



Assessment of Cataloguers' Competency in using Cataloguing Standard Tools for Electronic Information Resources in University Libraries in South East Nigeria

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Abstract

This study was designed to assess cataloguers' competency in using cataloguing standard tools for EIRs in university libraries in South East Nigeria. To achieve this, two research questions with two hypotheses were posed. These cover: standard cataloguing tools provided for cataloguing practices on EIRs, and competency level of cataloguers for the application of cataloguing standards on EIRs. The research design adopted for the study is descriptive survey. The study covers ten (10) publicly funded university libraries in South East Nigeria. The population comprises 184 librarians currently working in libraries understudy. The instruments for data collection were questionnaire titled: "Assessment of Cataloguers' Competency in using Cataloguing Standard Tools for EIRs Questionnaire" (ACCCSTEIRQ). Experts in the Department of Library and Information Science, University of Nigeria, Nsukka (UNN), validated the instruments. Research assistants were used for data collection. The data collected were analyzed using mean and standard deviation. The hypotheses were tested at 0.05 level of significance. Findings of the study shows that standard cataloguing tools were provided for cataloguing practices on EIRs and that cataloguers were competence in use of cataloguing standard tools. The researcher recommend: Universities library should organize continuous training programs and workshops for cataloguers, on the latest cataloguing standards, tools; libraries should invest in modern cataloguing tools, software, and digital infrastructure such as reliable internet and up-to-date cataloguing systems; establishing and implementing standardized cataloguing procedures and guidelines across public University libraries, and conducting regular competency assessments of cataloguers.

Keywords

Cataloguing Standards, EIR, University Library, Competency

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State Chapter

Introduction

University libraries are increasingly characterised in the literature as dynamic and vibrant places and spaces in which learners, cast in the role of discursive consumers with a manifold of mutable needs and expectations, are socially and academically networked, supported and developed in a myriad of ways (Roberts, & Grimwood, 2021). University libraries serve as repositories of knowledge, offering resources that support learning, teaching, and research activities. They provide access to books, journals, electronic resources, and other information materials

essential for academic success. For instance, a study at the University of Jos, Nigeria highlighted that university library resources significantly influence learning and research among nursing and midwifery students, underscoring the library's role in enhancing educational outcomes (Shittu, Attah, & Alfaris, 2024). University libraries according to Gabbay & Shoham (2019), are developed to serve two complementary purposes: to support the curriculum of the host institutions and to support the research of faculty members, students, and the host community

with both printed and electronic information resources.

Electronic information resources (EIRs) are defined as any type of resource that provides information in digital form, accessible through electronic systems and networks. These include e-books, online journals, databases, multimedia, and other digital formats that support academic research and learning (Davies, 2021). EIRs have become fundamental to modern libraries, transforming the way information is stored, accessed, and disseminated. They offer significant advantages, such as remote accessibility, enhanced search capabilities, and the ability to update content in real-time, which traditional print resources cannot match (Smith & Tanner, 2021). Electronic information resources can be described as any resources in which the accessibility and storage of information are done on electronic systems and networks (Adeleke and Nwalo, 2017). According to them, EIRs play a critical role in academic libraries by supporting the diverse information needs of students and faculty. These resources are to be organized using cataloguing standards for easy retrieval.

Cataloguing standards are essential frameworks that ensure the consistent description, organization, and retrieval of library resources. These standards facilitate interoperability across library systems and enhance the discoverability of materials by users (Garrison, 2020). In the digital era, cataloguing standards have evolved to accommodate electronic resources, providing structured metadata that supports complex search functionalities and seamless integration with various digital platforms. One of the most widely used cataloguing standards is the MARC (Machine-Readable Catalogue) format, which provides a standardized format for the representation and communication of bibliographic and related information and Resource Description and Access RDA (Library of Congress, 2022). The use and application of these standards to

EIRs depend largely on the competence of the cataloguer in the cataloguing workroom

