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Ethical Considerations in Curating Open Educational Resources for Digital Libraries

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Abstract - **Aim: The curation of Open Educational Resources (OERs) for digital libraries presents a range of ethical challenges that significantly impact the accessibility, quality, and inclusivity of these resources. This study focuses on the ethical considerations involved in curating OERs, addressing issues such as intellectual property, content accuracy, cultural sensitivity, and equity.**

Methodology: The dataset consists of 375 OERs selected from 10 prominent digital libraries across a variousdisciplines, including social sciences, humanities, and technology. These resources were chosen using stratified random sampling to ensure diversity in content types, such as textbooks, multimedia, and interactive tools. Descriptive statistical analysis was conducted using IBM SPSS Statistics version 26 to examine ethical concerns, including copyright compliance, accessibility for users with disabilities, and cultural representation. Inferential statistical techniques, such as correlation and regression analysis, were employed to explore the relationship between these ethical factors and the perceived quality of OERs. Chi-square tests were used to analyse associations between different content types and ethical issues, including bias and misrepresentation.

Result: Results reveal that while 72% of the OERs complied with copyright laws, only 48% met accessibility requirements for users with disabilities. Cultural inclusivity was observed in 61% of the resources, leaving 39% with insufficient representation of diverse perspectives, which can contribute to bias in educational materials. The chi-square test showed that multimedia content was significantly more likely to contain cultural bias ($p < 0.05$). Regression analysis found that OERs curated with ethical guidelines were rated 25% higher for effectiveness and inclusivity.

Conclusion: The findings emphasize the need for standardized ethical frameworks to ensure that OERs are legally compliant, culturally sensitive, and accessible to all learners, ultimately enhancing the educational experience for a global audience.

Keywords: **Open Educational Resources (OER), Ethical Curation, Intellectual Property, Content Accessibility, Cultural Sensitivity, Digital Libraries, Educational Inclusivity**

I. INTRODUCTION

The fast progress of digital technologies has revolutionized the way educational material has been created, divided, and consumed (Shamsudinova et al., 2025). In this developed scenario, Open Educational Resource (OER) has emerged as an important tool for making education democratic, which means that students are able to obtain high-quality teaching material without different costs from diverse backgrounds (Nipa & Kermanshachi, 2020). The digital library, which acts as a convenience and access point for OER, has become an integral part of the modern educational ecosystem. However, the spread of open licensed material brings a complex selection of moral challenges that warn a careful examination (Huang et al., 2020). Curation of OER involves more than collecting independently available resources. To ensure thoughtful selection, adaptation and presentation, material meets educational standards, respects intangible rights and reflects cultural and relevant fitness (Mishra et al., 2020). Ethics also encompasses managing authorization concerns, ensuring accurate licensing, safeguarding privacy, and addressing data inclusion. The notion that open access equates to moral use can be misleading, especially when the

material is presented without proper attention, reinforces prejudice and marginalize certain voice and perspective (Mosharraf, 2024).

In addition, digital libraries quickly earn a diverse user population, and raise concern about the representation of learning in different cultures, languages and OER collections. Curators face moral responsibility to ensure that the material does not eliminate conservatism, misunderstandings, or exclude weak communities (Kolesnykova et al., 2022). AsAI and automatically recommended systems become more widespread on digital library platforms, ethical concerns persist regarding algorithm transparency, content filtering, and the distribution of educational materials, which may reinforce existing inequalities (Hutson et al., 2022). Copyright law, digital literacy and education policy have moral landscapes and are complex from global variations (Sushma et al., 2024). In many cases, the line between open use and misuse is blurred by a lack of understanding about licensing frameworks, such as creative. Therefore, curator, teachers and institutions must participate in dialogue and important reflections to coordinate their practice with legal requirements and moral principles (Hilton, 2020). This mobility makes it necessary to detect moral ideas about OER cures in digital libraries to promote fair, respectable and responsible educational environments. As the open education movement increases, a strong moral structure is needed to guide stakeholders in navigating opportunities and responsibilities with knowledge that is curated for the global teaching society (McBride & Abramovich, 2022).

