



## **Ethical Behaviour and Use of Online Information Resources by Undergraduates in Two Selected Universities in Oyo State, Nigeria.**

### **Abstract**

*This study investigated ethical behavior and use of online information resources (OIR) among undergraduates of University of Ibadan and Lead City University, Nigeria. Descriptive correlational survey research design was employed. The population of the study was 18,464 undergraduates, from which a sample of 292 students was taken using a two-stage random sampling technique representing four percent of undergraduates randomly selected from each faculty in both universities. Data were collected using questionnaire. The data collected were analysed using descriptive (frequency, percentage and mean) and inferential (Pearson Product Moment Correlation) statistics. The findings revealed that OIR were highly used for both academic and non-academic purposes among undergraduates, with Google ( $\bar{x} = 3.72$ ), and online journals ( $\bar{x} = 3.56$ ) ranking highest. High ethical practices among the undergraduates include providing proper credit to the original authors ( $\bar{x} = 3.55$ ), respecting copyright policies ( $\bar{x} = 3.47$ ), and verifying correctness of information ( $\bar{x} = 3.24$ ). Ethical behavior was positively correlated with the employment of OIR. Top challenges highlighted are expensive internet services and inadequate infrastructure. Universities are encouraged to provide relevant trainings on digital research ethics to facilitate effective utilisation of OIR.*

**Keywords:** Ethical behavior; Online information resources; Undergraduates.

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## Introduction

The advent of internet has transformed students' access to and engagement with information. Online Information Resources (OIRs) like electronic journals, open educational resources, search engines, institutional repositories, and academic databases have become a normal component of undergraduates' studies. These channels offer rapid, comprehensive, and cost-free access to global knowledge, allowing learners to engage in independent learning, research, and collaborative projects (Sharma, 2024). Research indicating the role of ethical behavior on the academic engagements of undergraduates, particularly on their ways of using virtual resources, based on aspects such as ethical information handling, academic integrity, intellectual property, and virtual ethics in academic settings. Similarly, convenience of access to these resources raises ethical concerns such as plagiarism, intellectual property rights, and misinformation. Moreover, the emerging trend of the utilisation of online sources in academic settings calls for a strong ethical orientation among students in how they exploit online sources, in terms of academic integrity, referencing, and utilisation of digital content, as highlighted in the study conducted (Olubiyo & Olubiyo, 2023). The levels of ethical practice are often shaped by the levels of exposure of students to digital literacy education and school support systems. Existing studies reveal that students who were formally trained in information ethics and ethical digital citizenship were far more likely to cite sources appropriately, verify facts, and maintain intellectual property (Hosam & Abdulrahman, 2023).

Despite knowledge of ethical standards such as proper citation and non-plagiarism, it has been observed that their application is irregular. Academic pressure, lack of training in information ethics, and violation of institutional ethical practice often lead to improper use of web content. According to Nwakaego (2020) many Nigerian undergraduates are found to be ill-informed about copyright legislation and critical evaluation of OIR, thereby contributing to the inadvertent spread of information and engagement in academic dishonesty. To support this submission, Apata et al. (2025) stated that most institutions in Nigeria still do not have an organised method of teaching information ethics, and students are left to explore intricate digital spaces by themselves. Thus, there is a need to embed training programmes in general studies modules in universities to bridge ethical gap in the

undergraduates' use of OIR. As OIRs become more critical to rely on, and the ethical issue that comes with their application, it is imperative to investigate ethical behavior and the use of OIR among Nigerian university undergraduates.

## **Statement of the problem**

The emergence of the internet and the proliferation of digital technologies and exposure to OIR has transformed research and learning among undergraduates. Though this development has enhanced learning opportunities, it has introduced problems associated with appropriate utilization of information. Today, majority of undergraduates utilise OIR extensively for learning without adequate understanding of research ethics and intellectual property rights. Students primarily cut and paste material from websites without attribution, infringe on copyrights, and spread unverified information for academic or personal use. It has also been observed by Nwakaego (2020) that many Nigerian universities have failed to integrate digital research ethics and information literacy into their curricula; leading students have to navigate the vast digital information space without ethical support. These actions not only violate academic integrity but also debase scholarship and pose barriers to research ethics and critical thinking development. Therefore, this study investigated ethical behavior and use of OIR among undergraduates in two universities in Oyo State, Nigeria.

