A Citation Analysis of Western Journals Cited in Taiwan's Library and Information Science and History Research Journals: From a Research Evaluation Perspective

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This article examines citations of Western journals in eight LIS journals and six history journals published in Taiwan. The findings show that both the Western journals' impact factor values and whether they are included in JCR may not necessarily indicate their real use in Taiwan's LIS and history research—especially in history research.

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Introduction

Citation-based bibliometric methods have become a common approach for research evaluations. Existing empirical research finds that the citation of a scholarly work is a good indication of its quality, impact, and contribution.[1] Thus, citation analyses have been widely used in the evaluation of the academic impact of individual scholars,[2–4] research institutions,[5,6] scholarly journals,[7,8] and subject disciplines.[9,10] Citation analyses are advantageous in research evaluations in that they are efficient[11] and unobtrusive methods, freeing evaluations from individualistic opinions.[12] Further, citation traces between scholarly works can assist in the identification of the origins and impacts of ideas, and thereby facilitate the assessment of contributions in the making of scientific knowledge.[13]

But citation analyses are not without problems. Citation analyses often fail to differentiate diverse citing behaviors and purposes. Thus, some citations may misinform assessment such as in the conditions of biased citations,[14–16] self-citation,[17] under citation of the used works,[18] and citation errors.[19,20] Further, citation patterns differ by subject discipline[21,22] and by publication type.[23] Languages of publications further complicate the problem of citation based evaluation in the non-English-speaking world.[24–27]

The disciplinary differences in citation patterns and the language problems become more prominent when using citation data from Thomson Reuter's *ISI Web of Knowledge* to evaluate research performances in the social sciences and humanities (SS&H) disciplines. The series of products such as Science Citation Index (SCI), Social Science Citation Index (SSCI), and Journal Citation Report (JCR) have long been popular tools for research evaluation. For example, two recent worldwide university evaluation programs have employed the data,[28,29] but the aforementioned problems become salient when the citation data are used in cross-discipline and cross-country comparisons. SS&H research suffers most from the inherent biases of the ISI citation data due to researchers' heavier use of non-English languages and the prevailing regional focus in the disciplines.[30–32]

To further complicate the matter, ISI's categorization of journals by subject discipline may also misinform research evaluations. Each year, JCR offers journal rankings by subject discipline; the subject categories and the subject based journal rankings have been used as the basis of evaluation.[33–35] Subject-based journal ranking is closely linked to many facets of research evaluation and is highly influential to the entire evaluation result. In Taiwan, a growing number of intra-institution and academic discipline-based evaluation programs have used JCR subject categories and impact factor to identify the

"good journals" of a specific field. They then judge a scholar's research performance by whether he or she has been published in those journals with higher impact, most of which are Western journals. However, as this article will show, the JCR journal rankings may not accurately represent Western journals' real impact in a non-English-speaking research community—at least in the SS&H disciplines. Moreover, JCR's subject categorization to some extent represents idiosyncrasy rather than scholarly communities' consensus on what constitute as the "inside" journals of the respective fields (this point will be further explained in the next section). Consequently, using JCR data as the basis for evaluations can, to a varying degree, misinform research evaluations in a non-English-speaking country, particularly in the fields of social sciences and humanities because the SS&H researchers publish and cite a wider range of publications (journals and non-journals) in different languages and with a varying degree of regional focus.[36]

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This article reports the results from an exploratory study that sought to answer two questions: (1) how are Western journals cited in Taiwan's SS&H research as opposed to their citations as shown in JCR? (2) To what extent do Taiwan's SS&H authors cite JCR and non-JCR journals in their research papers? The study compared the rankings of the cited Western journals by their ISI *impact factor* values and by their actual received citations in Taiwan. Using LIS and history fields as exemplary cases of SS&H disciplines, this study found that discrepancies exist between Taiwan and international scholars' citation usages. The results of this study may offer significant insights in the use of JCR data in evaluating SS&H research in non-English-speaking countries.

The Problems of Impact Factor and JCR Rankings in Social Sciences and Humanities Research Evaluation

Every year, the *ISI Web of Knowledge* calculates the impact factor of each journal indexed in its citation databases. The impact factor assesses the annual impact of a journal by dividing the number of citations to all of a particular journal's papers published within the previous 2 years with the number of that journal's papers in the same 2 years.[37] ISI also sorts the journals by their impact factor values and publishes the annual rankings in JCR.

