

# Assessment of the academic quality of scientific journals of Ukraine in physical culture

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## Abstract

**Background and Study Aim** In the context of Ukraine's integration into the global academic space, a systematic assessment of the quality of national scientific journals is of particular importance. The aim of the study was to determine the level of academic quality of Ukrainian scientific journals on physical culture and to identify differences between groups of journals with different indexing statuses.

**Material and Methods** The analysis covered 29 Ukrainian journals with varying levels of indexing (WoS, Scopus, WoS/Scopus, DOAJ, Category B, non-indexed). A structured assessment model was applied based on eight criteria: Novelty, Methodology, Relevance, Analysis, Practical Value, Structure, Sources, and Internationalization. Article evaluation was conducted using an AI tool followed by expert verification. Statistical processing included descriptive statistics, the Shapiro–Wilk test, Spearman's rank correlation coefficient, and the Mann-Whitney U test.

**Results** Journals indexed in WoS/Scopus showed the highest mean scores across all criteria, particularly for Relevance (4.8), Novelty (4.7), and Structure (4.7). Category B journals had the lowest mean values, especially for Sources (3.13) and Internationalization (2.33). The Mann–Whitney U test revealed statistically significant differences ( $p \leq 0.001$ ) between indexed and non-indexed journals across all criteria. Spearman's correlation analysis identified strong positive associations among most criteria, with Internationalization showing relatively weaker correlations. The agreement between the results of the proposed model and the official WoS/Scopus metrics was 86.1%, confirming its validity and compliance with internationally recognized thresholds for a high level of agreement.

**Conclusions** The proposed assessment model enables an objective evaluation of the academic quality of Ukrainian journals, highlighting both strengths and areas for improvement. Aligning internationalization indicators, the quality of bibliographies, and methodological rigor with international standards may enhance the visibility and impact of Ukrainian journals in physical culture research.

**Keywords:** academic quality, Ukrainian scientific journals, physical culture, indexing status, internationalization, bibliographic quality, methodological rigor, statistical analysis

## Introduction

A scientific journal serves not only as a medium for recording and disseminating research findings but also as an important indicator of a country's scientific culture, determining its position in the global academic space. On the one hand, the presence of journals in international databases reflects the recognition of a country's scientific achievements by the global community. On the other hand, the very existence and functioning of national scholarly publications meet the needs of the academic community for professional communication, personnel evaluation, dissemination of applied results, and preservation of sectoral identity. In the current context, this dual function of a journal has

gained particular significance, acting both as an instrument of international representation and as a national regulator of scientific discourse.

Although several decades have passed since the introduction of the list of scientific specialized publications in Ukraine [1], the issue of their qualitative assessment remains relevant. In the mid-2000s, the first studies analyzing the state of specialized journals in the field of physical culture began to appear in official publications, marking the formation of a national system for publication-based accreditation. Initially, the list under the category "Physical Education and Sport" included six journals [1]. This initiated the development of a primary corpus of specialized publications, as well as discussions on their role in scientific communication and the prospects for integration into the international academic space [2].

Subsequent studies have focused on the inconsistency of the formalized national model with academic requirements regarding accessibility, English-language content, and international authorship [3, 4], as well as on the need to apply substantive criteria for evaluating publications in the field of physical culture. Later works [5, 6, 7] expanded the analysis by identifying barriers faced by Ukrainian authors in publishing, issues of formal editing, and factors influencing citation levels. These studies laid the foundation for transitioning to a content-based model for assessing scientific impact.

Other studies have noted that systematic approaches to the content-based evaluation of Ukrainian scientific publications remain underdeveloped to date [5, 8, 9]. The authors emphasize the absence of formalized multi-criteria models that allow for the quantitative comparison of journals based on substantive characteristics such as novelty, methodology, practical significance, and internationalization.

The results of analyses of the overall state of Ukrainian scientific publications confirm the aforementioned problems. As noted by Popov and Bohatel [8], most journals in Ukraine face challenges in editorial and technical preparation, which hinder their indexing in international databases. The authors emphasize the absence of structured metadata, English-language versions, high-quality peer review, clear open access policies, and compliance with ethical standards. The study by Mryhlod et al. [9] demonstrates that the lack of a development strategy, unstable funding, and a low level of English-language communication also significantly reduce the chances of Ukrainian journals for integration into the global scientific ecosystem. The authors highlight the need to implement professional management, unified evaluation standards, and national support for academic publications. Similar trends can be observed in journals on physical culture. In this context, the evaluation of scientific journals should go beyond formal indicators and take into account content quality, openness, and the role of publications in the global knowledge system.

Other studies indicate that excessive focus on ranking lists can distort scientific activity and hinder innovation [10, 11]. At the same time, despite the expansion of open access, leading publishers maintain monopoly power and control over profits [12]. Indexing in DOAJ or Scopus also does not guarantee genuine knowledge exchange if publications remain localized in language, subject matter, and audience [13]. UNESCO recommendations call for fairness, inclusivity, and internationalization not in a formal sense, but through active participation in the global scientific dialogue [14]. These principles are particularly relevant to the national field of physical culture,

which requires high-quality integration into the international academic space.

In contemporary scientometric practice, various approaches are applied to assess the quality of scientific journals, based on a combination of bibliometric indicators, editorial policy, internationalization of the authorship, and the scientific value of publications. According to Moed [15], citation metrics (e.g., Journal Impact Factor, Eigenfactor) play an important role, although they do not always reflect the substantive quality of articles. Seglen [16] emphasizes that evaluating a journal solely on the basis of its impact factor is statistically and methodologically flawed. Other researchers suggest complementing quantitative indicators with qualitative expert analysis of publication content, the structure of peer review, and the level of international participation [17].

In this context, modern models for evaluating scientific journals increasingly combine formal citation indices (Scopus, WoS, DOAJ) with in-depth content analysis of publications. The study by Bornmann and Marx [18] emphasizes the importance of expert assessment of content, interdisciplinarity, and the social impact of research. Sugimoto and Larivière [19] propose incorporating additional qualitative indicators into evaluation models, such as co-authorship structure, gender diversity, and the geographical representation of authors. Waltman [20] considers it appropriate to move away from purely quantitative metrics in favor of mixed approaches that encompass both scientometric and content-related aspects. In the same vein, Frantsvåg and Strømme [21] draw attention to the limitations of citation counts as a universal criterion, particularly for journals with a regional or interdisciplinary focus. The DORA Declaration [22] calls for rethinking research assessment approaches, prioritizing quality, openness, and ethical standards over formal indicators.

The analysis of previous studies has shown that the evaluation of scientific journals increasingly requires combining citation indices with content-based quality indicators derived from open data. Researchers emphasize the growing importance of transparent editorial policies, international collaboration, and open access practices. These trends are also characteristic of journals in the field of physical culture. Despite certain efforts, this domain continues to face challenges related to methodological rigor, adherence to ethical standards, and the global visibility of academic publications. The formalized approach prevailing in most scientific journals in Ukraine remains a constraining factor for their integration into the global scientific space. These circumstances highlight the need for a structured approach to assessing the state and development trends of scientific publications in this field.

