 7: Location w	here information is accesse	d by students in the new	ly upgraded state u	niversity-owned seco	ondary schools in S	South-West,
Nigeria						

S/N	Location Utilisation	VHU	HU	U	NU	\overline{x}	S.D
1.	School library or school's resource centre	86	92	55	104	2.52	1.17
		25.5%	27.3%	16.3%	30.9%		
2.	At home	26	30	60	221	3.41	0.94
		7.7%	8.9%	17.8%	65.6%		
3.	Cyber café	132	92	57	56	2.11	1.10
		39.2%	27.3%	16.9%	16.6%		
4	Friend's place	108	89	63	77	2.33	1.15
		32.0%	26.4%	18.7%	22.8%		
5	School ICT Centre	114	98	60	65	2.23	1.12
		33.8%	30.0%	17.8%	19.3%		
6.	Parent's office	87	92	85	73	2.43	1.09
		25.8%	27.3%	25.2%	21.7%		
	Overall weighted Mean $= 2.50$						

Key: VHU =, HU = Accessed, U = Highly Accessed, NU = Very Highly Accessed

The locations of information access points for students from secondary schools owned by universities in the South-West region of Nigeria are listed in Table 4.2.6a. According to the majority of kids, their house is where they obtain information the most ($\bar{x} = 3.41$), followed by their parent's office ($\bar{x} = 2.43$), the school library or resource center ($\bar{x} = 2.52$), and the school itself. Conversely, a lesser percentage indicated using the school's ICT center ($\bar{x} = 2.23$), cyber café ($\bar{x} = 2.11$), and friends' homes ($\bar{x} = 2.33$).

Research Question Six: For what purpose do students in the university-owned secondary schools in the South-West, Nigeria rely on the information environment?

Table 8: Purpose to which students in students in the newly up	pgraded state university-owned	secondary schools in South-West,	Nigeria rely on
the information use environment			

S/N	Purpose of using the information environment	SD	D	А	SA	\overline{x}	S.D
1.	To participate in online competition or survey	46	50	127	114	2.91	1.02
		13.6%	14.8%	37.7%	33.8%		
2.	To meet with friends	42	38	118	139	3.05	1.01
		12.5%	11.3%	35.0%	41.2%		
3.	Downloading a book in electronic format.	43	51	110	133	2.99	1.03
		12.8%	15.1%	32.6%	39.5%		
4.	For leisure and amusement (watch movies, play	27	3	114	163	3.23	0.92
	games).	8.8%	1.0%	37.1%	53.1%		
5.	Checking educational websites	34	30	113	160	3.18	0.97
		10.1%	8.9%	33.5%	47.5%		
6.	Utilization of social media platforms such as	40	32	114	151	3.11	1.00
	Facebook and Twitter.	11.9%	9.5%	33.8%	44.8%		
7.	Sending each other a text regarding a course.	39	30	126	142	3.10	0.98
		11.6%	8.9%	37.4%	42.1%		
8.	I utilize technology tools as often as I enjoy using	41	40	106	150	3.08	1.02

	them these days.	12.1%	11.9%	31.5%	44.5%				
9.	Emailing peers about projects or homework for	38	35	114	150	3.12	0.99		
	class.	11.3%	10.4%	33.8%	44.5%				
10.	To view instructive video streaming	40	48	121	128	3.00	1.00		
		11.9%	14.2%	35.9%	38.0%				
11.	Looking for details on school and schoolwork on	23	26	109	179	3.32	0.89		
	the internet.	6.8%	7.7%	32.3%	53.1%				
12.	Utilizing Skype to take part in group or class	52	65	109	111	2.83	1.05		
	discussions.	15.4%	19.3%	32.3%	33.0%				
13.	Sending teachers an email asking them to turn in	57	67	101	112	2.80	1.08		
	projects or assignments.	16.9%	19.9%	30.0%	33.2%				
14.	Listening to or seeing podcasts.	55	70	111	101	2.76	1.05		
		16.3%	20.8%	32.9%	30%				
15.	Participate in wikis and blogs.	52	85	105	95	2.72	1.04		
		15.4%	25.2%	31.2%	28.2%				
16.	Looking up material for school after consulting a	24	13	90	210	3.44	0.86		
	textbook.	7.1%	3.9%	26.7%	62.3%				
17	Searching the internet for general information.	21	12	109	195	3.42	0.83		
		6.2%	3.6%	32.3%	57.9%				
	Overall weighted Mean - 3.06								

