

Awareness and implementation of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria.

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Abstract:

The study investigated the Awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. Specifically, the study sought to determine information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria, and the extent of awareness and implementation of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. A descriptive survey research design was employed, with a population of 267 librarians from 15 public university libraries. No sample was done as a result of the manageable size of the population. The instruments for data collection were questionnaire and interview guide. The findings show that there is high extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. It also indicate that key elements of the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria are intellectual freedom and access to information, information privacy, regardless of the set of information ethics, it has no significant difference in the mean responses on awareness of information ethics among librarians for effective service delivery in federal and state university

libraries in North Central Nigeria. Based on the findings, it was concluded that information ethics sets could be applied in various areas of the library to contribute to effective service delivery in federal and state university libraries in North Central Nigeria, there is a need to effectively ensure that librarians are trained in order to boost their awareness on ethical practices to enhance service delivery in federal and state university libraries in North Central Nigeria.

Keywords: Information ethics, librarians, service delivery, university libraries, North Central Nigeria, awareness levels.

Introduction

In the digital era, information ethics is a foundational concept in the library and information science (LIS) profession, helping librarians to fulfill their ethical responsibilities to users, resources, institutions, and society. In a general sense, it can be described as the use of moral concepts to production, organization, dissemination, and consumption of information (Goguen, 2014), it touches upon the following vital problems: privacy, intellectual property, fairness, accuracy of resources, absence of prejudice, and opposition to censorship. These values are legalized in all parts of the world, especially in the IFLA Code of Ethics on Librarians and Other Information Workers (IFLA, 2012) which underlines the unrestricted access, protection of intellectual property, neutrality, and secrecy of the user as direct principles of effective service provision in academic settings.

The importance of information ethics in Nigeria is increased by the fast digitalization, higher education changes, and infrastructural limitations. The Librarian Registration Council of Nigeria (LRCN) has formulated a Code of Ethics and Professional Conduct that is consistent with the international standards but more responsive to the realities of the local context, which is cultural diversity, shared values and balancing between individual privacy and societal expectations. It fosters user access not restricted unnecessarily, professional integrity, intellectual freedom and contributions towards development of librarianship.

Adherence to these standards will result in user confidence, decrease information abuse e.g., copyright violations and improve quality of reference, circulation and digital services in university libraries (Yusuf, 2021; Olorunsaye, and Fagbami, 2021). Nevertheless, there are still problems, especially low awareness and lack of compliance levels, which hinder the provision of effective service delivery that defined the timeliness, accuracy, equity, and user-centered provision of information in resource-limited environments.

Libraries in Nigerian universities are usually faced with the challenges of inadequate funding, power outages, lack of proper ICT infrastructure, lack of skills among employees and challenges in handling the serials and electronic materials. Such problems are aggravated in North Central Nigeria that encompasses states such as, Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory where regional inequalities are the order of the day. Libraries in federal universities can receive increased funding and administration, which will contribute to increased exposure to ethical education, although state university libraries have to contend with budget constraints that are more severe, resulting in aged collections, low levels of digital access, and low levels of professional development. These environments may unwillingly lead to ethical failures, such as the invasion of privacy in online systems, unequal access to resources because of infrastructure inequity, or unwitting support of plagiarism by lack of sufficient copyright knowledge.

The issue is especially acute in North Central Nigeria, which is a situation with various ethnic, cultural, and socio-economic processes in the states of Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory. These zone federal and state university libraries have dissimilar degrees of resource availability and institutional support. Federal university libraries (e.g., University of Abuja, Federal University of Lafia) are usually better-funded and exposed to federal professional developmental programs, which might lead to increased levels of ethics awareness and compliance. Conversely, libraries at state universities frequently have to deal with more drastic budgetary constraints, outlived facilities, and the lack of continuing education opportunities that may lead to the decreased awareness levels and uneven ethical implementation (Njideka, N.D.). Such institutional inequalities threaten to increase the disparity in service provision between federal and state institutions, which will continue to cause disparities in access to credible information sources that are ethically controlled to students, faculty, and researchers in the region.

As a result, the issue is in the ambiguous determination of the necessary information ethics set and successful service provision in this situation as well as under investigated level of awareness and practice among working librarians in federal and state university libraries of North Central Nigeria. These gaps are posing threats to the profession in terms of imparting the best core values of fairness, integrity, and user-centeredness, and thus the contribution of the libraries to academic excellence, research integrity, and national development. This paper thus fills these critical gaps by finding the necessary ethics principles in a methodical manner and evaluating the existing level of awareness so as to give a basis on which specific intervention can be implemented.

