Level of Awareness and Effectiveness of Open Access Resources Among Library Users at Lyceum of the Philippines University

Tristan Azrael P. Florentino

Lyceum of the Philippines University-Batangas, Philippines;
Polytechnic University of the Philippines, Manila, Philippines

Level of Awareness and Effectiveness of Open Access Resources Among Library Users at Lyceum of the Philippines University

Tristan Azrael P. Florentino

Lyceum of the Philippines University-Batangas, Philippines;
Polytechnic University of the Philippines, Manila, Philippines
tan2florentino@gmail.com

Abstract

Statement of the Problem/Objectives. This study aims to assess Open Access Resources (OAR) awareness and effectiveness at LPU, demographic profile, and level of awareness and effectiveness. To promote OAR usage, a marketing plan will be developed to emphasize their value, accessibility, and equity.

Methods. A descriptive research design was employed to assess OAR awareness and effectiveness. Data was collected through an online survey-questionnaire distributed to library users. Data analysis used spreadsheet and statistical software.

Results. Most respondents were young females from high school. They preferred accessible websites, PDFs, and research articles with citation-generation features. Library users are aware of Open Textbook Library is disseminated on the library web page. Library users moderately agree that open access resources are complicated to understand. Directory of Open Access Books is complicated to understand as moderately agree by library users in terms of complexity. The respondents found open access resources suitable and accessible for research needs. They particularly favored the Directory of Open Access Books for its ease of use and accessibility. However, some titles were perceived as lacking full-text content.

Conclusions. Library users are moderately aware of OARs and find them effective, although some resources can be hard to understand and not entirely relevant. The marketing plan will focus on boosting awareness, encouraging recommendations, and improving the overall effectiveness of OARs.

Originality. This study presents research on open access initiatives of academic libraries in the Philippines.

Keywords: Open access resources; Awareness; Effectiveness; Marketing plan

Introduction

Open access resources (OAR) are openly accessible scholarly publications via the open internet. The full text of these articles can be read, downloaded, copies, distributed, printed, searched, and liked by any user. They can be used from obtaining access to the internet, users can also use them for any other legitimate purpose, such as indexing, or as data for software or without any financial, legal, or technical barriers. (UNESCO, 2018). Reitz (2004) defined curating as selecting the best or most appropriate items, especially for presentation, distribution, or publication. Cengage Group (2023) supports the statement regarding open access (OA) in libraries of higher educational institutions, emphasizing that curating electronic resources must take into account the specific requirements of the intended audience in addition to the published content's quality, relevancy, and currency.

The reasons for the unrecognized value of open access resources are unfamiliarity with features, difficulty navigating websites, confusion with the organization of the library's open access resources, irrelevant titles, print books preference, and slow Internet connection in times of crisis.

Statement of the Problem/Objectives

The research aims to assess the level of awareness and effectiveness of OAR at Lyceum of the Philippines University (LPU) and propose a marketing plan. Research questions include: 1.) What is the demographic profile of respondents? 2.) What is the level of awareness of OAR in terms of relative advantage and complexity? 3.) What is the level of effectiveness of OAR in terms of compatibility, observability, and complexity? 4.) Are there significant differences in awareness and effectiveness based on profile variables?

This study aims to assess OAR awareness and effectiveness at LPU. It will develop a marketing plan to promote OARs as valuable alternatives during crises, emphasizing their accessibility and equity. The plan will encourage user recommendations and increase awareness and effectiveness among library users.

Literature Review

The study focused on open access resources (OAR) revealing varied awareness levels such as reports on moderate awareness with search issues (Oriogu et al., 2018; Minakshi & Joshi, 2021), while others show high awareness due to OAR's free access (Shashidhara & Sambathkumar, 2019; Adil et al., 2024) while low level in Ajibili (2017). Ofua (2023) and Mahmud et al. (2020) on the effectiveness of OA resources regaring adequate speed of Internet connection. Challenges include search functionality and usability problems (Bankole, 2019; Kurian & Nagarajan, 2018). Despite the positive impacts on availability and accessibility (Osano, 2012; Govindarajan & Dhanavandan, 2019), usability issues affect perceived effectiveness (Bankole, 2019; Chigbu et al., 2016) including Mahmud et al. (2020) and Edem & Egbe (2016). Demographic factors influence awareness differently, with variations by sex noted in some studies (Shahzadi & Hussain, 2019; Kunle, Mary, & Zhimwang, 2021).

Several Philippine universities offer open access resources through their libraries. De La Salle University Manila (2021) provides full-text databases of journals and books, including DOAJ, DOAB, OUP OA titles, and a guide to OA journals, along with a directory of OA journals from other universities. The University of Santo Tomas' Miguel de Benavides Library (2022) curates free, peer-reviewed journal listings, databases, and ebooks from various fields, including Google Scholar, HERDIN PLUS, and Project Gutenberg. The University of Mindanao Library (2019) offers open access ebook databases like Classic Literature and Project Gutenberg, and categorizes journals by subject. Finally, the University of the Philippines Diliman Library (2023) provides additional open access resources such as Scilit, Open Research Library, ASEAN Digital Library, and others.

Marketing Plan and OAR

Marketing plans are crucial for libraries, especially concerning open access resources. They provide tools for data collection and analysis regarding customer needs, target groups, promotion methods, budgets, and potential constraints (Danladi et al., 2015). A good marketing plan maximizes ROI (Nagra, 2017) by considering resource discovery, departmental collaboration, and communication strategies. It plays a vital role in organizational success (Mohseni, 2017), helping libraries identify and reach target users, embrace trends, and promote open access resources. Specifically for open access, marketing plans address limited budgets, showcase potential, improve image, maintain relevance, and combat low awareness (Oguntoye et al., 2024; Okon & Umoh, 2025).

Methodology

Salaria (2012) defined descriptive research as the set of steps of collating, analyzing, organizing, and converting data into table format about the prevailing belief which was the focus of the study by the researcher in the assessment of awareness and effectiveness in open access resources. Participants are stakeholders of a higher educational institution consisting of library users in Lyceum of the Philippines University.

Thomas (2023) defined simple random sampling as randomly selecting a population subset where each member has an equal chance of selection. It's used for statistical inferences and requires a complete population list, reducing research bias. This method was used to select library user respondents.

The questionnaire had two parts. Part one collected demographic data: age, sex, college/department, devices used, and preferred format. Part two assessed OAR awareness and effectiveness, using indicators like relative advantage and complexity for awareness, and compatibility, observability, and complexity for effectiveness.

Library and information science experts validated the questionnaire. Pilot testing assessed clarity, comprehensiveness, and effectiveness. A Cronbach Alpha of 0.987 indicated excellent internal consistency.

This Likert scale measures user awareness and perceived effectiveness of Open Access Resources (OAR). Awareness is categorized into five levels: Fully Aware

(4.51-5.00), Aware (3.51-4.50), Moderately Aware (2.51-3.50), Slightly Aware (1.51-2.50), and Unaware (1.00-1.50). Effectiveness, focusing on compatibility, observability, and complexity, is also assessed using a five-point scale: Strongly Agree (4.51-5.00), Agree (3.51-4.50), Moderately Agree (2.51-3.50), Disagree (1.51-2.50), and Strongly Disagree (1.00-1.50).

This research employed several statistical methods for data analysis. Frequency percentages were used to describe demographic profiles. A weighted mean, calculated using a Likert scale was used to assess responses to survey questions. The Kruskal-Wallis H test, suitable for ordinal data and non-normal distributions, was employed to compare three or more independent groups, with the null hypothesis stating that all samples are drawn from the same population. Finally, the Mann-Whitney U test was used for comparing two independent groups.

The measures took place during the data gathering. The researcher generated a daily statistical report of library users from the visitor management system. The researcher processed the proposal together with the survey questionnaire to the College Research Ethics Board (CREB) for ethics review. Upon approval of the research ethics board, the researcher converted the research questionnaire to an electronic form using Google Forms and conducted a pilot test for thirty (30) library users. The researcher submitted the results of the pilot testing to a statistician for a reliability test attaining the minimum target of 0.8 which was interpreted as 'acceptable' while research instrument for validity. After attaining appropriate results of the reliability and validity test, the researcher administered Google Forms to the users. After retrieving the instrument, a statistician tabulated the results, separating the findings derived from the student ready for interpretation.

