Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

Use of Smart Phones and Access to Library Resources by Undergraduates in Lagos State, Nigeria

OGUNGBENI, John Igbekele
Systems Librarian, Lagos State University
ogungbeni@gmail.com

BOKOH, Mausi
Lecturer, Department of Library and Information Science
Lagos State University
mausi.bokoh@lasu.edu.ng

ASHIRU, Bolanle Badirat
Serials Librarian, Lagos State University
badirat.ashiru@lasu.edu.ng

Abstract

Smartphones have become companions of most undergraduates in Nigeria. A study of the use of these smartphones in their academic pursuit most especially in accessing library resources is imperative. This study adopted a survey research design using a questionnaire to gather information from undergraduates of Lagos State University. The total number of respondents was 251 across various faculties from a sample size of 540. Results of the study showed that undergraduates of Lagos State University use their smartphones to access e-books, e-journals, e-magazine and newspapers. The study found out that the type of phone, memory and storage capacities are determinants for use of a smartphone to access library resources. This study concludes that undergraduates use their smartphones to access some library academic resources like e-books because smartphone usage for daily activities has become an inevitable part of their lives.

Keywords: Smartphone, library resources, undergraduates, academic libraries, Nigeria.

Introduction

The rapid advancement of technology has revolutionized the way users access information and interact with the world. Smartphones, in particular, have become an integral part of daily lives, providing instant connectivity and access to a wide range of resources. This technological shift has had a significant impact on various aspects of society, including education. In the past, undergraduate students relied on libraries as primary sources of information for their academic pursuits. However, with the proliferation of smartphones, students now have a powerful tool at their fingertips that provide them with quick and convenient access to a vast amount of information.

Smartphones are equipped with multimedia phone features, which include camera function, sound recording, video display and applications. These features assist students to drive their learning process and dreams effectively. Thus, most smartphone and recreational applications are addictive to both the higher level and lower level students, which, in turn, affects their academic performance (Kibona & Mgaya 2015). These applications include WhatsApp, Twitter and Facebook. Learning systems have emerged over the years and involve ubiquitous learning (u-learning), which is being powered by smartphone capabilities in the learning environment. ubiquitous learning (u-learning) combines the characteristics of electronic learning (e-learning) and mobile learning (m-learning), in driving forward different forms of learning through the internet connection process in the 21st century (Jung, 2014).

A smartphone is a portable, full-fledge computer or device that offers advanced and sophisticated PC like capabilities that take the device beyond phone calls and SMS messages. Smartphones are wireless transmission devices that can receive and transmit via digital or analogue shortwave (Rouse, 2007). The smartphone is a general term for the kind of phone that has an independent operating system like a PC and can connect with wireless networks through mobile communications networks (Baike, 2013). In addition, there are wide range of features and functions available for smartphones. These features are preinstalled on the phone, while others are added. It is germane to note that, these features dependent on the phone's built-in capabilities, they also vary according to the mobile preferences of the users.

Smartphone technology has made communication and access to information very convenient and timely for users, whether from the comfort of their home and offices or while they are on the move using their cellular phones or the personal digital assistants (PDAs) (Batool and Asghar, 2012). The device enables users to access information without being limited. Through the adoption and use of smartphones, access to library and library services have changed and transformed in the world. The features of these smartphones help in accomplishing library tasks and carry out related library services. Libraries of all sizes and types are adopting online and virtual collections, though libraries still continue to offer both print and electronic collections for users.

Transformations and improvements have also influenced academic libraries and their services, such as automation, digital and virtual libraries, Web 2.0, Library 2.0, and Library 3.0 (Intelligent Libraries). They are all web applications that have been developed to help enhance access to and delivery of library services and interaction with users. The transformations that have taken place through this medium make library staff improve in terms of their services, roles, responsibilities, skills, and competencies. On the other hand, it encourages undergraduates to use the libraries' virtual, online content and materials to their maximum satisfaction. The advent of the internet and its associated web technologies have influenced the way libraries provide information resources and services to the users and the way users choose to access information resources (Chowdhury & Margariti 2004).

Libraries should provide WI-FI facilities for users, design library apps for android and windows-based smartphones, and develop effective use of mobile devices for library resources and services. However, the implementation of ICT facilities in libraries depends on adequate funding and upgrading of hardware, software purchase, license fees, maintenance

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

contracts, and telecommunications and subscription costs to e-resources. Libraries have crucial roles to perform in creating awareness among undergraduates on the availability of electronic databases including developing a functional library website, installing the mobile library applications and physically meeting with students to educate them on the needs, uses and benefits of using electronic resources (Matheus, 2021).