Purpose

Specifically, the study sought to determine:

- 1 required set information ethics for effective service delivery by librarians in federal and state university libraries in North Central Nigeria
- 2 the extent of awareness of information ethics for effective service delivery by librarians in federal and state university libraries in North Central Nigeria;

Questions

- 1 What are the information ethics set required for effective service delivery by librarians in federal and state university libraries in North Central Nigeria?
- 2 What is the extent of awareness of information ethics for effective service delivery by librarians in federal and state university libraries in North Central Nigeria?

Hypothesis

The null hypothesis was formulated and was tested at 0.05 level of significance.

H₀₁: There is no significant difference in the mean responses on awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria.

Literature review

The awareness of information ethics among librarians as it is emphasized in the literature focusing on its importance in the context of effective service provision in university libraries is important as a basis of the professional practice in the face of digital transformations. Awareness can be described as a simple state of perception or consciousness of an idea or a situation without necessarily having in-depth understanding, recognition, acknowledgment of an idea, situation, and are capable of making informed judgments, decisions, and perform well (Smith, 2020; Olajojo and Oyeboade, 2020). This awareness is important in the field of librarianship because librarians are becoming more dependent on information and communication technologies (ICTs) in service provision, and these bring ethical issues related to intellectual property rights, equal access, privacy of users, data accuracy, integrity, censorship, and misuse (Mbofung and Popoola, 2014; Hoq, 2012). The use of ICT must be accompanied by knowledge of the legal, ethical and social implications in order to handle the information in a way that is morally responsible even during its creation to its distribution.

Information ethics (IE) is an applied ethics field that deals with ethical problems in the creation, organization, dissemination, processing, and use of information. It includes privacy, intellectual property, security, information overload, digital divide, censorship, ownership, copyright and fair access (Chakraborty, 2023).

In the context of librarianship, IE has expanded to include the effects of digital ICT on society and media ethics, with other theories such as the ontocentric view by Floridi considering the infosphere to be ethically prominent. It strikes a balance between the right to know by the people and the privacy of an individual and encourages a responsible treatment. Professional codes, including the ALA, IFLA and Librarian Registration Council of Nigeria (LRCN) of Nigeria, focus on intellectual freedom, impartiality, confidentiality, neutrality, opposition to censorship, and service to the varied communities.

The information ethics has a significant impact on the practice of librarians and their contribution to society. It directs the professional behavior in collection development, access, preservation, and dissemination to promote fairness, diversity, inclusiveness, intellectual freedom, equitable access, and privacy (Bugeja, 2021). The compliance establishes user confidence, reliability, credibility, and confidentiality, fosters active interest, mentoring, and efficient use of resources (Tetteh and Nyantakyi-Baah, 2019). As part of the Library and Information Science (LIS) programs, IE prepares librarians to offer critical thinking, ethical decision-making, and responsible research, empowering users in the digital space (Singh, 2024). It helps to comply with the law regarding copyright, intellectual property, data protection, and access regulations and protect rights and offer legal guidance (Kisselburgh & Beever, 2022). Continuous learning is a professional development driver that enhances ethical judgment, the promotion of professional standards and policies, and the alleviation of such problems as plagiarism, censorship, privacy invasion, and handling sensitive data via policies, education, and discussion (Kibugi, 2021; Adebayo and Mabawonku, 2017; Jones, 2020). Finally, ethical librarians enhance informed and responsible communities by advocating equal access to knowledge, guarding rights, giving voice to marginalized communities, and enabling critical thinking, integrity, and democracy.

There is contradictory awareness levels found in empirical studies mostly in Nigeria and Africa. Most of them report a low or new awareness of professional ethics and ICT-related matters, and practice gaps prevent practice (Igbeka and Okoroma, 2013; Sherratt, Rogerson and Fairweather, 2005; Cilliers, 2017; Otiike and Maina, 2013; Famularo, 2024; Adejumo and Oye, 2015). The differences are by institution or region (Adetimirin, 2017; Prashar et al., 2023), and training, enlightenment programs, committees, monitoring, and enforcement of policies can be recommended. The unequal awareness and compliance may be intensified by infrastructural and financial imbalances in an environment such as the federal and state universities of North Central Nigeria, and this may influence the delivery of ethical services. Specific training is still essential to raise awareness, make compliance, and facilitate successful and ethically sound service delivery.