Results and Discussion

Demographic Profile

Figure 1. Frequency and Percentage Distribution of the Respondents in terms of Age
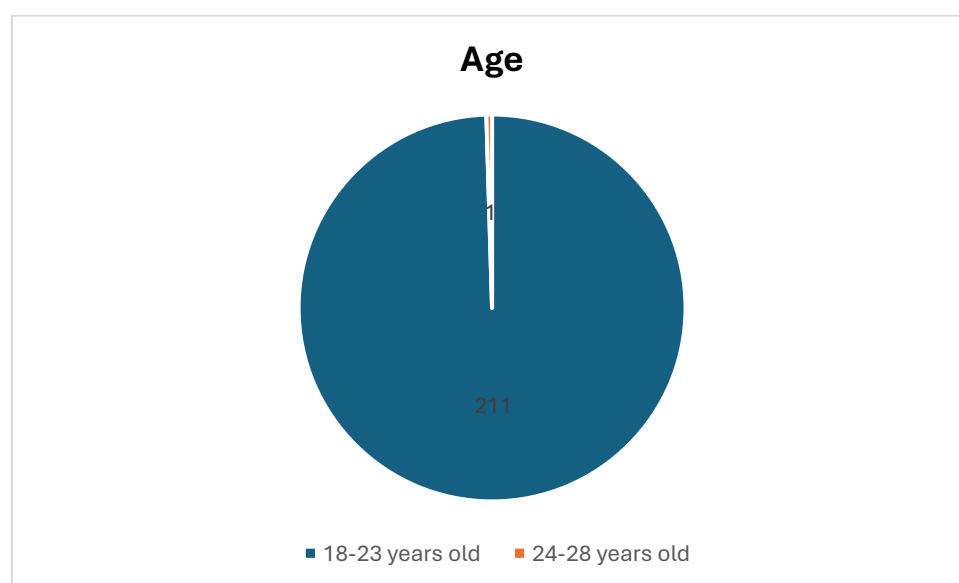
Most of the respondents' ages range from 18-23 years old with a frequency of 211 or 96.80% while 24-28, 29-33, 34-38, 39-43, 44-48, 49-53, 54-59 years old attaining 1 or 0.50% (Figure 1).

Figure 2. Frequency and Percentage Distribution of the Respondents in terms of Sex
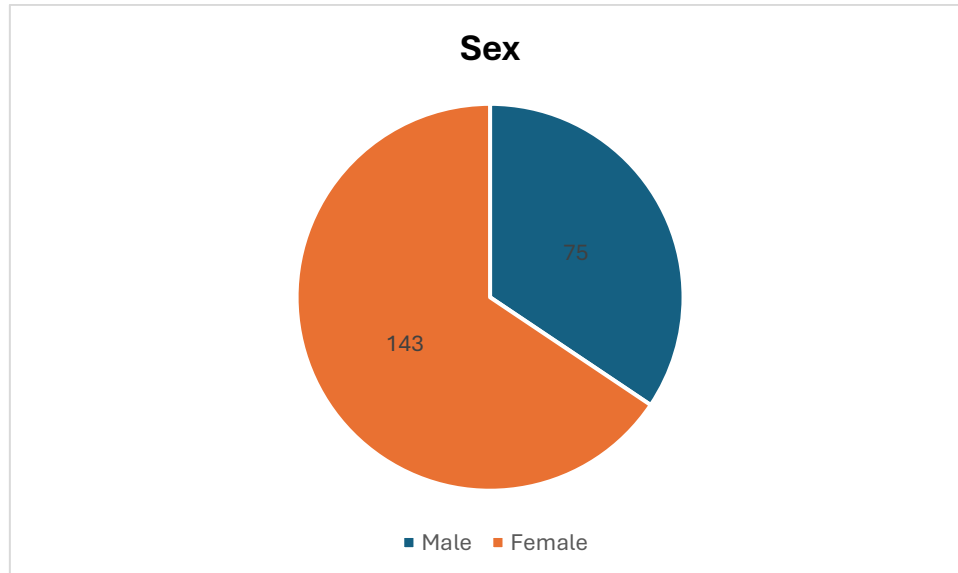
The majority of the sex profile of the respondents were female with a total number of 143 or 65.60% while male respondents had a total number of 75 or 34.40% (Figure 2).

Figure 3. Frequency and Percentage Distribution of the Respondents in terms of College/Department
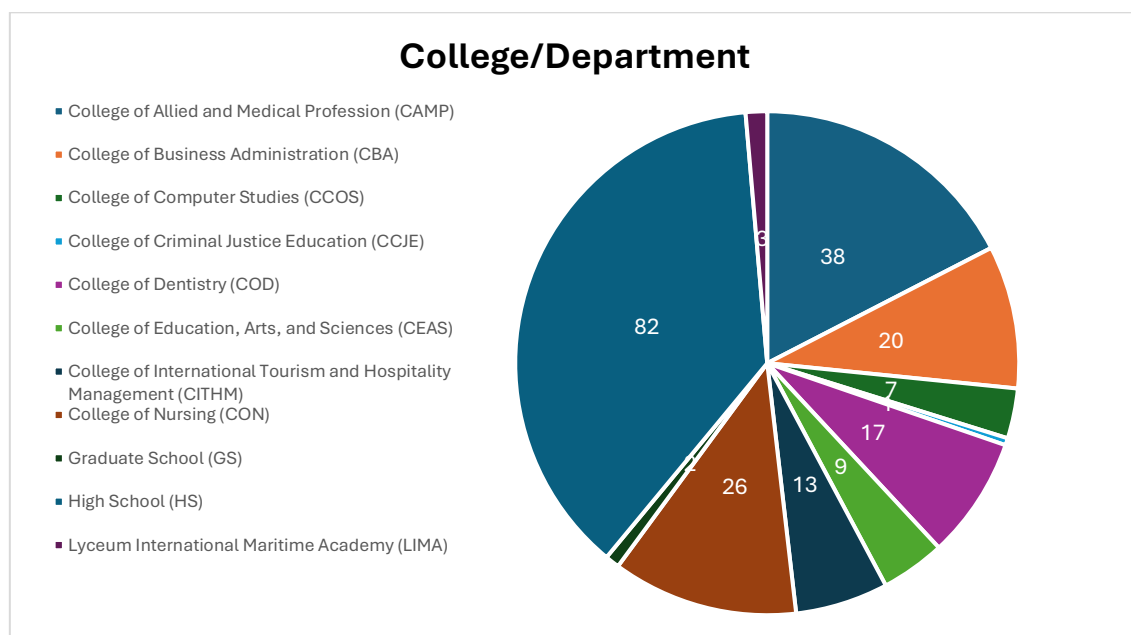
High School students comprised the largest group of 82 respondents (37.60%), followed by 38 CAMP (17.40%), 26 CON (11.90%), 20 CBA (9.20%), 17 COD (7.80%), 13 CITHM (6.00%), 9 CEAS (4.10%), 7 CCOS (3.20%), 3 LIMA (1.40%), 2 GS (0.90%), and 1 CCJE (0.50%) (Figure 3).

Figure 4. Frequency and Percentage Distribution of the Respondents in terms of Device/s Used
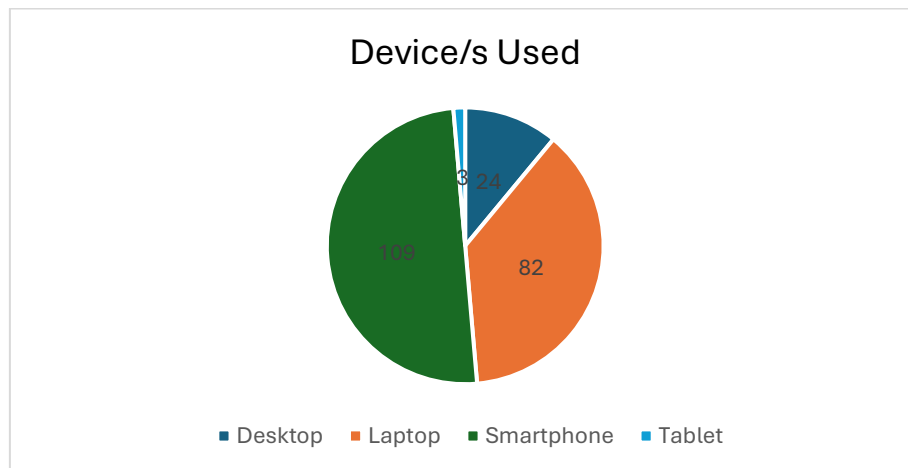
Figure 4 shows that smartphone (50.00%) was the most frequently used device by 109 respondents, followed by 82 for Laptop (37.00%), 24 in Desktop (11.00%), and Tablet for 3 (1.40%).