Every person may stay linked to society thanks to smartphones and the software (Apps) that can be downloaded to them, but undergraduate students in particular benefit greatly. Students may easily type notes and organize them on mobile devices, while calculator apps can assist with math issues. Similar to how they may access and read e-books, e-journals, and electronic databases, mobile devices help replace bulky print textbooks, Undergraduate students benefit greatly from using smart phones because they can easily access the internet to find the information they need, communicate with friends and family, make and receive calls, send and receive text messages, record, watch, and upload videos, take pictures, play games, and take advantage of other entertainment features. Due to the significant advantages of smart phone use among undergraduate students, many students have developed smartphone addictions that significantly impact their ability to focus on their academic work (Sambo, Lawal, & Helen 2021). However, It has not been clearly established in literature that undergraduates are taking advantage of their addiction to smartphones in their use of library resources. This study investigated the use of smartphone and access to library resources by undergraduates in Nigeria.

Statement of the problem

The purpose of this research is to investigate the use of smartphones and access to library resources among undergraduate students. With the widespread adoption of smartphones and their increasing role in students' lives, it is essential to understand how this technology impacts their engagement with library resources and services. Thus, despite the prevalence of smartphones among students, there is a lack of comprehensive understanding regarding how undergraduates utilize these devices to access library resources. It is crucial to explore the frequency, duration, and types of library resources accessed through smartphones to grasp the scope and implications of smartphone usage for accessing academic materials.

In addition, identifying the resources of the library that are accessed using smartphones is crucial for a university library. An important question to also ask is whether students consider the features of smartphones for accessing library resources as part of their academic needs. Understanding these factors is crucial for libraries and educational institutions to effectively cater to students' needs and provide enhanced mobile-friendly services. Thus, it is important to explore whether there are any variations in smartphone usage patterns for accessing library resources among undergraduate students based on demographics such as gender, academic discipline, or year of study. By identifying potential differences, libraries and educational institutions can tailor their services and support to meet the specific needs and preferences of different student groups effectively.

However, the impact of using smartphones in accessing library materials and services by undergraduates has not been empirically investigated in Lagos State University. In addition,

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

the undergraduates' preference for using smartphones in accessing library resources and the challenges encountered by undergraduates when using smartphones to access library resources and services in a Lagos State university context have not been reported in the Library and Information Science literature. This is why the current study examined undergraduates' use of smartphones for accessing library materials and services in Lagos State University, Nigeria.

Research questions

1. What library resources do undergraduates access using smartphones?

2. What are the factors influencing undergraduates' decisions to use smartphones for accessing library resources?

3. How do features of smartphone affect its use in accessing library resources among undergraduates?

4. Are there any differences in the usage patterns of smartphones between male and female undergraduates for accessing library resources?

Research Hypothesis

HO_1: There is no significant difference in the usage patterns of smartphones between male and female undergraduates for accessing library resources

Literature review

The first idea that finally led to the development of the smartphone was developed in the 1970s. However, International Business Machines (IBM) didn't develop a mobile phone prototype with Personal Digital Assistant (PDA) characteristics until 1992. The same year, the device was shown off at COMDEX, a trade show for the computer industry. BellSouth developed a more advanced version of the phone in 1994 under the name Simon Personal Communicator. This is the first gadget that truly qualifies as a smartphone.

In addition to calling and being called, the Simon Personal Communicator could also transmit emails and faxes (The Snugg, 2014). This review focuses on the pertinent research and studies on undergraduate students' use of smartphones, including topics such as the types of smartphones they use, how they access information using their smartphones, how they use information obtained from their smartphones, how they use information obtained from their smartphones, how well they use information obtained from their smartphones, how well they meet their information needs using smartphones, and factors that work against their use.

However, Smartphone apps enable students to access a variety of electronic media and information in a convenient way. Seilhamer, Chen & Sugar (2013), asserted that, there are significant factors that make mobile learning more attractive to students, such as convenience, flexibility, engagement and interactivity. Learning in academic institutions is now innovative

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

as a result of smartphone and other media in enhancing and advancing 21st century needed skills and knowledge (Tulenko and Bailey, 2013; Emerson & Berge, 2018). Students have experiences of digital surroundings in a tactile and personal manner, which is brought about by some mobile devices, including tablets and smartphones (Cano, 2012). However, the role of smartphone and mobile technologies in education cannot be ignored (Tikoria & Agariya, 2017).