The impact factor is often taken as an important indicator of journal quality or importance.[38] Many citation-based research evaluations share the same rationale that the ability to publish in journals with high impact factor values indicates good research performance. As such, JCR's journal rankings are often taken as benchmarks for evaluation. Such an assumption can be valid for natural and applied sciences research, but it can become problematic in the SS&H disciplines.[39–42]

The impact factor as a valid measure of journal quality and importance is based on the assumption that the inclusion/exclusion of journals in the pool of citation data is not biased by any factor. But ISI citation data can fail the SS&H research evaluations in this respect. First, far fewer SS&H journals are included in ISI citation databases than science journals.[43] Those included in the ISI databases are predominantly Western journals, especially those published in English. In fact, existing literature has directly or indirectly shown the prevalent bias in ISI citation data and the adverse consequences it may have on research evaluation in non-English-speaking countries.[44–48]

The bias toward Western countries in the ISI data becomes even more problematic in SS&H research evaluation. SS&H research often takes on stronger regional interests and characteristics. Compared to their colleagues in the science fields, SS&H researchers in non-English-speaking countries more often choose non-English journals as outlets for their research works.[49] That suggests that ISI citation data, on which the JCR journal rankings are based, may not accurately represent the real impact and importance of journals in the SS&H fields in those regions.

The validity of using ISI citation data and JCR journal rankings is further weakened by citation patterns in different subject disciplines.[50,51] ISI citation data and the JCR rankings are primarily about journal citations. The impact factor as a journal quality/importance indicator is valid only on the premise that the citations used for impact calculation have accurately reflected the authors' use of ideas. The well-received fact that natural and applied scientists predominantly cite journal articles corroborates with the use of ISI and JCR data in research evaluations in those fields. However, it is more questionable to claim the same degree of validity in evaluating SS&H research. Evidence from empirical studies shows that SS&H researchers cite a wider range of information sources other than journal articles.[52] That suggests the possibility of biases related to the use of JCR rankings in SS&H research evaluations.

JCR's categorization of journals by subject disciplines constitutes another problem in subject based or academic discipline-based research evaluations. JCR's subject categories and the journals listed under them may not necessarily represent what are consensually perceived as the inside/outside journals of the respective fields. Take *MIS Quarterly* and *Information Systems Research* for example. While these journals belong to the broader domain of information science, they are less consensually perceived as the "real" LIS journals like *Library Quarterly* and *Journal of Documentation*. In history studies, the JCR subject categorization is further influenced by an implicit Western centric viewpoint, so the journals focusing on Chinese and Asian histories are classified under area studies rather than in the history categories.

Existing literature has not examined how JCR's subject categorization may have affected research evaluations by academic disciplines and whether journals listed under a particular subject category do represent the consensually perceived "inside" journals of that particular field. However, these are important questions to ask in research evaluation. Indirect evidence from literature shows that, at least, JCR's categorization of LIS journals is not consensual to scholars' perceptions. Some researchers, when using JCR data to study their interested phenomena, have had to strategically remove certain journal titles in order to focus on the "real" LIS journals.[53,54] A recent study that employed factor analysis procedures to identify the core journal sets for interdisciplinary disciplines also found a core of 42 journals out of the 56 titles categorized by JCR as LIS journals.[55] The questionable JCR subject categorization raises the issue of representativeness when the JCR subject-based journal rankings are employed in research evaluations. Although this study did not attempt to identify the "real, inside journals" of LIS and history research, nor did it seek to study the effects of JCR categorization on evaluations, it compared what were really cited in Taiwan scholars' research works to what were included and ranked in JCR. The discrepancies revealed, we believe, were results from the combination of the aforementioned problems inherent in JCR impact factor and subject categorization. These call for cautions in the use of JCR data to evaluate SS&H research.

Table 1
The Taiwan-Based LIS Journals Used for Analysis

The English Title of the Journal	ISSN	Title as Listed in Worldcat
1. *University Library Journal*	1682-2889	University library quarterly
2. *Bulletin of the Library Association of China*	0758-1876	Zhongguotushu guan xuehuihuibao
3. *National Central Library Bulletin*	1026-5279	Guojia tu shuguanguan kan
4. *Journal of Educational Media & Library Sciences*	1013-090X	Journal of educational media & library sciences
5. *Journal of Information, Communication, and Library Science*	1024-1302	Journal of information, communication, and library science
6. *Bulletin of Library and Information Science*	1023-2125	Bulletin of library and information science
7. *Journal of Library and Information Studies*	1606-7509	Tushuzixunxuekan
8. *Journal of Library & Information Science*	0363-3640	Journal of library & information science

Methodology

Citation data used in this study were obtained from the *Taiwan Humanities Citation Index* (THCI) and Thomson Reuter's *Journal Citation Report* (JCR). Based on the 2005 edition of the databases, this study analyzed the citations to Western journals in eight LIS journals and six history journals published in Taiwan.