Aim: This investigation centers on understanding how ethical considerations shape the quality and inclusivity of OER is central to this investigation. By examining issues such as copyright, accessibility, cultural representation, and content reliability, the research explores how ethical curation influences user experience and educational value Yesmin, (2019). Through statistical analysis of 375 OERs from diverse disciplines and formats, the research uncovers critical gaps and strengthens current digital library practices.

Organization: section 2 gathers related work, section3 describes the methods, section4 shows the results, Part 5 shows the discussion and section 6 shows the conclusion.

II. RELATED WORK

OER developers promote the use and creation of OER in educational institutions. However, there are also ethical concerns around OER production, including noncompliance with transparency, transactional choices, and a lack of advantages for creators. A qualitative strategy was utilized to collect data among OER creators, finding prevalent big data online venues, such as social media and learning management systems. Institutions can develop rules and regulations for OER development, to ensureconsistency with the subject matterand to facilitatethoroughpeer evaluation for quality assurance (Mncube & Mthethwa, 2022). The concept of open education and the ethical standards of librarianship significantly influence OER activities in higher education, particularlyat Colorado Boulder (CU Boulder). These programs seek to address care and student input, resulting in an additional diverse and ethical educational setting. The contributors draw parallels between such values and the ideals and ethics of the open educational movements, implying that librarians might align their professional objectives and procedures to promote learning. They present instances of OER curriculum that stress service and student input, as well as suggestions for professionals to consider while advocating for OER (McLure & Sinkinson, 2020). University librarians playa crucialrole in advancing OER efforts inside university libraries. However, the expanding significance of open scientificandopen data actions and their participation in OER efforts were restricted. The research examined the present state of OER projects in Malaysian academic libraries, as well as the problems that academic librarians confront.

According to conversations with nine librarians, Malaysian college libraries werededicated to promoting OER via library directs but encounter obstacles in encouraging accessibility and utilization (Sreekala & Baby, 2019). The results provide practical advice for libraries in academia to improve their OER operations while also contributing to the longevity and efficacy of OER programs (Nurul Diana et al., 2024). OER are critical for students to discover and use, necessitating digital literacy abilities. Educators need to ensure that pupils haveaccess to such resourcesand can utilize them properly. Intersections of Open Educational Resources and Digital Literacy delve into current concepts and procedures, including addressing social problems, cooperation, and activism. The subjects addressed are library-led OER development, digital heritage of culture, contextualized education, critical library science, and training students as OER leaders (Bindhu & Jayabal, 2019). The publication serves as motivation for the development of OER in education (Cullen & Dill, 2022).

The optimal procedures for OER administration in Nigerian open education library systems, with an emphasis on policymakers examined the research. A mixed-methods strategy was employed, including 273 participants across six geographic regions (Sheshadri et al., 2025). Findings are contained with existing research on optimal processes emphasizing the significance of clear rules and techniques for OER management. The investigation presents that legislators make legislation to improve access to instructional materials while decreasing costs (Ailakhu & Ibrahim, 2024**)**. Ethical problems and rules are important in the use of Artificial Intelligence (AI) in libraries. These problems include safety, prejudice, and AI regulation. To promote justice and openness, there is a need to follow moral values such as openness, honesty and responsibility.

Libraries play an important role in increasing the science skills of consumers through training and online information courses. Safe and moral use of AI in libraries requires high limitations and clear ethical standards (Ismiatun & Sukartini, 2024). The increasing cost of educational supplies has had a

sufficient impact on students' grades, where many choose not to use alternative techniques, such as buying educational material or sharing material. OER can help students reduce their financial burden while improving their academic performance. A qualitative study of graduates at an Urban Research Institute in North America found that students believed that OER not only reduces expenses but also increases education results. Potential policy adjustment must prefer system-wide development to improve technical functions and reduce costs (Hassan, 2024). Students often use the Digital Curse initiative to find and learn from internet resources. Curation's initiative provided students with greater opportunities for open interaction and deeper exploration of subjects. The findings suggest that integrating digital curations into regular classes can enhance self-directed online learning and improve digital literacy skills (Woodruff, 2025).