Darko-Adje (2019) argued that the use of smartphones by students improves collaborative learning through its connection to the internet. This statement implies that the use of smartphones encourage students to be more engaged in learner-centred participation learning. This is a clear prove on supports that smartphones have brought to the students; it enhances their understanding by increasing academic performance, social media participation and information sharing; it promote their social skills by giving them opportunities to seek academic assistance and support, and many more (Mokoena, 2012).

Mi et al. (2016) asserted that with rapid rise on the usage of smartphones, libraries can leverage this by proving access to e-resources through mobile phones and extend learning spaces in real and virtual worlds. Saxena and Yadav (2013) voiced that libraries should create their own mobile sites with mobile friendly interface, which allow users to rearrange its control and navigation to suit the size of the screen. Similarly, Bushhousen et al. (2013) in a study on smartphone use at a University of Health Science Center in the United States of America, had the following suggestions from respondents: provision of access to literature databases by the university; development of mobile-friendly version websites; improve internet connectivity and provide access to full text electronic journals which will be utilised via mobile smartphones.

Students are interested in ways they can learn and at the same time have their attention captivated. They may be provided with autonomy over their educational experience (Buck et al., 2013) and access to standard learning contents and opportunities (Day & Erturk, 2017). As a matter of fact, one of the most important features of the ever evolving features of the smartphone is its small or rather portable size and its ability to be used not only in the classroom, but also outside the classroom (Mokoena, 2012). This offers an edge over the traditional library for learning and teaching, which deals with books and chalk/marker boards behind the four walls of education institutions.

White and Mills (2012) surveyed 403 Japanese university students regarding their adoption and use of smart phones, especially for language learning purposes. They found that students are increasingly adopting these mobile devices for a personal use, but they are still reluctant to use them for educational purposes. The study revealed that students‟ attitude towards the use of these devices for learning purposes have become more positive. Through an online survey, Song and Lee (2012) tried to investigate the ownership of mobile devices (smart phones, tablet PCs and e-readers) among 101 international students enrolled at the college of Business at the University of Illinois, USA, especially in the shade of the availability of mobile services introduced by academic libraries. It also revealed that although students were interested more in communication, they were also using mobile devices to access Social Networking Sites (SNSs), search for information and to have fun as well.

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

Regarding the use pattern of smart phones by library and information science students, there was a serious attempt made by Adomi (2006) who tried, through a systematic random sampling technique, to investigate the usage patterns of these mobile devices among 110 students at the Department of Library and Information Science, Delta State University, Nigeria. Findings revealed that a majority of the students were using mainly apps for making communication with their parents/relatives/friends as well as sending and receiving messages. Family matters, followed by finance and academic matters constitute the most conversation topics on the smart phones. Frequent network/call failure, followed by the high cost of recharge cards/airtime, limited area of coverage as well as interconnectivity problems were the most significant challenges faced by DLIS‟s students at Delta State University when using smart phone apps.

Sharma and Madhusudhan (2017) advised that library authorities should lay down policies towards the use of mobile devices and develop new tools and mobile apps for delivering access to e-resources. Correspondingly, Chaputula and Mutula (2018a) stated that libraries need to draft Information and Communication Technology (ICT) policies that support the use of mobile smartphones to access e-resources. Lack of skilled librarians hampers the deliverance of access to e-resource on smartphones. Chipatula and Mutula (2018a) suggested that university and college library staff should be given training on how to manage and access e-resources using smartphones prior to implementations. To add, libraries should implement continuous professional development programmes related to deliverance of library e-resources, through mobile phones to ensure that library staff continues to update their knowledge and skills, as technology is very dynamic. Equally, George, Maina and Wanangeye (2016) recommended that the government should initiate and implement training programmes in all academic institutions on the use of mobile phones technology in accessing and utilising e-resources including seminars and workshops and by involving all the stakeholders in various academic libraries.

Sharma and Madhusudhan (2017) proposed that libraries should provide WI-FI facilities for users, design library apps for android and windows-based smartphones, and develop effective use of mobile devices for library resources and services. Libraries should invest in ICT infrastructure (Sejane, 2017). Chisenga (2006) specified that the implementation of ICT facilities in libraries depends on adequate funding and upgrading of hardware, software purchase, license fees, maintenance contracts, and telecommunications and subscription costs to e-resources.