Figure 5. Frequency and Percentage Distribution of the Respondents in terms of Preferred Format
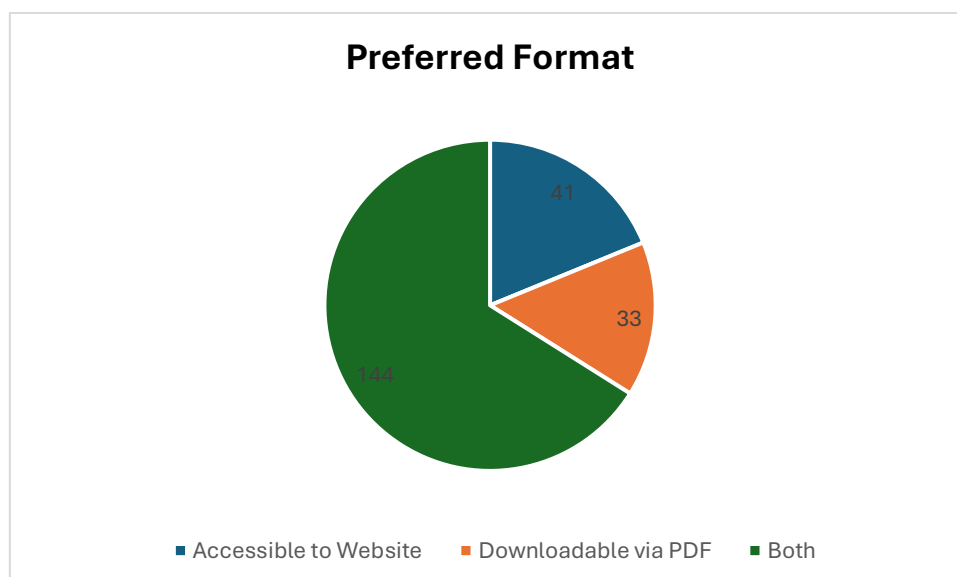
According to depicted figure 5, 144 respondents preferred both accessible to website and downloadable via PDF (66.10%), followed by 41 for accessible to website (18.80%), and 33 in downloadable via PDF (15.10%).

Figure 6. Frequency and Percentage Distribution of the Respondents in terms of Preferred Document Types

Preferred Document Types
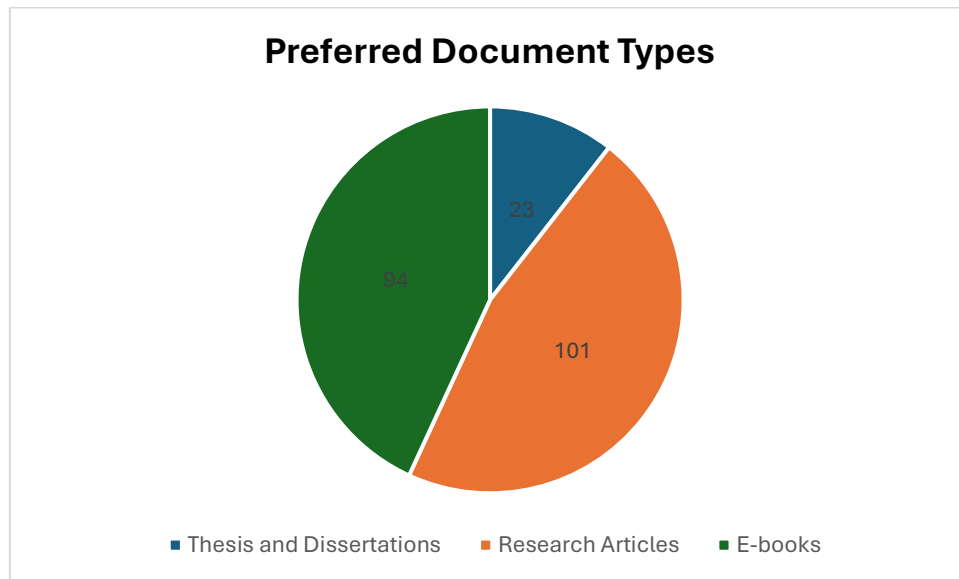
Figure 6 illustrates that Research Articles (46.30%) were the most preferred document type by 101 respondents, followed by e-books for 94 (43.10%), and thesis and dissertations in 23 (10.60%).

Figure 7. Frequency and Percentage Distribution of the Respondents in terms of Preferred Features

Preferred Features
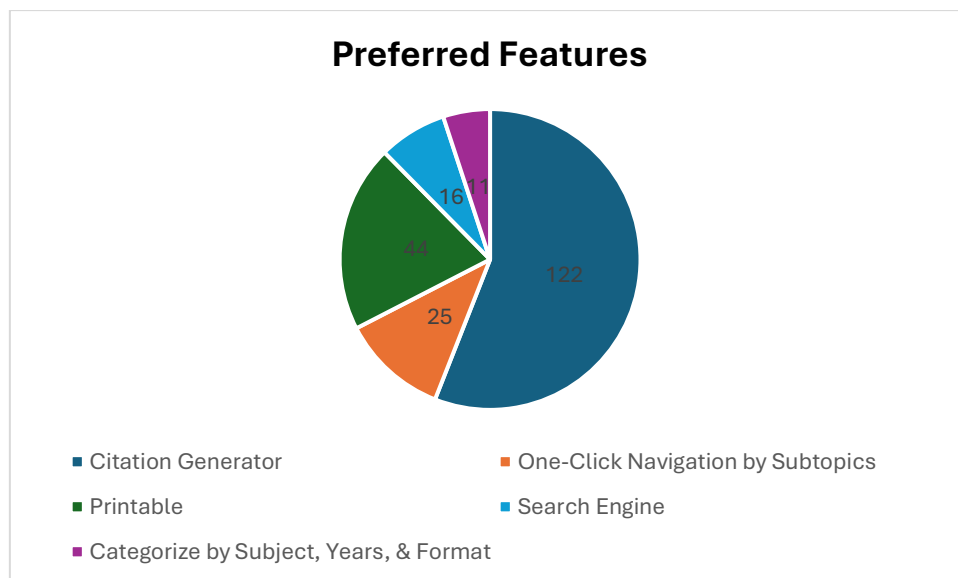
Citation generator (56.00%) is the most preferred feature by 122 respondents, according to Figure 7, followed by 44 in printable (20.20%), search engine for 25 (7.30%), one-click navigation by subtopics in 16 (11.50%), and categorized by Subject, Year, & Format by 11 (5.00%) .

Relative Advantage

Figure 8. Respondent's Assessment on the Level of Awareness of Open Access Resources in terms of Relative Advantage

Recommended open access resources are disseminated in the library web page.

Resource	Mean
Directory of Open Access Books	3.75
Open Textbook Library	3.86
Open Stax	3.31
Saylor Academy Open Textbook	3.25
Open Access Thesis and Dissertations	3.63
Routledge	3.23
Springer Open	3.28
Education Resources Information Center (ERIC)	3.54
Directory of Open Access Journals (DOAJ)	3.56
HerdinPlus	3.24
CORE	3.34
Social Science Open Access Repository	3.41
Grand Mean	3.45

Legend (series): ■ Fully Aware ■ Aware ■ Moderately Aware ■ Slightly Aware ■ Unaware

Legend: *"Unaware (1.00 – 1.50)", "Slightly Aware (1.51 – 2.50)", "Moderately Aware (2.51 – 3.50)", "Aware (3.51 – 4.50)", "Fully Aware (4.51 – 5.00)"*

In the illustration of figure 8, respondents demonstrated moderate awareness (Mean = 3.45) of Open Access Resources (OAR) in terms of relative advantage. Open Textbook Library ranked highest (Mean = 3.86), followed by Directory of Open Access Books (3.75), Open Access Thesis & Dissertations (3.63), Directory of Open Access Journals (3.56), and Education Resources Information Center (ERIC) (3.54). Other platforms included Social Science OA Repository (3.41), CORE (3.34), Open Stax (3.31), Springer Open (3.28), Saylor Academy Open Textbook (3.25), HerdinPlus (3.24), and Routledge (3.23).

DOAB was more easily understood by users compared to other platforms often perceived as limited to bibliographical references.

These findings align with previous research by Oriogu (2018) and Minakshi (2021) on moderate OAR awareness.