## **Research questions**

The following research questions were raised to guide this study:

1. What are the types of OIR utilised by undergraduates of University of Ibadan and Lead City University?
2. What is the frequency of use of OIR by the undergraduates by undergraduates of University of Ibadan and Lead City University?
3. What are the purposes for which the undergraduates use OIR by undergraduates of University of Ibadan and Lead City University?
4. What is the undergraduates' level of awareness of ethics pertaining to the use of OIR by undergraduates of University of Ibadan and Lead City University?
5. What is the level of compliance with ethics in the undergraduates' use of OIR by undergraduates of University of Ibadan and Lead City University?

6. What are the challenges encountered by the undergraduates in their use of OIR by undergraduates of University of Ibadan and Lead City University?

## Hypotheses

**H1:** There is no significant difference in OIR utilisation by undergraduates of University of Ibadan and Lead City University.

**H2:** There is no significant relationship between the undergraduates' ethical behavior and OIR utilisation by undergraduates of University of Ibadan and Lead City University.

## Review of related literature

The use of digital technologies within higher education has increased access to OIR for students, enabling them to research, complete assignments, and conduct independent studies. With increased access comes increased worry about ethical matters like plagiarism, copyright, data privacy, and misinformation. Ethical practice in the use of OIR involves students' ability to access, evaluate, and use online material ethically specifically in relation to the identification of sources, intellectual property rights, and proofreading (Acma & Ducot, 2025). The literature indicates that students tend to be aware of ethical principles but their actual behavior is determined by a range of factors including training, organisational regulations, peer, and digital literacy instruction availability.

Several studies have attempted to determine the extent of ethics among online university students. In accordance with Zaman et al. (2020), majority of students continued to engage in unethical behavior of copy-pasting from the internet without attribution despite acknowledging the necessity of referencing sources. The problem often seems to be worsened by ease of access to internet content in universities with lack of information security policy and trainings. Similarly, Nwakaego (2020) found that most undergraduates in Nigerian universities lacked adequate knowledge of copyright law and ethical standards, thus encouraging unintended academic dishonesty. The authors called for more efficient institutional measures and sensitisation programs to improve the ethical capacity of students.

Other studies indicate the significance of information literacy and digital ethics education in shaping online behavior among students. Research conducted by Nwalo and Babarinde (2022) revealed that students who are formally educated in information literacy

are likely to practice ethical use of online information. The study recorded that when digital ethics are included in the curriculum, there is increased sensitivity to citing sources, verification of online information, and avoidance of academic plagiarism. In like manner, Agina-Obu and Okwu (2023) had assumed that online behavior is a habit learned and that universities must equip students not just with the access to resources online but also the ability to use them ethically. Their research supports the assumption that ethics and digital literacy must be learned as complementary sets of skills in the cyber world. With increased awareness, there are still ethical concerns surrounding it due to infrastructural limitations and academic load.

As indicated by Orok et al. (2023), a number of students end up committing unethical behavior such as plagiarism due to poor internet connectivity, lack of necessary resources, and limited time. The pressure to meet academic timelines along with a lack of adequate training in digital ethics is likely to lead to cutbacks and the sacrifice of ethics. Additionally, where plagiarism checking tools and enforcement are weak, students are not likely to have complete awareness of the implications of unethical behavior. Thus, ethical use of OIRs is not just a personal obligation but also an institutional preparedness and institutional support systems issue. The literature provides evidence of a growing recognition of the importance of ethical behavior in online information resource usage by students. Having awareness existing, actual following still remains a problem due to a lack of training, institutional gaps, and environmental factors. Sustainability of e-media literacy programs, incorporation of information ethics as part of classroom curriculum, and enhanced academic integrity policies are crucial steps for fostering responsible and ethical use of electronic resources.

## Methodology

A descriptive survey research design was used for this study. A total of 16,623 were the number of undergraduates from the University of Ibadan, while a total of 1,841 were the number of undergraduates from Lead City University, all from the 2024-2025 academic session. A two-stage Simple Random Sampling Technique (SRS) was used for data collection. At first stage, 60% of the faculties from each university selected by balloting. A proportion of 60% was selected for the study since it was anticipated that it would be adequate enough to represent the different faculties due to the manageable number, which a trend is found in

conducting survey research for a vast number of students. On this note, a total of 10 were selected from the university, while a total of 2 were selected from Lead City. At the second stage, the respondents under the category of undergraduates comprised only 4% of the population. The figure was reached through the suggestions given in the model designed by Israel (2013), on the sample fraction determining model, where it was suggested that the figure could be used in large population studies where the population figures were already known, making it somewhat homogeneous. This procedure yielded a total sample size of 292 respondents. Analysis was done using descriptive statistics (frequency, percentage, mean) as well as the application of inferential statistic (Pearson correlation Product Moment).