In this context, the aim of the study was to determine the level of academic quality of Ukrainian scientific journals on physical culture and to identify differences between groups of journals with different indexing statuses.

## Materials and Methods

### *Sources of Information*

*Objects of the Study.* The analysis covered all 29 Ukrainian scientific journals operating in the field of physical culture at the time of the study. The journals were classified according to their indexing type:

- WoS/Scopus – 7 journals;
- DOAJ (excluding journals simultaneously indexed in WoS/Scopus) – 5 journals;
- Category B and non-indexed – 17 journals.

The list of Ukrainian journals was retrieved from the national database IAS “Ukrainian Scientific Periodicals” [23].

The study included the most up-to-date issues of journals available at the time of analysis. The first available 2025 issue was assessed if it remained the latest issue published in open access. The evaluation was based on full-text PDF versions of issues posted on the official journal websites. In cases where a complete issue was not available, individual open-access articles were analyzed.

### *Study Design*

For the analysis, the most recent issues of 29 Ukrainian scientific journals available in open access on their official websites were used. All journals provide free access to the full texts of articles in PDF format, which allows their legitimate use for scholarly analysis without violating copyright or ethical standards.

*Evaluation Criteria.* Eight standardized criteria of academic quality were applied in the analysis: Novelty, Methodology, Relevance, Analysis, Practical Value, Structure, Sources, and Internationalization. The definitions of these criteria and their key indicators are presented in Table 1. Evaluation was carried out on a five-point scale with a description of the level of implementation [Description of scoring criteria (1 = lowest, 5 = highest)], where 5 indicated a high level and 1 indicated a very low level or absence. Each criterion includes its definition and key features used to determine the degree of its manifestation in an article (Criterion Definition and Key Indicators). The criterion “Internationalization” was additionally supplemented with a quantitative scale measuring the share of foreign co-authors.

The justification for applying these criteria is based on recognized international standards and practices of expert peer review of scientific manuscripts [24, 25, 26, 27, 28, 29]. These criteria are confirmed as academically significant in the

contemporary literature [30, 31] and are used as standardized indicators of assessment.

### *Use of AI Tool*

For the preliminary evaluation of articles, the GPTs Hunter service was used – the largest catalog of custom GPT models synchronized with the GPT Store by OpenAI. The Scientific Article Analysis Tool (SAAT) [32] model was selected as the analysis instrument, designed for a detailed examination of scientific publications, highlighting key ideas, methodology, results, and conclusions. Access to SAAT is provided through the GPT Store and requires a ChatGPT Plus subscription.

In this study, the query form was supplemented with the criteria “Criterion Definition and Key Indicator” (Table 1), specifying the output format as a “CSV table.” The gpt-4o model (ChatGPT Plus) was used. The use of ChatGPT as an auxiliary peer-review tool has previously been tested in a number of other studies [33, 34, 35], which confirms the validity of this approach.

*Expert Verification.* All AI evaluation results were verified by two independent experts with over 10 years of experience in academic and editorial activities, including 5–10 years of service as editors-in-chief of journals indexed in WoS/Scopus. In cases where the difference between the AI score and the experts’ assessment exceeded one point, a joint discussion was conducted to reach a consensus on the final result.

An article evaluation algorithm was also adapted and applied, based on recommendations for the qualitative analysis of full-text publications [36, 37, 38]. The main stages of the algorithm include:

1. Classification of journals
2. Evaluation criteria
3. Article sampling principle
4. Assessment of internationalization

The first two stages contain corresponding sub-stages that detail the analytical processing procedure and ensure the systematic nature of the applied approach.

#### *1. Classification of Journals*

Journals were classified according to their level of indexing in international databases, following several recommendations [39, 40, 41]:

- WoS + Scopus
- Scopus
- DOAJ
- National List (Category B, Ukraine) [42]
- New journals without indexing

#### *2. Evaluation Criteria*

Eight main criteria were applied to each journal (Table 1).

#### *3. Article Sampling Principle (Table 2)*

The approach to article sampling was based on the following principles:

- Representativeness – the sample should cover the content of the issue.

**Table 1.** Article Evaluation Criteria

Criterion	Score	Description of scoring criteria (1 = lowest, 5 = highest)	Criterion Definition and Key Indicators
Novelty	5	Presents original ideas, new theoretical or methodological approaches that significantly expand the field of knowledge.	<b>1. Novelty</b> Definition: The degree of originality and innovation in the content of the article; its contribution to the development of the field.
Novelty	4	Shows moderate novelty: interesting application of known methods or adaptation of existing theories.	Key indicators: Introduction of new ideas, methods, data, or approaches.
Novelty	3	Uses well-known ideas with minor modifications.	The research complements existing knowledge or proposes original hypotheses.
Novelty	2	Almost complete repetition of previous works.	Clear distinction from previous publications on the topic.
Novelty	1	Fully borrowed, derivative material without any new aspects.	
Methodology	5	Methodology is well-structured, justified, appropriate to the research goals, and clearly described.	<b>2. Methodology</b> Definition: The scientific rigor and validity of the research methods used.
Methodology	4	Generally reliable methodology with minor simplifications or gaps.	Key indicators: Clear description of the applied methods (quantitative, qualitative, or mixed).
Methodology	3	Partially described method, justification or reproducibility is questionable.	Reproducibility and correctness of all stages.
Methodology	2	Weak or poorly described method, raises doubts about scientific rigor.	Control of variables and logical justification of the procedures.
Methodology	1	Method is absent or completely unsuitable for scientific research.	
Relevance	5	Addresses an urgent and socially or scientifically significant problem.	<b>3. Relevance</b> Definition: The significance and alignment of the article's topic with current scientific, applied, and social challenges.
Relevance	4	Clearly relevant but not critical.	Key indicators: Addressing urgent scientific or practical issues.
Relevance	3	Interesting topic, but lacking contemporary context.	Connection to current research, strategies, or challenges in the chosen field.
Relevance	2	Limited relevance, questionable applicability.	Reflection of the needs of the scientific community or professional practice.
Relevance	1	No value for modern science or practice.	
Analysis	5	Deep, logically structured analysis supported by evidence.	<b>4. Analysis</b> Definition: The depth of interpretation of the results, and the logic and completeness of the analysis.
Analysis	4	Analysis is present but somewhat superficial or incomplete.	Key indicators: Use of statistical or logical methods of analysis.
Analysis	3	Moderately superficial, some logical gaps.	Conclusions based on the obtained results.
Analysis	2	Weak, fragmented analysis that barely explains the data.	Critical assessment of limitations and possible interpretations.
Analysis	1	No analysis, conclusions are unsupported.	
Practical Value	5	Clearly described practical application, recommendations are realistic and feasible.	<b>5. Practical Value</b> Definition: The feasibility and relevance of applying the results in practice, education, sports, healthcare, and other areas.
Practical Value	4	Applicable in a narrow context or requires improvement.	Key indicators: Clearly defined areas of application.
Practical Value	3	Theoretical or hypothetical value, lacks implementation mechanism.	Practical recommendations for implementation or use.
Practical Value	2	Some theoretical benefit, but no clear practical relevance.	Identified target groups of users.
Practical Value	1	No practical value.	

