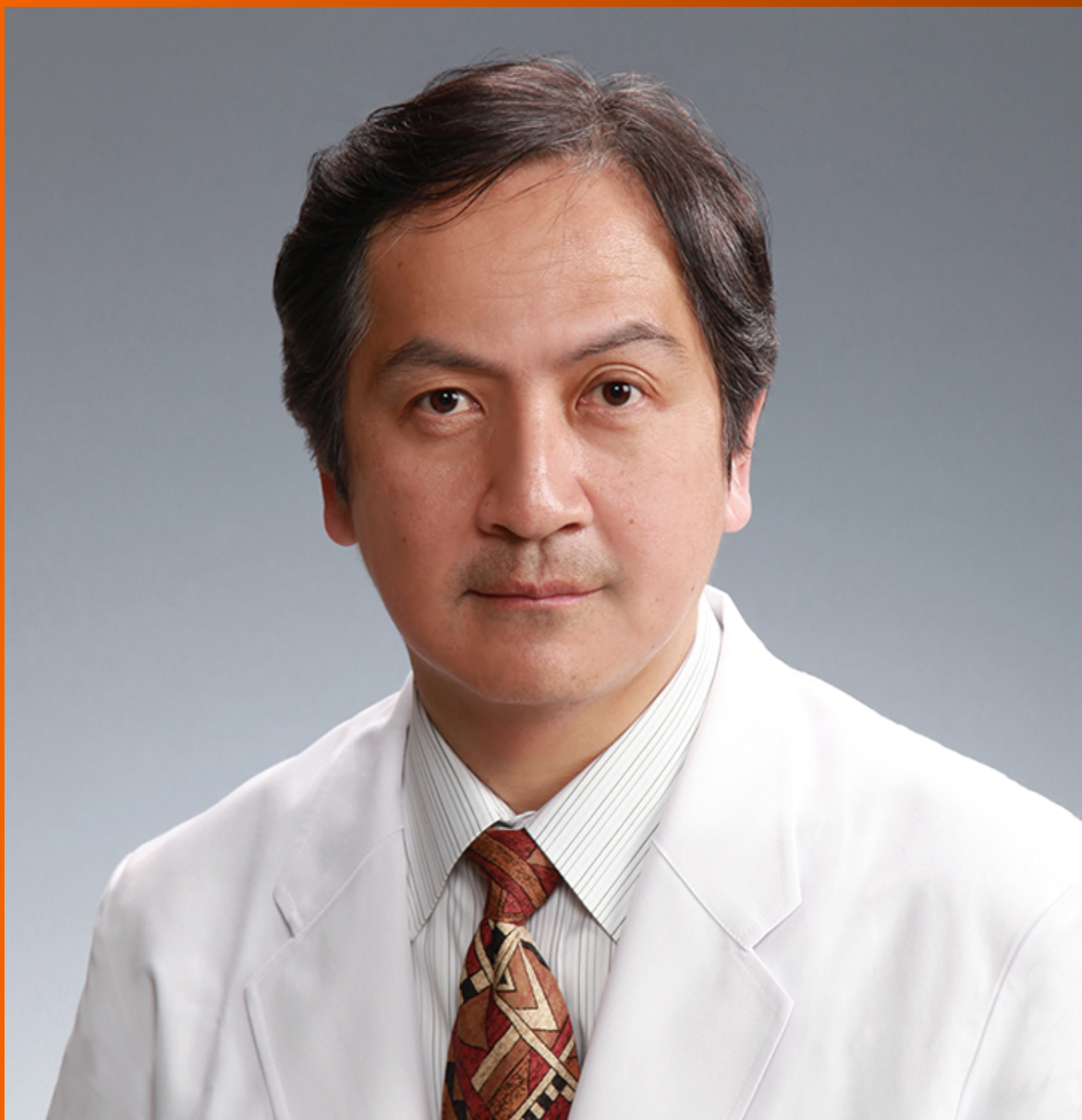


World Journal of *Gastroenterology*

World J Gastroenterol 2022 October 14; 28(38): 5515-5657



REVIEW

- 5515 Gastrointestinal and liver disease in patients with schizophrenia: A narrative review
Grant RK, Brindle WM, Donnelly MC, McConville PM, Stroud TG, Bandieri L, Plevris JN

MINIREVIEWS

- 5530 Ultrasound-based artificial intelligence in gastroenterology and hepatology
Liu JQ, Ren JY, Xu XL, Xiong LY, Peng YX, Pan XF, Dietrich CF, Cui XW
- 5547 Oxidative stress bridges the gut microbiota and the occurrence of frailty syndrome
Chen SY, Wang TY, Zhao C, Wang HJ

ORIGINAL ARTICLE

Basic Study

- 5557 Effect of low-dose radiation on thyroid function and the gut microbiota
Tong JY, Jiang W, Yu XQ, Wang R, Lu GH, Gao DW, Lv ZW, Li D
- 5573 Hypoxia inducible factor 1 α promotes interleukin-1 receptor antagonist expression during hepatic ischemia-reperfusion injury
Wang ZY, Liu Y, Li SP, Li JJ, Zhang Z, Xiao XC, Ou Y, Wang H, Cai JZ, Yang S

Retrospective Cohort Study

- 5589 No long-term survival benefit with sustained-release 5-fluorouracil implants in patients with stages II and III gastric cancer
Wu YZ, Wu M, Zheng XH, Wang BZ, Xue LY, Ding SK, Yang L, Ren JS, Tian YT, Xie YB
- 5602 Timing of endoscopic retrograde cholangiopancreatography in the treatment of acute cholangitis of different severity
Huang YC, Wu CH, Lee MH, Wang SF, Tsou YK, Lin CH, Sung KF, Liu NJ