## Results and Analysis

**Research question 1:** What are the types of OIR utilised by undergraduates of University of Ibadan and Lead City University?

**Table 1: Types of OIR utilised by undergraduates**

S/N	OIRs	HU (%)	MU (%)	LU (%)	NU (%)	$\bar{x}$	Std.Dev
1	Google scholar	141 (48.3%)	74 (25.3%)	49 (16.8%)	28 (9.6%)	3.12	1.011
2	Agora	12 (4.1%)	46 (15.8%)	70 (24.0%)	164 (56.2%)	1.68	.885
3	Twitter	173 (59.2%)	84 (28.8%)	30 (10.3%)	5 (1.7%)	3.46	.747
4	Google	223 (76.4%)	56 (19.2%)	12 (4.1%)	1 (0.3%)	3.72	.554
5	Hinari	21 (7.2%)	33 (11.3%)	80 (27.4%)	158 (54.1%)	1.72	.929
6	LinkedIn	111 (38.0%)	61 (20.9%)	52 (17.8%)	68 (23.3%)	2.74	1.194
7	Coursera	99 (33.9%)	63 (21.6%)	65 (22.3%)	65 (22.3%)	2.67	1.161
8	E-books	190 (65.1%)	67 (22.9%)	26 (8.9%)	9 (3.1%)	3.50	.784
9	Researchgate	92 (31.5%)	65 (22.3%)	88 (30.1%)	47 (16.1%)	2.69	1.081
Weighted Mean = 2.81							

\*\*Keys: Highly Used (HU), Moderately Used (MU), Lowly Used (LU), and Not Used (NU).

Table 1 indicated that Google Scholar, Agora, Twitter, Google, Hinari, LinkedIn, Coursera, E-books, and ResearchGate were moderately used. Moreover, the analysis highlighted that Google (with a  $(\bar{x}) = 3.72$ ) emerged as the most frequently used resource, whereas Agora (with a  $(\bar{x}) = .68$ ) was the least utilised among undergraduates at both universities.

**Research question 2:** What is the frequency of use of OIR by the undergraduates by undergraduates of University of Ibadan and Lead City University?

**Table 2: Frequency of use of OIR by the undergraduates**

S/N	OIRs	Very Often (%)	Often (%)	Occasionally (%)	Never (%)	$\bar{x}$	Std. Dev
1	Google scholar	116 (39.7%)	82 (28.1%)	63 (21.6%)	31 (10.6%)	2.97	1.020
2	Agora	23 (7.9%)	34 (11.6%)	64 (21.9%)	171 (58.6%)	1.69	.961
3	Twitter	164 (56.2%)	80 (27.4%)	39 (13.4%)	9 (3.1%)	3.37	.829
4	Google	219 (75.0%)	63 (21.6%)	9 (3.1%)	1 (0.3%)	3.71	.537
5	Hinari	15 (5.1%)	28 (9.6%)	67 (22.9%)	182 (62.3%)	1.58	.864
6	LinkedIn	87 (29.8%)	50 (17.1%)	76 (26.0%)	79 (27.1%)	2.50	1.180
7	Coursera	89 (30.5%)	48 (16.4%)	75 (25.7%)	80 (27.4%)	2.50	1.188
8	E-books	173 (59.2%)	71 (24.3%)	30 (10.3%)	18 (6.2%)	3.37	.900
9	Researchgate	86 (29.5%)	70 (24.0%)	86 (29.5%)	50 (17.1%)	2.66	1.077
Weighted Mean $\bar{x}$ =2.71							

Table 2 showed the frequency of undergraduates' use of OIR. The weighted  $\bar{x}$  of 2.71 surpasses the criterion mean of 2.50, indicating a high frequency of usage among undergraduates. Notably, Google emerges as the most used resource with a mean of  $(x)$  of 3.71, while Hinari, with a  $(x)$  of 1.58, stands as the least used OIR among undergraduates.

**Research question 3:** What are the purposes for which the undergraduates use OIR by undergraduates of University of Ibadan and Lead City University?