THCI was used to select the sample of Taiwan journals. These journals' citations to Western journals were used for analysis. THCI is published by the Center for Humanities Research of the National Science Council in Taiwan. At the time of this study, the database indexed 298 Taiwan based SS&H journals including 23 LIS journals and 48 history journals. Unlike the ISI databases, which indexed largely academic journals and proceedings, THCI included not only academic journals but also practice-oriented and professional trade journals. Thus, two authoritative journal lists were used to facilitate the identification of strongly research-oriented journals. For the LIS discipline, a journal list used to evaluate faculty performance in a major library school in Taiwan was used to assist selection. For the history discipline, a journal list from Taiwan's National Science Council, which sorts the history journals by quality and scholarly value, was used. The chosen journals are listed in Table 1 and Table 2.

The 2005 JCR covered more than 1700 social sciences journals, including those in the LIS and history disciplines. At the time of this study, according to the JCR subject scheme, the LIS fields are represented by the category of "information science & library science," and the history fields are represented by the categories of "history," "history & philosophy of science," and "history of social sciences."

This study extracted all of the citations to Western journals in those selected Taiwan journals and mapped them to the JCR journal data. This study first compared the rankings of the cited Western journals by their ISI impact factor values and by frequency of citation in the Taiwan journals. Using the JCR subject categories, this study then examined which JCR included journals and which non-JCR journals were cited in those Taiwan journals. The results are reported in the next section.

Findings

The Citation of Western Journals by Taiwans's LIS Authors

We first studied how frequently Taiwan's LIS authors cited JCR journals as in the 2005 data. Table 3 shows the conditions of 20 LIS journals: their rankings by ISI impact factor, numbers of received citations in the eight Taiwan-based LIS journals, and the rankings by Taiwan authors' citation. As one can see, the JCR impact factor-based rankings and the rankings based on Taiwan authors' citation are different. Twelve of the top 20 JCR-LIS journals were among the top 50 most cited journals by Taiwan authors. *Scientometrics* and *JASIS&T* were the only two journals that entered both the JCR and Taiwan's top 10 lists. *JASIS&T* was ranked 6th by JCR impact factor but was the most frequently cited journal by Taiwan authors. *Scientometrics* was ranked 5th by impact factor but was the 9th most cited journal in Taiwan's LIS world. All other journals showed relatively wider discrepancy in the rankings by the two criteria.

It was not a surprising result that eight of the top 20 JCR-LIS journals (two-fifths) failed to be included in the top 50 most cited journals by Taiwan authors. It confirmed that discrepancies existed between the JCR journals' international impact and their real impact on Taiwan's LIS studies. A closer examination found that most of the eight journals were highly specialized LIS journals. For example, *JAMIA* and *JHC* were journals of medical/health informatics and health sciences librarianship; *IJGIS* focused on geographic information research; *Information Society* focused on the social aspects of computing and information technologies, which in recent years have become known as social informatics; *SSCR* was a journal specializing in computerized social science research tools and applications. But it is a curious phenomenon

Table 2
The Taiwan-Based History Journals Used for Analysis

The English Title of the Journal	ISSN	Title as Listed in Worldcat
1. *Bulletin of the Institute of Modern History Academia Sinica*	1029-4740	Zhong yang yanjiuyuanjindaishiyanjiusuojikan.
2. *Bulletin of the Institute of History and Philology Academia Sinica*	1012-4195	Zhong yang yanjiuyuan li shiyuyanyanjiusuojikan
3. *New History*	1023-2249	Xinshixue
4. *Historical Inquiry*	1012-8514	Tai da li shi xue bao
5. *Thought and Word*	0258-8412	Si yuyan
6. *Chinese Studies*	0254-4466	Chinese studies