University libraries service delivery is effective when they offer to meet user needs to improve well-being, including circulation, cataloguing, reference, acquisition, reprographic, awareness, and ICT services (Hu et al., 2023; Lee et al., 2023; Oberhiri-Orumah and Achugbue, 2023). It surpasses expectations through quality, punctual, correct, timely services with little disruptions, fast solutions, uniform quality, clear communication and polite interactions, which create satisfaction and loyalty (Zygiaris et al., 2022; Hinson et al., 2024). It provides credible resources, customized support, favorable conditions, effective procedures, unlimited access to electronic resources, friendly interfaces, and responsive services in the university context with the help of communication and collaboration (Sahoo and Panda, 2020; Akinola, 2022). Increased ethical issues such as privacy, freedom of expression, and access rights exist in the face of the information explosion, and the ethical values of intellectual freedom and anti-censorship must be followed (Knox, 2022; Wingate, 2023; Capurro, Fiorentino, Garzella, and Giudici, 2022).

The ethical awareness will facilitate the inclusive programs (e.g. literacy workshops, digital training, outreach), facilitate equity, belonging, and empowerment, and focus on the needs of users, ethical standards, and efficiency to enhance engagement, learning results, and the institutional role of libraries.

Methodology

The research design used was a descriptive survey research design and the study sample was the 267 librarians in the fifteen public university libraries in North Central Nigeria chosen because of the presence of librarians in the area and the possibility of the librarians improving their services delivery when they become more aware and when they apply the ethics of information. Accidental (census) sampling was chosen as the sample population was found to be manageable as the entire population was sampled. Data was gathered using a structured questionnaire that is known as Librarians Awareness and Implementation of Information Ethics Questionnaire (LAIIEQ) and an interview guide, the questionnaire was face validated by three experts within the University of Nigeria, Nsukka, and the Cronbachs Alpha reliability coefficient of the questionnaire was determined to be 0.88 after the pilot test was conducted on the 20 librarians in the same institution. Frequency counts, mean, standard deviation, and independent samples t-tests were used to analyze quantitative data at 0.05 level of significance hypotheses accepted if $p \geq 0.05$ and rejected if $p < 0.05$), qualitative data analysis was performed through transcription and thematic analysis of interview responses to identify common trends in responses, and results were triangulated using both data sources to increase their validity.

Results

The results were presented in Tables in line with the research questions and the corresponding hypotheses that guided the study.

Presentation and Interpretation of the Results

Research Question One

What are the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria? Data answering the research question is contained in **Table 1**:

Frequency and percentages of information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria (n=237)

S / N	Item Statements	Federal (160)				State (77)			
		Required		Not Required		Required		Not Required	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	Access to Information	158	98.8	2	1.3	77	100.0	0	0.0
2	Information Privacy and Confidentiality	136	85.0	24	15.0	64	83.1	13	16.9
3	Information Literacy and User Education	151	94.4	9	5.6	77	100.0	0	0.0
4	Copyright and Fair Use	141	88.1	19	11.9	65	84.4	12	15.6
5	Data Curation and Integrity	137	85.6	23	14.4	72	93.5	5	6.5
6	Ethical Technology Use	140	87.5	20	12.5	72	93.5	5	6.5
7	Collaboration and Advocacy	141	88.1	19	11.9	72	93.5	5	6.5
8	Intellectual property	146	91.3	14	8.8	69	89.6	8	10.4
9	Plagiarism and Security and privacy	129	80.6	31	19.4	62	80.5	15	19.5
10	Privacy policy	134	83.8	26	16.3	62	80.5	15	19.5
11	Neutrality and Objectivity	130	81.3	30	18.8	65	84.4	12	15.6
12	Fabricating/falsifying a bibliography"	77	48.1	83	51.9	26	33.8	51	66.2
13	Paraphrasing/copying	91	56.9	69	43.1	44	57.1	33	42.9
14	Authenticity and Technology Ethics	144	90.0	16	10.0	74	96.1	3	3.9