Complexity

Figure 9. Respondent's Assessment on the Level of Awareness of Open Access Resources in terms of Complexity

The open access resources in the library is complicated to understand.

Resource	Mean
Directory of Open Access Books	3.46
Open Textbook Library	3.41
Open Stax	3.41
Saylor Academy Open Textbook	3.41
Open Access Thesis and Dissertations	3.4
Routledge	3.4
Springer Open	3.39
Education Resources Information Center (ERIC)	3.43
Directory of Open Access Journals (DOAJ)	3.33
HerdinPlus	3.39
CORE	3.38
Social Science Open Access Repository	3.39
Grand Mean	3.4

■ Strongly Agree ■ Agree ■ Moderately Agree ■ Slightly Agree ■ Disagree
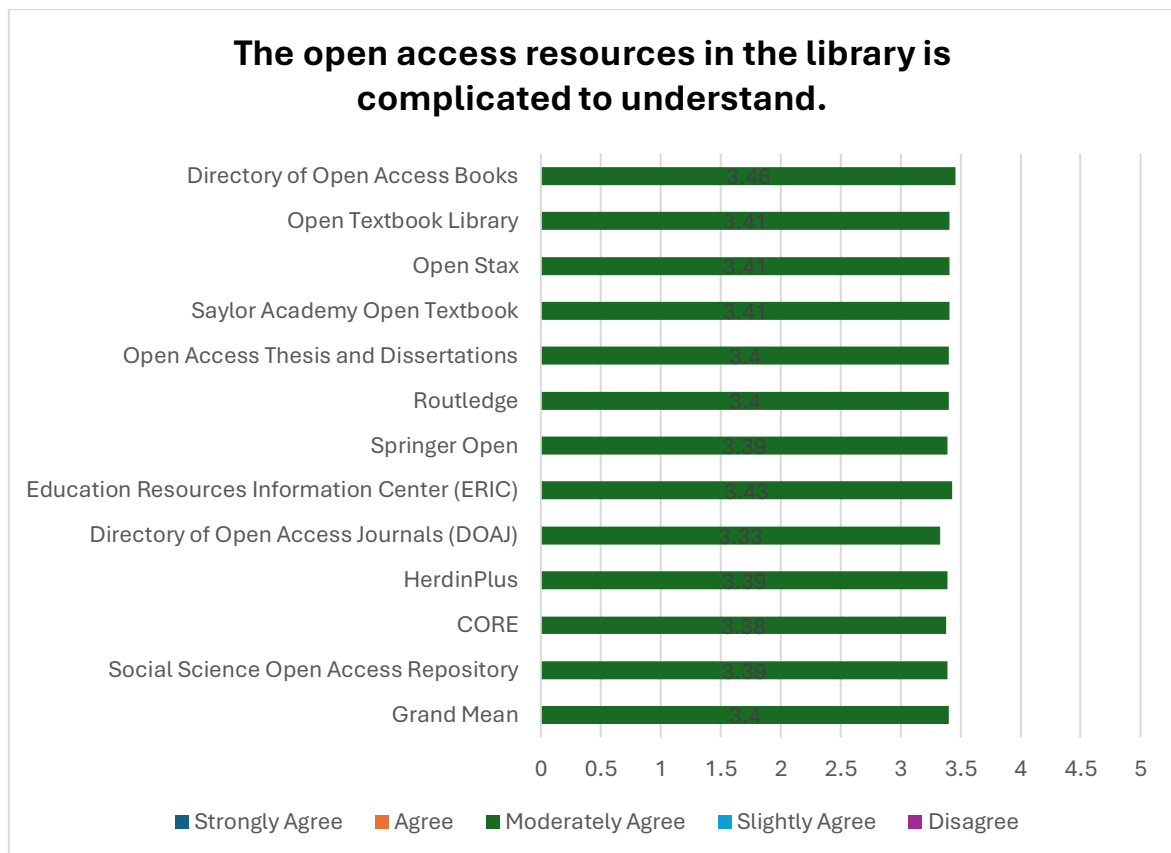
Legend: *"Disagree (1.00 – 1.50)", "Slightly Agree (1.51 – 2.50)", "Moderately Agree (2.51 – 3.50)", "Agree (3.51 – 4.50)", "Strongly Agree (4.51 – 5.00)"*

Respondents moderately agreed (Mean = 3.40) on the complexity of Open Access (OA) resources. DOAB ranked highest (Mean = 3.46), followed by ERIC (3.43), Open Textbook Library (3.41), Open Stax (3.41), Saylor Academy Open Textbook (3.41), OA Thesis & Dissertations (3.40), Routledge (3.40), Springer Open (3.39), HerdinPlus (3.39), Social Science OA Repository (3.39), CORE (3.38), and Directory of Open Access Journals (3.33) (Figure 9).

Directory of Open Access Books was perceived as most complex, potentially due to its extensive search results and less user-friendly interface.

These findings contrast with Ajibili (2017), who reported low OAR awareness among library users.

Effectiveness

Compatibility

Figure 10. Respondent's Assessment on the Level of Effectiveness of Open Access Resources in terms of Compatibility

The open access resources available in the library suited my research needs.

Resource	Mean
Directory of Open Access Books	3.87
Open Textbook Library	3.83
Open Stax	3.58
Saylor Academy Open Textbook	3.6
Open Access Thesis and Dissertations	3.78
Routledge	3.52
Springer Open	3.56
Education Resources Information Center (ERIC)	3.74
Directory of Open Access Journals (DOAJ)	3.72
HerdinPlus	3.53
CORE	3.61
Social Science Open Access Repository	3.65
Grand Mean	3.67

Legend: ■ Strongly Agree ■ Agree ■ Moderately Agree ■ Slightly Agree ■ Disagree

Legend: *"Disagree (1.00 – 1.50)", "Slightly Agree (1.51 – 2.50)", "Moderately Agree (2.51 – 3.50)", "Agree (3.51 – 4.50)", "Strongly Agree (4.51 – 5.00)"*

Respondents strongly agreed (Mean = 3.67) on the compatibility of Open Access (OA) resources. The Directory of Open Access Books ranked highest (Mean = 3.87), followed by Open Textbook Library (3.83), Open Access Thesis & Dissertations (3.78), and ERIC (3.74). Other platforms included DOAJ (3.72), Social Science OA Repository (3.65), CORE (3.61), Saylor Academy Open Textbook (3.60), Open Stax (3.58), Springer Open (3.56), HerdinPlus (3.53), and Routledge (3.52) (Figure 10).

Directory of Open Access Books was praised for its extensive resources, while HerdinPlus was perceived as limited.

These findings align with prior research by Oriogu (2018) and Minakshi (2021) on OA resource awareness.

Figure 11. Respondent's Assessment on the Level of Effectiveness of Open Access Resources in terms of Observability

The following open access resources are accessible in terms of speed and internet connection.

Resource	Mean
Directory of Open Access Books	3.76
Open Textbook Library	3.69
Open Stax	3.55
Saylor Academy Open Textbook	3.61
Open Access Thesis and Dissertations	3.71
Routledge	3.56
Springer Open	3.61
Education Resources Information Center (ERIC)	3.68
Directory of Open Access Journals (DOAJ)	3.67
HerdinPlus	3.55
CORE	3.56
Social Science Open Access Repository	3.65
Grand Mean	3.63