Competence in the context of library science refers to the skills, knowledge, and abilities required by library professionals to effectively manage and utilize resources, including electronic information systems. Competence encompasses not only the technical skills needed to operate electronic cataloguing systems but also the cognitive and analytical abilities required to organize and retrieve digital information efficiently (Aliyu & Mohammed, 2020). Competence in this context involves a deep understanding of cataloguing standards such as the MARC (Machine-Readable Cataloging) format, RDA (Resource Description and Access), and metadata schemas like Dublin Core, which are essential for the accurate description and classification of EIRs (Ngulube, 2020). This study therefore, underscores the importance of assessing cataloguers' competency in using cataloguing standard tools for managing electronic information resources in public university libraries in South East Nigeria.

Statement of the Problem

The rapid growth of electronic information resources in university libraries has significantly transformed library operations, with cataloguers now facing the challenge of adapting to and effectively using various cataloguing standard tools. In public university libraries in South East Nigeria, the proper management and organization of these resources are critical for ensuring their accessibility and usability. However, there is a growing concern about the competency levels of cataloguers in these libraries, particularly regarding their ability to effectively use the necessary cataloguing tools for electronic resources.

Despite the importance of these competencies, there is limited empirical research that evaluates the current proficiency of cataloguers in adopting and utilizing these tools in the region. Many

libraries in South East Nigeria continue to struggle with issues related to outdated systems, insufficient training, and a lack of standardized practices in cataloguing digital resources. As a result, the quality of cataloguing and the accessibility of electronic information resources may be compromised, affecting academic and research outcomes. This research seeks to assess the competency levels of cataloguers in using cataloguing standard tools for electronic information resources in public university libraries in South East Nigeria.

Research Question

The following research questions were formulated to guide this study:

1. To what extent are standard cataloguing tools provided for cataloguing practices on electronic information resources for effective retrieval in university libraries in the South East, Nigeria?
2. What is the competency level of cataloguers for the application of cataloguing standards on electronic information resources for effective retrieval in university libraries in South-East Nigeria?

Research Hypotheses

Null hypotheses tested on a 0.05 level of significance were formulated to guide this study:

H0₁: There is no significant difference in the mean rating of librarians on the extent to which cataloguing standards tools are used for cataloguing practices for effective retrieval in university libraries in South East Nigeria.

H0₂: There is no significant difference in the mean rating of librarians on cataloguers' competency level for application of cataloguing standards on electronic information resources for effective retrieval in university libraries in South-East Nigeria.

Literature review

University libraries are integral to the academic ecosystem, serving as the backbone for research, learning, and knowledge dissemination. They provide essential resources, services, and spaces that facilitate the educational and scholarly pursuits of students and faculty alike. University libraries serve as repositories of knowledge, offering a diverse range of resources, including physical books, electronic databases, and multimedia materials (Johnson, 2018). They support the curriculum by providing access to relevant academic content and enabling students to develop critical thinking and research skills (Adeleke & Olorunsola, 2010). Furthermore, they play a pivotal role in supporting faculty research by offering specialized research tools and services, such as literature searches, data analysis software, and interlibrary loan services (Smith, 2019).

Electronic information resources have become a cornerstone of modern academic libraries, transforming the way information is stored, accessed, and disseminated. These resources include e-books, e-journals, online databases, and other digital formats that offer greater flexibility and accessibility compared to traditional print resources (Johnson, Smith, & Tanner, 2020; Davies, 2021). Electronic information resources according to Smith and Tanner (2021), offer several advantages, including the ability to support advanced search functionalities, ease of integration with learning management systems, and the potential for interactive and multimedia content. The digital nature of these resources allows for continuous updates and the inclusion of supplementary materials, which is particularly beneficial in fields that experience rapid knowledge advancements (Brown, 2019). Cataloguers play a critical role in managing electronic information resources, as they are responsible for creating metadata that ensures these resources are easily discoverable and retrievable by the use of standardized cataloguing tools (Anderson & Lee, 2023).