Table 1. Continued

Criterion	Score	Description of scoring criteria (1 = lowest, 5 = highest)	Criterion Definition and Key Indicators
Structure	5	Excellent logical structure, all sections clearly marked, coherent and scientific language.	<b>6. Structure</b> Definition: The article's compliance with the academic format: presence of all sections, logical organization, and adherence to scientific style. Key indicators: Use of the IMRAD structure (Introduction, Methods, Results, and Discussion). Inclusion of abstract, keywords, figures, and tables. Logically organized and easily readable text.
Structure	4	Structure generally followed with minor stylistic issues or overload.	
Structure	3	Inconsistent structure, may hinder perception.	
Structure	2	Poorly organized text, hard to read.	
Structure	1	Chaotic structure, lacks academic formatting.	
Sources	5	Recent (last 5 years), authoritative sources used, citations are correct.	<b>7. Sources</b> Definition: The article's compliance with the academic format: presence of all sections, logical organization, and adherence to scientific style. Key indicators: Use of the IMRAD structure (Introduction, Methods, Results, and Discussion). Inclusion of abstract, keywords, figures, and tables. Logically organized and easily readable text.
Sources	4	Mostly high-quality sources, but some are outdated or less relevant.	
Sources	3	Limited literature base, low recency.	
Sources	2	Few sources, citation errors or irrelevant materials.	
Sources	1	Sources are missing or entirely inappropriate.	
Internationalization	5	International collaboration, global sources, universal findings.	<b>8. Internationalization</b> Definition: The degree of involvement in the international academic environment. Key indicators: Presence of foreign co-authors or international research teams. English-language text or abstract. Topics that cover international contexts or target global audiences.
Internationalization	4	International bibliography or context is present.	
Internationalization	3	Limited international content.	
Internationalization	2	Only local focus, weak connection to global science.	
Internationalization	1	No international dimension.	
<b>Scale</b>		<b>Internationalization</b>	
Internationalization		(% of foreign authors)   >75%   Score: 4.5–5.0	
Internationalization		(% of foreign authors)   50–75%   Score: 4.0–4.4	
Internationalization		(% of foreign authors)   25–50%   Score: 3.5–3.9	
Internationalization		(% of foreign authors)   10–25%   Score: 3.0–3.4	
Internationalization		(% of foreign authors)   <10%   Score: 2.5–2.9	
Internationalization		(% of foreign authors)   0%   Score: 2.0–2.4	

- Balance – taking into account the subject matter, publication type, and authorship.
- Standardization – a uniform approach applied to all journals.

The analysis included all articles of any format (original research, reviews) published in the issue. For large-volume issues, a statistical approach was applied:

- If the issue contained more than 10 articles, a sample size of  $\sqrt{n}$  or 20–30% of the total number of articles was selected;
- If the issue contained  $\leq 10$  articles, all publications were analyzed.

The application of such sampling strategies is supported in qualitative content research and is based on a pragmatic balance between representativeness and depth of analysis [43, 44, 45].

**Table 2.** Quantitative Rules for Article Sampling

Total Number of Articles in Issue	Number Selected for Analysis	Method
1–10	All	Full analysis
11–20	5–6	30% or $\sqrt{n}$
21–30	6–8	$\sqrt{n}$ or proportional
31–40	7–9	Thematically balanced
41 and above	8–10	By sections (if available)

4. Assessment of Internationalization (Table 3)

**Table 3.** Evaluation Rules for Internationalization

Share of Foreign Authorship / Content	Recommended Score
0% (all authors Ukrainian)	2.0–2.4
Less than 10%	2.5–2.9
10–25%	3.0–3.4
25–50%	3.5–3.9
50–75%	4.0–4.4
Over 75% or full internationalization	4.5–5.0

For Ukrainian Category B and non-indexed journals, the criterion of internationalization was based solely on the actual composition of authors (the proportion of foreign authors in the issue). This approach is grounded in the analysis of previous studies, which show that in such journals, references consist almost entirely of domestic sources, with international sources being virtually absent.

For WoS/Scopus journals, more than 90% of the references are typically to foreign publications; therefore, the internationalization indicator directly correlates with the presence of foreign co-authors.

For Category B journals, the following condition was applied: if all authors in an issue represented a single country (e.g., Ukraine only), the score for this criterion did not exceed 2.0–2.4 points on a

five-point scale. This approach is consistent with recommendations for evaluating international scientific collaboration, where the primary indicator of internationalization is the participation of foreign authors in publications [46, 47, 48].

*Comparison of Journal Indicators Across WoS/Scopus Databases*

The study design aimed to compare journal rankings obtained through the authors’ approach with ranking indicators from the WoS and Scopus databases. The analysis included seven journals for which data were available in at least one of these databases. The comparison was performed using the combined quartile (WoS/Scopus), three Scopus metrics (CiteScore 2024, SJR 2024, SNIP 2024), and the CiteScoreTracker 2025 indicator.

*Comparison of Journal Indicators Using the Open Ukrainian Scientific Content Initiative (OUCI) [49]*

To compare data for 22 scientific journals not indexed in WoS/Scopus, information from the Ukrainian resource OUCI was used. OUCI utilizes metadata from Crossref [50]. From OUCI, information was extracted on the h-index and the total number of published articles for each journal. Based on these indicators, a relative productivity measure was calculated—the Hirsch index per article. All obtained values were normalized to a range from 0 to 1. The normalized data were then used to calculate an integrated quality indicator (*quality\_score*), which served as the basis for compiling a journal ranking with unique positions from 1 to 22. The ranking results were compared with the authors’ ranking to identify matches and discrepancies.

*Statistical Analysis*

Data analysis was performed using Python (version 3.x) and the libraries *pandas*, *matplotlib*, *seaborn*, and *scipy.stats*. The analysis included:

1. Descriptive statistics – calculation of the mean, median, standard deviation, minimum, maximum, and quartiles for each criterion.
2. Normality testing – Shapiro–Wilk test (significance level  $\alpha = 0.05$ ).
3. Correlation analysis – Spearman’s rank correlation coefficient to identify relationships between criteria.
4. Comparative analysis – Mann–Whitney U test to identify differences between Indexed and Non-Indexed groups (groups defined by indexing type: WoS, Scopus, WoS/Scopus, DOAJ, Category B, non-indexed).
5. Journal ranking – calculation of the integrated quality indicator (*Average*) and compilation of the ranking.