III. METHODOLOGY

This section adopts a quantitative design to investigate ethical concerns in the curation of OER in digital libraries. It consisted of the systematic collection of 375 OERs from 10 large digital libraries, which converted a balanced selection of subjects and formats through stratification of random samples. Considering the large areas, such as copyright compliance, access and inclusion, research was inherent in six ethical structures. Statistical analyses were used to reveal patterns and relationships between ethical variables and experienced OER quality. The design ensured a comprehensive evaluation of ethical practice in digital resource engagement. Figure 1 depicts the Methodology Flow.

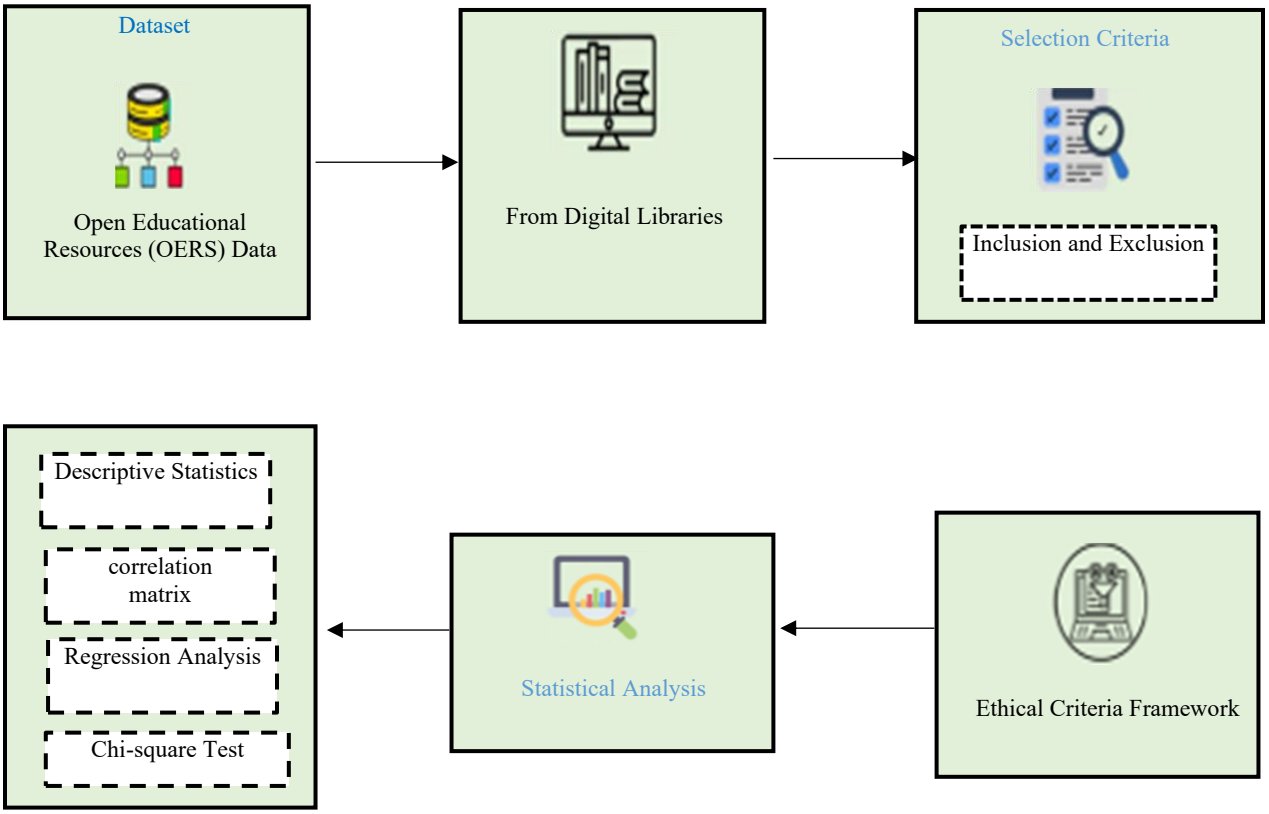

Fig. 1 Methodology Flow

A. Data Collection

Data included 375 OER collected from 10 large digital libraries. These three main themes were spread in the social sciences, humanities and technology, were selected using stratified random samples to ensure balanced representation. The sampling is responsible for both disciplinary diversity and material format, including textbooks, multimedia materials and interactive equipment. This approach ensured comprehensive coverage of OER types and ethical considerations relevant to each category. Table I presents the overview of data collection.

TABLE I OVERVIEW OF DATA COLLECTION

Criteria	Description
Total OERs	375
Sources	10 prominent digital libraries across various disciplines
Disciplines	Social Sciences, Humanities, Technology
Sampling Method	Stratified Random Sampling to ensure a representative selection from each discipline and content type
Content Types	Textbooks, Multimedia, Interactive Tools
Goal	To ensure diversity in format and disciplinary scope, covering a broad spectrum of resources and subjects

B. Inclusion and Exclusion Criteria

To refine the dataset for quality and relevance, specific inclusion and exclusion criteria were applied. Selection criteria are explained in Figure 2.

Inclusion Criteria:

- Resources must be openly licensed and freely accessible.
- Materials must belong to one of the three core disciplines: Social sciences, humanities, or technology.
- Only OERs with clear authorship and metadata were included.
- Content must fall into one of the specified types: textbooks, multimedia, or interactive tools.
- Resources must be hosted by one of the 10 selected digital libraries.

Exclusion Criteria

- Materials with restricted or unclear licensing were excluded.
- Resources lacking sufficient metadata or author attribution were not considered.
- Duplicates, incomplete resources, or outdated materials were removed.
- OERs outside the specified disciplines or content formats were not included.