Table 3
The Citation of the Top 20 JCR-LIS Journals in the Taiwan-Based Journals

Journal Title	JCR Impact Factor	Rank by Impact Factor	Number of Citations in the Taiwan Journals	Rank by Number of Citations in the Taiwan Journals
MIS Quarterly	4.978	1	63	15
Journal of the American Medical Informatics Association (JAMIA)	4.339	2	–	–
Annual Review of Information Science and Technology (ARIST)	2.652	3	34	25
Information Systems Research (ISR)	2.054	4	–	–
Scientometrics	1.738	5	92	9
Journal of the American Society for Information Science and Technology (JASIS&T)	1.583	6	318	1
International Journal of Geographical Information Science (IJGIS)	1.562	7	–	–
Journal of Information Technology (JIT)	1.543	8	–	–
Information & Management	1.524	9	20	44
Journal of Management Information Systems (JMIS)	1.406	10	26	32
College and Research Libraries (CRL)	1.245	11	134	3
Journal of the Medical Library Association (JMLIA)	1.225	12	111	6
Information Processing & Management (IPM)	1.192	13	103	8
The Information Society	1.018	14	–	–
Journal of Documentation (JOD)	0.983	15	120	4
Library & Information Science Research (LISR)	0.957	16	79	11
Journal of Health Communication (JHC)	0.802	17	–	–
Social Science Computer Review (SSCR)	0.757	18	–	–
Journal of Information Science (JIS)	0.747	19	69	14
Information Research	0.701	20	–	–

Note. Dash (–) indicates zero citation in the Taiwan-based journals.

that *Information Research*, an open-access journal with a wide content scope, failed to be cited more by Taiwan authors.

To further understand how Taiwan's LIS authors cited journals of international origins, we analytically categorized the 50 most frequently cited international journals into three groups: LIS journals included in JCR (JCR-LIS journals), LIS journals not included in JCR (non-JCRLIS journals), and non-LIS journals included in JCR (non-LIS JCR journals).

The Citation of JCR-LIS Journals

As Table 4 shows, 25 of the 50 (one-half) most cited international journals were JCR-LIS journals. Moreover, the top 11 most cited journals by Taiwan authors all belonged to this group. This suggests that, even though discrepancies existed between these journals' international impact and their impact on Taiwan journals, Taiwan authors to a great extent built their scholarship on international sources of LIS knowledge.

A closer examination of the subject nature of the journals further revealed interesting findings about their varying impact. We roughly classified the 25 JCR-LIS journals into three subject categories as suggested by their titles ("library science," "information science," and "information management") and found that information management journals were highly cited internationally but were of lower impact on Taiwan's LIS authors. For example, according to JCR, the *MIS Quarterly* was the most influential LIS journal, but it ranked 15th in the Taiwan list. Similarly, huge gaps existed between ranks for *Information and Management* and *JMIS*. This is hardly a surprising result because, as we have argued, JCR's categorization of library and information studies journals included certain titles that were not commonly recognized as such by the research communities. In contrast to the information management journals, library science journals were of lower international impact according to JCR but were highly cited by Taiwan authors. As one can compare in Table 4, twelve of the top 20 (three-fifths) most cited journals by Taiwan authors were in library science, while only one library science journal (*College and Research Libraries*) was among the top 20 journals of higher international impact (based on JCR impact factor). The third category, the information science journals, was cited more consistently by the international and Taiwan scholars. For example, *JASIS&T* was the most cited journal by Taiwan authors; in JCR it was also a high-impact journal. Similarly, *JOC*, *IPM*, *Scientometrics*, and *JIS* were all of higher JCR impact and were frequently cited by Taiwan authors. All of them were among the top 20 in both rankings.

The Citation of Non-JCR LIS Journals

Table 5 shows the 18 non-JCR LIS journals (of Western origins) among the top 50 most cited by Taiwan authors. Most of the journals were of lower impact on Taiwan's LIS scholarly in terms of their received citations, and their subject contents were mostly in library science. A few journals among the top 20 most cited had a stronger information science component in their contents, for example, *D-Lib* and *Library Hi Tech* were journals that published a great deal of content on information technologies and digital libraries. One can find that many of the non-JCR LIS journals were those known to be professional journals rather than research oriented journals, e.g., *American Libraries* (11th), *IFLA Journal* (33th), and *Wilson Library*