Cataloguing standards are essential frameworks that ensure the consistent description, organization, and retrieval of library resources. These standards facilitate interoperability across library systems and enhance the discoverability of materials by users (Smith & Jones, 2023). In the digital era, cataloguing standards have evolved to accommodate electronic resources, providing structured metadata that supports complex search functionalities and seamless integration with various digital platforms. One of the most widely used cataloguing standards is the **MARC (Machine-Readable Cataloging) format**, which provides a standardized format for the representation and communication of bibliographic and related information (Library of Congress, 2022).

However, as libraries increasingly manage electronic resources, newer standards such as **RDA (Resource Description and Access)** have gained prominence. RDA, which is designed to be more flexible and adaptable to digital environments, focuses on the relationships between resources and provides a more comprehensive approach to cataloguing (Garrison, 2020). **Dublin Core** is another widely adopted standard, particularly for digital resources. It offers a simple and flexible metadata schema that supports the discovery of digital materials in various contexts, including institutional repositories and online archives (Dublin Core Metadata Initiative (DCMI), 2021).

The competence of cataloguers in applying cataloguing standards to electronic information resources (EIRs) is critical for the effective organization and retrieval of digital content in academic libraries (Alemna & Opoku, 2022).. The shift from traditional to electronic resources has necessitated a corresponding evolution in cataloguing practices, requiring cataloguers to develop new skills and adapt to emerging standards

and technologies. Competence in this context involves a deep understanding of cataloguing standards such as the MARC (Machine-Readable Cataloging) format, RDA (Resource Description and Access), and metadata schemas like Dublin Core, which are essential for the accurate description and classification of EIRs (Ngulube, 2020; Anyaoku, Echedom, and Baro, 2021). The ability to apply these standards ensures that electronic resources are easily discoverable and accessible, which is fundamental for supporting research and learning in academic institutions (Ikonne & Adewole, 2021).

Research methods

This study employed a descriptive survey design, a population of 184 professional librarians in publicly funded university libraries in Southeast Nigeria was used. Two instruments were used for data collection: a structured questionnaire titled "Assessment of Cataloguers' Competency in Using Cataloguing Standard Tools for Electronic Information Resources in Public University Libraries in South East Nigeria" (ACCCSTEIRQ) and a 26 item observation checklist to assess the availability of electronic information resources in the libraries under study. The two instruments were validated by research experts from the Department of Library and Information Science and one research expert from the Measurement and Evaluation Unit, Faculty of Education, both at UNN. Cronbach's alpha (α) method which yield overall reliability score is 0.87 was used to ascertain the reliability of the instruments. The data for this study was administered and collected by the researcher. Data from research question one, using the observation checklist, were analyzed using frequency count and percentage and descriptive statistics were used to answer research questions two while Null hypotheses were subjected to t-test statistical computation at a 0.05 level of significance.

Findings and discussions

TABLE 1: Distribution of questionnaire by Institution before and after Administration

Institution	Admin	Return	%
Federal			
AE-FUNAI	7	7	100%
FUTO	48	33	68.7%
MOUUAU	23	21	91.3%
NAL	45	36	80%
PFANL	15	15	100%
Total	137	97	70%
State			
ABSU	10	8	80%
COOU	10	8	80%
EBSU	7	6	85.7%
ESUT	10	10	100%
IMSU	10	10	100%
Total	47	42	89.3
Grand Total	184	154	83.6%

Source: field survey (2024)

Research Question One: To what extent are standard cataloguing tools provided for cataloguing practices on electronic

information resources for effective retrieval in university libraries in the South East, Nigeria?