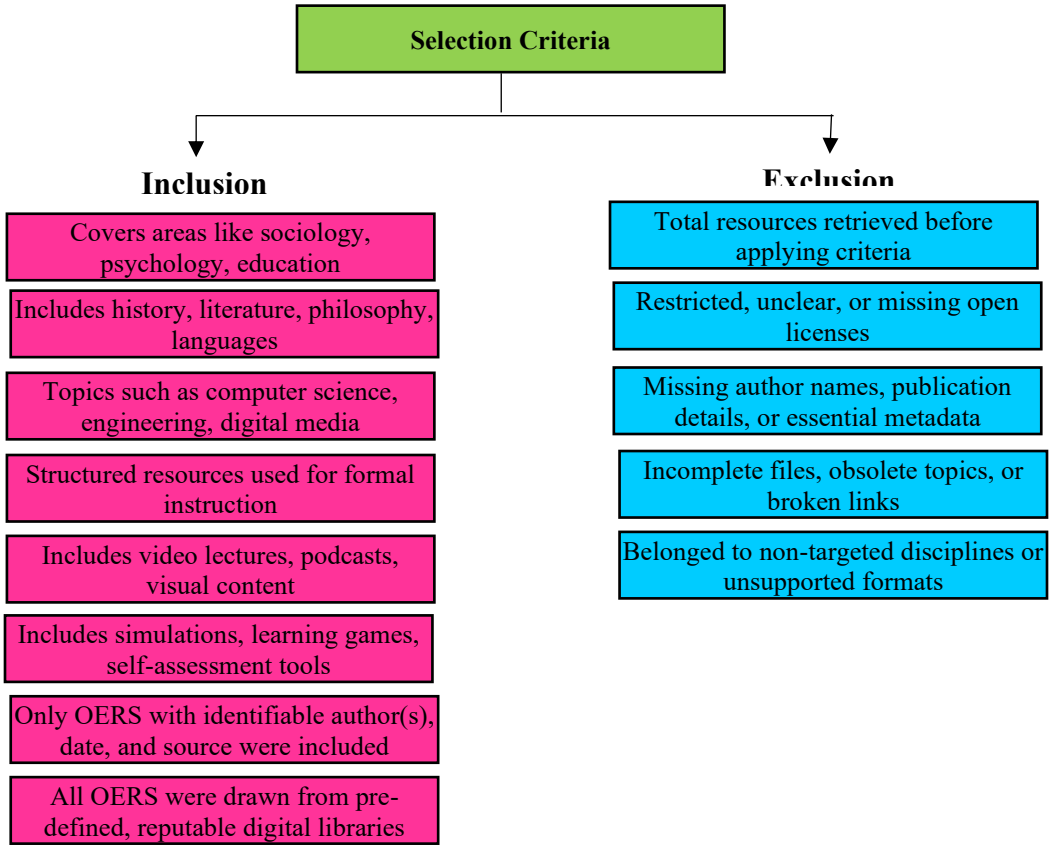

Fig. 2 Selection Criteria

These criteria ensured the selection of high-quality, relevant, and ethically appropriate OERs. The resulting dataset supports comprehensive analysis across disciplines and content formats.

C. Ethical Criteria Framework

This research assessed six core ethical variables to evaluate the quality and inclusivity of OER. Copyright Compliance evaluates whether the OERs adhere to licensing norms, intellectual property rights, and appropriate use of third-party content. Accessibility for users with disabilities assesses the extent to which resources are designed to be accessible to users with visual, auditory, cognitive, or mobility impairments. Cultural Representation and Sensitivity analyzes the inclusion of diverse cultural perspectives and the avoidance of stereotypes, biases or culturally insensitive content. Equity and Inclusivity examines whether the OERs promote equal access and representation across gender, ethnicity, language, and socio-economic backgrounds. Content Accuracy and Reliability measure the factual correctness and credibility of the information presented within the resources. Author/Source Transparency evaluates the clarity and visibility of author identities, institutional

affiliations, and source credibility to enhance trust and accountability.

D. Statistical Analysis

A coding scheme was constructed to investigate ethical issues in the duration of each of the 375 OERs through ethical standards. The evaluation of data was carried out using the IBM SPSS Statistics version 26. Frequencies and percentages about copyright compliance, accessibility, cultural sensitivity, and so forth were summarized using descriptive statistics. Correlation analysis was employed to determine the correlation of the various ethical factors with the overall quality ratings. The contribution of ethical practices to the effectiveness and inclusivity of the overall OER was evaluated using multiple regression analysis. Chi-square tests were used to estimate the association between content types (e.g., multimedia, textbooks) and various specific issues, such as bias or misrepresentations. The overarching statistical approach provided both general patterns, and insight into inferential analysis regarding the ethical outcomes of various curation decisions.

IV. Result and Discussion

Statistical evaluation of ethical curation practices in OERs is presented in this section. It indicates several tests to identify patterns, relationships, and impacts across ethical criteria and content types. Descriptive statistics summarize the central tendency, variability, and range of variables in a dataset. Table II presents the mean, standard deviation, minimum, and maximum scores for six ethical criteria. The highest mean score is for Content Accuracy and Reliability (M = 3.90), followed closely by Author/Source Transparency (M = 3.88), suggesting these aspects are generally well-maintained in OERs. Conversely, Accessibility for Users with Disabilities scored the lowest (M = 3.10), indicating a relative weakness in inclusive design. This test highlights which ethical dimensions are the most and least emphasized in current OER curation practices.