**Table 3: Purpose of use of OIR by the undergraduates**

1\*\*Keys: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD)

S/N	Use of OIR for:	SA (%)	A (%)	D (%)	SD (%)	Mean $\bar{x}$	Std. Dev
1	Assignments	232 (79.5%)	58 (19.9%)	2 (0.7%)	0 (0%)	3.79	.426
2	Group discussions	136 (46.6%)	141 (48.3%)	12 (4.1%)	3 (1.0%)	3.40	.621
3	Recreation	111 (38.0%)	119 (40.8%)	49 (16.8%)	13 (4.5%)	3.12	.845
4	Study notes	91 (31.2%)	105 (36.0%)	39 (13.4%)	57 (19.5%)	2.79	1.089
5	Projects	159 (54.5%)	120 (41.1%)	12 (4.1%)	1 (0.3%)	3.50	.595
6	Entertainment	189 (64.7%)	79 (27.1%)	20 (6.8%)	4 (1.4%)	3.55	.684
7	Group work	123 (42.1%)	144 (49.3%)	23 (7.9%)	2 (0.7%)	3.33	.649
8	Business	170 (58.2%)	103 (35.3%)	17 (5.8%)	2 (0.7%)	3.51	.639
9	Research	157 (53.8%)	118 (40.4%)	15 (5.1%)	2 (0.7%)	3.47	.628
Weighted Mean = 3.38							

Table 3 presented analysis on the primary reasons for respondents' use of OIR were mostly for assignments ( $\bar{x}=3.79$ ), followed by entertainment ( $\bar{x}=3.55$ ), business ( $\bar{x}=3.51$ ), projects ( $\bar{x}=3.50$ ), research ( $\bar{x}=3.47$ ), group discussions ( $\bar{x}=3.40$ ), group work ( $\bar{x}=3.33$ ), recreation ( $\bar{x}=3.12$ ), and study notes ( $\bar{x}=2.79$ ).

**Research question 4:** What is the undergraduates' level of awareness of ethics pertaining to the use of OIR by undergraduates of University of Ibadan and Lead City University?

**Table 4: Level of awareness of ethics in the use of OIR by the undergraduates.**

S/N	Level of awareness	VGE (%)	GE (%)	LE (%)	VLE (%)	Mean $\bar{x}$	Std. Dev
1	How important is acknowledging original sources?	180 (61.6%)	97 (33.2%)	12 (4.1%)	3 (1.0%)	3.55	.626
2	How crucial is respecting copyright laws?	164 (56.2%)	104 (35.6%)	22 (7.5%)	2 (0.7%)	3.47	.665
3	How often do you cross-reference sources?	103 (35.3%)	123 (42.1%)	58 (19.9%)	8 (2.7%)	3.10	.808
4	How confident are you in discerning credible sources?	101 (34.6%)	135 (46.2%)	42 (14.4%)	14 (4.8%)	3.11	.820
5	How much do transparency & honesty enhance credibility?	169 (57.9%)	103 (35.3%)	16 (5.5%)	4 (1.4%)	3.50	.666
6	How familiar are you with plagiarism implications?	89 (30.5%)	121 (41.4%)	58 (19.9%)	24 (8.2%)	2.94	.912

**Weighted Mean = 3.28; Arithmetic Mean = 16.12**

\*\*Keys: Very Great Extent (VGE), Great Extent (GE), Low Extent (LE) and Very Low Extent (VLE)

Table 4 presented the level of awareness of ethics in the use of (OIRs) among undergraduates. The weighted mean of 3.28 exceeds the criterion mean of 2.50, indicating a high level of awareness of ethics in the use of OIRs among undergraduates.

**Table 4.1:** Test of norm showing level of awareness of ethics in the use of OIRs among undergraduates.

Interval	Mean index	Level of Awareness	Frequency	Percentage
1-12		Low	-	-
13-24	<b>16.12</b>	High	292	100.0

Table 4.1 presented the level of awareness regarding ethics in the use of OIR among undergraduates. Notably, none of the undergraduates exhibited a low level of awareness, with 100.0% (n=292) demonstrating a high level of awareness.

**Research question 5:** What is the level of compliance with ethics in the undergraduates' use of OIR by undergraduates of University of Ibadan and Lead City University?