Table 2: Mean and standard deviation of respondents on the extent to which standard cataloguing tools are provided for cataloguing practices on electronic information resources for effective retrieval in university libraries in the South East, Nigeria, (N = 154)

S/N	Cataloguing Standard	Federal		State		Overall Mean		R	Remark
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		
1	Resource Description and Access (RDA)	2.39	1.15	2.74	1.08	2.62	1.11	8	HE
2	Anglo-American Cataloguing Rule2 (AACR2)	3.31	0.81	3.34	0.80	3.33	0.80	3	HE
3	Standard Subject Heading	3.49	0.58	3.47	0.68	3.47	0.65	1	HE
4	Classification schemes	3.49	0.61	3.44	0.64	3.45	0.63	2	HE
5	International Standard Bibliographic Description (ISBD)	2.39	1.04	2.74	1.03	2.62	1.04	8	HE
6	Machine Readable Catalogue (MARC21)	2.55	0.90	2.70	1.02	2.65	0.98	7	HE
7	Thesaurus	2.78	0.90	2.95	0.88	2.90	0.89	6	HE
8	Functional Requirement for Bibliography Record (FRBR)	2.20	1.04	2.55	1.07	2.44	1.07	10	LE
9	Functional Requirement for Authority Data (FRAD)	2.16	1.03	2.46	1.03	2.36	1.03	11	LE
10	Resource Description Framework (RDF)	2.16	1.07	2.64	1.14	2.48	1.13	9	LE
11	Cutter table	3.25	0.84	3.27	0.87	3.27	0.86	5	HE
12	Shelf list catalogue	3.25	0.82	3.37	0.75	3.33	0.78	3	HE
13	Dictionaries	3.45	0.64	3.48	0.68	3.47	0.67	1	HE
14	Author title catalogue	3.31	0.65	3.32	0.79	3.32	0.75	4	HE
	Cluster Mean	2.87	0.51	3.03	0.59	2.98	0.57		HE

Key: $\bar{X}$ = Mean, SD = Standard Deviation, R = Rank

The results in Table 2 show the extent to which standard cataloguing tools are

provided for cataloguing practices on electronic information resources for effective retrieval in university libraries in the South

East, Nigeria. The results reveal that standard subject headings, with a mean score of 3.47; classification schemes, with a mean score of 3.45; Anglo-American Cataloging Rule 2 (AACR2), with a mean score of 3.33; author-title catalogues, with a mean score of 3.32; Cutter tables, with a mean score of 3.27; and Thesaurus, with a mean score of 3.90, are within the range for a high extent, which is 2.50-3.49. Meanwhile, the Functional Requirements for Bibliographic Records (FRBR), with a mean score of 2.48; Functional Requirements for Authority Data (FRAD), with a mean score of 2.44; and Resource Description Framework (RDF), with a mean

score of 2.36, fall within the range of 1.50-2.49, indicating that the extent to which standard cataloguing tools are provided for cataloguing practices on electronic information resources for effective retrieval in university libraries in the South East, Nigeria, is low for these items.

Hypothesis One

There is no significant difference in the mean ratings of male and female librarians regarding the extent to which cataloguing standards tools are provided for cataloguing practices for effective retrieval in university libraries in the South East, Nigeria.

Table 3: An independent t-test analysis of a significant difference in the mean rating of male and female librarians on the extent to which cataloguing standards tools are provided for cataloguing practices for effective retrieval in university libraries in the South East, Nigeria

Gender	N	Mean	SD	Df	t-value	P-value
Male	51	2.87	.51	152	-1.657	.099
Female	103	3.03	.59			

The result in Table 3 shows the t-test for independent samples assuming equal variance. The result shows $t(152) = -1.657$, $P > .099$. Thus, the null hypothesis of no significant difference was accepted since the p-value of .099 is greater than the 0.05 level of significance. The researcher therefore, concludes that there is no significant difference in the mean rating of male and female librarians on the extent to which

cataloguing standards tools are provided for cataloguing practices for effective retrieval in university libraries in the South East, Nigeria.

Research Question Two: What are the competency level of cataloguers for the application of cataloguing standards on electronic information resources for effective retrieval in university libraries in the southeast of Nigeria?