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

In table 8 presented that the majority of students indicated the activities they preferred. The highest-ranked activities, according to their observations, were looking up general information online ($\bar{x} = 3.42$), checking out information about school and schoolwork on websites ($\bar{x} = 3.32$), searching for information related to school work after using textbooks ($\bar{x} = 3.44$), and enjoying entertainment and recreation ($\bar{x} = 3.23$). On the other hand, activities like using Skype to participate in class or group discussions ($\bar{x} = 2.83$), emailing teachers to turn in assignments or projects ($\bar{x} = 2.80$), watching or listening to podcasts ($\bar{x} = 2.76$), and editing blogs or wikis ($\bar{x} = 2.72$), received lower scores from them.

Research Question Seven: What are the problems encountered by students in the university-owned secondary schools in the South-West, Nigeria in the use of Information environment?

Table 9: Problems encountered by students in the newly upgraded state university	-owned secondary schools in South-West, Nigeria in the use
of Information environment	

S/N	Problems encountered	SD	D	А	SA	\overline{x}	S.D
1.	Issue with the power supply.	56	51	102	128	2.89	1.09
		16.6%	15.1%	30.3%	38.0%		
2.	Services on the network being unstable.	32	38	139	128	3.07	0.93
		9.5%	11.3%	41.2%	38.0%		
3.	Overwhelming amounts of information make it	48	24	126	139	3.06	1.02
	difficult to pinpoint the most pertinent ones.	14.2%	7.1%	37.4%	41.2%		
4.	If there had been sufficient technical support,		42	109	142	3.03	1.04
students' utilization of the information environment for classwork would have been more efficient.		13.1%	12.5%	32.3%	42.1%		
5.	Lack of inclusion in the curriculum of the schools.		71	103	104	2.74	1.08
		17.5%	21.1%	30.6%	30.8%		
6.	Ignorance of the services' locations and methods of	76	109	89	63	2.41	1.04
	use.	22.6%	32.3%	26.4%	18.7%		
7.	There are no internet or network services	51	73	107	106	2.80	1.04

	accessibility.	15.1%	21.6%	31.8%	31.5%				
8.	Insufficient self-assurance to get the services.	111	102	71	53	2.20	1.06		
		32.9%	30.3%	21.2%	15.7%				
9.	Inadequate educational software	71	75	106	85	2.61	1.08		
		21.1%	22.3%	31.5%	25.2%				
10	Inadequate or antiquated computing infrastructure.	72	80	102	83	2.58	1.08		
		21.4%	23.7%	30.3%	24.6%				
11.	Absence of a consistent current awareness	84	86	92	75	2.47	1.09		
	programme.	24.9%	25.5%	27.3%	22.3%				
12.	Access to information is hampered by technological	51	74	124	88	2.74	1.01		
	limitations.	15.1%	22.0%	36.8%	26.1%				
13.	Language barrier when carrying out information	68	115	87	67	2.46	1.03		
	search.	20.2%	34.1%	25.8%	19.9%				
	Weighted mean = 2.70								

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 9 presents information on problems encountered in the use of Information environment among the students. The top three were services on the network being unstable ($\bar{x} = 3.07$), overwhelming amounts of information make it difficult to pinpoint the most pertinent ones. ($\bar{x} = 3.06$) and If there had been sufficient technical support, students' utilization of the information environment for classwork would have been more efficient. ($\bar{x} = 3.03$). In addition, a lack of confidence to utilize the services ($\bar{x} = 2.20$ ignorance of where and how to use the services ($\bar{x} = 2.41$), a language barrier that prevents people from using ($\bar{x} = 2.46$) respectively.