Methodology

The research design adopted for this study is survey research design. The population of the study consists of 43,362 (Lagos State University, 2024) students of Lagos State University. A questionnaire designed by the authors was the instrument for data collection. The questionnaire collected demographic information of respondents that are relevant to the study and information about their use of smart phones for library services. Purposive sampling technique was used to select 300 level students across nine (9) faculties of Lagos State University. 300 level students were selected because they have enough experience with the use of smartphones as undergraduates and are free from encumbrances associated with

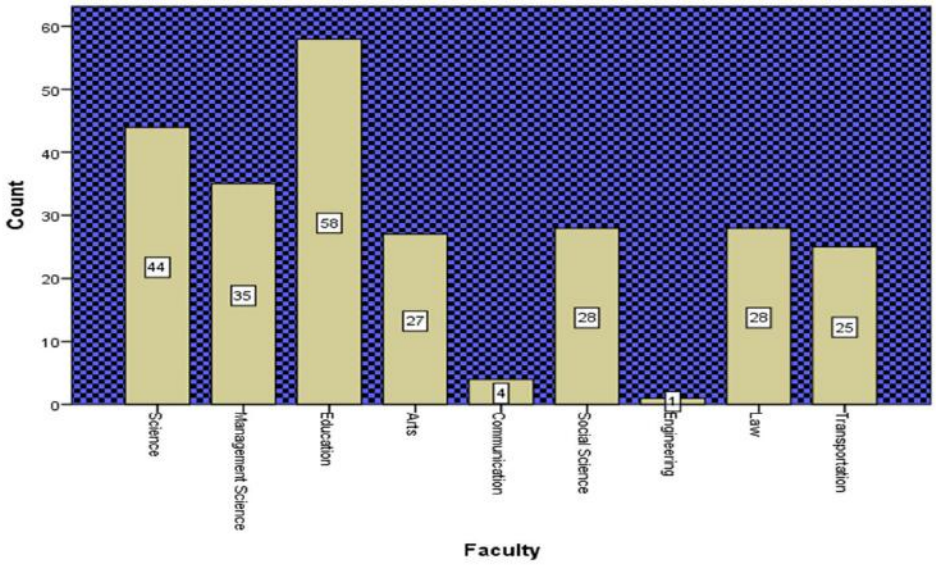
Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

students in their final year, which may make final year students not to be good respondents for this study. The nine faculties selected are: Science, Arts, Education, Engineering, Communication and Media Studies, Transport and Logistics, Management Sciences, Social Sciences and Law. These faculties were selected because they are old faculties that have 300 level students.

Sixty (60) students were selected from each faculty using random sampling technique, making the total sample to be five hundred and forty (540). The authors got the lecture time tables for the 300 level students in the nine faculties. Copies of the questionnaire were taken to lecture halls and distributed randomly to students immediately after faculty courses that involve 300 level students in all the departments in a faculty. The completed questionnaire were collected on the spot. Data analysis was carried out using frequency, simple percentages, mean and standard deviation. The research hypothesis was however tested using t-test.