■ Strongly Agree ■ Agree ■ Moderately Agree ■ Slightly Agree ■ Disagree

Legend: *"Disagree (1.00 – 1.50)", "Slightly Agree (1.51 – 2.50)", "Moderately Agree (2.51 – 3.50)", "Agree (3.51 – 4.50)", "Strongly Agree (4.51 – 5.00)"*
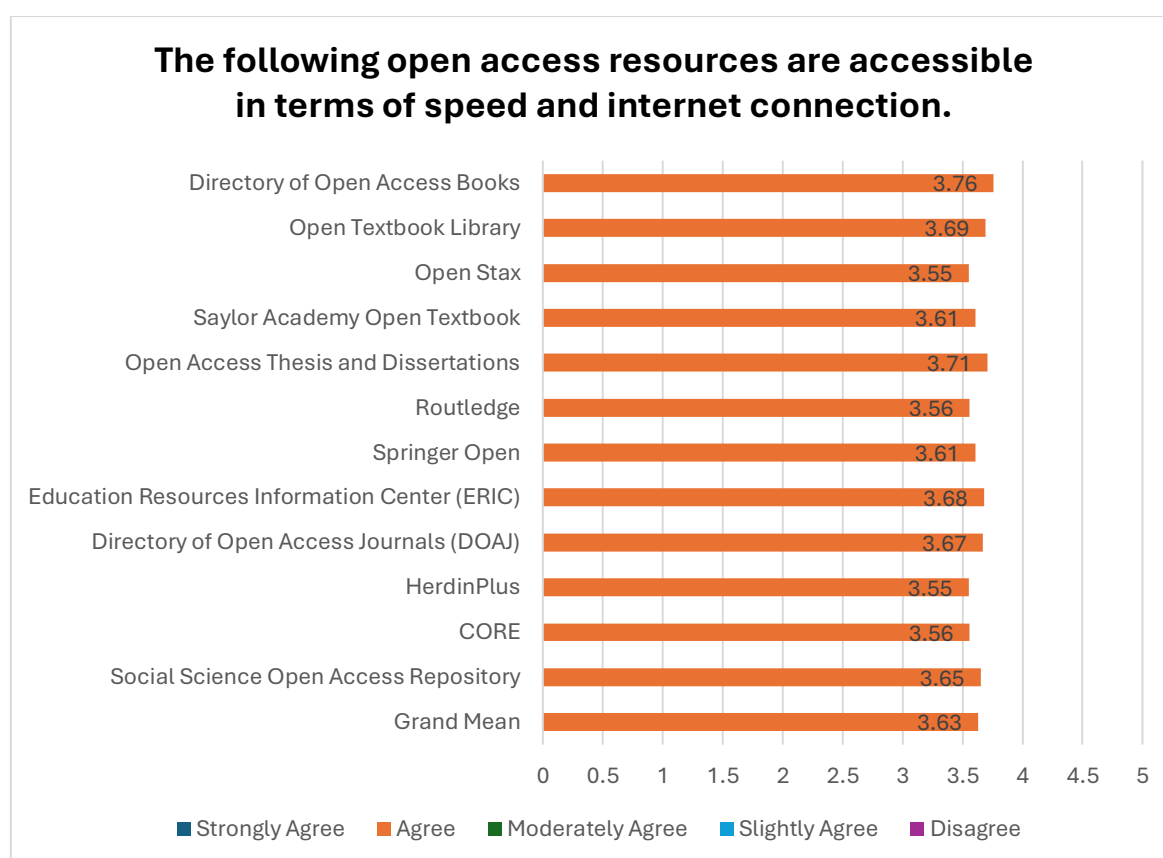
Respondents generally agreed (Mean = 3.63) on the observability of Open Access (OA) resources. The Directory of Open Access Books ranked highest (Mean = 3.76), followed by Open Access Thesis & Dissertations (3.71), Open Textbook Library (3.69), ERIC (3.68), and Directory of Open Access Journals (3.65). Other platforms included Social Science OA Repository (3.61), Springer Open (3.61), Saylor Academy Open Textbook (3.56), Routledge (3.56), and CORE (3.56). Open Stax and HerdinPlus (both 3.55) had the lowest scores (Figure 11).

Directory of Open Access Books was found to be more user-friendly compared to other platforms.

These findings align with previous research by Ofua (2023) and Mahmud et al. (2020) on the effectiveness of OA resources.

Complexity

Figure 12. Respondent's Assessment on the Level of Effectiveness of Open Access Resources in terms of Complexity

Some titles are only somewhat relevant to my studies.

Resource	Mean
Directory of Open Access Books	3.67
Open Textbook Library	3.62
Open Stax	3.48
Saylor Academy Open Textbook	3.52
Open Access Thesis and Dissertations	3.6
Routledge	3.49
Springer Open	3.5
Education Resources Information Center (ERIC)	3.58
Directory of Open Access Journals (DOAJ)	3.61
HerdinPlus	3.51
CORE	3.56
Social Science Open Access Repository	3.59
Grand Mean	3.56

Strongly Agree ■ Agree ■ Moderately Agree ■ Slightly Agree ■ Disagree

Legend: "Disagree (1.00 – 1.50)", "Slightly Agree (1.51 – 2.50)", "Moderately Agree (2.51 – 3.50)", "Agree (3.51 – 4.50)", "Strongly Agree (4.51 – 5.00)"
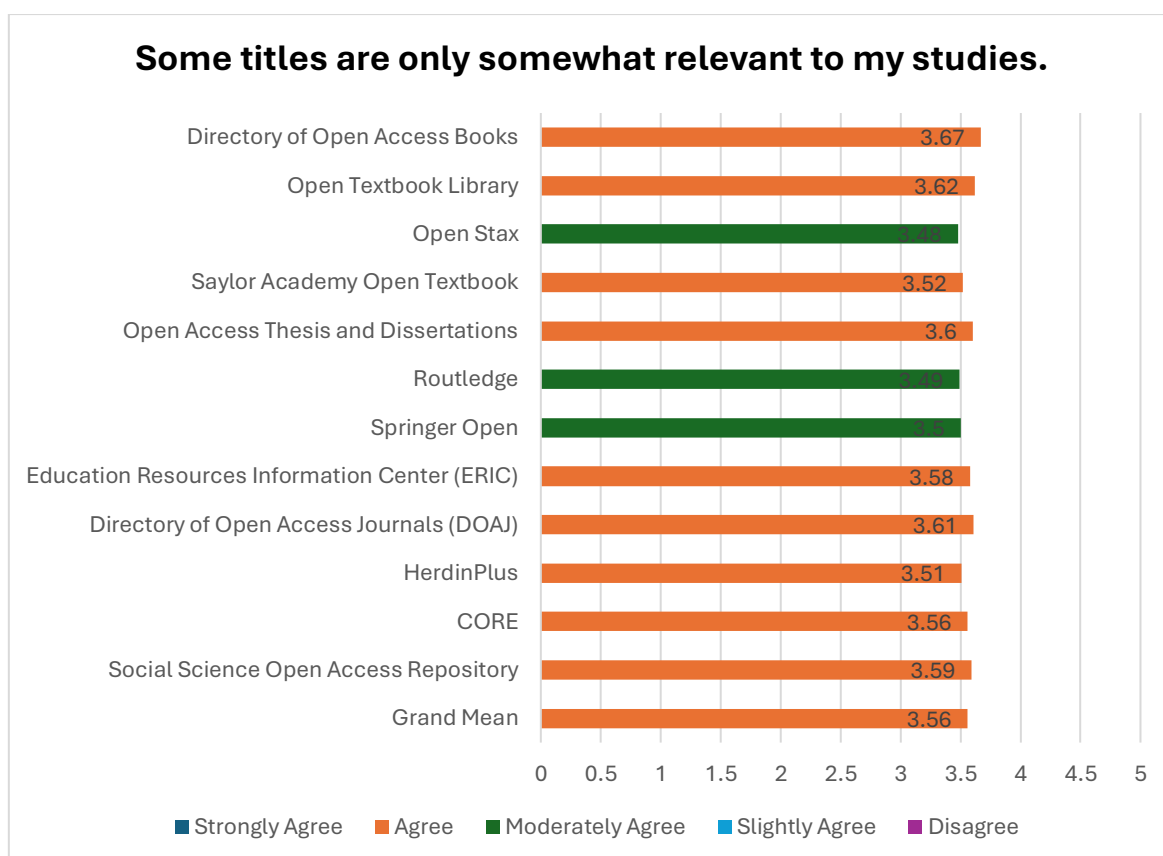
Respondents generally agreed (3.56) on the effectiveness of Open Access (OA) resources. The Directory of Open Access Books ranked highest (Mean = 3.67), followed by Open Textbook Library (3.62), DOAJ (3.61), OA Thesis & Dissertations (3.60), Social Science OA Repository (3.59), ERIC (3.58), CORE (3.56), Saylor Academy Open Textbook (3.52), and HerdinPlus (3.51). Springer Open (3.50), Routledge (3.49), and Open Stax (3.48) had lower ratings (Figure 12).

The result suggests that some library users cannot find the exact titles of randomly exact subjects in the Directory of Open Access Books. Clients locate easily relevant subjects but generally only in Open Stax.

These findings align with previous research by adil et al. (2020) and Edem & Egbe (2016) highlighting the complexity in OA resource effectiveness.

Significant Difference

Awareness

Table 1 Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Age

Indicators	Age	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	18-23	109.14	10.772	0.149	Failed to Reject Ho	Not Significant
	24-28	40.00				
	29-33	211.00				
	34-38	185.50				
	39-43	15.00				
	44-48	211.00				
	49-53	59.50				
	54-59	121.50				
Complexity	18-23	109.02	8.751	0.271	Failed to Reject Ho	Not Significant
	24-28	34.00				
	29-33	211.00				
	34-38	178.00				
	39-43	94.50				
	44-48	211.00				
	49-53	79.00				
	54-59	59.50				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

Table 1 reveals that there is no significant difference in respondents' awareness levels of Open Access Resources (OAR), according to age profile, regarding both Relative Advantage (Kruskal-Wallis H = 10.772, p > 0.149) and Complexity (Kruskal-Wallis H = 8.751, p > 0.271).

Table 2. Mann Whitney U-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Sex

Indicators	Sex	Mean Rank	U-statistic	p-value	Decision	Remarks
Relative Advantage	Male	125.25	4181.500	0.008	Reject Ho	Significant
	Female	101.24				
Complexity	Male	212.30	4477.500	0.045	Reject Ho	Significant
	Female	103.31				

Note: *"If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

Table 2 shows a significant difference in respondents' awareness levels of Open Access Resources (OAR) between male and female respondents for both Relative Advantage (Mann-Whitney U = 10.722, p < 0.008) and Complexity (Mann-Whitney

U = 10.606, p < 0.045). These findings agrees the result from the study of Shahzadi and Hussain (2019), which also demonstrated significant differences in OAR awareness based on sex.

Table 3. Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to College/Department

Indicators	College/ Department	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	College of Allied and Medical Profession (CAMP)	77.66	21.485	0.018	Reject Ho	Significant
	College of Business Administration (CBA)	106.25				
	College of Computer Studies (CCOS)	96.29				
	College of Criminal Justice Education (CCJE)	116.00				
	College of Dentistry (COD)	101.50				
	College of Education, Arts, and Sciences (CEAS)	88.61				
	College of International Tourism and Hospitality Management (CITHM)	141.23				
	College of Nursing (CON)	122.77				
	Graduate School (GS)	198.25				
	High School (HS)	118.70				

	Lyceum International Maritime Academy (LIMA)	108.00				
Complexity	College of Allied and Medical Profession (CAMP)	79.71	17.220	0.070	Failed to Reject Ho	Not Significant
	College of Business Administration (CBA)	105.98				
	College of Computer Studies (CCOS)	116.64				
	College of Criminal Justice Education (CCJE)	119.00				
	College of Dentistry (COD)	100.97				
	College of Education, Arts, and Sciences (CEAS)	103.17				
	College of International Tourism and Hospitality Management (CITHM)	135.35				
	College of Nursing (CON)	116.83				
	Graduate School (GS)	194.50				
	High School (HS)	118.23				
	Lyceum International Maritime Academy (LIMA)	87.17				

Analysis in Table 3 revealed a significant difference in awareness levels of Open Access Resources (OAR) among respondents from different colleges/departments, specifically regarding Relative Advantage (Kruskal-Wallis H = 21.485, p < 0.018). However, no significant difference was found in awareness levels based on the perceived complexity of OAR (Kruskal-Wallis H = 17.220, p > 0.070). These findings partially contradict Akpojotor (2016), who observed significant differences across departments.

Table 4. Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Device/s Used

Indicators	Device/s Used	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	Desktop	113.04	5.197	0.158	Failed to Reject Ho	Not Significant
	Laptop	97.18				
	Smartphone	118.01				
	Tablet	108.67				
Complexity	Desktop	100.42	7.424	0.060	Failed to Reject Ho	Not Significant
	Laptop	97.41				
	Smartphone	121.07				
	Tablet	92.33				

The analysis illustrated in Table 4 found no significant differences in respondents' awareness levels of Open Access Resources (OAR) across different device usage groups, for both Relative Advantage (Kruskal-Wallis H = 5.197, p > 0.158) and Complexity (Kruskal-Wallis H = 7.424, p > 0.060).

Table 5. Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Preferred Format

Indicators	Format	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	Accessible to Website	134.24	8.568	0.014	Reject Ho	Significant
	Downloadable via PDF	112.56				
	Both	101.75				
Complexity	Accessible to Website	132.87	13.511	0.001	Reject Ho	Significant
	Downloadable via PDF	129.41				

	Both	98.28				

Significant differences depicted in Table 5 in OAR awareness levels were found among respondents based on their preferred format for both Relative Advantage (Kruskal-Wallis H = 8.568, p < 0.014) and Complexity (Kruskal-Wallis H = 13.511, p < 0.001).

Table 6. Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Preferred Document Types

Indicators	Types	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	Thesis and Dissertations	141.80	6.956	0.031	Reject Ho	Significant
	Research Articles	107.66				
	E-books	103.57				
Complexity	Thesis and Dissertations	123.07	1.261	0.532	Failed to Reject Ho	Not Significant
	Research Articles	109.03				
	E-books	106.69				

Table 6 demonstrating significant differences in OAR awareness levels were found among respondents based on their preferred document types regarding Relative Advantage (Kruskal-Wallis H = 6.956, p < 0.031). However, no significant differences were found in terms of Complexity (Kruskal-Wallis H = 1.261, p > 0.532).

Table 7. Kruskal Wallis H-Test: Comparison on the Level of Awareness in Open Access Resources by the Respondents when Grouped According to Preferred Features

Indicators	Features	Mean Rank	K-statistic	p-value	Decision	Remarks
Relative Advantage	Citation Generator	101.76	4.855	0.303	Failed to Reject Ho	Not Significant
	One-Click Navigation by Subtopics	117.78				
	Printable	115.27				
	Search Engine	125.31				

	Categorize by Subject. Years, & Format	130.41				
Complexity	Citation Generator	105.25	1.997	0.736	Failed to Reject Ho	Not Significant
	One-Click Navigation by Subtopics	122.58				
	Printable	110.67				
	Search Engine	110.56				
	Categorize by Subject. Years, & Format	120.64				

Note: *"If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

No significant differences in OAR awareness levels were found among respondents based on their preferred features, for both Relative Advantage (Kruskal-Wallis H = 4.855, p > 0.303) and Complexity (Kruskal-Wallis H = 1.997, p > 0.736) shown in Table 7.

Effectiveness

Table 8. Kruskal Wallis H-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Age

Indicators	Age	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	18-23	109.12	8.854	0.263	Failed to Reject Ho	Not Significant
	24-28	21.00				
	29-33	207.50				
	34-38	167.00				
	39-43	85.00				
	44-48	207.50				
	49-53	45.50				
	54-59	113.50				
Observability	18-23	109.32	9.926	0.193	Failed to Reject Ho	Not Significant
	24-28	25.00				
	29-33	208.00				
	34-38	181.00				
	39-43	60.00				
	44-48	208.00				
	49-53	45.00				
	54-59	77.50				

Complexity	18-23	108.95	8.390	0.299	Failed to Reject Ho	Not Significant
	24-28	40.00				
	29-33	209.50				
	34-38	181.50				
	39-43	84.00				
	44-48	209.50				
	49-53	61.50				
	54-59	96.50				

Note: *"If p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

The illustration of Table 8 states that there are no significant differences in OAR effectiveness across different age groups for Compatibility (Kruskal-Wallis H = 8.854, p > 0.263), Observability (Kruskal-Wallis H = 9.926, p > 0.193), and Complexity (Kruskal-Wallis H = 8.390, p > 0.299).

Table 9. Mann Whitney U-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Sex

Indicators	Sex	Mean Rank	U-statistic	p-value	Decision	Remarks
Compatibility	Male	120.83	4512.500	0.054	Failed to Reject Ho	Not Significant
	Female	103.56				
Observability	Male	121.91	4431.500	0.035	Reject Ho	Significant
	Female	102.99				
Complexity	Male	122.73	4370.500	0.025	Reject Ho	Significant
	Female	102.56				

Note: *"If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

The depiction of table 9 reveals that there are no significant differences in OAR effectiveness between male and female respondents for Observability (Mann-Whitney U = 4431.500, p < 0.035) and Complexity (Mann-Whitney U = 4370.500, p < 0.025). No significant difference was found for Compatibility (Mann-Whitney U = 4512.500, p > 0.054).

Table 10. Kruskal Wallis H-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to College/Department

Indicators	College/ Department	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	College of Allied and Medical	85.05	14.394	0.156	Failed to Reject Ho	Not Significant

	Profession (CAMP)					
	College of Business Administration (CBA)	108.75				
	College of Computer Studies (CCOS)	106.00				
	College of Criminal Justice Education (CCJE)	95.00				
	College of Dentistry (COD)	99.97				
	College of Education, Arts, and Sciences (CEAS)	90.89				
	College of International Tourism and Hospitality Management (CITHM)	125.69				
	College of Nursing (CON)	129.06				
	Graduate School (GS)	187.25				
	High School (HS)	115.50				
	Lyceum International Maritime Academy (LIMA)	91.50				
Observability	College of Allied and Medical Profession (CAMP)	89.80	13.674	0.188	Failed to Reject Ho	Not Significant
	College of Business Administration (CBA)	100.45				

	College of Computer Studies (CCOS)	109.00				
	College of Criminal Justice Education (CCJE)	89.50				
	College of Dentistry (COD)	99.62				
	College of Education, Arts, and Sciences (CEAS)	84.61				
	College of International Tourism and Hospitality Management (CITHM)	120.38				
	College of Nursing (CON)	130.19				
	Graduate School (GS)	194.50				
	High School (HS)	115.55				
	Lyceum International Maritime Academy (LIMA)	109.33				
Complexity	College of Allied and Medical Profession (CAMP)	85.39	14.765	0.141	Failed to Reject Ho	Not Significant
	College of Business Administration (CBA)	104.70				
	College of Computer Studies (CCOS)	110.79				
	College of Criminal	114.00				

Justice Education (CCJE)					
College of Dentistry (COD)	101.71				
College of Education, Arts, and Sciences (CEAS)	94.67				
College of International Tourism and Hospitality Management (CITHM)	137.23				
College of Nursing (CON)	117.75				
Graduate School (GS)	195.50				
High School (HS)	116.75				
Lyceum International Maritime Academy (LIMA)	83.83				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

No significant differences in OAR effectiveness were found, as illustrated in Table 10, across different college/department groups for Compatibility (Kruskal-Wallis H = 14.394, p > 0.156), Observability (Kruskal-Wallis H = 13.674, p > 0.188), and Complexity (Kruskal-Wallis H = 14.765, p > 0.141).

Table 11. Kruskal Wallis H-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Device/s Used

Indicators	Device/s Used	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	Desktop	99.27	3.124	0.373	Failed to Reject Ho	Not Significant
	Laptop	104.20				
	Smartphone	116.49				
	Tablet	82.17				
Observability	Desktop	105.92	5.453	0.141		Not Significant
	Laptop	100.01				

		Mean Rank	K-statistic	p-value	Decision	Remarks
	Smartphone	118.55			Failed to Reject Ho	
	Tablet	68.83				
Complexity	Desktop	108.77	4.961	0.175	Failed to Reject Ho	Not Significant
	Laptop	103.01				
	Smartphone	116.23				
	Tablet	48.33				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

There are no significant differences in OAR effectiveness across different device usage groups for Compatibility (Kruskal-Wallis H = 3.124, p > 0.373), Observability (Kruskal-Wallis H = 5.453, p > 0.141), and Complexity (Kruskal-Wallis H = 4.961, p > 0.175) as stated in Table 11.

Table 12. Kruskal Wallis H-Test: Comparison of the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Preferred Format

Indicators	Format	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	Accessible to Website	119.01	5.090	0.078	Failed to Reject Ho	Not Significant
	Downloadable via PDF	126.91				
	Both	102.80				
Observability	Accessible to Website	125.57	8.156	0.017	Reject Ho	Significant
	Downloadable via PDF	127.56				
	Both	100.78				
Complexity	Accessible to Website	133.55	13.477	0.001	Reject Ho	Significant
	Downloadable via PDF	128.32				
	Both	98.34				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

Significant differences in OAR effectiveness were found in Table 12 across different preferred format groups for Observability (Kruskal-Wallis H = 8.156, p < 0.017) and Complexity (Kruskal-Wallis H = 13.477, p < 0.001). No significant difference was found for Compatibility (Kruskal-Wallis H = 5.090, p > 0.078).

Table 13. Kruskal Wallis H-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Preferred Document Types

Indicators	Types	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	Thesis and Dissertations	123.33	1.405	0.495	Failed to Reject Ho	Not Significant
	Research Articles	109.63				
	E-books	105.97				
Observability	Thesis and Dissertations	130.87	3.727	0.155	Failed to Reject Ho	Not Significant
	Research Articles	110.77				
	E-books	102.90				
Complexity	Thesis and Dissertations	126.43	1.891	0.389	Failed to Reject Ho	Not Significant
	Research Articles	108.22				
	E-books	106.73				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

Table 13 shows that no significant differences in OAR effectiveness were found across different preferred document type groups for Compatibility (Kruskal-Wallis H = 1.405, p > 0.495), Observability (Kruskal-Wallis H = 3.727, p > 0.155), and Complexity (Kruskal-Wallis H = 1.891, p > 0.389).

Table 14. Kruskal Wallis H-Test: Comparison on the Level of Effectiveness in Open Access Resources by the Respondents when Grouped According to Preferred Features

Indicators	Features	Mean Rank	K-statistic	p-value	Decision	Remarks
Compatibility	Citation Generator	107.27	2.632	0.621	Failed to Reject Ho	Not Significant
	One-Click Navigation by Subtopics	124.20				
	Printable	102.86				
	Search Engine	111.59				

	Categorize by Subject. Years, & Format	124.32				
Observability	Citation Generator	108.18	3.408	0.492	Failed to Reject Ho	Not Significant
	One-Click Navigation by Subtopics	118.88				
	Printable	99.72				
	Search Engine	115.28				
	Categorize by Subject. Years, & Format	133.50				
Complexity	Citation Generator	105.46	3.023	0.554	Failed to Reject Ho	Not Significant
	One-Click Navigation by Subtopics	126.82				
	Printable	106.73				
	Search Engine	111.44				
	Categorize by Subject. Years, & Format	123.23				

Note: *"If the p-value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject*
Ho."

According to Table 14, there are no significant differences in OAR effectiveness across different preferred feature groups for Compatibility (Kruskal-Wallis H = 2.632, p > 0.621), Observability (Kruskal-Wallis H = 3.408, p > 0.492), and Complexity (Kruskal-Wallis H = 3.023, p > 0.554).

Conclusions

Library users are familiar with the Open Textbook Library but often find the Directory of Open Access Books (DOAB) confusing. While the latter includes relevant

materials, some titles may not align with their studies, leading to uncertainty about its usefulness.

Awareness of these resources is not influenced by age, college/department (relative advantage), device type, or preferred document format (as a complexity factor). However, it is shaped by sex, college/department (as a complexity factor), preferred format, and preferred document type (relative advantage). For instance, users with a strong preference for interactive digital textbooks may be more aware of open-access repositories that offer such formats.

Effectiveness is shaped by multiple factors, including age, sex (in terms of compatibility), college/department, device, preferred format (also linked to compatibility), document type, and platform features. However, contradictions arise, particularly in how sex and preferred format relate to observability and complexity. The former refers to how easily users can see the benefits of these resources in action while the latter reflects the perceived difficulty of navigating or using them effectively.

These findings have societal and policy implications. Open access resources (OAR) are crucial, especially during crises like the COVID-19 pandemic, when accessing physical materials is difficult. Libraries can promote OAR through varied methods, identifying user information needs during crises. Marketing plans can improve OAR availability, accessibility, awareness, and effectiveness. Universities can benefit from exploring OAR usage.

Recommendations

The researcher recommended intensifying promotion of open access, enhancing equitable access, educating on continuous internet accessibility, widening the comprehensive selection, and improving website organization make library users realize that open access resources are accessible in a timely and equitable manner and willing library users to recommend according to their experience in how to attain more user awareness and effectiveness open access resources among library users (Table 15).