Retrospective Study

- 5614 Clearance of the liver remnant predicts short-term outcome in patients undergoing resection of hepatocellular carcinoma
Miki A, Sakuma Y, Ohzawa H, Saito A, Meguro Y, Watanabe J, Morishima K, Endo K, Sasanuma H, Shimizu A, Lefor AK, Yasuda Y, Sata N
- 5626 A new scoring system to evaluate adjuvant chemotherapy for patients with T2N0M0 gastric cancer after D2 gastrectomy
Xu Q, Kang WZ, Xiong JP, Shao XX, Li WK, Hu HT, Tian YT

Observational Study

- 5636** Red blood cell distribution width derivatives in alcohol-related liver cirrhosis and metabolic-associated fatty liver disease

Michalak A, Guz M, Kozicka J, Cybulski M, Jeleniewicz W, Lach T, Cichoż-Lach H

SCIENTOMETRICS

- 5648** Comparison of evaluation indexes for Gastroenterology and Hepatology journals in different databases

Li JY, Yan ZH, Xiang Z, Gao C, Wu J

ABOUT COVER

Editorial Board of *World Journal of Gastroenterology*, Shunji Fujimori, AGAF, MD, PhD, Director, Department of Gastroenterology, Chiba Hokusoh Hospital, Nippon Medical School, Chiba 270-1694, Japan. s-fujimori@nms.ac.jp

AIMS AND SCOPE

The primary aim of *World Journal of Gastroenterology* (WJG, *World J Gastroenterol*) is to provide scholars and readers from various fields of gastroenterology and hepatology with a platform to publish high-quality basic and clinical research articles and communicate their research findings online. WJG mainly publishes articles reporting research results and findings obtained in the field of gastroenterology and hepatology and covering a wide range of topics including gastroenterology, hepatology, gastrointestinal endoscopy, gastrointestinal surgery, gastrointestinal oncology, and pediatric gastroenterology.

INDEXING/ABSTRACTING

The WJG is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Current Contents/Clinical Medicine, Journal Citation Reports, Index Medicus, MEDLINE, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 edition of Journal Citation Reports® cites the 2021 impact factor (IF) for WJG as 5.374; IF without journal self cites: 5.187; 5-year IF: 5.715; Journal Citation Indicator: 0.84; Ranking: 31 among 93 journals in gastroenterology and hepatology; and Quartile category: Q2. The WJG's CiteScore for 2021 is 8.1 and Scopus CiteScore rank 2021: Gastroenterology is 18/149.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Hua-Ge Yin; Production Department Director: Xu Guo; Editorial Office Director: Jia-Ru Fan.

NAME OF JOURNAL

World Journal of Gastroenterology

ISSN

ISSN 1007-9327 (print) ISSN 2219-2840 (online)

LAUNCH DATE

October 1, 1995

FREQUENCY

Weekly

EDITORS-IN-CHIEF

Andrzej S Tarnawski

EDITORIAL BOARD MEMBERS

<http://www.wjgnet.com/1007-9327/editorialboard.htm>

PUBLICATION DATE

October 14, 2022

COPYRIGHT

© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Comparison of evaluation indexes for Gastroenterology and Hepatology journals in different databases

Jia-Yuan Li, Zhi-Han Yan, Ze Xiang, Ce Gao, Jian Wu

Specialty type: Scientific journal

Provenance and peer review:

Invited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): A

Grade B (Very good): B

Grade C (Good): 0

Grade D (Fair): 0

Grade E (Poor): 0

P-Reviewer: Mansour AM, Lebanon; Santos BS, Brazil

Received: August 9, 2022

Peer-review started: August 9, 2022

First decision: August 25, 2022

Revised: September 4, 2022

Accepted: September 21, 2022

Article in press: September 21, 2022

Published online: October 14, 2022



Jia-Yuan Li, Ze Xiang, Zhejiang University School of Medicine, Zhejiang University, Hangzhou 310009, Zhejiang Province, China

Zhi-Han Yan, Department of Hepatology, Wuxi Fifth People's Hospital Affiliated to Jiangnan University, Wuxi 214005, Jiangsu Province, China

Ce Gao, Jian Wu, Department of Clinical Laboratory, The Affiliated Suzhou Hospital of Nanjing Medical University, Suzhou Municipal Hospital, Gusu School, Nanjing Medical University, Suzhou 215008, Jiangsu Province, China

Corresponding author: Jian Wu, MD, PhD, Professor, Department of Clinical Laboratory, The Affiliated Suzhou Hospital of Nanjing Medical University, Suzhou Municipal Hospital, Gusu School, Nanjing Medical University, No. 242 Guangji Road, Suzhou 215008, Jiangsu Province, China. wujianglinxing@163.com

Abstract

BACKGROUND

Accurate assessment of the quality of academic journals is of great significance. While Journal Impact Factor (JIF), calculated by Clarivate and based upon the Web of Science literature database, and CiteScore (CS), developed by Elsevier and based upon the Scopus database, have enjoyed high uptake worldwide, efforts continue towards creation of other scientometric indexes that will provide ever-greater qualitative insights into journal impact. Such efforts have yielded the newly-launched *Journal Article Influence Index (JAII)*, which is based on the *Reference Citation Analysis (RCA)* database, an open multidisciplinary citation analysis database based on artificial intelligence technology.

AIM

To evaluate and summarize the similarities and differences between *JAII* and *JIF/CS* as journal evaluation indicators, and provide an intuitive method for visual representation of the related data.

METHODS

We searched the Journal Citation Reports to obtain the 2021 JIF list, downloaded the CS list updated in July on the Scopus website, and collected the comprehensive list of 2022 *JAII*s from the *RCA* database (www.referencecitationanalysis.com).

RESULTS

Our research results revealed that by breaking through the time limit of mainstream journal evaluation methods, the *JAI* is able to perform well in data reliability, establishing its benefit as a complementary scientometric index to JIF and CS.

CONCLUSION

JAI provides comprehensive assessment of the quality and performance of journals.