**Table 5: Level of compliance of ethics in the use of OIR by the undergraduates**

S/N	Level of compliance	VGE (%)	GE (%)	LE (%)	VLE (%)	Mean $\bar{x}$	Std. Dev
1	Do you cite sources when using others' work?	110 (37.7%)	136 (46.6%)	35 (12.0%)	11 (3.8%)	3.18	.785
2	Do you get permission before using copyrighted material?	91 (31.2%)	128 (43.8%)	62 (21.2%)	11 (3.8%)	3.02	.822
3	Do you understand and follow copyright laws?	78 (26.7%)	137 (46.9%)	62 (21.2%)	15 (5.1%)	2.95	.828
4	Do you verify information accuracy before using or sharing it?	115 (39.4%)	138 (47.3%)	34 (11.6%)	5 (1.7%)	3.24	.722
5	Do you strictly follow privacy policies?	89 (30.5%)	142 (48.6%)	51 (17.5%)	10 (3.4%)	3.06	.784
6	Are you transparent about sources and methodologies?	110 (37.7%)	124 (42.5%)	48 (16.4%)	10 (3.4%)	3.14	.812
7	Do you actively avoid plagiarism?	89 (30.5%)	147 (50.3%)	43 (14.7%)	13 (4.5%)	3.07	.792
8	Do you follow required citation styles?	106 (36.3%)	126 (43.2%)	50 (17.1%)	10 (3.4%)	3.12	.811
9	Do you comply with digital content licensing agreements?	84 (28.8%)	124 (42.5%)	56 (19.2%)	28 (9.6%)	2.90	.926

**Weighted Mean = 3.08; Arithmetic Mean = 27.68**

Table 5 illustrated the level of compliance with ethics in the use of OIRs among undergraduates. The weighted mean of 3.08 surpasses the criterion mean of 2.50, indicating a high level of compliance with ethics in the use of OIRs among undergraduates.

**Table 5.1:** Test of norm showing level of compliance of ethics in the use of OIRs among undergraduates.

Interval	Mean index	Level of compliance	Frequency	Percentage
1-18		Low	-	-
19-36	<b>27.68</b>	High	292	100.0

Table 6.1 presented the level of compliance regarding ethics in the use of OIRs among undergraduates. Notably, none of the undergraduates exhibited a low level of compliance, with 100.0% (n=292) demonstrating a high level of compliance among undergraduates in the universities.

**Research question 6:** What are the challenges encountered by the undergraduates in their use of OIR by undergraduates of University of Ibadan and Lead City University?

**Table 6: Challenges of use of Online Information Resources (OIRs) by the undergraduates**

S/N	Challenges	SA (%)	A (%)	D (%)	SD (%)	Mean $\bar{x}$	Std. Dev
1	Limited Access to Academic Resources	117 (40.1%)	104 (35.6%)	48 (16.4%)	23 (7.9%)	3.08	.936
2	Limited Internet Access.	114 (39.0%)	114 (39.0%)	47 (16.1%)	17 (5.8%)	3.11	.880
3	Infrastructure Issues	144 (49.3%)	118 (40.4%)	27 (9.2%)	3 (1.0%)	3.38	.696
4	Cost of Internet Services is too high	167 (57.2%)	101 (34.6%)	22 (7.5%)	2 (0.7%)	3.48	.666
5	Digital Literacy Challenges	54 (18.5%)	89 (30.5%)	108 (37.0%)	41 (14.0%)	2.53	.950
6	Content Quality and Reliability are low	51 (17.5%)	113 (38.7%)	92 (31.5%)	36 (12.3%)	2.61	.914

**Weighted Mean  $\bar{x} = 3.03$**

Keys: *Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).*

Table 6 revealed that the most prominent challenge is high cost of internet services ( $\bar{x}=3.48$ ), infrastructure issues ( $\bar{x}=3.38$ ), limited internet access ( $\bar{x}=3.11$ ), limited access to academic resources (mean score=3.08), low content quality and reliability ( $\bar{x}=2.61$ ), and digital literacy challenges ( $\bar{x}=2.53$ ) respectively.

**Hypotheses 1:** There is no significant difference in the use of OIR by undergraduates of University of Ibadan and Lead City University.

**Table 7: The difference in the use of OIR by undergraduates of University of Ibadan and Lead City University.**

Variables	N	Mean	St. Dev	P-value (T<=t)	Critical value	Remark
University of Ibadan	262	24.5	4.673			
Lead City University	30	22.4	3.256	0.003	2.015	Sig.