1 5	Ownership and Professional Conduct		150	93.8	10	6.3	70	90.9	7	9.1
1 6	Accuracy and Transparency		157	98.1	3	1.9	76	98.7	1	1.3
1 7	Censorship and Filtering		133	83.1	27	16.9	66	85.7	11	14.3
1 8	Copyright Infringement and Equity and Inclusion		117	73.1	43	26.9	51	66.2	26	33.8
1 9	Illegal downloading		56	35.0	104	65.0	27	35.1	50	64.9

Result in Table 1 shows the Frequency and percentages of respondents on the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria. The result showed that access to information (235, 99.2%), information privacy and confidentiality (200, 84.4%), information literacy and user education (228, 96.2%), copyright and fair use (206, 86.9%), data curation and integrity (209, 88.2%), ethical technology use (212, 89.5%), collaboration and advocacy (213, 89.9%), intellectual property (215, 90.7%), authenticity and technology ethics (218, 92.0%), ownership and professional conduct (220, 92.8%), accuracy and transparency (233, 98.3%) are the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria.

On the contrary, the result revealed that fabricating/falsifying a bibliography (134, 56.5%), and illegal downloading (154, 65.0%) are the information ethics set not required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria. This finding aligns with comments of respondents interviewed. In agreement with items 2, 3, 4 and 6 in Table 1 one of the respondent has this to say: RESP4: *"To ensure effective service delivery in my university library, we are supposed to have information ethics such as information privacy and confidentiality of the information, information literacy and user education, copyright and fair use, ethical technology use."*

Concerning items 1, 17, 2 and 9 in Table 1 one of the respondents interviewed supported by mentioning *"intellectual freedom, and censorship. We also have confidentiality and privacy. And of course, equity of access. And of course, intellectual property rights. Finally, I would add professional integrity"* (RESP 9). Notably, from the results, it can be deduced that access to information, information privacy and confidentiality, information literacy and user education, and copyright and fair use among others are the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria.

Research Question Two

What is the extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria? Data answering the research question is contained in **Table 2**:

Mean and Standard deviation of respondents on the extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries (n=237).

S/ N	Item Statement	Federal (N=160)		State (N=77)		Overall		De c
		$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	
1	Access to Information guarantee complete access to all information	3.3 0	0.7 2	3.4 8	0.6 0	3.3 6	0.6 8	HE
2	Information privacy and confidentiality protects a user's name, and allows access and use within the library	3.1 9	0.7 0	3.2 7	0.6 6	3.2 2	0.6 9	HE
3	information literacy and user education provide basic search skills to target groups	3.3 6	0.7 0	3.5 7	0.5 7	3.4 3	0.6 6	HE
4	Copyright and Fair Use	3.1 6	0.7 8	3.2 3	0.7 2	3.1 8	0.7 6	HE
5	Data Curation and Integrity	2.9 5	0.8 9	3.2 2	0.6 6	3.0 4	0.8 3	HE
6	Ethical Technology Use	3.0 9	0.8 2	3.2 1	0.6 8	3.1 3	0.7 7	HE
7	Sustainability and Environmental Responsibility in libraries daily operations and beyond internal practices	3.2 3	0.7 2	3.1 4	0.7 2	3.2 0	0.7 2	HE

8	Collaboration and Advocacy	3.1 9	0.7 1	3.2 3	0.6 7	3.2 0	0.7 0	HE
9	Intellectual property	3.2 4	0.7 2	3.3 8	0.6 9	3.2 8	0.7 1	HE
10	Plagiarism and Security and privacy	3.1 3	0.7 8	3.0 4	0.8 7	3.1 0	0.8 1	HE
11	Ensure Privacy policy	3.1 3	0.7 5	3.3 5	0.7 9	3.2 0	0.7 7	HE
12	Neutrality and Objectivity	3.0 3	0.8 2	3.3 6	0.6 7	3.1 4	0.7 9	HE
13	Fabricating/falsifying bibliography”	a 2.6 5	0.9 4	2.7 5	1.0 7	2.6 8	0.9 8	HE
14	Paraphrasing/copying	2.7 9	0.9 1	2.9 7	0.8 9	2.8 5	0.9 0	HE
15	Authenticity and Technology Ethics	3.0 4	0.7 3	3.3 5	0.6 0	3.1 4	0.7 0	HE
16	Ownership and Professional Conduct	3.1 9	0.7 3	3.5 3	0.5 5	3.3 0	0.7 0	HE
17	Accuracy and Transparency	3.2 4	0.7 5	3.4 3	0.5 7	3.3 0	0.7 0	HE
18	Censorship and Filtering	3.0 1	0.8 1	3.2 9	0.7 8	3.1 0	0.8 1	HE
19	Copyright Infringement and Equity and Inclusion	2.9 6	0.8 6	3.0 4	0.8 7	2.9 8	0.8 6	HE
20	Illegal downloading	2.5 3	1.0 2	2.6 0	1.0 4	2.5 5	1.0 2	HE
Cluster Mean		3.0 7	0.4 5	3.2 2	0.4 2	3.1 2	0.4 5	HE