Data Analyses

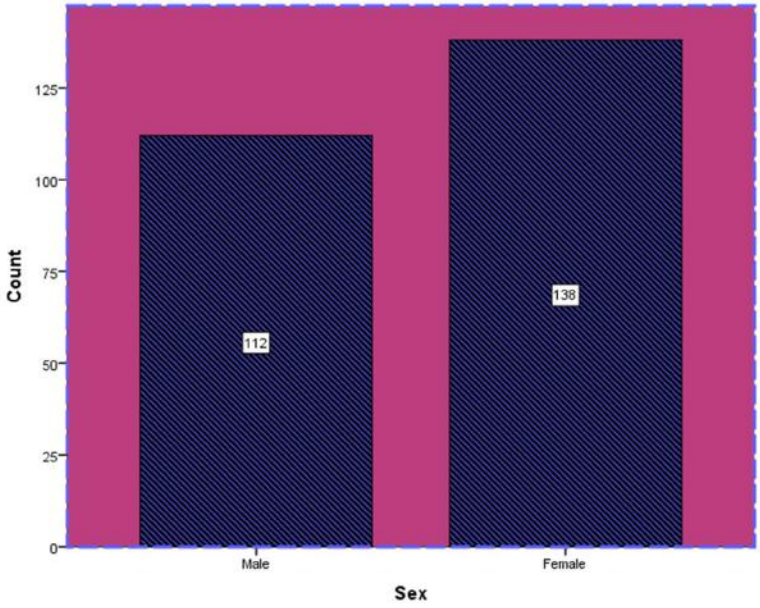
Demographic Information of respondents



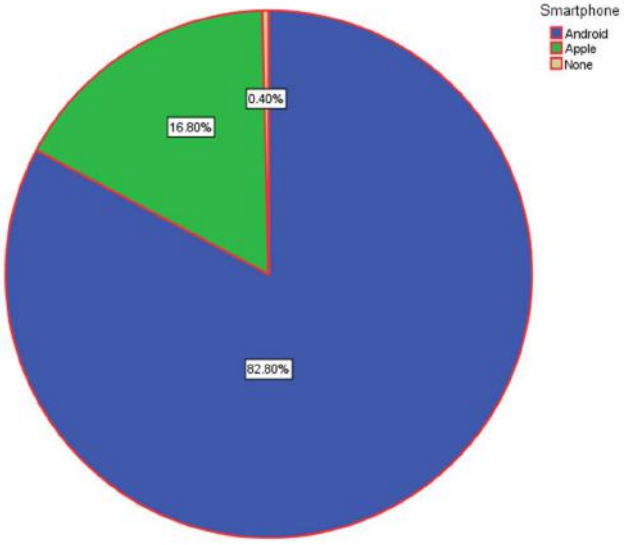
The bar chat above shows the demographic information of respondents of the study on faculty bases. The bar chat above reveals that 58 (23.2%) of the respondents are from faculty of Education, Faculty of Science 44 (17.6%) of respondents from Science, 35(14.0%) were respondents from Faculty of Management Science. Also, 29 (11.2 %), of respondents were from Faculty of Social Science, Faculty of Law 28 (11.2%), Faulty of Arts 27 (10.8%), Faculty of Communication 4(1.16%), School of Transport 25 (10.0%) and Faculty of

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

Engineering 1(0.4 %) respectively.



The bar chat shows the demographic information of respondents of the study on Sex. The bar chat above reveals that 138 (55.0%) of the respondents were Female students and 113 (45.0%) were Male students. The results on demographic information of Undergraduate students that are studied showed that there were more females students than their male counterparts.



Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

The Pie chat shows the demographic information of respondents of the study on smartphone. The Pie chat above reveals that 207 (82.80%) of the respondents used Android. Also, 42 (16.80%) of the respondents uses Apple and 1 (0.40%) of respondents used none. The results on demographic information of Undergraduate students that was studied reveals that there were more Android phones in use than apple phones among students in Lagos State University.

Research question 1
What library resources do undergraduates access using smartphones?

S/N	Resources	Once in a month	Two days in a week	Every day	Never	x	S.D
1	E-books	77 (30.7%)	94 (37.5%)	28 (11.2%)	52 (20.7%)	2.42	1.020
2	E-journals	61 (24.3%)	103 (41.0%)	34 (13.6%)	52 (20.7%)	2.28	1.229
3	E-dictionary	41 (16.3%)	50 (19.9%)	130 (51.8%)	30 (12.0%)	2.27	.877
4	Library catalogue	49 (19.5%)	48 (19.1%)	47 (18.7%)	107 (42.6%)	2.15	1.171
5	Library Manual	45 (18.0%)	42 (16.7%)	48 (19.2%)	116 (46.2%)	2.07	1.161
6	Library App	27 (10.8%)	41 (16.4%)	34 (13.6%)	148 (59.2%)	1.79	1.071
			Weighted mean = 2.16				

The table 1 present the data collect from the respondents on the type of library resources accessed using smartphone. The results revealed that the frequency of usage for library resources is generally low, with most respondents rarely using the resources. E-books (M = 2.42, SD = 1.02) and e-journals (M = 2.28, SD = 1.23) are accessed more frequently, with most users engaging with them at least once a month or twice a week. However, resources like the library catalogue (M = 2.15, SD = 1.17), library manual (M = 2.07, SD = 1.16), and the library app (M = 1.79, SD = 1.07) are used less frequently, indicating limited engagement with these resources, especially the library app, which has a particularly low frequency of use, with the majority never using it.