Table 4
The Citation of JCR-LIS Journals in the Taiwan-Based Journals

Journal Title	Number of Citations	Rank by Number of Citations	JCR Impact Factor	Rank by Impact Factor	Subject Category
1. *Journal of the American Society for Information Science and Technology*	318	1	1.583	6	Information Science
2. *Library Trends*	155	2	0.365	36	Library Science
3. *College and Research Libraries*	134	3	1.245	11	Library Science
4. *Journal of Documentation*	120	4	0.983	15	Information Science
5. *Journal of Academic Librarianship*	116	5	0.559	23	Library Science
6. *Journal of the Medical Library Association*	111	6	1.225	12	Library Science
7. *Library Journal*	108	7	0.227	48	Library Science
8. *Information Processing and Management*	103	8	1.192	13	Information Science
9. *Scientometrics*	92	9	1.738	5	Information Science
10. *Information Technology and Libraries*	86	10	0.288	45	Library Science
11. *Library and Information Science Research*	79	11	0.957	16	Library Science
12. *Journal of Information Science*	69	14	0.747	19	Information Science
13. *MIS Quarterly*	63	15	4.978	1	Information Management
14. *Reference & User Services Quarterly*	50	18	0.298	43	Library Science
15. *The Library Quarterly*	42	20	0.688	21	Library Science
16. *Library Resources and Technical Services*	35	23	0.512	27	Library Science
17. *Annual Review of Information Science and Technology*	34	25	2.652	3	Information Science
18. *Journal of Management Information Systems*	26	32	1.406	10	Information Management
19. *The Electronic Library*	22	38	0.26	46	Library Science
20. *Knowledge Organization*	21	40	0.533	26	Library Science
21. *Information and Management*	20	44	1.524	9	Information Management
22. *Journal of Librarianship and Information Science*	17	47	0.355	39	Library Science
23. *Aslib Proceedings*	17	47	0.333	40	Library Science
24. *Online*	16	49	0.246	47	Library Science
25. *Libri*	16	49	0.192	49	Library Science
Average	74.8	–	–	–	–

Note. The subject categories were assigned by the authors based on journal title keywords (i.e., containing "library" or "information management").

Bulletin (45th). Others included journals focusing on general library administration issues and specific specialties in librarianship such as cataloging and classification, reference services, serials management, etc. Although the non-JCR LIS journals were not as heavily cited as the JCR-LIS journals, they still constituted a good portion of the cited journals, indicating that Taiwan's LIS authors to a certain extent have relied on the former for research information. These journals' actual impact may have been overlooked in JCR and JCR-based research evaluations.

The Citation of Non-LIS JCR Journals

Table 6 shows 8 non-LIS JCR journals appearing in the top 50 most cited journals by Taiwan authors. The *Communications of the ACM* (the Association for Computing Machinery) was categorized by JCR as a computer science journal but was ranked as the 19th most cited journal in Taiwan's LIS research. This was not an unreasonable result because ACM, broadly speaking, caters to all information scientists and has actively engaged in LIS related research, e.g., information retrieval and digital libraries. Other non-LIS JCR journals included those from management science, business, and psychology. This is consistent with Chen and Liang's findings in which they reported a closer relationship between LIS and other social sciences disciplines through citation analyses.[56] It is interesting to see Taiwan authors' relatively frequent citing of *Science* and *Nature*, which are usually considered multidisciplinary natural sciences journals. Peritz and Bar-Ilan found that the citation of these two journals had increased in *Scientometrics*.[57] Our data, in part, corroborated their findings. *Scientometrics* was ranked as the 9th most cited journal in Taiwan's LIS research; the 40 citations to *Nature* and *Science* were actually contributed by bibliometric researches. It accounts for 71.43% (40/56) of citations to *Nature* ($n = 25$) and *Science* ($n = 31$) in this study. Bibliometric research did seem to result in more use of those multidisciplinary science journals.

A Spearman analysis found that the correlation between the rankings by JCR impact factor and by Taiwan authors' citations was moderately correlated (correlation coefficient $= 0.329$) even though it was not statistically significant ($p = 0.116$). This suggests that, in the LIS fields, the inter-journal citation phenomenon as documented by JCR only partially represents Taiwan authors' actual citation use in scholarly research.

Table 5
The Citation of Non-JCR LIS Journals in the Taiwan-Based Journals

Journal Title	Number of Citations	Rank by Number of Citations
1. *D-Lib Magazine*	78	12
2. *American Libraries*	72	13
3. *Library Hi Tech*	62	16
4. *Journal of Library Administration*	51	17
5. *Reference Services Review*	40	21
6. *The Reference Librarian*	37	22
7. *Computers in Libraries*	35	23
8. *Library Acquisitions: Practice and Theory*	34	25
9. *Cataloging and Classification Quarterly*	30	28
10. *The Serials Librarian*	29	29
11. *Serials Review*	28	30
12. *IFLA Journal*	24	33
13. *College and Research Libraries News*	23	37
14. *Research Strategies*	22	38
15. *Journal of Education for Library and Information Science*	21	40
16. *Library Administration and Management*	21	40
17. *Wilson Library Bulletin*	18	45
18. *Library Review*	16	49
Average	35.6	–

The Citation of Western Journals by Taiwan's History Authors

JCR classified history subjects as including "history", "history of social sciences," and "history & philosophy of science." Of the 58 journals classified under these three categories, many were also classified as journals of other sciences or social sciences disciplines (JCR may assign more than one subject category to a particular journal). For example, of those entering the top 20 most cited by Taiwan history authors, some were simultaneously classified as journals of environmental studies, psychiatry, economics, sociology, business, and so on (see Table 7). This indicates the multidisciplinary nature of history research.

Table 7 lists the top 20 history journals sorted by JCR impact factor and shows how they were cited in Taiwan's history journals. As shown in the table, a significant portion of the journals (9 of 20) were classified as "history & philosophy of science." Compared to the situations in library science, an even wider gap existed between the international citation of the journals as represented by JCR impact factor and the Taiwan citation of those. Only four of the 20 JCR-History journals (one-fifth) were within the top 50 most cited by Taiwan authors, including the *American Historical Review (AHR)*, *Biology and Philosophy*, *Journal of the History of Medicine and Allied Sciences*, and *Journal of Modern History*. Except *AHR*, huge discrepancies existed between the ranks based on JCR impact factors and based on Taiwan authors' actual citations. Further, the numbers of Taiwan authors' citations to these 4 journals were less than impressive. Even the most cited *AHR* received only 12 citations by Taiwan's history authors; in sharp contrast, *JASIS&T*, the most cited journal by Taiwan's LIS authors, was cited 318 times. The other 3 history journals received 3–4 citations in Taiwan. These indicate the rather infrequent use and arguably very low impact of JCR history journals specifically, and the Western journals in general, in Taiwan's history research.

To further understand how Taiwan's history authors cited journals of international origins, we ranked the Western journals by their received citations and studied those entered top 50; 72 journals were in this list because some titles received the same number of citations. We categorized these 72 journals into three groups: history journals included in JCR (JCR history journals), journals not included in JCR (non-JCR journals), and non-history journals included in JCR (non-history JCR journals).

Table 6
The Citation of Non-LIS JCR Journals in the Taiwan-Based Journals

Journal Title	Number of Citations	Rank by Number of Citations	JCR Impact Factor	Subject Category
1. *Communications of the ACM*	46	19	1.797	Computer Science, Hardware and Architecture; Computer Science, Software Engineering; Computer Science, Theory and Methods
2. *Science*	31	27	30.927	Multidisciplinary Sciences
3. *Management Science*	27	31	1.669	Operations Research and Management Science
4. *Nature*	25	33	29.273	Multidisciplinary Sciences
5. *Journal of Marketing*	24	33	2.611	Business
6. *Harvard Business Review*	24	33	1.404	Business; Management
7. *Decision Sciences*	21	40	1.055	Management
8. *Psychological Bulletin*	18	45	9.746	Psychology, Multidisciplinary
Average	27.0	–	–	–

Note. The subject categories were assigned by JCR.

Table 7
The Top 20 JCR History Journals Cited in the Taiwan-Based Journals

Journal Title	JCR Impact Factor	Rank by Impact Factor	Number of Citations in the Taiwan Journals	Rank by Number of Citations in the Taiwan Journals	Subject Category
1. *American Historical Review*	1.623	1	12	5	History
2. *Biology & Philosophy*	1.055	2	–	–	History and Philosophy of Science
3. *Economic History Review*	1.051	3	3	47	Economics; History of Social Sciences
4. *Social Studies of Science*	0.929	4	–	–	History and Philosophy of Science
5. *Journal of American History*	0.922	5	–	–	History
6. *Public Understanding of Science*	0.913	6	–	–	Communication; History and Philosophy of Science
7. *Environmental History*	0.884	7	–	–	Environmental Studies; History
8. *Explorations in Economic History*	0.818	8	–	–	Economics; History of Social Sciences
9. *Isis*	0.778	9	–	–	History and Philosophy of Science
10. *Business History*	0.755	10	–	–	Business; History of Social Sciences
11. *British Journal for the Philosophy of Science*	0.737	11	–	–	History and Philosophy of Science
12. *Journal of African History*	0.722	12	–	–	History
13. *Physics in Perspective*	0.692	13	–	–	History and Philosophy of Science
14. *Journal of Historical Geography*	0.688	14	–	–	Geography; History of Social Sciences
15. *Journal of the History of Biology*	0.600	15	–	–	History and Philosophy of Science
16. *History of Psychiatry*	0.583	16	–	–	Psychiatry; History of Social Sciences
17. *Journal of the History of Medicine and Allied Sciences*	0.576	17	4	30	History and Philosophy of Science
18. *Agriculture and Human Values*	0.571	18	–	–	Sociology; History and Philosophy of Science
19. *Journal of Modern History*	0.568	19	3	47	History
20. *Journal of Economic History*	0.529	20	–	–	Economics; History of Social Sciences

Note. 1. Dash (–) indicates zero citation in Taiwan journals; 2. the subject categories were assigned by JCR.

The Citation of JCR History Journals

Table 8 clearly shows the very low citation of JCR history journals in Taiwan's history research. Of the 72 Western journals, only 8 sparsely cited journals were included in JCR. This indicated that JCR history journals were a rather insignificant information source for Taiwan's history research.

The Citation of Non-JCR Journals

Thirty-seven of the 72 journals (about 51%) were non-JCR journals, and 10 of non-JCR journals were within the top 20 most cited by Taiwan's history authors. Again, the high percentage (50%) of the non-JCR journals appearing in the top 20 list suggested the irrelevance of JCR inclusion in indicating the use of international journals for Taiwan's history researchers. However, readers are reminded again that Western journals as a whole were not a significant source of information for Taiwan's history authors. Even the most cited *Harvard Journal of Asiatic Studies*, a non-JCR journal, was cited only 21 times. In sharp contrast, the most cited journal by Taiwan's LIS authors, *JASIS&T*, was a JCR journal and was cited 318 times.

We further divided the 37 non-JCR journals into history journals (17 titles) and non-history journals (20 titles). Table 9 and Table 10 list the journals of the two groups, respectively, along with their ranks by number of citations received in Taiwan. As shown in Table 9, 17 non-JCR journals were history journals. Eight journals in this group were among the top 20 most cited.

We further examined the subject content of the journals by looking at the journal titles and their Web sites, if available. Many of the journals focused on regional and/or periodized history. Not

Table 8
The Citations of JCR History Journals in the Taiwan-Based Journals

Journal Title	Number of Citations	Rank by Number of Citations	JCR Impact Factor	Rank by Impact Factor
1. *The American Historical Review*	12	5	1.623	1
2. *Comparative Studies in Society and History*	7	16	0.516	21
3. *Past and Present*	5	26	0.296	41
4. *History of Science*	5	26	0.194	50
5. *Journal of the History of Medicine and Allied Sciences*	4	30	0.576	17
6. *Bulletin of the History of Medicine*	4	30	0.326	36
7. *Journal of Modern History*	3	47	0.568	19
8. *Economic History Review*	3	47	1.051	3
Average	5.4	–	–	–

surprisingly, most of them dealt with Chinese or Asian history. Some journal titles explicitly indicated its regional focus, e.g., the *Harvard Journal of Asiatic Studies*, the *Late Imperial China*, etc. Others were less obvious, but their published content did focus on Chinese and East Asian histories, e.g., the *Monumenta Serica*, *Positions*, *T'oungPao*, and the *Kaikodo Journal*. Four journals had published a good deal of content on historiography; two of them (the *History and Theory* and the *Historical Journal*) were more often cited, both hitting the top 10 most cited journals. But again, the overall citation of Western history journals was less than impressive in Taiwan's history research.

Table 10 lists the 21 non-history journals within the larger group of the non-JCR journals. Citations to these journals were sparse in Taiwan's history journal, and the content scopes were widespread and far reaching. This suggests the highly multidisciplinary nature of history research. Also, the wide-ranging thematic topics as shown in the citations comported with the findings of a recent study pointing out that, in Taiwan, the boundaries between several formerly distinct history research fields had greatly blurred and the inquires had become far more diverse.[58] The multitude of the thematic foci as shown in the citations seemed to confirm the claim of expanding diversity.