H01: There is no significant relationship between ICT Acceptance and Information Use Environment among students in University-owned secondary schools in South-West, Nigeria. Pearson Product Moment Correlation analysis was used to show the relationship between ICT Acceptance and Information Use Environment among students in University-owned secondary schools in the South-West, Nigeria

Table 10: PPMC showing the relationship between ICT Acceptance and Information Use Environment

Variable	Mean	Std. Dev.	N	R	Р	Remark
Information Use Environment	152.9733	30.4839				
ICT Acceptance			674	.370*	.000	Sig.
	39.4065	5.2482				

*Sig. at .05 level.

Table 10 presents the result of the relationship between ICT acceptance and Information Use Environment and it shows that there was a positive significant relationship between ICT acceptance and Information Use Environment of students in University-owned secondary schools in South-West, Nigeria ($r = .370^*$, N = 674, p<.05). Hence, an improvement in the level of ICT Acceptance among the students in University owned secondary schools should lead to an improvement in their information use environment such that for every level increase in ICT Acceptance, a 13.7% improvement in the information use environment would be attained. The significance of the relationship established the importance of ICT Acceptance to information use environment of the students.

H02: There is no significant relationship between ICT adoption and Information Use Environment among students in University-owned secondary schools in South-West, Nigeria.

Pearson Product Moment Correlation analysis was used to find the relationship between ICT adoption and Information use environment as postulated in hypothesis 3.

Variable	Mean	Std. Dev.	N	R	Р	Remark
Information Use Environment	152.9733	30.4839				
ICT Adoption			674	.584*	.000	Sig.
	83.6439	15.3303				

*Sig. at .05 level

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Table 11 shows that there was a positive significant relationship between ICT adoption and information use environment among students in the University-owned secondary schools in South-West, Nigeria(r = 0.584*, N = 674, p < .05). The relationships established that an improvement in the level of ICT adoption among the students would lead to an improvement in their information use environment such that for every increase in the level of ICT adoption, a 34.1% improvement in information use environment of the students is achieved. The significance of the relationship established that ICT adoption is key to information use among the students.

H03: There is no relative contribution of ICT Readiness, Acceptance and Adoption to the Information Use environment of Students in University-owned secondary schools in South-West, Nigeria

Model	Unstandardized Coefficient		Stand. Coefficient	Т	Sig.	Remark
	В	Std. Error	Beta Contribution			
(Constant)	24.835	7.865		3.157	.002	Sig
ICT Acceptance	1.019	.214	.175	4.772	.000	Sig
ICT Adoption	1.027	.066	.516	15.466	.000	Sig

Table 12: Summary of relative contributions of Acceptance and Adoption on Information Use environment of Students.

Table 12 reveals the relative contribution of the independent variables (Acceptance and Adoption) to the dependent variable (information use environment). The result reveals ICT Adoption as the leading contributor to information use environment of the students under survey (($\beta = 0.516$, t=15, p< 0.05) followed by ICT Acceptance ($\beta = 0.175$, t=4.772, p<0.05). The two (ICT Adoption and Acceptance) were found to contribute significantly to information use environment of the students. This implies that both ICT Adoption and ICT Acceptance are predictors of information use environment of students in students in the university-owned secondary schools in the South-West, Nigeria.

Discussion of findings and implications

The findings of this study revealed the contributions of attitudes of the students towards ICT acceptance with emphases on students' perception, behavioural intention and facilitating condition Perceived usefulness factor is paramount to other constructs in this study as perceived usefulness has been established to be highly acceptable construct out of the constructs under ICT acceptance in this study. Researches also established perceived usefulness as a strong factor of user acceptance (Davis, 1989; Lee, 2010; Tan et al, 2012; Vululleh, 2018). In line with other submissions, Egbe, (2014) concluded that students' perception of usefulness has a significant influence on acceptance and use of technology.