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

Research Question 2
What are the factors influencing undergraduates' decisions to use smartphones for accessing library resources?

S/N	Factors	SA	A	U	D	SD	x	S.D
1	Availability of digitized library resources	100 (40.0%)	95 (38.0%)	18 (7.2%)	25 (10.0%)	12 (4.8%)	3.98	1.144
2	Relevance of available digital resources to information needs	83 (33.2%)	108 (43.2%)	27 (10.8%)	22 (8.8%)	10 (4.0%)	3.93	1.073
3	Preference for electronic resources	79 (31.6%)	99 (39.6%)	37 (14.8%)	25 (10.0%)	10 (4.0%)	3.85	1.098
4	Availability of free Wifi	103 (41.2%)	73 (29.2%)	17 (6.8%)	33 (13.2%)	24 (9.6%)	3.79	1.355
5	Recency of available library resources	69 (27.6%)	91 (36.4%)	64 (25.6%)	20 (8.0%)	6 (2.4%)	3.79	1.013
6	Models of smartphones	64 (25.6%)	79 (31.6%)	41 (16.4%)	43 (17.2%)	23 (9.2%)	3.47	1.290
7	Distance of the library from my faculty	58 (23.2%)	66 (26.4%)	29 (11.6%)	50 (20.0%)	47 (18.8%)	3.15	1.459
		Weighted mean = 3.70						

The result reported in table 2 shows that Availability of digitized library resources (x = 3.98) ranked highest by the mean score rating and was followed in succession by Relevance of available digital resources to information needs (x = 3.93) and Preference for electronic resources (x = 3.85). The least item indicated by the respondents was Distance of the library from my faculty (x = 3.15) respectively.

How do features of smartphone affect its use in accessing library resources among undergraduates? V large = Very large, V small = Very small, N effect = No effect

S/N	Features	V large	Large	Small	V small	N effect	x	S.D
1	Android/Iphone	74 (29.2%)	100 (40.0%)	29 (11.6%)	39 (15.6%)	9 (3.6%)	3.76	1.141
2	Memory	63 (24.8%)	86 (34.4%)	52 (20.8%)	40 (16.0%)	10 (4.0%)	3.60	1.141
3	Storage	50 (20.0%)	89 (35.6%)	55 (22.0%)	47 (18.8%)	9 (3.6%)	3.50	1.117
4	Colour	39 (15.6%)	9 (3.6%)	42 (16.8%)	73 (29.2%)	100 (40.0%)	1.42	0.250

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

5	Shape	45 (18.0%)	78 (31.2%)	74 (29.6%)	41 (16.4%)	12 (4.8%)	1.41	0.106
		Weighted mean = 3.49						

Result reveals that the type of smartphone, android/iphone (x = 3.76) ranked highest by the mean score rating and was followed in succession by the memory of the phone (x = 3.60), the phone storage (x = 3.50), phone color (x = 1.42), and phone shape (x = 1.41) respectively.

Test of hypothesis

Table 1: Paired samples t-test on significant difference in the usage patterns of smartphones between male and female undergraduates for accessing library resources

Work		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Male - Female	1.08517	1.95922	.06061	1.20409	.96624	1.795	1044	.000

The result of analysis of the significant difference in the usage patterns of smartphones between male and female undergraduates for accessing library resources using paired samples t-test is shown in Table 1.

The result shows that t_{cal} = 1.795 is less than t_{tab} = 1.96. Therefore, the null hypothesis that says there is no significant difference in the usage patterns of smartphones between male and female undergraduates for accessing library resources is upheld. It therefore implies that there is no significant difference in the usage patterns of smartphones between male and female undergraduates for accessing library resources.

Discussion of Findings

The result of findings on demographic information of respondents of the study on faculty bases, the bar chat reveals that 58 (23.2%) of the respondents are from faculty of Education, Faculty of Science 44 (17.6%), Faculty of Management Science 35(14.0%), Faculty of Social Science 29 (11.2 %), Faculty of Law 28 (11.2%), Faulty of Arts 27 (10.8%), Faculty of Communication 4(1.16%), School of Transport 25 (10.0%) and Faculty of Engineering 1(0.4 %). The results on demographic information on Faculties showed that there were more respondents from faculty of Education than other faculties.