Key Words: *Journal Article Influence Index*; Journal Impact Factor; CiteScore; Gastroenterology and Hepatology; Scientometric index

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Compared with Journal Impact Factor (JIF) and CiteScore (CS), the newly-launched *Journal Article Influence Index (JAI)* breaks through the time limit feature of the former indexes. A key benefit of the *JAI* is that it does not require the temporal path (wait-time) of JIF and CS to accurately evaluate a journal's impact. As such, *JAI* is immediately useful for assessing the performance of journals and the drawbacks of time randomness are overcome. Here, we describe the features of *JAI* as a comprehensive assessment of the quality and performance of journals, in its functionality based upon the *Reference Citation Analysis (RCA)* database that covers some more specific journals than other literature databases.

Citation: Li JY, Yan ZH, Xiang Z, Gao C, Wu J. Comparison of evaluation indexes for Gastroenterology and Hepatology journals in different databases. *World J Gastroenterol* 2022; 28(38): 5648-5657

URL: <https://www.wjgnet.com/1007-9327/full/v28/i38/5648.htm>

DOI: <https://dx.doi.org/10.3748/wjg.v28.i38.5648>

INTRODUCTION

The quality assessment of peer-reviewed published research is important for the reputation, substance and growth of various professional associations, individual scientists, and academic institutions, as well as the funding organizations that evaluate and support them[1]. The quality of scientific contributions is primarily assessed on a temporal basis, with quantitative evaluation of the long-term impact in a field or discipline. The impact of an individual scientific article can be inferred from the citations that it receives. A similar principle is applied to evaluation of the journals that publish these scientific articles[2]. These long-standing efforts have led to researchers proposing various methods that improve the assessment of the quality of scientific journals[3,4]. What most of these methods have in common, though, is the use of complex mathematical algorithms to analyze networks of scientific papers to estimate citation quality.

First proposed by Eugene Garfield in 1955, the Scientific Citation Index, Journal Citation Reports [(JCR); published by the Institute for Scientific Information (ISI)] aims to rank, evaluate, classify, and compare journals[5]. The involved metrics are calculated based on the number of articles published by a journal and the number of times that a journal is cited. Moreover, they have been widely adopted as tools to evaluate researchers and research work in a wide range of scientific settings. One of the most prominent among such indicators is the Journal Impact Factor (JIF).

In addition to the JIF, other metrics provided by the ISI include total citation frequency, immediacy index, number of source entries published in the current year, frequency of citations in the previous 2 years, cited half-life, and the ratio of different citations for each article. The ISI introduced a simplified system in 1974, along with a list of topic categories and an accompanying catalog of the total 176 JCR journals. In recent decades, the different journal categories have been subjected to many holistic analyses. The resultant definitions of the common characteristics that underpin particular types of journals and relate to the JIF have served as a useful tool for researchers, both in the scientometric field and in general as contributing authors, to better evaluate journal impact[6,7]. To this day, journals are ranked by JIF within their assigned category. The journals listed in the JCR are further subgrouped by the ranking of JIF-related indicators (*i.e.* JIF variation coefficient, *etc.*); this greater detailed categorization has allowed scholars to peruse the impact factor values more intuitively from a holistic and comprehensive perspective.

JIF has been the most widely used indicator of quality of scientific journals over the past decades[8]. However, in accordance with the 1999 announcement by the ISI/JCR that the accuracy of JIF is not fully guaranteed[9], it is important to note that the methodological considerations in the JIF calculation still include a lack of assessment of the quality of citations, the inclusion of self-citations, poor comparability between different scientific fields, and an analysis of publications mainly in English[10]. This is in addition to the fact that JIFs of journals representing different disciplines are not comparable to each

other.

On December 8, 2016, Scopus launched the CiteScore (CS) quality metric, in direct competition of JIF but which was developed specifically for journals indexed by Scopus. Over the past few years, the number of journals assigned a CS has increased dramatically, especially for journals that are not included in the JIF annual assignments. Scientometric studies evaluating the relationship between CS and JIF have revealed that although there is a strong correlation between the two metrics, there are also obvious complex differences[11,12]. While CS may be more balanced and most certainly is more transparent[13], it also shares some key limitations with the JIF[14,15].

Reference Citation Analysis (RCA) is a very recently launched open multidisciplinary citation analysis database based on artificial intelligence technology. This database covers a wide array of seemingly disparate disciplines such as business, economics and management, chemistry and materials science, engineering and computer science, health and medical sciences, humanities, literature and arts, life sciences and earth sciences, physics and mathematics, and social sciences. Users can search the collective literature based on fields such as author, category, DOI, ISSN, keyword, ORCID number, publication name, PubMed ID, and title to track original innovative research results and cutting-edge progress; they can also sort results by an article impact index metric. Importantly, the results analysis functionality culminates in a comprehensive and customizable report of the retrieved results.

Based on the RCA database, the *Journal Article Influence Index (JAII)* metric is officially available as a new indicator of journal quality that is calculated *via* the normal approach of quantifiable citations. Systematically comparing this new metric to traditional journal evaluation metrics will help ensure the accuracy of JAII. With acknowledgement of the continuous deepening of research in the field of Gastroenterology and Hepatology of recent years[16], we performed such a comparative analysis to determine the similarities and differences between JAII and JIF/CS as journal evaluation indicators, with the ultimate aim of providing an intuitive method for visual representation of the related data.

MATERIALS AND METHODS

Data sources

The raw data for this study was obtained in July 2022 from the official websites of the institutions that released each metric under consideration. We searched the JCR to obtain the 2021 JIF list, downloaded the CS list updated in July from the Scopus website, and collected the 2022 JAII list from the RCA database (www.referencecitationanalysis.com). In addition, we also searched for information related to the characteristics of these scientific journal quality indexes for reference.

Besides, based on the results of RCA search by the Gastroenterology and Hepatology category, we compared JAII to JIF and CS respectively. The resultant data from the RCA database were used as the matching benchmark, and the matching method was based on ISSN, EISSN, and journal name.

RESULTS

Statistical analysis and visualization

The Gastroenterology and Hepatology-categorized journals identified in each database are presented in Table 1 (grouped by the evaluation indicator and in descending order according to the respective quality metric value). In total, 102 journals carried a JAII, 81 carried a JIF, and 76 carried a CS (all assigned in 2021).

Next, in order to make an intuitive comparison between the three evaluation indicators, we drew a scatter distribution plot for JIF-JAII (Figure 1A) and CS-JAII (Figure 1B), and plotted a single-timepoint uniform curve using the least squares method[17]. In this case, we took an intersection, considering that some journals with JAII have no JIF or CS. It can be seen from the figure that in the evaluation of lower-quality journals, the linearity of JAII and JIF/CS has greater overlap, but in the evaluation of higher-quality journals, the randomness of the data is greater. Journals with a large deviation between JIF and JAII include *Nature Reviews Gastroenterology & Hepatology*, *Lancet Gastroenterology & Hepatology*, *Seminars in Liver Disease*, and so on. Journals with a large deviation between CS and JAII include *Gut*, *Journal of Hepatology*, *Gastroenterology*, and so on.

The results of the combined analysis of the three journal evaluation indicators are visualized in Figure 2A-C[18]. Figure 2A gives a comparison of the values between the three evaluation indicators of the same journal (73 in total, taking the intersection). Figure 2B gives the JIF-JAII ratio and CS-JAII ratio for each journal. Figure 2C gives the values of JIF and CS in descending JAII order.

Finally, we combined the three journal evaluation indicators together, and through a histogram (Figure 2D), we can more clearly see the impact of the joint evaluation of the three on the ranking of journals without weight. This can also be used as a reference evaluation method.

Table 1 Comparison of Journal Article Influence Index, Journal Impact Factor, and CiteScore in decreasing order of Journal Article Influence Index values

| Journal name | 2022 JAI | 2021 JIF | 2021 CS |
|---|----------|----------|---------|
| <i>Seminars in Liver Disease</i> | 48.011 | 6.512 | 9.4 |
| <i>Hepatology</i> | 43.087 | 17.298 | 25.8 |
| <i>Gastroenterology</i> | 37.347 | 33.883 | 33 |
| <i>Gut</i> | 36.77 | 31.793 | 40.1 |
| <i>Nature Reviews Gastroenterology & Hepatology</i> | 35.564 | 73.082 | - |
| <i>Gut Microbes</i> | 31.922 | 9.434 | 9.4 |
| <i>Alimentary Pharmacology & Therapeutics</i> | 28.815 | 9.524 | - |
| <i>Journal of Hepatology</i> | 28.63 | 30.083 | 39.2 |
| <i>Best Practice & Research Clinical Gastroenterology</i> | 28.443 | 2.695 | - |
| <i>Diseases of the Colon & Rectum</i> | 26.986 | 4.412 | - |
| <i>Liver Transplantation</i> | 26.916 | 6.112 | 8 |
| <i>Gastric Cancer</i> | 24.132 | 7.701 | 12.5 |
| <i>Lancet Gastroenterology & Hepatology</i> | 23.661 | 45.042 | - |
| <i>The American Journal of Gastroenterology</i> | 23.599 | 12.045 | - |
| <i>Journal of Gastroenterology</i> | 22.863 | 6.772 | 13.7 |
| <i>Clinical Gastroenterology and Hepatology</i> | 22.413 | 13.576 | 12.2 |
| <i>Neurogastroenterology and Motility</i> | 22.381 | 3.96 | 6.5 |
| <i>World Journal of Gastroenterology</i> | 21.897 | 5.374 | 8.1 |
| <i>American Journal of Physiology-Gastrointestinal and Liver Physiology</i> | 21.407 | 4.871 | - |
| <i>Journal of Gastrointestinal Surgery: Official Journal of the Society for Surgery of the Alimentary Tract</i> | 20.787 | 3.267 | - |
| <i>Liver International</i> | 19.971 | 8.754 | 11.2 |
| <i>Clinics in Liver Disease</i> | 19.939 | 6.265 | 8 |
| <i>Journal of Viral Hepatitis</i> | 19.545 | 3.517 | 6.1 |
| <i>Digestive Diseases and Sciences</i> | 19.37 | 3.487 | 5.5 |
| <i>World Journal of Gastrointestinal Pathophysiology</i> | 18.735 | - | - |
| <i>Scandinavian Journal of Gastroenterology</i> | 18.364 | 3.027 | 3.6 |
| <i>Gastrointestinal Endoscopy</i> | 18.175 | 10.396 | 9.8 |
| <i>Helicobacter</i> | 18.162 | 5.182 | 8.6 |
| <i>Inflammatory Bowel Diseases</i> | 17.936 | 7.29 | 9.8 |
| <i>Gastroenterology Clinics of North America</i> | 17.833 | 3.867 | 6.1 |
| <i>Journal of Pediatric Gastroenterology and Nutrition</i> | 17.742 | 3.288 | 4.8 |
| <i>Hepatology International</i> | 17.664 | 9.029 | 8.9 |
| <i>Journal of Clinical Gastroenterology</i> | 16.888 | 3.174 | 5.5 |
| <i>Journal of Gastroenterology and Hepatology</i> | 16.793 | 4.369 | 6 |
| <i>World Journal of Hepatology</i> | 16.007 | - | 3.6 |
| <i>International Journal of Colorectal Disease</i> | 15.433 | 2.796 | 3.9 |
| <i>Gut Pathogens</i> | 15.39 | 5.324 | 6.5 |
| <i>World Journal of Gastrointestinal Pharmacology and Therapeutics</i> | 14.797 | - | - |
| <i>Pancreas</i> | 14.71 | 3.243 | 4.4 |
| <i>HPB: The Official Journal of the International Hepato Pancreato Biliary Association</i> | 14.453 | 3.842 | - |

| | | | |
|--|--------|-------|------|
| <i>International Journal of Hepatology</i> | 14.249 | - | 6.1 |
| <i>European Journal of Gastroenterology & Hepatology</i> | 14.227 | 2.586 | - |
| <i>Therapeutic Advances in Gastroenterology</i> | 13.823 | 4.802 | 5.8 |
| <i>Journal of Neurogastroenterology and Motility</i> | 13.594 | 4.725 | 7.4 |
| <i>Pancreatology</i> | 13.497 | 3.977 | 5.8 |
| <i>Hepatology Research</i> | 13.332 | 4.942 | 7.8 |
| <i>Gut and Liver</i> | 13.193 | 4.321 | 6.6 |
| <i>Digestive Diseases</i> | 13.081 | 3.421 | 4.2 |
| <i>BMC Gastroenterology</i> | 12.991 | 2.847 | 3.3 |
| <i>Endoscopy</i> | 12.541 | 9.776 | 11 |
| <i>Journal of Crohn's & Colitis</i> | 12.432 | 10.02 | |
| <i>Colorectal Disease</i> | 12.341 | 3.917 | 4.4 |
| <i>Liver Cancer</i> | 12.174 | 12.43 | 12.6 |
| <i>Digestive and Liver Disease: Official Journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver</i> | 12.096 | 5.165 | - |
| <i>Diseases of the Esophagus: Official Journal of the International Society for Diseases of the Esophagus</i> | 11.969 | 2.822 | - |
| <i>Current Opinion in Gastroenterology</i> | 11.929 | 2.741 | 4.9 |
| <i>World Journal of Gastrointestinal Oncology</i> | 11.552 | 3.404 | 3.6 |
| <i>United European Gastroenterology Journal</i> | 11.453 | 6.866 | 7.9 |
| <i>Clinical and Molecular Hepatology</i> | 11.251 | 8.337 | 8.9 |
| <i>Digestive Surgery</i> | 11.226 | 2.459 | 4.2 |
| <i>Expert Review of Gastroenterology & Hepatology</i> | 10.885 | 4.095 | - |
| <i>World Journal of Gastrointestinal Endoscopy</i> | 10.598 | - | - |
| <i>World Journal of Gastrointestinal Surgery</i> | 10.579 | 2.505 | - |
| <i>Clinical and Translational Gastroenterology</i> | 10.45 | 4.396 | 5.2 |
| <i>Clinical and Experimental Gastroenterology</i> | 10.149 | - | 5 |
| <i>Gastroenterology Research and Practice</i> | 9.902 | 1.919 | 3.7 |
| <i>Journal of Digestive Diseases</i> | 9.302 | 3.366 | 4.2 |
| <i>Cellular and Molecular Gastroenterology and Hepatology</i> | 9.277 | 8.797 | - |
| <i>Digestion</i> | 9.189 | 3.672 | 5.1 |
| <i>Clinics in Colon and Rectal Surgery</i> | 9.059 | 2.403 | 3.5 |
| <i>Techniques in Coloproctology</i> | 9.056 | 3.699 | 4.6 |
| <i>Journal of Gastric Cancer</i> | 9.031 | 3.197 | 4.4 |
| <i>Hepatic Medicine: Evidence and Research</i> | 8.847 | - | - |
| <i>Annals of Hepatology</i> | 8.782 | 3.388 | 4.7 |
| <i>JHEP Reports</i> | 8.693 | 9.917 | 8.1 |
| <i>BMJ Open Gastroenterology</i> | 7.884 | - | 3.5 |
| <i>Clinical Endoscopy</i> | 7.72 | - | 3.5 |
| <i>Intestinal Research</i> | 7.651 | - | 6 |
| <i>Canadian Journal of Gastroenterology & Hepatology</i> | 7.615 | 2.605 | - |
| <i>Digestive Endoscopy</i> | 7.111 | 6.337 | 7.5 |
| <i>Hepatobiliary & Pancreatic Diseases International</i> | 7.052 | 3.355 | - |
| <i>Esophagus: Official Journal of the Japan Esophageal Society</i> | 6.775 | 3.671 | - |

| | | | |
|--|-------|-------|-----|
| Endoscopy International Open | 6.725 | - | - |
| Gastroenterology Report | 6.685 | 4.063 | 4.9 |
| Clinics and Research in Hepatology and Gastroenterology | 6.59 | 3.189 | 3.1 |
| Journal of Clinical and Experimental Hepatology | 6.236 | - | 5.3 |
| Saudi Journal of Gastroenterology | 6.205 | 3.214 | 4.3 |
| Hepatitis Monthly | 6.037 | 1.214 | 1.1 |
| Hepatology Communications | 6.006 | 5.701 | 7.7 |
| Liver Research | 5.941 | - | 6.3 |
| Endoscopic Ultrasound | 5.932 | 5.275 | 5.9 |
| Gastrointestinal Tumors | 5.556 | - | - |
| Indian Journal of Gastroenterology: Official Journal of the Indian Society of Gastroenterology | 5.311 | - | - |
| Frontline Gastroenterology | 4.933 | - | 3.8 |
| Journal of Clinical and Translational Hepatology | 4.562 | 5.065 | 6.4 |
| Inflammatory Intestinal Diseases | 4.474 | - | 0.2 |
| Annals of Gastroenterological Surgery | 4.427 | 3.583 | 5.5 |
| Case Reports in Gastroenterology | 4.117 | - | 1 |
| Annals of Coloproctology | 3.946 | - | 2.4 |
| Translational Gastroenterology and Hepatology | 3.945 | - | 5.5 |
| Clinical Liver Disease | 3.934 | - | 2.4 |
| Journal of Gastrointestinal Oncology | 3.029 | 2.587 | 3.3 |

CS: CiteScore; JAI: Journal Article Influence Index; JIF: Journal Impact Factor. "-" denotes lack of score assigned by the corresponding institution/database.

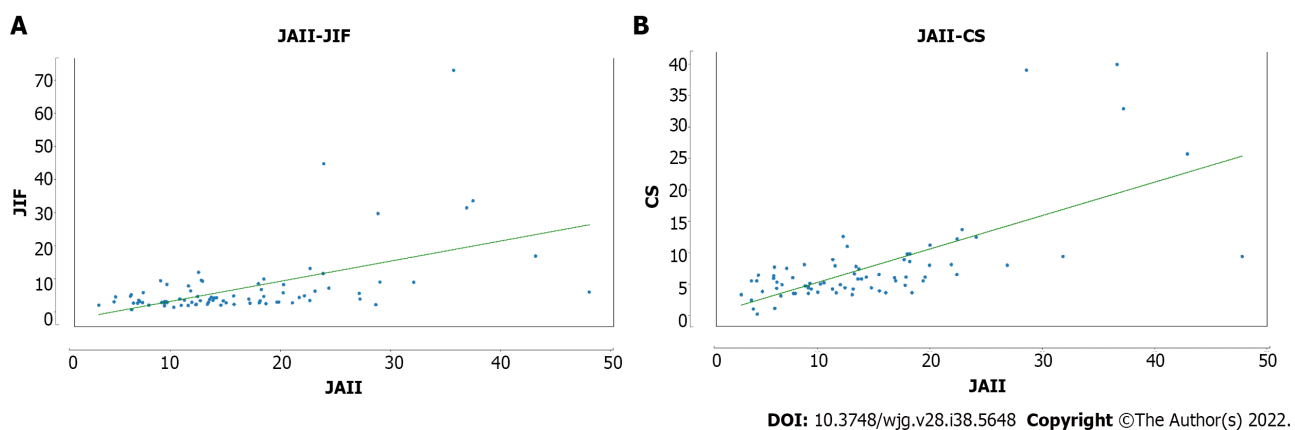


Figure 1 Scatter distribution plots for Journal Impact Factor-Journal Article Influence Index and CiteScore-Journal Article Influence Index. A: Journal Impact Factor-Journal article influence index (JAI); B: CiteScore-JAI. JIF: Journal Impact Factor; CS: CiteScore; JAI: Journal Article Influence Index.

DISCUSSION

Comparison of databases and calculation principles

JIF: JIFs are obtained through the Web of Knowledge database using the Science Edition of JCR which collects citation data from more than 7300 science and technology journals worldwide. The IF of a T-year journal is defined as the number of times that the journal has been cited in years T-1 and T-2 divided by the number of documents that can be cited in the journal in years T-1 and T-2[19].

CS: CSs are calculated using data from the Scopus database. CS has a publication window of 3 years before the 1-year reference window and counts the references from one document type to another[20]. In other words, CS calculates the average number of citations of papers published in a journal for 3

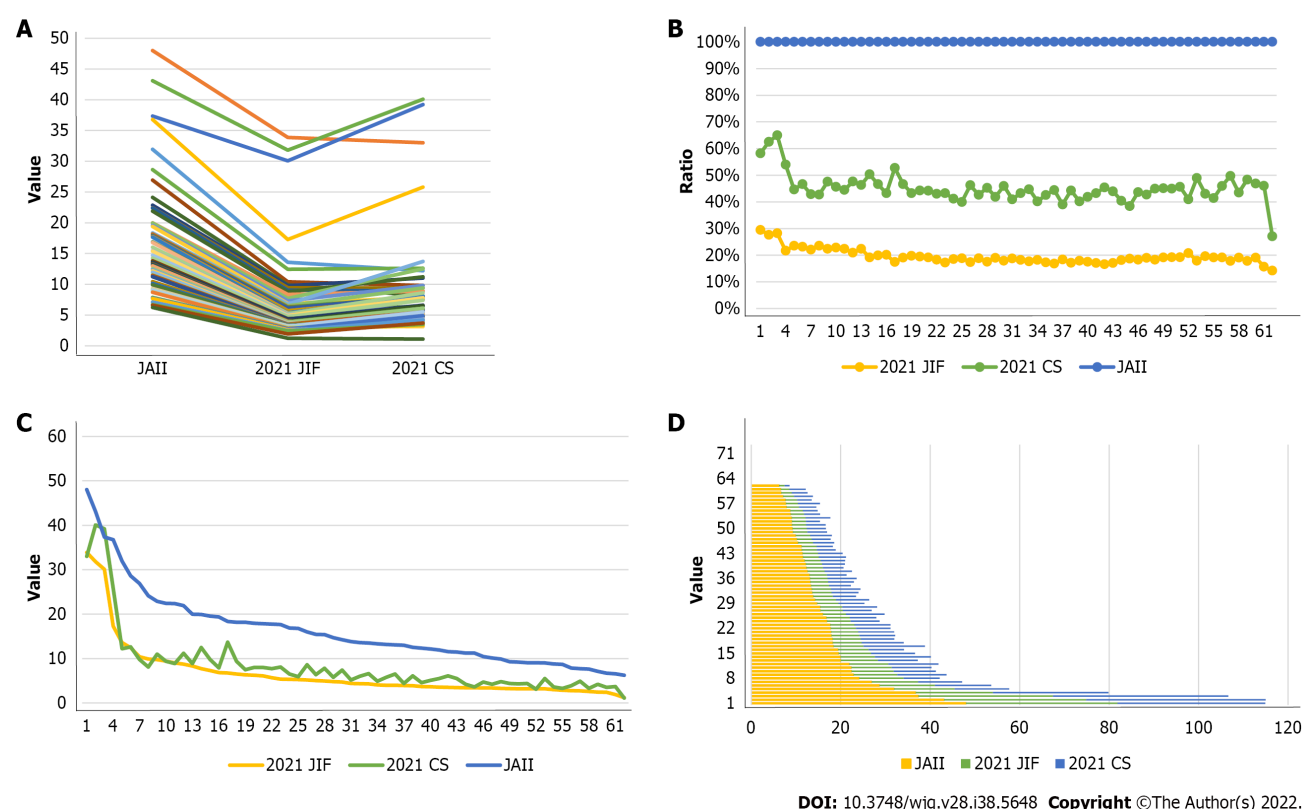


Figure 2 Visualization of the three journal evaluation indicators. A: Comparison of the values obtained upon application of the three evaluation indicators; B: Journal Impact Factor (JIF)-Journal Article Influence Index (JII) and CiteScore (CS)-JII ratios for each journal; C: Values of JIF and CS in descending JII order; D: Histogram combining the three journal evaluation indicators together. JIF: Journal Impact Factor; CS: CiteScore; JII: Journal Article Influence Index.

consecutive years in the 4th year. In a given year, CS is calculated as the amount of times that documents published in the previous 3 years were cited in that year divided by the number of documents published in those 3 years that were included in the Scopus database.

JII: JIIs, calculated as total citations divided by total articles, are based on journals and their citations included in the RCA database.

Advantages and disadvantages of JII

It is undeniable that the JII metric has its merits as a journal evaluation indicator. (1) Compared with JIF and CS, JII is able to break through the time limit disadvantage of the first two. Journals do not need to meet the waiting-time thresholds of JIF and CS to be accurately evaluated. As such, JII is able to evaluate more journals accurately in a near-real time manner, which explains why there are more journals with a JII than those with a JIF/CS. (2) Compared with JIF and CS, JII is useful for assessing the performance of journals immediately upon its creation. Moreover, since a small number of articles in journals will result in a high JIF and CS at a given time, JII relieves the chance of biased evaluation of journals. JII is also more conducive to a comprehensive assessment of the quality and performance of journals. And (3), compared with JIF and CS, JII is more conducive to high-quality journal evaluation. In addition to these advantages, JII has a high degree of compliance with JIF and CS in the evaluation of journals with a lower impact.

Another important feature related to the JII is that the RCA database, upon which it is based, can enable queries to journals by category, such as focused query of Gastroenterology and Hepatology, representing a ready convenience to researchers.

There exist disadvantages in the JII. These include the lack of statistical timeliness, a feature by which JII is slightly inferior to JIF and CS, and the lack of consideration to different developments of the same journal in different periods. JII also shares some of the drawbacks of both JIF and CS, such as the lack of evaluation of citation quality and the inclusion of self-citations.

Non-linearity interpretation

As we have shown in Figure 1 and described textually in the “Results” section above, the linearity of JII-JIF-CS was clear for lower-quality journals but failed to match each other perfectly for higher-quality journals.

Our explanation is that JIF and CS are subject to changes in citation frequency and number of published articles in different years, and their correlation with time exacerbates the influence of human manipulability[21]. *JAI* reduces this time randomness. In addition, the JIF and CS of high-quality journals may be more susceptible to this effect, and their fluctuations can be effectively explained.

Threats to validity

In addition to the lack of evaluation of citation quality and self-citation, other factors may threaten the effectiveness of the evaluation parameters in use. Research on JIF, CS and other statistical standards for journal quality has shown that there are still many statistical violations at play, including those related to and arising from reliability, incomplete reporting of validity, insignificant results, insignificant effect sizes, and hypothesis checking, as well as uncorrected inferences and multiple comparisons from descriptive statistics[22]. *JAI* is also inevitably affected by the same, to at least some extent, and this limitation cannot be ignored.

CONCLUSION

The main differences between *JAI* and JIF/CS come from the differences in the scientific databases used as the cited sources, as well as the differences in the evaluation methods underpinning each of these indicators. Due to the JIF/CS time factor limitation, the *JAI* method based on the RCA database is able to evaluate more journals. Besides, *JAI* provides more focused quantitative insight by considering categories of journal papers. In terms of practicality, the novelty introduced by the *JAI* indicator is its open-accessibility to users (as opposed to a subscription service to select users). To summarize, *JAI* is a reliable index to evaluate the quality of journals in near-real time.

In the future, scientometric researchers can focus on the differences of the different journal evaluation indexes to aid in their studies on the origin of nonlinear characteristics in order to put forward a more perfect journal evaluation standard. Meanwhile, researchers in general can exploit the distinct advantages of each as they currently stand to better understand journal quality and promote the impact of their own scientific communications.

ARTICLE HIGHLIGHTS

Research background

The evaluation of journal quality is very important for researchers. Journal Impact Factor (JIF) and CiteScore (CS) are two of the most popular and authoritative journal evaluation indicators. With the ongoing scientometric research into their advantages and disadvantages, there is a consequent emergence of new journal evaluation indicators. The logical next-step is comparative judgement of the reliability and innovative novelty of such new journal evaluation indexes.

Research motivation

The recently-launched *Reference Citation Analysis* database of Baishideng Publishing Group is an open multidisciplinary citation analysis database founded in artificial intelligence technology. Based on this database, *Journal Article Influence Index (JAI)* has been proposed as a new journal evaluation indicator.

Research objectives

To compare the advantages and disadvantages of *JAI* with those of JIF and CS.

Research methods

For comparisons between *JAI* and 2021 JIF/2021 CS, we conducted statistical analyses and provided an intuitive method for visual representation of the related data.

Research results

For lower-quality journals, *JAI*, 2021 JIF, and 2021 CS had a good linear correlation. However, their results of assessments of higher-quality journals varied widely. These three evaluation indexes have their own advantages and disadvantages, including the avoidance of time randomness and ability for near-real time evaluation of the *JAI*.

Research conclusions

JAI is a comprehensive assessment tool to assess the quality and performance of journals.

Research perspectives

In the future, we hope to better explain the current existent nonlinear relationship among the three evaluation indexes, and combine a variety of journal evaluation indicators to allow for more comprehensive evaluation of journal quality by scientometric-focused and general researchers.

FOOTNOTES

Author contributions: Wu J designed the study and revised the manuscript; Li JY and Yan ZH performed the data analysis and manuscript drafting; Xiang Z and Gao C searched the literature and collected the data; Li JY wrote the paper; Wu J reviewed the results and made critical comments on the manuscript; All authors reviewed and approved the final version; Li JY and Yan ZH contributed equally to this work.

Supported by the Youth Medical Talent of Jiangsu Province, No. QNRC2016475.

Conflict-of-interest statement: The authors declare that there are no competing interests associated with this manuscript.

PRISMA 2009 Checklist statement: The authors have read the PRISMA 2009 Checklist, and the manuscript was prepared and revised according to the PRISMA 2009 Checklist.

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: China

ORCID number: Jian Wu 0000-0003-0087-3744.

S-Editor: Chen YL

L-Editor: Wang TQ

P-Editor: Chen YL

REFERENCES

- Azer SA, Holen A, Wilson I, Skokauskas N. Impact factor of medical education journals and recently developed indices: Can any of them support academic promotion criteria? *J Postgrad Med* 2016; **62**: 32-39 [PMID: 26732194 DOI: 10.4103/0022-3859.173202]
- Brezgov S. Misleading Metrics. Sch. 2022. Available from: <https://scholarlyoa.com/misleading-metrics/>
- Valderrama P, Jiménez-Contreras E, Escabias M, Valderrama MJ. Introducing a bibliometric index based on factor analysis. *Scientometrics* 2022; **127**: 509-522 [DOI: 10.1007/s11192-021-04195-4]
- Abramo G, D'Angelo CA, Felici G. Predicting publication long-term impact through a combination of early citations and journal impact factor. *J Informetr* 2019; **13**: 32-49 [DOI: 10.1016/j.joi.2018.11.003]
- Garfield E. The history and meaning of the journal impact factor. *JAMA* 2006; **295**: 90-93 [PMID: 16391221 DOI: 10.1001/jama.295.1.90]
- Solari A, Magri M-H. A New Approach to the SCI Journal Citation Reports, a System for Evaluating Scientific Journals. *Scientometrics* 2000; **47**: 605-625 [DOI: 10.1023/a:1005680202961]
- Pichappan P. Identification of mainstream journals of science speciality: A method using the discipline-contribution score. *Scientometrics* 1993; **27**: 179-193 [DOI: 10.1007/bf02016549]
- Callaway E. Beat it, impact factor! *Nature* 2016; **535**: 210-211 [PMID: 27411614 DOI: 10.1038/nature.2016.20224]
- Moed H, Leeuwen TV, Reedijk J. Towards appropriate indicators of journal impact. *Scientometrics* 2006; **46**: 575-589 [DOI: 10.1007/bf02459613]
- Falagas ME, Kouranos VD, Arencibia-Jorge R, Karageorgopoulos DE. Comparison of SCImago journal rank indicator with journal impact factor. *FASEB J* 2008; **22**: 2623-2628 [PMID: 18408168 DOI: 10.1096/fj.08-107938]
- Okagbue HI, Teixeira da Silva JA. Correlation between the CiteScore and Journal Impact Factor of top-ranked library and information science journals. *Scientometrics* 2020; **124**: 797-801 [DOI: 10.1007/s11192-020-03457-x]
- Fu BS, Yu Z, Tiwari K. New Release of 2020 Impact Factor (Web of Science) and Cite Score (Scopus). *J Orthop Translat* 2021; **29**: A3 [PMID: 34466383 DOI: 10.1016/j.jot.2021.07.003]
- Teixeira da Silva JA, Memon AR. CiteScore: A cite for sore eyes, or a valuable, transparent metric? *Scientometrics* 2017; **111**: 553-556 [DOI: 10.1007/s11192-017-2250-0]
- Teixeira da Silva JA. CiteScore: Advances, Evolution, Applications, and Limitations. *Publ Res Q* 2020; **36**: 459-468 [DOI: 10.1007/s12109-020-09736-y]
- Teixeira da Silva JA. CiteScore: Risk of copy-cat, fake and misleading metrics. *Scientometrics* 2021; **126**: 1859-1862

- [DOI: [10.1007/s11192-020-03791-0](https://doi.org/10.1007/s11192-020-03791-0)]
- 16 **Zhao Z**, Tang H, Li F. Measles-Associated Severe Pneumonia in a Patient with HBeAg-Negative Chronic Hepatitis B: A Case Report. *Zoonoses* 2022; **2**: 3 [DOI: [10.15212/zoonoses-2021-0013](https://doi.org/10.15212/zoonoses-2021-0013)]
 - 17 **Axelsson O**. A generalized conjugate gradient, least square method. *Numer Math* 1987; **51**: 209-227 [DOI: [10.1007/bf01396750](https://doi.org/10.1007/bf01396750)]
 - 18 **Gleicher M**, Albers D, Walker R, Jusufi I, Hansen CD, Roberts JC. Visual comparison for information visualization. *Inf Vis* 2011; **10**: 289-309 [DOI: [10.1177/1473871611416549](https://doi.org/10.1177/1473871611416549)]
 - 19 **McGinnis R**. Research tool. *Science* 1980; **207**: 972 [PMID: [17830451](https://pubmed.ncbi.nlm.nih.gov/17830451/) DOI: [10.1126/science.207.4434.972](https://doi.org/10.1126/science.207.4434.972)]
 - 20 **James C**, Colledge L, Meester W, Azoulay N, Plume A. CiteScore metrics: Creating journal metrics from the Scopus citation index. *ArXiv Prepr ArXiv181206871* 2018 [DOI: [10.1002/Leap.1246](https://doi.org/10.1002/Leap.1246)]
 - 21 **Kiesslich T**, Weineck SB, Koelblinger D. Reasons for Journal Impact Factor Changes: Influence of Changing Source Items. *PLoS One* 2016; **11**: e0154199 [PMID: [27105434](https://pubmed.ncbi.nlm.nih.gov/27105434/) DOI: [10.1371/journal.pone.0154199](https://doi.org/10.1371/journal.pone.0154199)]
 - 22 **Al-Hoorie AH**, Vitta JP. The seven sins of L2 research: A review of 30 journals' statistical quality and their CiteScore, SJR, SNIP, JCR Impact Factors. *Lang Teach Res* 2019; **23**: 727-744 [DOI: [10.1177/1362168818767191](https://doi.org/10.1177/1362168818767191)]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