The results of this study also demonstrated how students' attitudes about accepting ICT contributed, with a focus on students' perceptions, behavioral intentions, and enabling circumstances. The perceived utility component is crucial to the other variables in this study since, among the dimensions under ICT acceptability, perceived usefulness has been shown to be highly acceptable. Additionally, studies have shown that user approval is significantly influenced by perceived utility (Davis, 1989; Lee, 2010; Tan et al, 2012; Vululleh, 2018). Egbe (2014) came to the similar conclusion as other submissions: students' adoption and use of technology are significantly influenced by their view of its usefulness.

Additionally, the study demonstrated a strong correlation between perceived utility (PU) and perceived usability (PEOU). The stances of Edmund et al. (2010) and Elkaseh et al. (2010) were supported by this. In their research, Edmund and colleagues observed that the mean coefficient alpha for PU and PEOU was 0.934 and 0.920, respectively. Elkaseh and colleagues discovered that PEOU had a significant impact on technology use. As a result, perceived ease of use (PEOU), which is based on students' evaluation of a crucial component of using technology that would require no effort, is concerned with students' motivation. Technology resources at home and at school, as well as students' access to them, are what determine the facilitating condition that help senior secondary school students in the newly upgraded state-owned university secondary schools in the South-West, Nigeria to accept ICT. Additionally, kids in the twenty-first century learn best in a collaborative setting, or a worldwide classroom, which is made feasible by technology acceptance (Sherrelle, 2012). Kemuah (2016) examined the research done by Kerawalla and Crook (2004) about parental involvement in their kids' usage of ICT at home as well as parents paying attention to their kids' computer use.

Regarding adoption, the conclusion derived from this study's findings is that students in South-West Nigerian university-owned secondary schools were encouraged to use ICT tools by their parents and teachers because they were a good option. Students were also able to study at their own pace, thanks to extensive use of computer resources, which also made it easier for them to collaborate and communicate with their peers about their subjects. Finally, students in this study understood complex or abstract topics better when they used ICT.

According to this study, the internet, mobile phones, and television were the main information sources and services used by secondary students in the information environment of the secondary schools operated by universities in the South West of Nigeria. Students' responses during the focus group discussion support this, since they indicated that it is simpler to find material online and that it is always current. The findings from Tella et al. (2007) and Alio and Aneke (2015) also corroborate this conclusion.

In university secondary schools, the most commonly utilized information resources are television, internet, and mobile phones. Osman (2014) found that 75% of respondents said they frequently use a computer, while 66% said they frequently use the internet. Additionally, the three widely used resources stimulate students' auditory and visual senses, making information searches more engaging for them. According to Tarimo and Kavishe's (2017) observations, young people also devoted a significant portion of their time to using their smartphones and the Internet, with social media activities including talking, downloading, and working being mostly responsible for this.

According to this survey, students in secondary schools controlled by universities in the South-West of Nigeria generally used ICT resources at home, at the school's resource center or library, at the school's ICT center, and finally at a cyber café. The majority of students studied had access to high-end technical devices at home, which increased the rate of adoption and use among the students. This is consistent with Ukpebor and Emwanta's (2012) conclusion that private school students primarily access information at home and rarely at cybercafés. Outcome 91.7% of the sample surveyed for Badri and Rashedi's (2017) findings on school performance, social networking effects, and learning of school children utilize the internet through home access. This study's conclusion is that students use the information environment for the following purposes: searching the internet for general information, checking the website for information regarding school or schoolwork, searching for information after studying a textbook, and for leisure and amusement (watch movies, play games, etc.). The objective of students can be broadly understood to be primarily educational, as assignments are regularly assigned by teachers to promote research. Personal needs related to pursuing interests are also taken into consideration. Osokoya (2015) supports the conclusion that secondary students primarily use for informational, recreational, and academic needs. The aim of information, which students rely on, can be summed up by emphasizing the importance of learning new things and developing oneself for a lifetime of use.