The findings on the library resources that are accessed by undergraduates in Nigeria using smartphones revealed that E-books, E-journals, and E-dictionary were the major library resources accessed. This was because the items mentioned above were the items ranked above

Jewel Journal of Librarianship
ISSN: 2141-3908 (Print); ISSN: 2736-0881 (Online)
https://www.jeweljournals.com/
Volume 20, Issue 1, 2025

the weighted mean of 2.16 which identified the library resources access able by undergraduate students. The findings agreed with Adeoye and Popoola (2011), who asserted that, for effective learning process, learners must have access to necessary information materials and resources. These resources might be in tangible (i.e., printed resources) and intangible (i.e., electronic resources) format. They express that librarian is responsible for providing the right information to the right person at the right time.

Regarding the features of smartphones used by undergraduates to access library resources, majority of the respondents used android phones in comparison to iPhones. This can simply be attributed to the fact that iphones are more expensive than android phones. The memory and storage capacity of a smartphone are other major considerations for undergraduates in accessing library resources. Phones with high memory and storage capacity will download large files faster.

The result of the only hypothesis of this study showed that both genders use their phones for academic purposes most especially in accessing library resources.

Conclusion

Smartphone technology has greatly enhanced the convenience and immediacy of communication and information access for users, whether they are at home, in the office, or on the go with their mobile devices or personal digital assistants. This study concludes that undergraduates use their smartphones to access some library academic resources like e-books because smartphone usage for daily activities has become an inevitable part of their lives. It was also established from the findings of this study that there is no significant difference between the usage patterns of the male and female undergraduates in the usage of smartphones in accessing library resources. The use of smartphones will continue to influence how often and how long undergraduate students access library resources. It is crucial to comprehend the effects of technology on engagement with library resources and services. This shift in technology has significantly affected many areas of society, including education,

Recommendations

1. Academic libraries need to focus on creating websites and applications that are optimized for mobile use.
2. Libraries should offer training and resources to assist students in learning how to effectively access library resources using their smartphones.
3. To address issues related to expensive data plans and unreliable internet connectivity, universities should contemplate partnering with telecommunication companies to offer discounted data plans for students.
4. Faculty members should be motivated to incorporate library resources into their course content and assignments, emphasizing the ease of accessing these resources through smartphones.

References

Darko-Adjei, N. (2019). The Use and Effect of Smartphones in Students' Learning Activities: Evidence from the University of Ghana, Legon. *Library Philosophy and Practice (e-journal).* 2851. https://digitalcommons.unl.edu/libphilprac/2851

Day, S. & Erturk, E. (2017). E-Learning objects in the cloud: SCORM compliance, creation and deployment options. *Knowledge Management and E-Learning,* 9(4), 449–467.

Mokoena, S. (2012). Smartphones and regular cellular phones: assessing their impact on students' education at the University of Zululand. *Doctoral dissertation*, University of Zululand.

Tikoria, J., & Agariya, A. K. (2017). ICT enabled classroom effectiveness scale development and validation: A case of multi-campus university. *Knowledge Management and E-Learning*, 9(1), 111–127.

Cano, E. V. (2012). Mobile learning with Twitter to improve linguistic competence at secondary schools. *New Educational Review*, 29(3), 134–147.

Emerson, L. C., & Berge, Z. L. (2018). Microlearning: Knowledge management applications and competency-based training in the workplace. *Knowledge Management and E-Learning*, 10(2), 125–132.

Ifeanyi , I. P., and Chukwuere, J.E. 2018. The impact of using smartphones on the academic performance of undergraduate students. *Knowledge Management and E-Learning*, 10(3). Online:

Adeyinka, T., & Durodolu, O.O. (2021). Undergraduates' use of smartphones for accessing library materials and services in selected academic libraries in south-west Nigeria. *Journal of Educators*. Online:

Lagos State University (2024). A brief history of the university. https://lasu.edu.ng

Mansour, E. (2016). Use of smartphone apps among library and information science students at South Valley University, *Egypt*. *The Electronic Library*, 34 (3), 371–404. Online: https://doi. org/10.1108/EL-03-2015-0044

Matheus, E. (2021). An Investigation into the Use of Smartphones in Accessing Electronic Resources at the University of Namibia. *Library and Information Science at the University of Namibia*. Online:

Sambo, A. S., Lawal, A. M., & Helen K. (2021). The Use of Smart Phones for Information Seeking by Undergraduate Students in Nigerian Specialized University. *Library Philosophy and Practice (e-journal*). Online: