INVESTIGATING THE USEINFORMATION RETRIEVAL SYSTEMS BY POSTGRADUATE STUDENTS IN MODIBBO ADAMA UNIVERSITY, YOLA, ADAMAWA STATE, NIGERIA

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Keywords

Information Retrieval, postgraduate, academic performance

Abstract

Research Problem*: There is a major gap in the aspect of information retrieval skills among students in Nigeria.This negatively affects academic performance, technical abilities and critical thinking, thereby making postgraduate students unprepared for the recent development in internet and digital technologies. Therefore, this paper investigated the use Information Retrieval Systems by Postgraduate Studentsin ModibboAdama University, Yola, Adamawa State, Nigeria. Specifically, the study sought identify the informationretrievalsystems used by postgraduate students, and to examine the challenges faced by students while accessing information retrieval systems.*

Methods/Theory: *The population of the study consisted only 2024/2025 session registered Postgraduate students from all the faculties. The study employed descriptive survey research with a sample of 60 respondents proportionally selected from all the faculties, while 55 copies of the questionnaires were retrieved. The paper also calculated the mean and standard deviationof each responses to the questions. The findings of the study were presented in a tabular form. The study was based on the Theory of Planned Behaviour (TPB).*

Results: *The results revealed most of the students prefer Google Scholar to Google and OPAC. They also face the problem of erratic power supply,*

low sensitization, lack of ICT Password. Moreover, most students do not own a laptop.

Conclusion: *This research paper concluded that the types of information retrieval systems utilised by the Postgraduate students in Modibbo Adama University, Yola include Boolean, OPAC, Google Scholar and Google. They use it frequently, their major reasons for using this system is for the purpose of learning and research. They are satisfied with the use of Information Retrieval Systems. The challenges the face in the course of using Information Retrieval Systems include erratic power supply, insufficient facilities and low sensitization.*

Key Contribution to Knowledge: *This study contributes to knowledge by identifying the patterns of information retrieval systems utilisation among postgraduate students in North Eastern Nigeria, specifically, ModibboAdama University, Yola, Adamawa State, Nigeria. The study also reveals peculiar and contemporary challenges faced by postgraduate students in the North Eastern part of Nigeria, particular in Adamawa state, in terms of access to information retrieval systems in this age of advancement in digital technology and globalization. Moreover, this study provides recommendations that are useful for policymaking at various levels.*

Recommendation

The study recommends that there should be constant power supply, proper sensitization, provision of ICT Password and the management should ensure that every student own a laptop.

Introduction

In this era of digital technological growth, every student and researcher must possess the ability to access information to remain informed about the current state of knowledge and attain academic success. Salvador and Adesope (2021) observed that historically, academic endeavours in higher education relied predominantly on printed resources as primary knowledge sources. Currently, the emergence of Information Retrieval Systems has transformed the methods by which academic information is accessed and disseminated. The population of this study consists of postgraduate students who have completed post-secondary education and obtained an undergraduate degree.

Academic libraries are progressively utilising Information Retrieval Systems to enhance user access to information. The proliferation of information in electronic media has created opportunities for global access, accelerated service delivery, expanded the user base, augmented the volume and comprehensiveness of information available, and offered novel opportunities for postgraduate students to locate research-related information (Liman, 2023). The advancement of Information Retrieval Systems in Nigerian university libraries will undoubtedly enhance access to extensive collections of digital

books and electronic journals for postgraduate students. Despite the integration of the internet into significant academic sectors inside Nigerian universities during the past decade, a digital gap persists, resulting in inequitable access to electronic information within the system.

Most university libraries in Nigeria have not yet implemented a policy to ensure equal internet access for their postgraduate students. Postgraduate students have predominantly been impacted by the unequal access to the internet at these universities. The adoption and dissemination of Information Retrieval Systems in Nigerian university libraries have not progressed as swiftly or seamlessly as in developed information societies, where these systems are regarded as essential for information access and utilisation. The scarcity of contemporary and relevant information for postgraduate study in Nigerian university libraries has significantly troubled both library management and the research community in the nation (Adebambo & Akpati, 2021).

Several research (Jibrin et al., 2024; Eneh and Ekhorutomwem, 2023, etc.) have advanced the analysis of student usage patterns of information retrieval systems. Nonetheless, numerous studies concentrated on undergraduates, examining regions of Nigeria other than the North Eastern Region. This study will concentrate on postgraduate students in the North Eastern region of Nigeria, namely Adamawa State, to investigate the unique characteristics of this area.

This study focuses on identifying usage patterns of information retrieval systems among postgraduate students and uncovering specific barriers that hinder access and optimal utilisation of these systems within Nigeria, particularly in Adamawa State in North Eastern Nigeria. This study seeks to promote the implementation of targeted policies at several levels to improve information retrieval and academic achievement.

Statement of the Problem

Although scholars are investigating innovative methods to acquire, assess, and effectively exploit information, the requisite abilities have become intricate and multifaceted due to the swift advancement of digital technologies. Furthermore, a significant deficiency in knowledge retrieval skills is evident among students in Nigeria. The deficiency in library skills, including information retrieval and digital literacy, along with the inadequate use of information retrieval systems, hinders academic performance, technical proficiency, and critical thinking, rendering postgraduate students ill-equipped for recent advancements in internet and digital technologies. These result in challenges in doing research, obstacles in data collection and analysis, and a lack of collaboration in the digital age.

The primary aim of this study is to examine the utilisation of Information Retrieval Systems by postgraduate students at Modibbo Adama University, Yola. The primary purpose is to identify the types of Information Retrieval Systems utilised by postgraduate students. Analyse the obstacles encountered by pupils in utilising information retrieval tools.

Information Retrieval

Information retrieval, also referred to as search, depicts the acquisition, organization, and searching of mainly knowledge-based information (Hersh, 2021).

Theoretical Framework

Theory of Planned Behaviour

According to Ajzen (1991), Theory of Planned Behavior (TPB) posits that the behavior of an individual is determined by behavioral intention, where behavior intentions are a function of: the attitude of an individual towards behavior, subjective norms and perceived behavioral control.

The attitude towards the behaviour might be a favourable or an unfavourable evaluation carried out by the individual concerning the costs of the behaviour. Subjective norm depicts the social pressure on the individual to perform or not to perform the behaviour. Perceived behavioural control refers to a person's perception of his/her ability to perform a particular behaviour. Figure 1 is a diagrammatic representation of the Theory of Planned Behaviour.

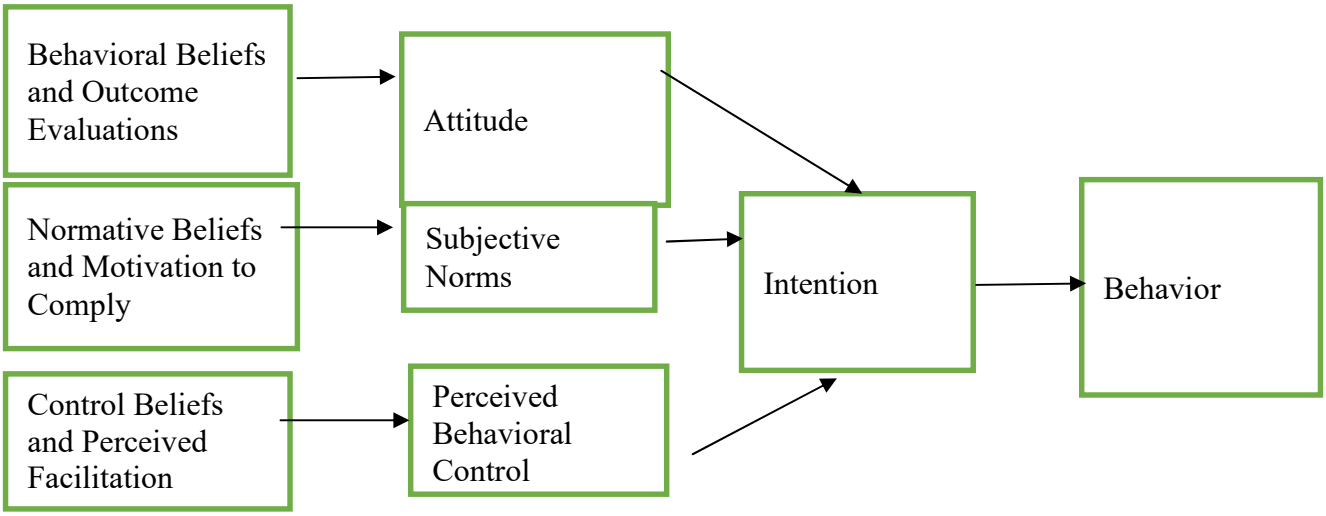


Fig. 1: Theory of Planned Behavior adapted from Mathieson, 1991

Source: Mathieson (1991)

Relevance of Theory of Planned Behaviour to the study

Theory of Planned behaviour (TPB) is relevant to this study because it models deliberate behaviours, including the selection of information retrieval systems such as Google Scholar, library databases, etc. by students, through three (3) main components. The first component consist of attitudes toward the behaviour (for instance, considering information retrieval systems as effective tools for excellent academic performance). The second component include subjective norms, which depicts the influence of colleagues and lecturers who encourage usage of specific information retrieval systems. The third component is perceived behavioural control, which refers to trust in a person's capability to access these tools in the midst of obstacles.

Considering the situation in Nigeria, and by extension, North East Nigeria, where there are problems of erratic electricity supply, high internet costs, and gaps in digital capabilities, the Theory of Planned Behaviour adequately models the objectives of this study. It helps in explaining why postgraduate students are attracted to known and free resources, hence, identifying ways they utilise these resources.

Moreover, this theory explicates challenges as indicators of perceived control.

Types of Information Retrieval Systems used by students.

Jibrin et al. (2024) investigated the accessibility and use of digital information resources and services for postgraduate students in University Libraries in Kaduna State. The generated data were examined using descriptive statistics. The results revealed that CD-ROMs, e-journals, search engines, and online public access were the most prevalent types of digital information resources accessible to postgraduate students.These findings align with Tyopev et al. (2021), who similarly recognised e-journals as resources accessible to students.

Tyopev et al. (2021) investigated the impact of undergraduate students' information retrieval skills on their effective utilisation of electronic resources in university libraries in Benue State. The collected data were analysed through frequency counts, percentages, means, and standard deviation to address the research questions, while the Chi-square statistic was employed to test the null hypothesis at a 0.05 level of significance. The study's results suggested that the e-resources utilised by undergraduates in university libraries in Benue State comprised e-journals and internet resources. The analysed research indicate that e-journals are extensively utilised by students in various regions of Nigeria.

Obstacles encountered by pupils in utilising information retrieval systems Babayi, Obuezie, and Chisom (2023) performed research on the use of Information Retrieval Systems for library services by undergraduate students at Professor Agbagbo Library, Awka. The obtained data were analysed using descriptive statistics. The findings indicated that the students were cognisant of the retrieval mechanisms available and utilised them for academic objectives. The hurdles they encounter include inadequate power supply, deficient maintenance practices, internet speed limitations, and a lack of knowledge. This indicates that the infrastructure deficiency is a significant obstacle hindering postgraduate students' effective use of information retrieval systems (IRS). Challenges such as power supply shortages and inadequate amenities are prevalent in different regions of Nigeria, as evidenced by Eneh and Ekhorutomwem (2023).

Eneh and Ekhorutomwem (2023) examined the accessibility and utilisation of Electronic Information Resources by Postgraduate Students at the John Harris Library, University of Benin. A descriptive survey study design was employed for a sample of 47 participants. Data analysis employed frequency counts and percentages. The respondents indicated that they utilise Electronic Information Resources for project writing, assignments, and academic purposes due to their accessibility, multi-user capability, time efficiency, and spatial convenience. The obstacles encountered in utilising Electronic Information Resources include inadequate facilities, power supply deficiencies, and insufficient capabilities among both staff and students. The issues reported in this investigation, including power supply shortages and inadequate facilities, parallel those found by Babayi et al. (2023).

Fagbemi et al. (2024) examined the role of digital library services in facilitating efficient information retrieval inside federal university libraries in Nigeria. A synthesis of surveys, interviews, and usage data analysis was employed to ascertain the principal factors that affect the efficacy of digital library services. The findings underscore the crucial function of digital libraries in facilitating academic research

and education, while simultaneously confronting issues such as digital literacy, infrastructure, and user engagement. The study concludes with suggestions for enhancing digital library services to improve information retrieval in Nigerian federal universities. The findings of this study align with Aung and Khaing (2016), which identified that lower-middle-income countries encounter challenges related to access, connectivity, and teacher training; these factors adversely impact students' access to digital resources.

Mahwasane and Mudzielwana (2016) delineated the obstacles encountered by pupils in utilising the library. The study's results revealed that the obstacles comprise insufficient knowledge of information retrieval abilities, inadequate user education, low computer literacy, and a deficiency of Information Communication Technology (ICT) for accessing library content. The results of this study align with Ukonu et al. (2012), which indicated that the primary obstacle impeding understanding and utilisation of the library is students' lack of awareness regarding available services, compounded by insufficient outreach from library staff.
Tyopev et al. (2021) identified that the obstacles hindering undergraduate students' use of e-resources were insufficient information retrieval abilities, slow internet connectivity, inconsistent power supply, unawareness of e-resources, and inadequate orientation. This study's findings align with Mada (2025), which identified challenges encountered by students in utilising information and communications technology (ICT), including inadequate staff training and retraining by management, insufficient funding, erratic power supply, and deficient search skills. The findings of multiple studies examined in this study reveal that power supply and internet connectivity issues are significant obstacles encountered by students in Nigeria when accessing information retrieval systems. This report reviews multiple research that analyse students' usage habits of information retrieval systems. However, the majority of these research focused on undergraduates. Furthermore, the study areas encompassed several zones and locations in Nigeria, excluding the North Eastern geopolitical zone. This study will concentrate on postgraduate students in the North Eastern geopolitical zone of Nigeria, particularly in Adamawa State, to examine the challenges and distinct characteristics of this region.

Methodology

Research Design

A descriptive survey research design was adopted in this study. Descriptive survey design is a crucial method within survey methodology, assumed to provide a detailed overview of a population's characteristics, behaviors, and opinions (source).

Population of the Study

The population of the study consist of all the 2,305 postgraduate (PGS, MSC, Ph.D) students of ModibboAdama University, Yola that registered for 2024/2025 academic session from the eight faculties which are the Faculty of Agriculture (FOA), the Faculty of Environmental Science (FES), the Faculty of Social and Management Sciences(FSMS), the Faculty of Physical Sciences (FPS), the Faculty of Life Sciences (FLS) the Faculty of Engineering (FOE), the Faculty of Education (FED), Faculty of Computing Science (FOC) and the Centre for Peace and Security Studies (CPSS).