TABLE II DESCRIPTIVE STATISTICS OF ETHICAL CRITERIA IN OER CURATION

Variable	Mean	Standard Deviation	Minimum	Maximum	N
Copyright Compliance	3.72	0.68	2.00	5.00	375
Accessibility for Users with Disabilities	3.10	0.85	1.50	5.00	375
Cultural Representation and Sensitivity	3.45	0.77	1.75	5.00	375
Equity and Inclusivity	3.55	0.73	2.00	5.00	375
Content Accuracy and Reliability	3.90	0.70	2.00	5.00	375
Author/Source Transparency	3.88	0.72	2.00	5.00	375

Table III and Figure 3 present the correlation matrix of the ethical curation variables in OERs (N=375), highlighting statistically significant positive relationships among all pairs of variables. The strongest correlation is between Content Accuracy and Reliability and Author/Source Transparency ($r = 0.48$, $p < 0.01$), indicating that transparent authorship is often linked with more accurate and reliable content. Similarly, Equity and Inclusivity strongly correlates with Cultural Representation and Sensitivity ($r = 0.41$, $p < 0.01$), suggesting inclusive OERs are more likely to reflect diverse cultural perspectives. Moderate correlations between copyright compliance, accessibility, and other variables suggest that ethical elements often co-occur. These results indicate that improving one ethical aspect of OERs can positively influence others, supporting a comprehensive and integrated approach to ethical curation.

TABLE III CORRELATION MATRIX OF ETHICAL CURATION VARIABLES IN OERS (N = 375)

Variables	Copyright Compliance	Accessibility for Users with Disabilities	Cultural Representation and Sensitivity	Equity and Inclusivity	Content Accuracy and Reliability	Author/Source Transparency
Copyright Compliance	1.00					
Accessibility for Users with Disabilities	0.32**	1.00				
Cultural Representation and Sensitivity	0.28**	0.35**	1.00			
Equity and Inclusivity	0.22*	0.38**	0.41**	1.00		
Content Accuracy and Reliability	0.44**	0.30**	0.27**	0.36**	1.00	
Author/Source Transparency	0.40**	0.25**	0.23*	0.31**	0.48**	1.00

*Note: *p < 0.05, **p < 0.01 (2-tailed)*

Fig. 3 Confusion Matrix

Regression analysis examines the influence of independent variables (ethical criteria) on a dependent variable (perceived OER quality). The beta coefficients (β) and p-values indicate the strength and significance of each predictor (Table IV). *Content Accuracy and Reliability* (β = 0.398, p < 0.001) and *Author/Source Transparency* (β = 0.372, p < 0.001) were the strongest predictors of OER quality. All variables significantly contributed to the model (R^2 values ranging from 0.60 to 0.68). This test indicates that ethical curation significantly enhances the perceived quality of OERs, justifying the inclusion of ethical standards in OER development.

TABLE IV REGRESSION ANALYSIS RESULTS FOR ETHICAL CURATION VARIABLES AND PERCEIVED OER QUALITY (N = 375)

Variables	β (Unstd.)	β (Std.)	t-value	p-value	R^2	F-value	Significance
Copyright Compliance	0.284	0.231	4.015	0.001	0.62	29.87	0.001
Accessibility for Users with Disabilities	0.318	0.267	4.526	0.000	0.64	30.92	0.001
Cultural Representation and Sensitivity	0.276	0.224	3.873	0.002	0.60	28.44	0.001
Equity and Inclusivity	0.345	0.296	4.778	0.000	0.66	32.73	0.001
Content Accuracy and Reliability	0.398	0.333	5.104	0.000	0.68	34.12	0.001
Author/Source Transparency	0.372	0.308	4.654	0.001	0.67	33.05	0.001

Note: p-values are statistically significant at $p \leq 0.01$.