This study also identified the following issues with the use of the information environment that students in South-West Nigeria's university-owned secondary schools faced: services on the network becoming unstable, Overwhelmed by facts, making it difficult to discern the most pertinent ones, if there had been sufficient technological support, students' utilization of the information environment for classwork would have been more effective. issue with the power supply, internet access and network services are unavailable, access to information is hampered by technological limitations, lack of inclusion in the curriculum of the schools, insufficient instructional software inadequate or antiquated computer system lack of frequent current awareness service, language barrier for looking for information, ignorance of where and how to use the services and lack of self-confidence to use the services correspondingly. Internet speed, content, and familiarity with search engines were also noted as issues in an early study by Nolan and Humphyrs (2003).

CONCLUSION AND RECOMMENDATIONS

The study was designed to investigate ICT acceptance and adoption as predictors of information use environment among secondary school students in newly upgraded state universities Southwest, Nigeria. Seven research questions were raised and three null hypotheses formulated alongside the four specific objectives. The findings of this study revealed the level of ICT acceptance that was predicted by the perceived usefulness of technology, perceived ease of use as well as the attitude toward technology. Level of adoption was high which is hinged on the information use environment in the federal university owned- secondary schools. Electronic dictionaries, electronic books, educational softwares and internet, mobile phone and television are the information sources and information services most used, while mobile phone, internet, television and social media respectively are the most used ICT resources for information among secondary school students in newly upgraded state universities in Southwest, Nigeria. The location of their information use environment are their homes, school library or school resource centre as well as the parents' offices for academic and entertainment purposes. The major identified problems in the use of information environment are: instability of network services, that is, internet connectivity, information overload, ineffective use of technology, unstable power supply. It was also revealed that there was a significant relationship between ICT acceptance and Information Use Environment as well as a significant relationship between ICT adoption and Information Use Environment which means that ICT Acceptance had significant relative contribution and ICT Adoption had significant relative contribution among students in Universityowned secondary schools in South-West, Nigeria.

It is therefore recommended that Government should ensure that ICT policy statements are translated into reality; school management should invest in custom-made digital materials with highly relevant content suitable for secondary school students. These will cub the abuse/ misuse of internet; Time to time awareness programme and workshop on the available information sources and the appropriate use of information environment for all secondary school students in order to improve their skills; Policy makers and curriculum planners should include information retrieval skill in the school curriculum. This will bring about employment of experts who will take the students through the rudiments of information retrieval skills. The school management should cater for ease of technology access within the school information environment such as hardware stability and regular maintenance, faster internet access and stable power supply. This will improve access to resources in the students' information use environment for more interactive learning system.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

- Alhumaid, K., Ali, S., Waheed, A., Zahid, E., & Habes, M. (2020). COVID-19 & elearning: Perceptions & attitudes of teachers towards E-learning acceptancein the developing countries. *Multicultural Education*, 6(2), 100-115.
- 2. Ani, O. E. (2013). Accessibility and utilization of electronic information resources for research and its effect on productivity of academic staff in selected Nigerian

OLATUBOSUN BUSUYI AKOLE MR., CLN; ISAR J Sci Tech; Vol-2, Iss-5 (May- 2024): 22-41

universities between 2005 and 2012 (Doctoral dissertation, University of South Africa).