**Results**

The results of expert evaluations of articles are presented in Table 4. Based on the integrated

**Table 4.** Ranking of 29 Scientific Journals Based on Average Quality Score

Indexing Journal	Number	Novelty	Methodology	Relevance	Analysis	Practical Value	Structure	Sources	Internationalization	Average	Sample	Ratings Count	Sample Max	Rank
WoS/Scopus	S1	4.7	4.6	4.8	4.6	4.5	4.7	4.4	4.3	4.57	7/7	7	7	1
WoS	S2	4.5	4.3	4.6	4.4	4.4	4.5	4.2	4.1	4.38	5/5	5	5	2
Scopus	S3	4.4	4.3	4.5	4.3	4.4	4.6	4.2	4.1	4.35	8/8	8	8	3
DOAJ	N1	4.2	4.1	4.5	4.3	4.3	4.4	4.2	4.1	4.26	9/9	9	9	4
DOAJ	N3	4.2	4.1	4.5	4.3	4.4	4.4	4.2	4.0	4.26	5/5	5	5	4
DOAJ	N2	4.1	4.0	4.4	4.2	4.3	4.3	4.0	3.9	4.15	5/5	5	5	6
Scopus	S4	3.9	4.1	4.3	4.1	4.2	4.1	4.0	3.7	4.05	6/28	6	28	7
Non-indexed	N4	3.9	3.8	4.2	4.0	4.1	4.2	4.0	3.6	3.97	5/5	5	5	8
Scopus	S5	4.0	3.8	4.2	3.9	4.0	3.9	3.8	3.5	3.88	5/13	5	13	9
Scopus	S6	4.0	3.9	4.3	4.0	4.1	4.2	3.9	2.4	3.85	5/17	5	17	10
Non-indexed	N13	3.9	4.0	4.4	4.2	4.3	4.2	4.0	2.8	3.85	5/5	5	5	10
Scopus	S7	3.9	4.0	4.4	4.1	4.3	4.2	4.1	2.4	3.8	8/45	8	45	12
Category B	N10	3.6	3.7	4.1	3.8	4.0	3.6	3.2	2.7	3.71	7/7	7	7	13
DOAJ	N14	3.8	3.7	4.2	3.9	4.1	3.8	3.4	2.4	3.66	4/10	4	10	14
Category B	N15	3.6	3.6	4.1	3.7	4.0	3.6	3.3	2.3	3.65	6/26	6	26	15
Category B	N8	3.7	3.8	4.2	3.9	4.0	3.6	3.2	2.4	3.6	8/8	8	8	16
Category B	N17	3.7	3.6	4.1	3.8	4.0	3.8	3.2	2.3	3.56	5/41	5	41	17
Category B	N21	3.6	3.7	4.1	3.8	4.0	3.7	3.2	2.4	3.56	5/10	5	10	17
Category B	N20	3.5	3.6	4.0	3.6	3.8	3.7	3.5	2.6	3.54	3/3	3	3	19
Category B	N11	3.6	3.5	4.0	3.6	3.8	3.6	3.2	2.4	3.46	5/15	5	15	20
Category B	N16	3.4	3.4	4.0	3.5	3.7	3.4	3.1	2.2	3.46	5/24	5	24	20
Category B	N9	3.6	3.5	4.0	3.6	3.8	3.6	3.3	2.3	3.46	10/10	10	10	20
Category B	N22	3.5	3.5	4.0	3.6	3.8	3.4	3.2	2.2	3.4	4/11	4	11	23
Category B	N12	3.4	3.3	4.1	3.5	3.8	3.6	3.1	2.1	3.36	4/13	4	13	24
Category B	N18	3.6	3.3	4.1	3.4	3.7	2.8	3.1	2.4	3.3	6/26	6	26	25
Category B	N7	3.4	3.3	4.0	3.4	3.5	3.4	3.1	2.3	3.3	4/12	4	12	25
DOAJ	N5	2.8	2.9	4.0	3.0	3.1	3.2	3.1	2.6	3.1	5/15	5	15	27
Category B	N6	3.2	3.0	3.7	3.2	3.5	2.9	2.7	2.0	3.03	5/20	5	20	28
Category B	N19	2.5	2.6	3.2	2.6	2.9	2.7	2.6	2.3	2.68	8/40	8	40	29

The list of journals with abbreviations is as follows: S1 = Pedagogy of Physical Culture and Sports; S2 = Physical Education of Students; S3 = Health, Sport, Rehabilitation; S4 = Physical Education Theory and Methodology; S5 = Slobozhanskyi Herald of Science and Sport; S6 = Rehabilitation & Recreation; S7 = Physical Rehabilitation and Recreational Health Technologies; N1 = Journal of Learning Theory and Methodology; N2 = Pedagogy of Health; N3 = Physical Culture, Recreation and Rehabilitation; N4 = Health Technologies; N5 = Education: Modern Discourses; N6 = Scientific Bulletin of the Izmail State Humanitarian University; N7 = Sports Games; N8 = Martial Arts; N9 = Physical Activity, Health and Sports; N10 = Visnyk of Kamianets-Podilsky Ivan Ohienko National University; N11 = Sport Science and Human Health; N12 = Newsletter of Precarpathian University; N13 = Health-saving technologies, rehabilitation and physical therapy; N14 = Physical Education, Sport and Health Culture in Modern Society; N15 = Physical Culture Sports and Health of the Nation; N16 = Sportyvnyi Visnyk Prydniprovia; N17 = Sports Medicine, Physical Therapy And Occupational Therapy; N18 = Physical Education and Sports; N19 = Scientific Journal of Drahomanov Ukrainian State University; N20 = Ukrainian Journal of Medicine, Biology and Sports; N21 = Scientific Discourse in Physical Education and Sports; N22 = Sport Science Spectrum

quality indicator (*Average*), a ranking of 29 scientific journals (*Rank*) was compiled.

The analysis of the data in Table 4 shows that the highest positions in the ranking are occupied by journals indexed in WoS and/or Scopus, while Category B journals occupy the lowest positions. The main differences between the groups are determined by the values for the criteria “Internationalization,” “Structure,” and “Sources.”

A descriptive statistical analysis was conducted for the evaluations of 29 scientific journals according to the following criteria: “Novelty,” “Methodology,” “Relevance,” “Analysis,” “Practical Value,” “Structure,” “Sources,” “Internationalization,” and “Average.” The results of the basic statistics are presented in Table 5.

As shown in Table 5, the highest mean value was obtained for the criterion “Relevance.” Relatively high scores were also recorded for the criteria “Practical Value” and “Analysis.” The lowest mean values were observed for the criteria “Internationalization” and “Sources.” The overall mean value across all criteria (*Average*) was  $3.70 \pm 0.44$ .