Table 4: Mean and standard deviation of respondents on the competency level of cataloguers for the application of cataloguing standards on electronic information resources for effective retrieval in university libraries in South-East Nigeria. n=154

S/N	Cataloguing Standard	Federal		State		Overall Mean		R	Remark
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		
1	Bibliographic resource description competency in cataloguing	3.33	0.62	3.37	0.69	3.36	0.66	6	HC
2	Use of subject heading tools	3.47	0.54	3.47	0.65	3.47	0.62	1	HC
3	Subject classification	3.41	0.54	3.41	0.66	3.41	0.62	2	HC
4	Subject analysis	3.20	0.57	3.33	0.68	3.29	0.64	9	HC
5	Use of classification schemes	3.43	0.60	3.36	0.74	3.38	0.71	4	HC
6	Use of Anglo-American Cataloguing Rule II (AACR2)	3.35	0.66	3.21	0.81	3.26	0.77	10	HC
7	Use of machine readable catalogue (MARC21)	2.82	0.87	2.81	0.98	2.81	0.94	15	HC
8	Use of Resource Description and Access (RDA)	2.59	0.90	2.70	1.03	2.66	0.98	17	HC
9	Use of Functional Requirement for Bibliographic Record (FRBR)	2.47	1.01	2.53	1.06	2.51	1.04	18	HC
10	Functional Requirement for Authority Data (FRAD)	2.37	1.02	2.52	1.10	2.47	1.07	19	LC
11	Use of International Standard bibliographic Description (ISBD)	2.73	0.98	2.71	1.02	2.71	1.00	16	HC
12	Descriptive cataloguing competence	3.31	0.65	3.09	0.90	3.16	0.83	12	HC
13	Subject cataloguing competence	3.43	0.61	3.34	0.81	3.37	0.75	5	HC
14	Cutter numbering	3.49	0.76	3.36	0.86	3.40	0.83	3	HC
15	Knowledge of language and semantics	3.14	0.66	3.32	0.69	3.26	0.68	10	HC
16	Computer application associated with cataloguing	3.20	0.66	3.33	0.55	3.29	0.59	9	HC
17	Use of cataloguing databases	3.10	0.64	3.28	0.62	3.22	0.63	11	HC
18	Data mining competence	2.90	0.70	3.14	0.73	3.06	0.73	14	HC
19	Internet/web navigation competence	3.14	0.78	3.08	0.78	3.10	0.77	13	HC
20	Competence in browsers and search engines	3.25	0.56	3.20	0.72	3.22	0.67	11	HC
21	Basic computer appreciation competence	3.31	0.58	3.34	0.69	3.33	0.66	8	HC
	Cluster Mean	3.12	0.40	3.14	0.50	3.13	0.47		HC

Key: $\bar{X}$ = Mean, SD = Standard Deviation, R = Rank

The results in Table 4 show the competency levels of cataloguers in applying cataloguing standards to electronic information resources for effective retrieval in university libraries in Southeast Nigeria. The results reveal that the use of subject heading tools, with a mean score of 3.47; subject classification, with a mean score of 3.41; cutter numbering, with a mean score of 3.40; the use of classification schemes, with a mean score of 3.38; subject cataloguing competence, with a mean score of 3.37; bibliographic resource description competency in cataloguing, with a mean score of 3.37; and bibliographic resource description competency in cataloguing, with a mean score of 3.36, all fall within the real limit of 2.50-3.49. This indicates that the

competency level of cataloguers in applying cataloguing standards to electronic information resources for effective retrieval in university libraries in Southeast Nigeria is high for these items. However, the Functional Requirement for Authority Data (FRAD), with a mean score of 2.47, falls within the real limit of 1.50-2.49, indicating that the competency level of cataloguers in applying FRAD to electronic information resources for effective retrieval in university libraries in Southeast Nigeria is low for this item. The table also reveals that the standard deviations for the 21 items ranged from 0.59 to 1.07, indicating that the respondents were homogeneous in their responses.

Hypothesis Two: There is no significant difference in the mean ratings of male and female librarians regarding cataloguers' competency levels in applying cataloguing

standards to electronic information resources for effective retrieval in university libraries in Southeast Nigeria.