*Significant at the 0.05 level*

Table 7 demonstrated that with a p-value below the significance level of 0.05, the hypothesis is rejected which suggests no significant difference in the use of OIR between undergraduates at the University of Ibadan and Lead City University. Thus, based on the

evidence, it is evident that there exists a significant difference in the use of OIR among the undergraduates.

**Hypotheses 2:** There is no significant relationship between the undergraduates' ethical behavior and their use of OIR.

**Table 8: PPMC showing the relationship between the undergraduates' ethical behavior and their use of OIR.**

Variables	N	Mean	St. Dev	r	P	Remark
Ethical behavior	292	47.4	7.940			
Use of online information resources.	292	24.3	4.588	-.125	.033	Sig.

*Correlation is significant at the 0.05 level (2-tailed)*

Table 8 results indicated a significant relationship ( $r = -.125$ ,  $P < 0.05$ ) between undergraduates' Ethical behaviour and Use of OIR. Since the p-value is less than the significance level of 0.05, the hypothesis (H2) is rejected. Based on the results, there is indeed a significant relationship between undergraduates' ethical behaviour and use of OIR.

## Discussion of the findings

The findings of this study reveal a notably high level of OIR utilisation among undergraduates. The findings of this study support Oladele and Aragbaye's (2021) position, whose study investigated the use of OIR among undergraduates at the University of Ibadan. The findings also support the submissions of Igbinovia and Bayo-Odelami (2022) on use of OIR among undergraduates in Ajayi Crowther University and Lead City University. The results revealed that the undergraduates' frequency of use was slightly high and such use was for both academic and non-academic purposes. Furthermore, the study highlights Google as the predominant OIR employed by undergraduates at both the University of Ibadan and Lead City University.

The results indicated that the primary motivation for students using OIR is for academic purposes. The results aligned with the positions of Jiang et al. (2024) and Apuke and Tunca (2022) who stated that a substantial number of undergraduates were using online platforms for their academic and research work. The findings of the study resonate with

Awodoyin et al. (2024), who identified inconsistent electricity provision, unfamiliarity with websites, lack of internet connectivity within universities, and a general unawareness about OIR as obstacles undergraduates' use of OIR.

The findings highlighted a high level of awareness and compliance regarding ethical behavior in the use of OIR among undergraduates. This observation aligns with the conclusions drawn by Dosunmu et al. (2024) that demographic and academic factors are vital to ethical decision making. This could promote a high level of awareness and compliance of ethics in the use of OIRs among undergraduates. The findings of this study indicated a significant difference in the use of OIR among undergraduates of the two institutions. These findings corroborate the study done by Ruzegea & Msonde (2021), which showed dissimilarities in the pattern of usage of the OIR among university undergraduates. Moreover, the findings were similar to Alabi's (2021) result in terms of frequency, purposes, and challenges among university level students. Additionally, the findings of the study showed a significant relationship between the ethical behavior of university undergraduates and their usage of the OIR. These findings were similar to Ebiefung's (2023), study which showed a low level of proficiency among university undergraduates studying at the University of Ibadan on evaluating the credibility and reliability of the OIR.

## Conclusion

This study indicated that ethical behavior is very vital to responsible use of OIR among undergraduates of the University of Ibadan and Lead City University. The findings were characterised by extensive usage of online resources, with Google being the most utilised site for academic and non-academic tasks. Additionally, the research confirmed that despite exhibiting a relatively good level of ethical sensitivity to fully leverage on OIR, the students were confronted with challenges of high cost of internet, inferior infrastructure, and low digital literacy. The study also disclosed a significant relationship between ethical practice by students and their use of online materials, and this indicates that awareness concerning ethics informs the manner in which students' access, assess, and use online information. Moreover, there was a significant disparity in use by students from the two universities, and this indicates that institutional context and facilitation can heavily impact

use of digital resources as well as ethical practice. The study underlines the fact that universities should provide access to the internet, encourage ethical values and promote information literacy competencies to enable students become responsible digital citizens.

## **Recommendations**

1. Universities should include courses or modules of digital research ethics and information literacy in general studies or faculty curricula. This will ensure that students gain responsible use of OIR for academic purposes.
2. Universities should invest in reliable internet services, free or subsidized Wi-Fi, and digital learning infrastructure to enhance responsible use of OIR among the undergraduates.
3. Universities must enhance and market their online libraries and academic databases as reliable substitutes for common search engines, enabling students to access scholarly content without encountering misinformation.

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