Table 15. Proposed Marketing Plan for Open Access Resources

Key Result Area	Objectives	Strategies	Sources	Performance Indicator	School Year
Library users are moderately aware that Recommended open access resources are disseminat	Improve organization of websites comprising of open access resources	Frequently promote the online service involving recommending open access resources in library	Library Staff	Library users inquire through the social media page of library for relevant information.	2024-2025

		events and orientations.			
ed in the library web page		In a general orientation, explain briefly the significance of open access resources.	Library Staff	Library users understand and realize the significance of open access.	2024-2025
		Library staff shall informally guide library users how to access websites of open access resources is similar to different devices.	Library Staff	Library users can browse websites of open access in a device of their choice.	2024-2025
Library users moderately agree experience complication in understanding of open access resources	Intensify promotion of open access resources to library users.	Conduct an informal training how to select open access resources to minimize congestion to users by means of search filters.	Library Staff	Library users are able to figure out search filters in websites of open access resources.	2024-2025
Library users agree that the open access resources available in the library suited their research needs	Enhance equitable access of open access to students.	Conduct seminar/s for randomly selected open access resources time to time from references done in research and course	Library Staff	Students understand more about using different websites of open access resources.	2024-2025

		outlines in collaboration with the research department.			
		There should have a separate web page comprising of open access resources organized by subjects according to course.	Management Information Systems Department	Browsing selection of open access resources by subject will be more efficient retrieval for library users.	2024-2025
Library users agree that the open access resources are accessible in terms of speed and internet connection.	Widen comprehensive selection of open access resources.	Conduct an in-service training for library staff in considerations of curating open access resources and informal training to library users.	Library Staff	Library staff can curate open access resource in a more efficient manner as need arises.	2024-2025
Library users moderately agree that some titles are only somewhat relevant to my studies for library users	Educate library users how to strategize continuous accessibility of open access resources.	Curate additional websites comprising of open access resources that are selected for library users.	Library Staff Management Information Systems Department	Library users can avail more selection of websites of open access resources.	2024-2025
		Recommend open access websites especially in course outlines.	Library Staff	Teachers can provide online learning materials and environment	2024-2025

		Library staff shall informally teach library users how to improvise Internet connection in case of technical problems in library.	Library Staff Internet Device	Library users can experience continuous accessibility of websites of open access resources through Internet connection.	2024-2025
				from websites of open access resources.	

Notes

This paper was presented during the 15th International Research Web Conference and 10th Guro Research Awards, titled: "Empowering Education 5.0: Navigating the Future through Innovation and Excellence."

References

Adil, H. M., Ali, S., Sultan, M., Ashiq, M., & Rafiq, M. (2024). Open education resources' benefits and challenges in the academic world: a systematic review. *Global Knowledge, Memory and Communication, 73*(3), 274-291. https://www.emerald.com/insight/content/doi/10.1108/GKMC-02-2022-0049/full/html

Ajibili, D. O., & Ajibili, S. B. (2023). Application and use of social media tools for effective service delivery in academic and research libraries. *Academic and Research Libraries Section of the Nigerian Library Association on: Current trends and emerging issues in academic and research libraries for information service delivery, 28–29.*

Bankole, Q. (2019). Awareness and attitude of undergraduates toward serial publications in Kwara State University Library. *Library Philosophy and Practice*, 1-21. https://core.ac.uk/download/pdf/215162027.pdf

Cengage Group. (n.d.). Content development philosophy. https://www.cengagegroup.com/about/content-development-philosophy/

Chigbu, E. D., Njoku, E. O., & Uzoagba, N. (2016). Management and usage of open access scholarly online resources in university libraries in Nigeria. *The Electronic Library*, *34*(6), 974–984. https://doi.org/10.1108/el-08-2015-0140

Danladi, M. B., Aderibigbe, T., & Mahdi, A. (2015). Strategic marketing plan for enhancing information service in academic libraries. *International Journal of Research,   9(1).* https://globalacademicgroup.com/journals/approaches/MUHAMMAD%20BELLO12.pdf

De La Salle University Manila. (2021, October 15). *Free databases*. De La Salle University. https://www.dlsu.edu.ph/library/resources/free-databases/

Govindarajan, R., & Dhanavandan, S. (2019). Awareness and attitude towards open access among teaching staff in higher education institutions in Tamil Nadu. *International Journal of Information Studies and Libraries*, *4*(1), 1. http://www.publishingindia.com/ijisl/107/awareness-and-attitude-towards-open-access-among-teaching-staff-in-higher-education-institutions-in-tamil-nadu/791/5500/

Edem, N. B., & Egbe, N. (2016). Availability and utilization of electronic resources by postgraduate students in a Nigerian University Library: A case study of University of Calabar, Nigeria. In *Information and Knowledge Management, 6*(2), 60-69. https://core.ac.uk/download/pdf/234672286.pdf

Kunle, Y. S., Mary, A. O., & Zhimwang, Z. S. (2021). Awareness and use of open access journal articles in federal univesity Lokoja postgraduate students, Nigeria. *International Journal of Information Practice and Management*, 263. https://www.researchgate.net/profile/Olayinka-Adekoya/publication/368283540_International_Journal_of_Information_Practice_and_Management_IJIPM/links/63df8b3662d2a24f9202ab46/International-Journal-of-Information-Practice-and-Management-IJIPM.pdf#page=271

Kurian, B., & Nagarajan, M. (2018). Awareness and use of Open Access Resources among the Research Scholars of Annamalai University, Tamil Nadu: A Study. *Journal of Advances in Library and Information Science*, 7(1), 109-114. http://jalis.in/pdf/7-1/Kurian.pdf

Mahmud, A. A , Akanda, A. K. M. E. A., Hasan, M. N. Haque, M. A., & Begum, D. (2020). Higher education and scholarly research: faculties versus students perspectives. *Library Philosophy and Practice (e-journal)*, 4516. https://digitalcommons.unl.edu/libphilprac/4516

Minakshi, & Joshi, M. K. (2021). Awareness of open access resources among researchers and faculty members in sciences in the select universities of Haryana and Punjab. *International Journal of Library Information Network*, *6*, 2455–5207. https://slp.org.in/IJLINK/volumes/IJLINK-V6I1-1.pdf

Mohseni, S. (2017). Marketing plan for Kajaani University of Applied Sciences Library. https://www.theseus.fi/handle/10024/123133

Nagra, K. A. (2017). Developing a strategic marketing plan for academic library e-resources to optimize return on investment. *Community & Junior College*

Libraries, 23(3-4), 115-128. https://www.tandfonline.com/doi/abs/10.1080/02763915.2019.1661735

Ofua, J. O. (2023). Awareness, perception, and utilization of open access resources among delta state university research scholars: a research. *Library Philosophy & Practice*. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=14580&context=libphilprac

Okon, M. E., & Umoh, M. O. (2025). Marketing of information and library services in Nigerian university libraries: the way forward. *Afrischolar Discovery Repository (Annex)*. https://publications.afrischolar.net/index.php/home/article/view/358

Oguntoye, F. B., Olafimihan, C. O., & Ajibare, O. O. (2024). Reimaging the library: Marketing strategies for the digital age. *International Journal of Knowledge dissemination (IJKD), 5*(2), 14-29. https://ijkd.uniabuja.edu.ng/index.php/ijkd/article/view/108

Oriogu, C. D., Oluwatola, K. I., Oriogu-Ogbuiyi, D. C., & Enamudu, A. I. (2018). Awareness and use of electronic books among undergraduate students: A survey. Library Philosophy and Practice (e-journal), 2208. https://core.ac.uk/download/pdf/215160102.pdf

Osano, J. O. (2012). *Assessment of subscription and open access online resources of San Beda College*. [Unpublished master's thesis]. Polytechnic University of the Philippines.

Reitz, J. M. (2004). Curation. *In Online Dictionary of Library and Information Science*. https://odlis.abc-clio.com/odlis_c.html

Salaria, N. (2012). Meaning of the term descriptive survey research method. *International journal of transformations in business management, 1*(6), 1-7.

Shahzadi, U., & Hussain, B. (2019). Awareness and access of open access resources by teacher educators and student teachers: Potential for reflection. *Pakistan Journal of Distance and Online Learning, 5*(1). http://journal.aiou.edu.pk/journal1/index.php/PJDOL/article/view/63

Shashidhara, J., & Sambathkumar, S. A. (2019). Awareness and use of open access resources by the users of selected dental college libraries in Bangalore, Karnataka: A comparative study. *Asian Journal of Information Science and Technology, 9*(2), 50–55. https://doi.org/10.51983/ajist-2019.9.2.276

Thomas, L. (2023, December 18). *An introduction to simple random sampling*. Scribbr. https://www.scribbr.com/methodology/simple-random-sampling/

UM DLP Main. (2025). *Facilities and services*. University of Mindanao. https://dlpmain.umindanao.edu.ph/

University of Santo Tomas' Miguel de Benavides Library. (2022). *Electronic resources*.

University of Santo Tomas. https://library.ust.edu.ph/e-databases.html

UNESCO. (2018). *Open access resources*. https://www.unesco.org/en/open-access
The University Library. (2023). *Open access databases*. University of the
Philippines Library. https://mainlib.upd.edu.ph/open-access-databases/