The Shapiro–Wilk test was applied to assess the normality of the distribution for each quality assessment criterion (Table 6). The results showed that several variables, including “Relevance,” “Practical Value,” “Sources,” and “Internationalization,” exhibited statistically significant deviations from a normal distribution ( $p \leq 0.05$ ). Given these deviations and the discrete nature of the 0–5 scoring scale, Spearman’s rank

correlation coefficient was chosen as the most appropriate method to identify associations between the eight independent criteria. The analysis revealed consistently strong positive associations among most criteria, with the highest coefficients observed between “Methodology” and “Analysis” ( $\rho = 0.99$ ), “Novelty” and “Analysis” ( $\rho = 0.97$ ), and “Methodology” and “Novelty” ( $\rho = 0.97$ ). In contrast, “Internationalization” demonstrated comparatively weaker correlations, particularly with “Practical Value” ( $\rho = 0.66$ ) and “Relevance” ( $\rho = 0.72$ ), indicating its relative independence from other components of academic quality. A visual representation of the identified relationships between the criteria is provided in the correlation heatmap (Figure 1).

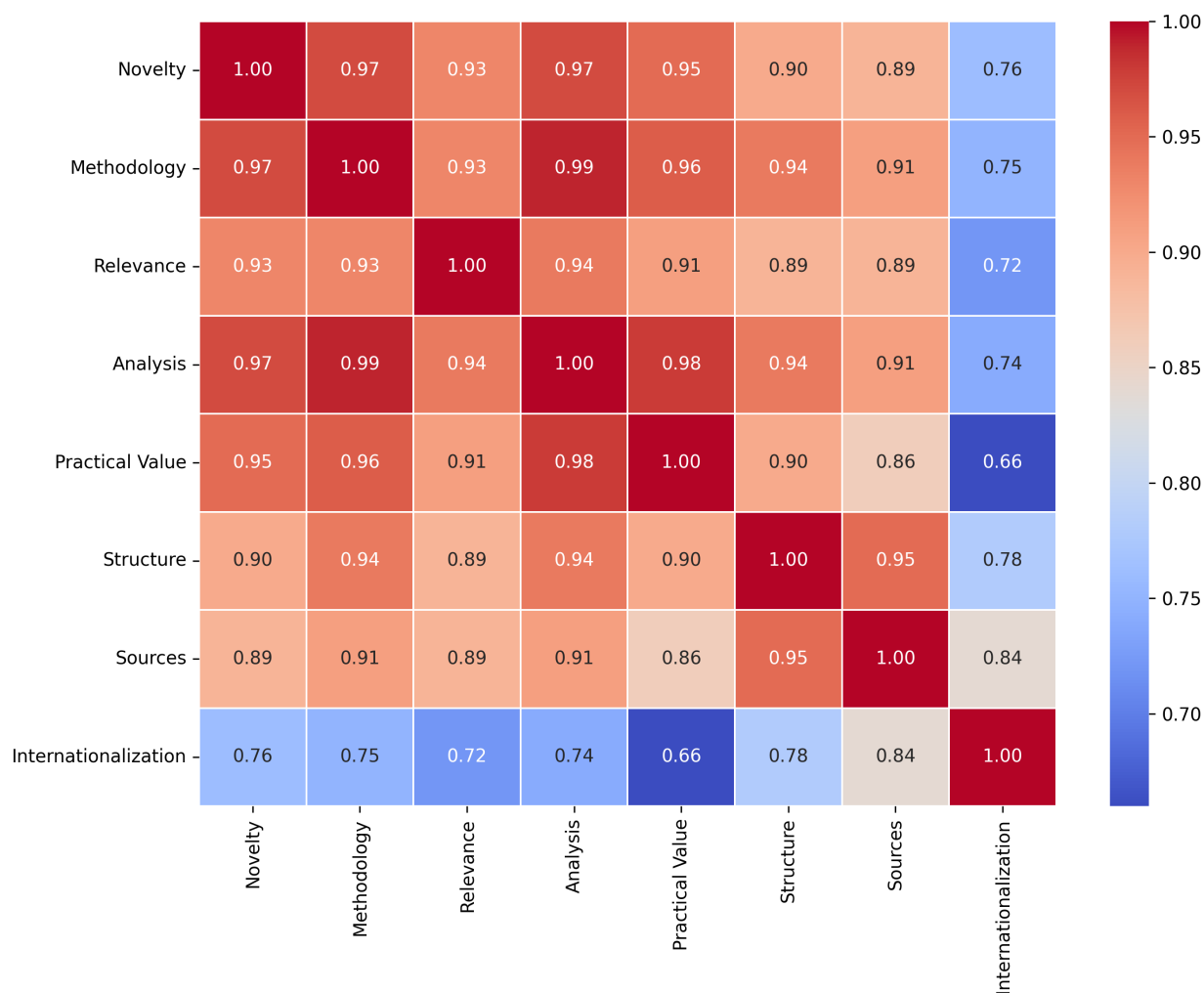
To confirm the statistical significance of the differences between indexed and non-indexed journals, the non-parametric Mann–Whitney U test was applied to each of the eight quality criteria (Table 7). The grouping was as follows: journals indexed in WoS, Scopus, WoS/Scopus, and DOAJ were combined into the *Indexed* group, while journals from category B and non-indexed journals were combined into the *Non-Indexed* group. The results indicated statistically significant differences ( $p \leq 0.001$ ) for all criteria, with indexed journals generally achieving higher scores across all quality indicators compared to non-indexed journals. The largest differences were observed for the criteria “Novelty” and “Relevance,” reflecting the higher level of originality and topicality of research content

**Table 5.** Descriptive statistics of the evaluations of 29 scientific journals based on the main quality criteria

Quality Assessment Criterion	count	mean	std	min	25 %	50 %	75 %	max
Novelty	29.0	3.73	0.46	2.5	3.5	3.7	4.0	4.7
Methodology	29.0	3.69	0.44	2.6	3.5	3.7	4.0	4.6
Relevance	29.0	4.17	0.3	3.2	4.0	4.1	4.4	4.8
Analysis	29.0	3.8	0.44	2.6	3.6	3.8	4.1	4.6
Practical Value	29.0	3.96	0.38	2.9	3.8	4.0	4.3	4.5
Structure	29.0	3.8	0.53	2.7	3.6	3.7	4.2	4.7
Sources	29.0	3.53	0.51	2.6	3.2	3.3	4.0	4.4
Internationalization	29.0	2.86	0.76	2.0	2.3	2.4	3.6	4.3
Average	29.0	3.7	0.44	2.68	3.46	3.65	3.97	4.57

**Table 6.** Results of the Normality Test for Criterion Scores (Shapiro–Wilk Test)

Criterion	Shapiro-Wilk stat	p-value	Conclusion
Novelty	0.9627	0.3829	Normal
Methodology	0.9816	0.8773	Normal
Relevance	0.9087	0.0159	Not normal
Analysis	0.9698	0.5555	Normal
Practical Value	0.9181	0.0272	Not normal
Structure	0.9617	0.3623	Normal
Sources	0.9014	0.0106	Not normal
Internationalization	0.797	0.0001	Not normal
Average	0.9837	0.9207	Normal



**Figure 1.** Spearman correlation heatmap of quality assessment criteria (0–5 scale)

in indexed publications.