Key: N = Number of respondents, $\bar{x}$ = mean, SD = Standard Deviation, HE = High Extent, Dec. = Decision.

Result presented in Table 2 showed the mean and standard deviations of respondents on the extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. Result showed that items 1-20 had overall mean ratings of 3.36, 3.22, 3.43, 3.18, 3.04, 3.13, 3.20, 3.20, 3.28, 3.10, 3.20, 3.14, 2.68, 2.85, 3.14, 3.30, 3.30, 3.10, 2.98 and 2.55 with standard deviations of 0.68, 0.69, 0.66, 0.76, 0.83, 0.77, 0.72, 0.70, 0.71, 0.81, 0.77, 0.79, 0.98, 0.90, 0.70, 0.70, 0.70, 0.81, 0.86 and 1.02 respectively.

These overall mean ratings are within the range of 2.50-3.49 set as benchmark for High Extent. This implies that intellectual freed and access to information guarantee complete access to all information, information privacy and confidentiality protects a user's name, and allows access and use within the library, information literacy and user education provide basic search skills to target groups, and copyright and fair use among others are to a high extent information ethics librarians are aware of, for effective service delivery in federal and state university libraries in North Central Nigeria. The mean for federal university libraries is 3.07 with a standard deviation of 0.45 while the state university mean is 3.22 with a standard deviation of 0.42. The overall cluster mean of 3.12 is also within the range of 2.50-3.49 set as benchmark for High Extent. The overall cluster mean of 3.12 with a standard deviation of 0.45 shows that there is high extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. The finding corresponds with comments by respondents interviewed.

With regard to items 1, 9 and 17 in table 2, RESP10 have this to say: *“In my opinion, the extent of awareness of the value of information accuracy, intellectual property, information access, dignity of users, quality of library and information services, and then the dignity of effective service delivery is to a large extent”*. Also, RESP 5 said that *“they are professionals, so they are aware of information ethics, at least especially when it comes to copyright”*. On a general note RESP 1 said *“the librarians in my library, all of them, especially the professional librarians, they're all aware of all of these things, you know, guiding them in the use of information”*. Some of the respondents further encouraged promotion of awareness of information ethics through *“orientation, library education, sensitization, educational programmes, resource development, distribute flyers and sensitize, um, users and provide personalized guidance* (RESP1, RESP3, RESP4, RESP6 & RESP9). From the result, it could be said that there is high extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria.

Hypothesis One

There is no significant difference in the mean responses on awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. Data testing the hypothesis are contained in **Table 3**:

t-test analysis of the mean responses of federal and state university librarians on the awareness of information ethics among librarians for effective service delivery

University Type	Mean	SD	t-value	df	Sig. value	Dec.
Federal	3.07	0.45	-2.50	235	0.013	S
State	3.22	0.42				

$\alpha = 0.05$, NS = Not Significant

Result in Table 3 is a t-test analysis of the significant difference between the mean responses of federal and state university librarians on the awareness of information ethics among librarians for effective service delivery in university libraries in North Central, Nigeria. Result showed that a t-value of -2.50 with a degree of freedom (df) of 235 and a significant or probability value of 0.013 was obtained. Since the probability value of 0.013 is less than 0.05 level of significance set as bench mark, the null hypothesis which stated that there is no significant difference in the mean responses on awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria, is rejected. Inference drawn is that, there is significant difference in librarian awareness of information ethics for effective service delivery in federal and state university libraries. However, the Sig.value of 0.013 stands for both universities.

Findings

Access to information, information privacy and confidentiality, information literacy and user education, and copyright and fair use among others are the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria.

There is high extent of awareness of information ethics among librarians for effective service delivery in federal and state university libraries in North Central Nigeria. More so, there is a significant difference in the mean responses on awareness of information ethics among librarians for effective service delivery in

federal and state university libraries in North Central Nigeria. The findings were discussed in line with the specific purposes that guided the study

Information Ethics Set Required for Librarians' Effective Service Delivery

The findings of the study indicate that key elements of the information ethics set required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria include intellectual freedom and access to information, information privacy and confidentiality, information literacy and user education, and copyright and fair use. These align closely with prior literature emphasizing information ethics as a critical framework for addressing moral concerns in information lifecycles creation, collection, distribution, processing and issues like privacy, moral agency, and digital environmental challenges (Mbofung & Popoola, 2014). The presented ethics code reflects more general professional ethics, including fair access, protection of intellectual property, and user-focused approaches, which improve the quality of services and their trust (Adebayo and Mabawonku, 2017). Some of the mentioned studies rely on similar areas (e.g., Mosalanejad and Abdollahifar, 2020, on compliance in patient care areas such as empathy and emotion regulation), but they support the importance of ethical standards when it comes to professional behavior. Likewise, Oche and Sambe (2018) emphasise the presence of enforceable codes (e.g., fines on missing materials, identity verification), which emphasize pragmatic ethical instruments that help to foster accountability and adherence among users, which is in line with the focus of the current study on ethics as the means of delivering services fairly and in an impartial manner.

Extent of Awareness of Information Ethics for effective service delivery

In concerns to the level of awareness of information ethics among the librarians in the provision of good services, the research determined that there is a high level of awareness in general concerning the libraries of the university in North Central Nigeria, with a great disparity in the understanding of the state university librarians relative to the federal librarians. Such awareness also means that librarians have a good understanding of ethical standards that should be used to address the issues of ICT and maintain professionalism. The result is in line with various Nigerian and regional research results that indicate high or moderate-to-high awareness. As an example, Phillips, Oyewole, and Akinbo (2018) reported high levels of awareness and positive perception of the ethical challenges in the delivery of library services among poly-technic librarians in Ibadan, who perceived ethics to be a serious matter, and core to practice. The current results are reflected in the findings made by Ndumbaro, Rehema, and Mutula (2020), who identified library professionals conscious of such core aspects as access, intellectual property, privacy,

and accuracy in libraries in Tanzanian universities. Nneji (2018) observed good knowledge of copyright laws, provisions and limits by the librarians, which favors good awareness on legal-ethical fields. The authors Anyaegbu and Wali (2021) have confirmed the importance of awareness to professional training and development, but their article has more of an impact on the staff training.

This awareness is however in contrast to other previous Nigerian literature which suggest low or inconsistent awareness as was the case with Igbeka and Okoroma (2013) who found low awareness of professional ethical values and advocated enlightenment programs, or institution-specific variations (Adetimirin, 2017). The high level and state-federal gap of the present study can be explained by the contextual factors such as regional training differences, professional development programs, or changing needs of digital in North Central Nigeria. In sum, the results support the view that a high level of information ethics awareness, especially in the areas of privacy, access, literacy, and copyright enhances successful, ethical service delivery, which leads to user trust, compliance, and institutional excellence, and the necessity to maintain training to eliminate any remaining loopholes.

Conclusion

The study examined librarian's awareness and implementation of information ethics for effective service delivery in university libraries in North Central Nigeria. The research found that information ethics set are required for librarians' effective service delivery in federal and state university libraries in North Central Nigeria.

The research found that librarians are aware of information ethics such as Access to information, information privacy and confidentiality, information literacy and user education, and copyright and fair use and as well implement them for effective service delivery in federal and state university libraries in North Central Nigeria.

It was therefore, concluded that information ethics could be applied in various areas of the library to contribute to effective service delivery in federal and state university libraries in North Central Nigeria is essentially overwhelmed by fundamental problems but be it as it may, there is a critical need to effectively ensure that librarians are trained in order to boost their awareness on ethical practices to enhance service delivery in federal and state university libraries in North Central Nigeria.

Recommendations

On the basis of the findings of the study, the following recommendations were made:

1. In order to effectively improve awareness, workshops and seminars should be organized by the library management from time to time to intimate librarians on the information ethics set required for effective service delivery.
2. Since librarians are aware of information ethics, it can still be enforced at the entry point into the university library system by the library management and administrators.

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