Table 5: An independent t-test analysis of a significant difference in the mean rating of male and female librarians on cataloguers' competency level for application of cataloguing standards on electronic information resources for effective retrieval in university libraries in the South-East, Nigeria

Gender	N	Mean	SD	df	t-value	P-value
Male	51	3.12	.41	152	-.262	.794
Female	103	3.14	.50			

The result in Table 5 shows the t-test for independent samples assuming equal variance. The result is as follows: $t(152) = -.262$, $P = .794$. Thus, the null hypothesis of no significant difference was accepted since the p-value (.794) is greater than the 0.05 level of significance. The researcher therefore concludes that there is no significant difference in the mean rating of male and female librarians on cataloguers' on competency level for application of cataloguing standards on electronic information resources for effective retrieval in university libraries in South-East Nigeria.

Discussion of the Findings

The findings of the study in table 2 revealed that Anglo-American Cataloguing Rules 2 (AACR2), Resource Description and Access (RDA), Standard Subject Headings, Dublin Core, International Standard Bibliographic Description (ISBD), Machine Readable Catalogue (MARC21), amongst others, were highly provided for cataloguing practices in university libraries studied. This were in agreement (DCMI, 2020; Library of Congress, 2022; & OCLC, 2021), who listed the standard cataloguing tools. However, the researcher remarked that there is need to provide the Functional Requirements for Bibliographic Records (FRBR) and the Functional Requirements for Authority Data (FRAD),

which serve as the foundation for RDA guidelines.

The results in table 4 revealed that cataloguers are highly competent in use of subject heading tools, subject classification, Anglo-American Cataloguing Rules, Second Edition (AACR2) and more contemporary frameworks like Resource Description and Access (RDA), alongside familiarity with metadata schemas such as **Dublin Core**, and **MARC21** formats adapted for digital resources. This is in line with the study of Ifijeh (2012), who listed such competency as what cataloguers must possess to thrive in the profession. The study is also in line with Olawuyi (2021) who asserts that regular use of subject headings and classification schemes, and applying linked data principles where appropriate increases the competence of cataloguers. The researcher, opined that continuous professional development, regular workshops, and curriculum updates in library and information science programs, institutional support in providing access to updated cataloguing tools, standards manuals, and real-time digital cataloguing practices is will also be crucial to improve cataloguers' competencies.

The hypothesis states that there is no significant difference in the mean rating of male and female librarians on the extent to which cataloguing standards tools are

provided for cataloguing practices, and on competency level for application of cataloguing standards on electronic information resources for effective retrieval in university libraries in the South East, Nigeria. The findings imply that while university libraries in Nigeria are commendably providing key cataloguing tools such as AACR2, RDA, ISBD, MARC21, and Dublin Core, there remains a critical need to integrate foundational frameworks like FRBR and FRAD to fully align with international best practices. Policies should therefore mandate the provision and adoption of these advanced standards, while library management must prioritize continuous professional development through regular training workshops, updated curricula in Library and Information Science programs, and sustained institutional investment in current cataloguing manuals and digital cataloguing technologies. Moreover, given that cataloguers of both genders demonstrate comparable competencies, policy frameworks should focus less on demographic differences and more on universal access to resources and skill enhancement, ensuring all cataloguers are equipped to handle the evolving demands of digital information organization and retrieval effectively.

Recommendation

Based on the study's findings, the following recommendations are made:

1. Universities library should organize continuous training programs and workshops for cataloguers, focusing on the latest cataloguing standards, tools, and technologies to boost competency.
2. Libraries should invest in modern cataloguing tools, software, and up-to-date cataloguing systems to support efficient cataloguing of electronic resources.
3. Conducting regular competency assessments of cataloguers will help

identify skill gaps and areas that need improvement.

Conclusion

The assessment of cataloguers' competency in using cataloguing standard tools for electronic information resources in public university libraries in South East Nigeria is a critical area of study that has significant implications for the efficiency and effectiveness of library services. As electronic resources continue to expand in academic environments, the ability of cataloguers to adapt to and proficiently use these tools is essential for ensuring the accessibility, organization, and preservation of digital materials.

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