Sample and Sampling Technique

Data on total number of postgraduate students in each faculty were obtained from the School of Postgraduate Studies, ModibboAdama University, Yola. Cluster sampling technique was adopted to select 2.5% of the total number of Postgraduate students in each faculty. A total of 60 respondents were selected for the study. This sample is appropriate because studies that employ the descriptive approach as the main method of analysis do not test a hypothesis; they employ data collection methods such as surveys or observations to quantify and summarise, or describe, a particular group or phenomena (Siedlecki, 2020). Hence, rather than just seeking a random sample, information is collected from those with experience in the subject matter that is being studied. The premise may include their characteristics.The sampling frame is presented in Appendix 1.

Instrument for Data Collection

The author collected data by using a closed ended questionnaire as the instrument for data collection. The questionnaire will be divided into six section (A-F). Section A is on types of information retrieval systems being used; section B is on the frequency of usage while section C focuses on students' satisfaction with the information retrieval systems. Section D focused on the challenges in using the system while section E dwelt on suggestions for improvements.

Method of data Analysis

The data were analysed by descriptive statistics on a 5-point Likert Scale. The mean is 3.00. An opinion having a mean of three (3.00) and above was considered positive and acceptable while those below three are rejected.

Results and Discussion

Presentation of Results

The result shown in Table 4.1 is on the types of Information Retrieval Systems being used by Postgraduate students. The result indicates that 50.91% of the respondents use Google, 29.09% use Google Scholar, 9.0.9% use OPAC while 10.91% use Boolean. The implies that majority of the students are familiar with Google.

Table 4.1 Types of Information Retrieval Systems Used

S/N	Search Engine	Frequency	Percentage
1	Google	28	50.91
2	Google Scholar	16	29.09
3	OPAC	5	9.09
4	Boolean	6	10.91

Source: Survey, 2025

Table 4.2: Purpose for Utilization Information Retrieval Systems

S/N	Statement	N	X̄	SD	Decision
1	I use Information Retrieval Tools or Internet Search Engines for the purpose of Teaching, Learning and Research	55	4.42	0.74	Accepted
2	I frequently visit the E-library or make use of my own PC or phone to access Information Retrieval Systems r Internet Search Engines	55	4.13	1.05	Accepted
3	I access the websites or downloading journals by registering with my Email	55	3.96	0.98	Accepted
	Grand Mean	4.17			Accepted

Source: Survey 2025

The result in Table 4.2 dwells on the utilization and Purpose of usage of Information Retrieval Systems by Postgraduate Students. The mean of the respondents that stated that they use Information Retrieval Systems for the purpose of teaching, learning and Research is 4.42,The mean of the respondents that frequently visit the E-library or make use of the PC or phone to access information Retrieval is 4.13 Systems and The mean of the respondents that stated that they access the website for downloading journals by registering with their email is 3.96. All the means are greater than 3 and thus the opinions are accepted.

Table 4.3 Postgraduate Students Satisfaction with Information Retrieval Systems

S/N	Statement	N	X̄	SD	Decision
1	I am happy with the use of Information Retrieval Systems.	55	3.46	0.92	Accepted
2	It is preferred to manual systems	55	3.86	0.95	Accepted
3	I have good Information Retrieval Skills, and know how to use Internet Search Engines?	55	4.07	0.88	Accepted
4	The university provides training on Information Retrieval Skills or how to use Internet Search Engines?	55	4.02	1.15	Accepted
5	I look for latest Information Retrieval Systems or Internet Search Engines?	55	4.27	0.75	Accepted
6	The Information Retrieval Systems provides me with up-to-date information	55	4.36	0.73	Accepted
7	Do you download books or you prefer journals?	55	4.00	0.82	Accepted
8	Is it time consuming to use Information Retrieval Systems or Internet Search Engines	55	4.26	0.89	Accepted
	Grand Mean	4.04			Accepted

Source: Survey 2025

In table 4.3, the Postgraduate Students' Satisfaction with information Retrieval Systems was assessed. The mean of the respondents that stated that they are happy with the use of Information Retrieval Systems is 3.46, The mean of the respondents that revealed that they prefer it to Manual Systems is 3.86, The mean of the respondents that revealed that they have good Information Retrieval Skills is 4.07, The mean of the respondents that revealed that the

University gives good training on Information Retrieval Skills is 4.02,

The mean of the respondents that revealed that the Information Retrieval Systems provides them with up-to –date information is 4.27, The mean of the respondents that revealed that they download books and they don't prefer journals is 4.00 and The mean of the respondents that revealed that it is time consuming to use Information Retrieval Systems is4.26. All the means are greater than 3.00 indicating that all the opinions are accepted.

In Table 4.4 the challenges faced while accessing Information Retrieval Systems are recorded. The mean of the respondents that stated that Most students don't own a laptop is 4.12,

The mean of the respondents that stated that Most of the students don't patronize the school's E-library is 4.20 The mean of the respondents that stated there is lack of poor sensitization is 4.07, The mean of the respondents that stated that there is erratic power supply is 4.12, The mean of the respondents that stated that there is limited search skills is 3.93,

The mean of the respondents that stated that there is lack of good software is 3.98 , The mean of the respondents that stated that the Federal Government does not include the provision of laptops for students in its budget is 3.96, The mean of the respondents that stated that students shy away from asking questions on Information Retrieval Systems from their lecturers is 3.87,

The mean of the respondents that stated that most students don't own a personal ICT Centre password being administers to all postgraduate students by the University's management is 4.15., The mean of the respondents that stated that the library closes too early for security purposes.3.82 Since all the means are greater than 3.00, all the opinions are accepted.

Table 4.4 Challenges faced while accessing Information Retrieval Systems

S/N	Statement	N	X̄	SD	Decision
1	Most of the Students do not own a laptop	55	4.12	0.85	Accepted
2	Most of the students don't patronize the school's E-library	55	4.20	0.89	Accepted
3	Lack of proper sensitization	55	4.07	0.98	Accepted
4	Erratic Power Supply	55	4.12	0.96	Accepted
5	Limited Search Skill Lack	55	3.93	0.86	Accepted
6	Lack of Good Software	55	3.98	0.95	Accepted
7	The Federal Government does not include the provision of laptops for students in its budget	55	3.96	1.15	Accepted
8	Students shy away from asking questions on Information Retrieval Systems form their lecturers	55	3.87	1.00	Accepted
9	Most students don't own a personal ICT password being administered to all postgraduate students by the university's managements	55	4.15	0.93	Accepted
10	The library closes too early for security purposes	55	3.82	0.95	Accepted
	Grand Mean	4.02			Accepted

Source: Survey 2025

Table 4.5 presents the Suggestions to solve the Problem in Using Information Retrieval Systems is shown. The mean of the respondents that suggested that the management should ensure all students own a laptop is 4.22 The mean of the respondents that suggested that the management should give free Internet Services is 4.32, The mean of the respondents that suggested that students should be sensitized on the use of Information Retrieval Systems is 4.31

The mean of the respondents that suggested that the management should improve on providing power supply is 4.16 The mean of the respondents that stated that suggested that students should improve on their search skills is 4.27, The mean of the respondents that suggested that ICT Staff should download more software line Mozilla Firefox is 4.29.

The mean of the respondents that suggested that The Federal Government should ensure they include laptops for students in their budget is 4.11 The mean of the respondents that suggested that students should be bold enough to ask questions on Information Retrieval Systems from their lecturer is 4.38, The mean of the respondents that suggested that the management should make it compulsory for all postgraduate students to acquire a password 4.26, and The mean of the respondents that suggested that the library should be open for longer hours with tight security is 4.51.

Table 4.5 Suggestions to solve the Problem in Using Information Retrieval Systems

S/N	Statement	N	$\bar{X}$	SD	Decision
1	The Management should ensure all students own a laptop	55	4.22	0.79	Accepted
2	The Management should give free Internet Services	55	4.32	0.88	Accepted
3	Students should be sensitized on the use of Information Retrieval Systems	55	4.31	0.64	Accepted
4	The Management should improve on providing power supply	55	4.16	0.79	Accepted
5	Students should improve on their Search Skills	55	4.27	0.59	Accepted
6	The ICT staff should download more software like Mozilla Firefox	55	4.29	0.71	Accepted
7	The federal Government should ensure they include laptops for students in their budget	55	4.11	0.94	Accepted
8	Students should be bold enough to ask questions on Information Retrieval Systems from their lecturers	55	4.38	0.68	Accepted
9	The management should make it compulsory for all postgraduate students to acquire an ICT password	55	4.26	0.82	Accepted
10	The library should be open for longer hours with tight security	55	4.52	0.69	Accepted
	Grand Mean	4.28			Accepted

Source: Survey 2025

Discussion of Findings

The study's findings indicated that the majority of postgraduate students utilise Google Chrome, Google Scholar, and OPAC. This result

aligns with the findings of Ajiboye et al. (2023) that the information retrieval mechanism utilised by the students is the Google search engine. Jibrin et al. (2024) similarly stated that the most prevalent sort of Information Retrieval System utilised by students is the Google search engine. The majority of students often utilise Information Retrieval Systems primarily for study and research purposes. This observation aligns with the results of Amagaghe and Ankanmah (2020) and Rahoo et al. (2019). The study revealed that students exhibited a high level of satisfaction with Information Retrieval Systems, corroborating the findings of Ajiboye et al. (2023) that the use of retrieval tools has favourably influenced students' academic and social lives.

The study indicated that, according to the second aim, Postgraduate students encounter difficulties with Information Retrieval Systems, including inadequate internet access, inconsistent power supply, and insufficient awareness initiatives. This aligns with the findings of Babayi, Obuezie, and Chisom (2023), who identified inadequate power supply, deficient maintenance practices, internet bandwidth limitations, and lack of understanding as challenges encountered by students in utilising Information Retrieval Systems. The findings revealed the recommendations made by the respondents, which included the supply of complimentary internet services by the university administration, ownership of personal laptops, and mandatory acquisition of ICT passwords by students. This conclusion is supported by a research conducted by Olaniyi (2022), in which respondents indicated that upgrading internet speed is necessary to improve accessibility and alleviate the frustrations encountered by students.

Conclusion

This research investigated the utilisation of information retrieval systems (IRS) by students at ModibboAdama University in Yola, Adamawa State, Nigeria. The study was based on the Theory of Planned Behaviour. The results indicated that the information retrieval systems utilised by Postgraduate students encompass Boolean, OPAC, Google Scholar, and Google. They frequently utilise these systems primarily for teaching, learning, and research purposes. They express satisfaction with Information Retrieval Systems; however, they encounter challenges such as erratic power supply and insufficient awareness. This issue can be addressed through a consistent power supply and adequate sensitisation. Proposed solutions for the challenges associated with Information Retrieval systems include providing complimentary internet services by management and encouraging students to confidently enquire about Information Retrieval Systems from their instructors.

Recommendations

The statistics indicate that the majority of postgraduate students utilise Google Chrome, Google Scholar, OPAC, and similar resources. The ICT staff should procure additional software such as Google Chrome and Google Scholar, as these are the preferred Information Retrieval Systems among students. Given that most students regularly utilise Information Retrieval Systems for teaching, learning, and research, postgraduate students should be urged to consistently access the E-library to enhance their educational and research objectives. Given that the majority of students express satisfaction with information retrieval systems, management should provide complimentary Internet services to enhance students' access to these systems.

The findings indicate that students encounter problems such as inconsistent power supply and insufficient awareness initiatives. Students should be educated on the use of Information Retrieval Systems; the departments, faculties, postgraduate college, and university should provide training to enhance students' skills in information retrieval. Furthermore, pupils ought to enhance their search skills by continuous practice, exploration, and guidance.

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