- Adeniran, P. (2011). User satisfaction with academic libraries services: Academic staff and students perspectives. *International journal of library and information science*, 3(10), 209-216.
- Nkanu, W. O. (2008). Utilization of information and communication technology facilities in Nigerian university libraries. *Information Technologist (The)*, 5(2), 1-6.
- Ahmed, Y. A., Mohamed, M. M., Ali, A. F., Alasso, M. M., & Ahmad, A. D. S. M. N. (2021). Evaluating Students Perspectives on ICT Readiness in Somali Higher Education towards Teaching--Learning Acceptance. *arXiv* preprint *arXiv:2108.11455*.
- Adeniran, P. (2013). Usage of electronic resources by undergraduates at the Redeemer's University, Nigeria. *International Journal of Library and Information Science*, 5(10), 319-324. Retrieved July, 13, 2015, from <u>http://www.academjournal.org/IJLIS</u>.
- Akanwa, P. C., & Mbagwu, I. F. (2016). SCHOOL LIBRARY SERVICES AND STUDENTS'SATISFACTION IN THE SCHOOL LIBRARY OF FEDERAL GOVERNMENT GIRLS COLLEGE OWERRI. *Information Technologist*, 13(1).
- Aduwa-Ogiegbaen, S. E., & Iyamu, E. O. S. (2005). Using information and communication technology in secondary schools in Nigeria: Problems and prospects. *Journal of educational technology & Society*, 8(1), 104-112. Retrieved September 22, 2023 from <u>https://www.scirp.org/reference/referencespapers?referenceid</u> <u>=1929782</u>
- Ali, G. E., & Magalhaes, R. (2008). Barriers to implementing e-learning: a Kuwaiti case study. *International journal of training and development*, *12*(1), 36-53. Retrieved March 22, 2024 from <u>https://www.learntechlib.org/p/69811/</u>
- Akinsolu, A. O. (2012). Resource utilization and internal efficiency in Nigerian secondary schools: Implications for socio problems of education. *International Journal of Sociology and Anthropology*, 4(1), 23.
- Alio, A. N., & Aneke, C. (2015). Correlates of Internet use among secondary school students in Nigeria. *International Journal of Education, Learning and Development*, 4(1), 30-39.

- Al-Barashdi, H., Bouazza, A., & Jabur, N. (2015). Smartphone addiction among university undergraduates: a literature review. *Journal of Scientific Research and Reports*, 4(3), 210-225. https://doi.org/10.9734/JSRR/2015/12245
- 13. <u>B</u>
- Becta, A. (2004). A review of the research literature on barriers to the uptake of ICT by teachers. *London, UK, BECTA*) http://publications. becta. org. uk/display. cfm.
- 15. Badri, M., Alnuaimi, A., Al Rashedi, A., Yang, G., & Temsah, K. (2017). School children's use of digital devices, social media and parental knowledge and involvement-the case of Abu Dhabi. *Education and Information Technologies*, 22, 2645-2664. Retrieved September 22, 2023 from file:///C:/Users/mr%20bosun/Downloads/School childrens us

<u>e of digital devices social me.pdf</u>

- Bamidele, I. A. (2015). The library use habits of senior secondary school students in Ogun State, Nigeria. International Journal of Advanced Library and Information Science, 3(1), 170-181. file:///C:/Users/mr%20bosun/Downloads/thelibraryusehabitso fseniorsecondaryschoolstudentsinOgunStateNigeria.pdf
- Chen, C. Y., & Chung, W. L. (2012). Research on the learning effects of multimedia assisted instruction on mandarin vocabulary acquisition for Vietnamese students (Part II): A case study. *Educational Research and Reviews*, 7(14), 315. https://academicjournals.org/journal/ERR/article-full-textpdf/6FB098A4875
- Choo, C. W. (2001). Environmental scanning as information seeking and organizational learning.[version électronique] Information Research, 7 (1), 29p. Saisie de http://InformationR. net/ir/7-1/paper112. html.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Dhanavandan, S., Esmail, S. M., & Nagarajan, M. (2012). Access and awareness of ICT resources and services in medical college libraries in Puducherry. *Library Philosophy* and Practice (e-journal), 750. Retrieved on 5th may 2017 from: http://digitalcommons.unl.edu/libphilprac/750.

- Egbe, N. G. (2014). An Exploration of Sources of Funding ICT in Nigerian Academic Libraries. Retrieved December 19, 2018.from <u>www.negbe.blogspot.com</u>.
- Elkaseh, A., Wong, K. W., & Fung, C. C. (2015). A review of the critical success factors of implementing E-learning in higher education. *International Journal of Technologies in Learning*, 22(2).
- 23. Fullan, M. (2015). *The new meaning of educational change*. Teachers college press. https://doi.org/10.4324/9780203986561
- Gu, X., Zhu, Y., & Guo, X. (2013). Meeting the "digital natives": Understanding the acceptance of technology in classrooms. *Journal of Educational Technology & Society*, *16*(1), 392-402.
- Halili, S. H., & Sulaiman, H. (2019). Factors influencing the rural students' acceptance of using ICT for educational purposes. *Kasetsart Journal of Social Sciences*, 40(3), 574-579.
- 26. Igwe, K. N., Aliyu, M. B., & Ukah, E. O. (2013). The Information Environment of Teachers of Science Subjects in Public Secondary Schools in Offa Metropolis, Nigeria. *Higher education of social science*, 4(2), 1-7. <u>https://www.semanticscholar.org/paper/The-Information-Environment-of-Teachers-of-Science-</u> IgweAliyu/874f830108d0eafd3190fbbc4c6fad8199a376c7
- 27. Kerawalla, L., & Crook, C. (2002). Children's computer use at home and at school: Context and continuity. *British Educational Research Journal*, 28(6), 751-771.
- Kerawalla, L., & Crook, C. (2005). From promises to practices: The fate of educational software in the home. *Technology, Pedagogy and Education*, 14(1), 107-125.
- Kalejaiye, O. J., Fabunmi, A. F., & Adeoye, A. J. (2011). Role of school media centres in technology integration in Nigerian schools: an exploration. Retrieved from <u>https://nopr.niscpr.res.in/bitstream/123456789/12841/4/</u> <u>ALIS%2058(3)%20211-218.pdf</u> on September 14th, 2023.
- 30. Karp, M. J. M., & Fletcher, J. (2014). Adopting new technologies for student success: A readiness framework. Retrieved from, <u>https://ccrc.tc.columbia.edu/publications/adopting-new-technologies-for-student-success.html</u> on 14th September, 2023

- Khan, M. T. (2018). Taylor's information use environments (IUEs): an assessment. *Pakistan Library & Information Science Journal*, 49(3), 13-25. Retrieved from, <u>https://www.researchgate.net/publication/327079141</u> on 9th July, 2023.
- 32. Mingaine, L. (2013). Leadership Challenges in the Implementation of ICT in Public Secondary Schools, Kenya. Journal of education and learning, 2(1), 32-43. Retrieved from, <u>https://ijsse.com/sites/default/files/issues/2013/v4i1/paper/Pap</u> <u>er-20.pdf</u> on 14th September, 2023
- Liew, C. L., Foo, S., & Chennupati, K. R. (2001). Towards a new generation of information environment for the use of edocuments. *Journal of information science*, 27(5), 327-342. Retrieved March 22, 2023 from https://www.learntechlib.org/p/94504/.
- Lee, M. C. (2010). Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation–confirmation model. *Computers & education*, 54(2), 506-516. http://dx.doi.org/10.1016/j.compedu.2009.092
- 35. Machumu, H., Rabiel, A., & Almasi, M. (2018, June). ICT as a pedagogical tool in secondary schools teaching and learning: policy and practices interplays. In *EdMedia+ Innovate Learning* (pp. 1827-1832). Association for the Advancement of Computing in Education (AACE). .http://www.researchgate.net/ <u>publication/326069057</u>.
- Mikre, F. (2011). The roles of information communication technologies in education: Review article with emphasis to the computer and internet. *Ethiopian Journal of Education and Sciences*, 6(2), 109-126.
- Molla, S., & Seyoum, Y. (2022). Status of ICT Integration in Secondary Schools: Dire Dawa City Administration in Focus. *Education Research International*, 2022.
- BENTAHERP C. and Rajaa M. (2022). A Systemic Approach On The Initiation And Exhibition Of Technology In The Logistics And Supply Chain Industry - International Journal of Innovative Science, Engineering & Technology, Vol. 09 Issue 01,
- Machumu, H., Rabiel, A., & Almasi, M. (2018, June). ICT as a pedagogical tool in secondary schools teaching and learning: policy and practices interplays. In *EdMedia+ Innovate Learning* (pp. 1827-1832). Association for the Advancement

OLATUBOSUN BUSUYI AKOLE MR., CLN; ISAR J Sci Tech; Vol-2, Iss-5 (May- 2024): 22-41

of Computing in Education (AACE). http://www.researchgate.net/publication/326069057.

- 40. Mishra, J., Allen, D., & Pearman, A. (2015). Information seeking, use, and decision making. *Journal of the association for information science and technology*, 66(4), 662-673. Retrieved from https://www.academia.edu/61946547/Information seeking us e and decisionmaking on 17th August, 2023
- Pervez, Z., Dahar, M. A., & Maryam, A. (2017). Impact of school culture on student's academic achievement at secondary level. *Science International*, 29(3), 565-568.
- Ratheeswari, K. (2018). Information communication technology in education. *Journal of Applied and Advanced research*, 3(1), 45-47.
- Salehi, H., & Salehi, Z. (2012). Challenges for using ICT in education: teachers' insights. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 2(1), 40.
- Teo, T. (2019). Students and teachers' intention to use technology: Assessing their measurement equivalence and structural invariance. *Journal of Educational Computing Research*, 57(1), 201-225. <u>https://www.journal.sagepub.com</u> on 30th August,2023. DOI:10.1177/0735633117749430.
- Anderson, J., Van Weert, T., & Duchâteau, C. (2002). Information and communication technology in education: A curriculum for schools and programme of teacher development.
- Venkatesh, V., Ajzen, I., and Davis, F. D. (2003) Unified theory of acceptance and use of technology: A synthesis and elaboration, seminar paper Quarterly, vol. 27, no. 3, pp. 425– 478.
- 47. Venkatesh, V., Davis, F., & Morris, M. G. (2007). Dead or alive? The development, trajectory and future of technology

adoption research. *The Development, Trajectory and Future* of Technology Adoption Research (April 27, 2007). Venkatesh, V., Davis, FD, and Morris, MG "Dead or Alive, 267-286.

- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.
- Yusuf, M. O. (2007). Trends and barriers on the integration of information and communication technology in the Nigerian school system. *in Studies in Curriculum*. <u>https://studylib.net/doc/16112172/trends-and-barriers-on-theintegration-ofinformation</u>
- Yusuf, M. O. (2005). Information and communication technology and education: Analysing the Nigerian national policy for information technology. *International education journal*, 6(3), 316-321.
- Zain, N., & Mahmud, M. (2018). Acceptance and readiness of mobile Learning integration among teachers of Dyslexic students: a preliminary study. *Int J Multimed Appl*, 157-68. DOI.10.5121/ijma.2018.10613. Retrieved date 24th July 2023.
- Marikyan, M., & Papagiannidis, P. (2021). Unified theory of acceptance and use of technology. *TheoryHub book*. Available at https://open.ncl.ac.uk / ISBN: 9781739604400
- 53. Mbagwu, I. (2022). Staffing and Supervision as Predictors of Students' Satisfaction with Library Services in Public Secondary Schools in Imo State. *Library Philosophy & Practice*. Retrieved <u>https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1</u> <u>4018&context=libphilprac</u>