The chi-square test assesses associations between categorical variables in this case, OER content types and ethical compliance percentages. A significant p-value (< 0.05) suggests a meaningful relationship (Table V). The results demonstrated notable differences in ethical adherence based on the type of content, for example, Textbooks scoring higher across all metrics, and all other types of content (Multimedia and Infographics) being behind, especially on accessibility and cultural responsiveness. The findings suggest that ethical compliance, or non-compliance, varies by format, which signifies that ethical frameworks should be specific to the type of OER that is being produced.

TABLE V CHI-SQUARE ANALYSIS OF ETHICAL CURATION METRICS ACROSS OER CONTENT TYPES

Metrics	Textbooks (%)	Multimedia (%)	Interactive Tools (%)	Lecture Slides (%)	Infographics (%)	Chi-Square (p-value)
Copyright Compliance	82	68	74	76	69	0.021*
Accessibility for Users with Disabilities	59	41	47	50	39	0.008*
Cultural Representation and Sensitivity	65	48	59	62	45	0.014*
Equity and Inclusivity	72	53	66	69	51	0.012*
Content Accuracy and Reliability	84	69	75	80	66	0.005*
Author/Source Transparency	76	58	67	70	61	0.017*

VI. DISCUSSION

The results highlight the crucial role of ethical considerations inshaping the perceived quality of OERs. The findings reveal that while 72% of OERs comply with copyright laws, only 48% meet accessibility standards, pointing to a significant gap in inclusive design. This is consistent with the challenges reported by (Ailakhu & Ibrahim, 2024), who emphasized that many OER initiatives, especially in developing regions, struggle to meet accessibility standards. In addition, cultural representation was present in 61% of resources, which reveals different approaches to cultural sensitivity in OER

development. This finding aligns with (Nurul Diana et al., 2024), which identified the importance of ensuring that OERs reflects different cultural approaches, especially in academic libraries. The Chi-Square analysis further demonstrated that the multimedia format is more prone to cultural bias ($p < 0.05$), reflecting specific moral risks. It emphasizes the need for the strategies that are targeted to reduce such prejudices, which also noted by Hassan (2024), who reported that OER with different material formats may unconsciously marginalize some groups. Results for recovery analysis confirm that ethical crime affecting OER quality positively affects the quality of moral hardening, evaluating 25% more compatibility in efficiency and inclusion. This outlines the importance of integrating moral standards into OER development, a feeling that reflects the above studies, and emphasizes the need for moral guidelines to increase the efficiency and inclusion of OER.

VII. CONCLUSION

The purpose of this research was to detect the moral ideas involved in curation in OER for digital libraries, focusing on factors such as copyright, access, inclusion and material reliability. The purpose was to assess how these moral dimensions affect the alleged quality of OER. Descriptive statistics revealed that Content Accuracy and Reliability had the highest mean score ($M = 3.90$), followed by Author/Source Transparency ($M = 3.88$), identifying them as the strongest predictors of perceived OER quality. Regression analysis further supported this, showing that Content Accuracy and Reliability ($\beta = 0.398$, $p < 0.001$) and Author/Source Transparency ($\beta = 0.372$, $p < 0.001$) had the most significant influence on OER quality, contributing to an overall model R^2 of 0.68. Conversely, Accessibility for Users with Disabilities was the lowest mean score ($M = 3.10$), and only 48%of OERs metconvenience standards, representing an important area for upgrading. Chi-Square test presented significant inequalities of material type, especially showing low adherence to cultural and access measurements ($p < 0.05$) with multimedia resources. This research has boundaries associated with relying on self-report perceptions, which canlead to uneven conclusions and limit objective assessment. In addition, research emphasized only selected moral criteria for evaluation and did not address other potential cultural or geopolitical factors that may affect moral alternatives. Future directions could gather qualitative views from teachers and students to gain afull understanding and a better control of the longitudinal effects of moral curations. Expanding research for other educational systems and technologies will provide more confirmation and depth to the findings.

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