**Table 7.** Results of Mann–Whitney U-Test Comparing Indexed vs. Non-Indexed Journals Across Quality Criteria

Criterion	U-statistic	p-value
Novelty	184.0	0.0
Methodology	180.0	0.001
Relevance	185.0	0.0
Analysis	179.0	0.001
Practical Value	178.0	0.001
Structure	181.5	0.0
Sources	182.0	0.0
Internationalization	181.5	0.0

Table 8 presents the mean values for nine quality criteria for each group of journals classified by indexing type (Category B, DOAJ, Non-indexed, Scopus, WoS, WoS/Scopus). The data are based on aggregated evaluation results of publications from 29 journals.

The data in Table 8 indicate that:

- Journals indexed in WoS/Scopus demonstrate the highest mean scores across all criteria,

particularly for *Relevance* (4.8), *Novelty* (4.7), and *Structure* (4.7).

- WoS and Scopus journals are also characterized by high scores, averaging from 4.0 to 4.4 for most parameters.
- Publications listed in DOAJ and non-indexed journals show moderate values, with DOAJ journals having a comparatively high *Relevance* score (4.32) and *Structure* score (4.02).
- Category B journals demonstrate the lowest values for the criteria *Sources* (3.13) and *Internationalization* (2.33), which significantly impacts their average score (3.4).
- The most substantial differences between groups are observed for the criteria *Internationalization*, *Sources*, and *Structure*.

A comparison of the data obtained using the authors' approach with the indicators presented in the WoS/Scopus databases revealed a high level of agreement (Table 9). The proportion of matches between the authors' approach and the official rankings was 86.1%, confirming its applicability for journal evaluation.

The analysis of the data in Table 9 shows that

the smallest discrepancies (MAE = 0.83; 13.9%) are observed when using the three integrated Scopus metrics CiteScore 2024, SJR 2024 and SNIP 2024 as well as when comparing with the CiteScoreTracker

2025 indicator. When combining the Q positions from WoS and Scopus, the mean deviation was 1.86 (31.0%) which indicates greater variability when evaluating solely by quartiles.

The ranking of 22 journals not indexed in WoS/

**Table 9.** Comparative analysis of journal indicators according to WoS, Scopus, and the developed approach

Indexing Journal	Title	Rank	Q(WoS)	IF(WoS)	Q(Scopus)	CiteScoreTracker 2025 (05 August, 2025)	CiteScore 2024	SJR 2024	SNIP 2024	Q_unified_num	Q_pos_start	Q_pos_end	Q_pos_center	AbsDiff_Q	Metric_Mean_3	Rank_Metric_3	AbsDiff_3	Rank_CT	AbsDiff_CT
WoS/Scopus	S1	1	Q2	1.5	Q2	3.0	2.8	0.334	0.654	2.0	1.0	2.0	1.5	0.5	1.26	1.0	0.0	1.0	0.0
WoS	S2	2	Q3	0.7						3.0	3.0	6.0	4.5	2.5					
Scopus	S3	3			Q3	1.7	2.1	0.331	0.608	3.0	3.0	6.0	4.5	1.5	1.01	3.0	0.0	3.0	0.0
Scopus	S4	4			Q2	2.5	2.7	0.318	0.57	2.0	1.0	2.0	1.5	2.5	1.2	2.0	2.0	2.0	2.0
Scopus	S5	5			Q4	1.3	0.7	0.182	0.202	4.0	7.0	7.0	7.0	2.0	0.36	5.0	0.0	4.0	1.0
Scopus	S6	6			Q3	0.6	0.5	0.159	0.137	3.0	3.0	6.0	4.5	1.5	0.27	6.0	0.0	6.0	0.0
Scopus	S7	7			Q3	0.9	1.1	0.196	0.269	3.0	3.0	6.0	4.5	2.5	0.52	4.0	3.0	5.0	2.0

Note. Indexing Journal – database in which the journal is indexed. Q(WoS), IF(WoS) – quartile and impact factor in WoS. Q(Scopus), CiteScore, SJR, SNIP – official Scopus metrics. Q\_unified\_num – unified quartile (WoS/Scopus). AbsDiff\_Q, AbsDiff\_3, AbsDiff\_CT – absolute deviations between the rankings according to the authors’ method and the official indicators. Metric\_Mean\_3 – mean value of the three Scopus metrics.

**Table 10.** Calculation of journal ranking based on OUCI data

Journal	total_articles	h_index	h_per_article	h_per_article_norm	quality_score	rank_quality
N1	81	9	0.111	1.0	1.0	1
N2	36	4	0.111	1.0	1.0	2
N3	36	3	0.083	0.75	0.75	3
N4	50	3	0.06	0.54	0.54	4
N5	119	6	0.05	0.454	0.454	5
N6	30	1	0.033	0.3	0.3	6
N7	100	3	0.03	0.27	0.27	7
N8	224	5	0.022	0.201	0.201	8
N9	45	1	0.022	0.2	0.2	9
N10	229	4	0.017	0.157	0.157	10
N11	176	3	0.017	0.153	0.153	11
N12	147	2	0.014	0.122	0.122	12
N13	150	2	0.013	0.12	0.12	13
N14	487	5	0.01	0.092	0.092	14
N15	398	4	0.01	0.09	0.09	15
N16	420	4	0.01	0.086	0.086	16
N17	388	3	0.008	0.07	0.07	17
N18	369	2	0.005	0.049	0.049	18
N19	2717	10	0.004	0.033	0.033	19
N20	1932	4	0.002	0.019	0.019	20
N21	25	0	0.0	0.0	0.0	21
N22	83	0	0.0	0.0	0.0	22

Note: total\_articles = total number of articles; h\_index = Hirsch index; h\_per\_article = Hirsch index calculated per article; h\_per\_article\_norm = normalized value of h\_per\_article; quality\_score = integrated quality score; rank\_quality= position in the ranking.

Scopus, calculated based on OUCI data, is presented in Table 10.

The analysis of the data in Table 10 showed that the highest positions in the ranking are occupied by journals with a relatively small number of publications but a high h-index per article (N1, N2, N3, N4). Journals with a large number of articles and a low h-index are found in the lower part of the list. The absence of citations (h-index = 0) results in the minimum integrated quality score and places the journals in the last positions of the ranking (N21, N22).

A comparison of journal rankings calculated using OUCI data with the authors' ranking is presented in Table 11.

**Table 11.** Comparison of journal positions in the authors' ranking and according to OUCI data

Number	rank_my	rank_quality	rank_diff
N1	1	1	0
N3	2	3	1
N2	3	2	1
N4	4	4	0
N13	5	13	8
N10	6	10	4
N14	7	14	7
N15	8	15	7
N8	9	8	1
N17	10	17	7
N21	11	21	10
N20	12	20	8
N11	13	11	2
N16	14	16	2
N9	15	9	6
N22	16	22	6
N12	17	12	5
N18	18	18	0
N7	19	7	12
N5	20	5	15
N6	21	6	15
N19	22	19	3

Note: *number* = journal code; *rank\_my* = position in the ranking according to the authors' calculation; *rank\_quality* = position in the ranking according to OUCI; *rank\_diff* = difference between the rankings.

A comparative analysis of the data in Table 11 showed that for four journals (N1, N2, N3, N4) the rankings in both systems fully coincide, indicating the stability of their positions regardless of the calculation method. The largest discrepancies (ranking differences of more than 10 positions) were recorded for journals N5, N6 and N7, which occupy higher positions in the authors' ranking compared to OUCI. The overall trend indicates that the OUCI methodology is more sensitive to quantitative citation metrics, whereas the authors' ranking takes

into account additional aspects of quality.

## Discussion

The aim of this study was to assess the level of academic quality of Ukrainian scientific journals in the field of physical culture and to identify differences between groups of journals with different indexing statuses. The results showed that journals indexed in the WoS/Scopus databases demonstrate the highest average scores for key criteria, whereas publications classified as Category B are considerably below the overall level of academic quality.

### *Assessment of the Reliability of AI Tools in the Peer Review Process*

To confirm the validity of using AI tools in the peer review of scientific articles, publications comparing ChatGPT evaluations with those of human reviewers were considered. According to the study by Carabantes and Redondo-Sama [33], the average level of agreement was 60–70%, and in one out of three articles, a 100% distortion of the content structure was identified. In the work by Tai et al. [34], which covered 30 medical articles, it was found that in 13% of cases there were significant discrepancies between the article content and the ChatGPT review, in 30% of cases there were hallucinated sources, and the overall agreement with editors' opinions was 70–75%. The analysis by Saad et al. [35] showed that in 100% of cases ChatGPT did not note the absence of ethical approvals and also failed to detect methodological gaps, which reduces the reliability of its reviews.

Our findings are consistent with these results. However, the errors reported in similar studies can be avoided by ensuring the accuracy of the queries submitted and refining them when necessary. In our study, a modified approach was applied: eight specialized queries were used, each containing a detailed algorithm for evaluating a scientific article according to each of the eight criteria (Table 1). This made it possible to increase the accuracy of ChatGPT responses and minimize the number of significant discrepancies. Thus, the preliminary structuring of queries can be considered a factor that enhances the accuracy of AI-generated reviews. At the same time, the comparison and correction of the final result by experts remains an essential procedure.

The obtained data indicate that the proposed ranking method demonstrates high agreement with Scopus evaluations and moderate concordance with the combined WoS/Scopus quartile. Exceeding the agreement level of 85% (86.1% for individual metrics) confirms the applicability of the approach for journals present in international databases. However, extending these conclusions to the entire set of 29 journals is limited by the absence of standardized indicators for a significant portion of them. In this regard, the method can be used as

an auxiliary tool for evaluating journals without full indexing in WoS or Scopus.

#### *Conceptual and Methodological Approaches to Assessing the Quality of Scientific Journals*

In our study, the criteria for assessing the quality of Ukrainian journals were identified based on existing recommendations and scholarly evaluation practices [5, 8, 36]. Certain aspects revealed during the analysis are consistent with the results of previous studies, which emphasize the importance of characteristics such as originality, methodological rigor, logical structure, clarity of argumentation, and academic formatting of articles [37, 43, 44]. The quality of peer review as a tool for maintaining scientific standards is also considered an important component of the publication process [30, 38, 51]. In addition, text structure, the relevance of keywords, and international co-authorship may be associated with the perception of a publication as high quality and with its scientometric indicators [7, 48, 52].

In contemporary academic practice, the quality of a scientific article is viewed as a multifaceted concept that encompasses the originality of content, methodological rigor, logical structure, thematic relevance, formatting, and other elements of scholarly culture [36, 43, 44]. Our analysis confirms that these parameters play an important role in the perception of a publication as high quality and may also correlate with citation indices and the status of the journal [7, 48, 52]. The trends we identified are consistent with approaches in studies focused on evaluating peer review and the intrinsic quality of publications [38, 51, 53]. Thus, the inclusion of such criteria in the algorithm for assessing scientific journals makes it possible to objectify the analysis procedure and enhance its validity.

The results of our study complement existing approaches to assessing the quality of scientific publications and highlight the importance of components such as internationalization, article structure, and methodological rigor. These findings are consistent with the recommendations presented in the study by Agustian [54], which emphasizes the importance of clearly describing the research design, ensuring reproducibility, and controlling variables as hallmarks of sound research. In turn, Kosmützky [55] stresses the need for a flexible yet well-justified choice of methodology depending on the objectives and context of the study. Furthermore, as noted by Synowiec et al. [56], transparency and adaptability in method selection enhance the scientific credibility and practical relevance of publications. Thus, the criteria and differences between journal groups identified in our analysis confirm the relevance and applicability of these theoretical and methodological guidelines in the context of evaluating Ukrainian scientific journals.

#### *Empirical Basis and Quantitative Analysis of*

#### *Differences in Academic Quality*

Statistical analysis (Mann–Whitney U test) revealed significant differences between indexed and non-indexed journals across all nine criteria of academic quality. The most pronounced discrepancies were recorded for the indicators of scientific novelty, relevance, article structure, and internationalization (all:  $p = 0.000$ ), which underscores the advantage of journals included in international databases. These results are consistent with previously identified trends indicating the association between indexation and compliance with the standards of scholarly communication and international authorship [17, 19]. Formal elements such as DOI assignment and adherence to the IMRAD structure, along with the participation of foreign authors, serve as indicators of the academic level of a journal. Thus, the identified quantitative differences justify the need for Ukrainian journals to adapt to the requirements of international platforms.

This study obtained a high degree of agreement (86.1%) between the authors' evaluation method and the official indicators of the WoS/Scopus databases, which indicates the robustness of the proposed approach. According to Traag et al. [57], at the institutional level, the degree of agreement between metrics and peer review can be comparable to the internal agreement among reviewers. Tunger and Schaer [58] demonstrated that post-publication expert evaluations can show high consistency with bibliometric and altmetric indicators when AI analysis of expert statements is applied. According to generally accepted methodological guidelines, an agreement level of  $\geq 80\%$  is considered acceptable and reflects a high degree of concordance [59, 60]. The classic classification by Landis and Koch [61] categorizes such values as "almost perfect" agreement. Similar levels of concordance between bibliometric metrics and expert evaluations have been demonstrated in other studies [62, 63], which confirms the validity of combined approaches.

In this context, the novelty of this study lies in the adaptation of a multi-criteria evaluation model, typically applied at the level of individual publications, to the comprehensive ranking of scientific journals based on eight content-related criteria. Unlike traditional studies focused on the correlation of individual metrics with expert evaluations, the proposed approach integrates content analysis, AI tools, and expert verification. This approach makes it possible to obtain robust results even in the absence of a complete set of scientometric indicators.

The comparative analysis (Table 8) showed that journals indexed in WoS and Scopus demonstrate significantly higher average scores for key criteria. Category B journals and non-indexed publications

lag behind, particularly in terms of international participation, which indicates their limited integration into the international academic space. The Mann–Whitney U test (Table 7) confirmed statistically significant differences in the indicators. An example is a journal that occupies the last and first positions in Table 4 (Rank) for the “Average” criterion. These differences are consistent with previous studies [17, 19], which emphasize the role of internationalization, methodological rigor, and transparency in academic quality.

The results of this study confirm that the bibliographic component is an important indicator of the quality of scientific publications. For the “Sources” criterion, Category B journals lag significantly behind journals indexed in WoS and Scopus. These findings are consistent with the conclusions of Santini [64], Kumar [65], and Mammola et al. [66], who emphasize the importance of the relevance, accuracy, and completeness of the “References” section. As shown by Tykhonkova [67], Ukrainian journals also suffer from the absence of DOIs and the use of outdated sources, which reduces their international visibility.

#### *Specific Features of the Functioning of Ukrainian Scientific Publications in the National Context*

A number of domestic studies confirm the need to move from formal indicators (presence of ISSN, indexation, publication frequency) to a multi-criteria content-based assessment of the quality of scientific journals. For example, in the works of Vlokh [68] and Demin [69], models based on bibliometric and statistical data are proposed: the first focuses on the distribution of publication activity in the field of physics, and the second applies an integrated QI vector at the level of national analytics. These approaches align with our position regarding the consideration of comprehensive metrics and scientific significance.

The study by Tykhonkova [67] emphasizes that the integration of Ukrainian journals into the international scientific space requires not only formal compliance (indexation, ISSN) but also substantive improvement, including the quality of metadata, transparency of editorial policy, language adaptation, and adherence to open access standards. These conclusions confirm the relevance of the multi-criteria approach applied in our study.

The works of Nazarovets [70] and Nazarovets and Mryglod [71] show that a high level of publication citations is not always determined by indexation in international databases but is driven by such content-related parameters as the language of the article, international co-authorship, and open access. This confirms the need to account for the content characteristics incorporated into the model we propose.

The study by Mryglod et al. [72] is of particular

significance, as it was the first to implement an analysis of Ukrainian economic science based on open metadata (Crossref, OUCI). This approach serves as an alternative to formal expert review and supports the logic of multi-criteria content evaluation adopted in our study.

These results are complemented by earlier research [2, 3, 4, 5], which emphasized the importance of both formal and content-related characteristics in the evaluation of Ukrainian scientific journals. Later publications [6, 7] examined factors of citation and scientific novelty that directly influence publication quality. These findings formed the basis of the proposed structured model for journal evaluation.

Thus, our study is supported by the results of previous works in terms of its focus on content-based evaluation, the use of open data, and comprehensive indicators. At the same time, its distinctive feature is the universality and extensiveness of the approach: the model covers not only quantitative but also structural, linguistic, collaborative, and thematic parameters applicable to a wide range of Ukrainian scientific journals.

#### *Adaptation to International Criteria and Improvement of Editorial Practice*

Our results correlate with the quality criteria established by Scopus and Web of Science, such as international authorship, transparent editorial policy, peer review, and the availability of metadata [39, 41]. However, Category B and non-indexed journals often lag behind in internationalization, transparency, and bibliography. This is also confirmed by the findings of Mongeon and Paul-Hus [40], who note the uneven coverage of journals. Ukrainian publications need to align with international standards to enhance their academic legitimacy and visibility.

The results of the study show that Category B journals are primarily focused on meeting the formal criteria set by the national system of scientific accreditation. This orientation is driven by the current monitoring procedures of the Ministry of Education and Science of Ukraine and the editorial boards’ aim to maintain their status in the approved list. As a result, priority is often given to quantitative indicators (publication frequency, volume of publications), while methodological rigor, content quality, and international visibility are relegated to the background. This is reflected in low average scores for a number of key criteria that characterize articles with foreign participation, transparency of editorial procedures, peer review policy, and bibliography quality. These indicators point to the limited integration of such publications into the international scientific community and the insufficient maturity of their editorial policies.

#### *Comparison of Journal Rankings Based on OUCI Data*

A comparison of the indicators for 22 Ukrainian journals not indexed in WoS/Scopus showed that when using Crossref data, only citations of publications with a DOI registered in this system are taken into account. This limits the completeness of the evaluation, since some publications may be registered in other systems. At the same time, most Ukrainian journals cite publications with a DOI to a limited extent and tend to cite national sources more frequently. The analysis of Tables 1 and 2 revealed that complete coincidence of rankings in both systems was observed for only 4 out of 22 journals (18.2%), the difference did not exceed 8 positions for 14 journals (63.6%), and for 8 journals (36.4%) the discrepancies were more substantial, reaching up to 15 positions.

Taken together, the obtained data confirm the effectiveness of the proposed algorithm for assessing the quality of Ukrainian scientific journals in the field of physical culture. The use of comprehensive criteria, including article structure, methodological rigor, internationalization, and the accuracy of bibliographies, made it possible to identify both the strengths and the problem areas in the development of academic publications. Comparison with international practices such as Scopus, WoS, and DOAJ shows that Ukrainian journals indexed in authoritative databases are aligned with global standards. At the same time, Category B publications often retain a formal approach and insufficient transparency. These results highlight the need for systemic changes in the activities of Ukrainian Category B journals aimed at improving research integrity, increasing the openness of editorial processes, and strengthening integration into the international scientific space.

#### *Limitations of the Study*

The results of this study should be interpreted in light of several limitations. The first limitation is the reliance on information available in open access on the official websites of the journals. In cases where such information was absent or presented only partially, the evaluation may have been incomplete. The second limitation concerns quantitative indicators (for example, citation index), which were not always available for journals published in the Ukrainian language, thereby limiting the possibility

of objective comparison with international practices. The third limitation is the number of issues analyzed for each journal (only one current issue) and the number of experts involved in the article evaluation process.

## **Conclusions**

The conducted study made it possible to comprehensively assess the quality of Ukrainian scientific journals in the field of physical culture based on objective criteria and to compare them with international practices. The results revealed a significant differentiation of indicators depending on the category of the journal and its indexing status. Journals represented in the WoS and Scopus databases demonstrate higher values for such criteria as methodological rigor, internationalization, article structure, and bibliography quality. In contrast, Category B publications are characterized predominantly by formal compliance with standards, which limits their integration into the international academic space.

Thus, the proposed evaluation algorithm can be used not only for monitoring the academic quality of journals but also as a tool for enhancing the international visibility of Ukrainian scientific publications. Improvements in such indicators as internationalization, bibliography quality, and article structure contribute to increased citation rates, compliance with the requirements of international indexing databases (Scopus, WoS), and, consequently, the strengthening of Ukrainian journals' positions in the global scientific space.

## **Conflict of Interest**

One of the authors (Sergii Iermakov) serves as the Editor-in-Chief and Publisher of this journal. To ensure an objective review process, the manuscript was handled by an independent editorial board member, and the peer review was conducted by external reviewers who had no affiliations with the authors. The Editor-in-Chief did not participate in the review or editorial decision-making process regarding this manuscript. The other co-authors (Georgiy Korobeynikov and David Curby) declare that they have no conflict of interest related to this publication.

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