Also similar to non-JCR history journals, a bunch of journals within this group (non-JCR and non-history) had a regional focus on Chinese or Asian phenomenon. Six journals were editorially Chinese or Asian focused, i.e., the *Chinese Science*, *Journal of Chinese Linguistics*, *Chinese*

Table 9
The Citation of Non-JCR History Journals in the Taiwan-Based Journals

Journal Title	Number of Citations	Rank by Number of Citations	Subject Category
1. *Harvard Journal of Asiatic Studies*	21	1	Regional history
2. *Late Imperial China*	15	3	Regional History; Periodized history
3. *History and Theory*	14	4	Historiography
4. *The Historical Journal*	10	8	Historiography; World history
5. *Early China*	9	10	Regional History; Periodized history
6. *English Historical Review*	9	10	Historiography; World history
7. *Monumenta Serica*	8	12	Regional history
8. *Positions*	7	16	Regional history
9. *T'oungPao*	6	23	Regional history
10. *The Journal of British Studies*	6	23	Regional history
11. *Sixteenth Century Journal*	6	23	Periodized history
12. *Bulletin of the School of Oriental and African Studies*	4	30	Regional history
13. *Journal of the History of Ideas*	4	30	Historiography; Intellectual history
14. *Far Eastern History*	3	47	Regional history
15. *Kaikodo Journal*	3	47	Regional history
16. *Speculum*	3	47	Regional history; Periodized history
17. *Victorian Studies*	3	47	Regional history; Periodized history
Average	7.7	–	–

Note. The subject categories were assigned by the authors based on journal content.

Table 10
The Citations of Non-JCR, Non-History Journals in the Taiwan-Based Journals

Journal Titles	Number of Citations	Rank by Number of Citations	Subject Category
1. *Art Bulletin*	10	8	Art
2. *Columbia Human Rights Law Review*	7	16	Law
3. *Journal of Women's History*	5	26	Women's studies
4. *Edinburgh Medical Journal*	5	26	Medicine
5. *Proceedings of Zoological Society of London*	4	30	Zoology
6. *Chinese Science*	4	30	Natural Science
7. *Critical Inquiry*	4	30	Art
8. *Boundary 2*	4	30	Human Sciences
9. *Journal of the Warburg and Courtauld Institutes*	4	30	Sociology
10. *Journal of Chinese Linguistics*	3	47	Linguistics
11. *MASCA Research Papers in Science and Archaeology*	3	47	Archaeology
12. *Chinese Economic Journal*	3	47	Economics
13. *European Law Review*	3	47	Law
14. *International Lawyer*	3	47	Law
15. *Journal of Chinese Philosophy*	3	47	Philosophy
16. *Medical Times and Gazette*	3	47	Medicine
17. *Public Law*	3	47	Law
18. *History of Religions*	3	47	Religion
19. *The Journal of American–East Asian Relations*	3	47	Political Science
20. *Journal of Chinese Religion*	3	47	Religion
21. *The American Political Science Review*	3	47	Political Science
Average	4.0	–	–

Note. The subject categories were assigned by the authors based on journal content.

Economic Journal, *Journal of Chinese Philosophy*, *Journal of American-East Asian Relations*, and *Journal of Chinese Religion*.

The Citation of Non-History JCR Journals

Of the 72 journals scoring the top 50 most cited, 27 of them (37.5%) are non-history JCR journals. Four of them were journals of area studies, according to JCR subject categorization, and all focused on China or East Asian studies. This again showed the very strong regional focus in history research in Taiwan. One noteworthy finding is that the citation of area studies journals by Taiwan's history researchers was more consistent with their JCR impact factors. JCR included 33 journals in area studies, and by impact factor, the *China Quarterly*, the *Modern China*, and the *Journal of Asian Studies* were ranked as the second, fourth, and sixth respectively. This suggested a recent popularity of China/Asia studies in the global research arena. Taiwan authors' citations of these three journals were also relatively higher (see Table 11). All of them were within the top 5 most cited by Taiwan authors, although one must bear in mind, again, that the average citation to Western journals was commonly very low in Taiwan's history journals.

Table 12 shows the 22 JCR journals of all other subject topics cited in Taiwan's history research. Seven of them were in the top 20 most cited. This once again showed the multidisciplinary nature of history research. One can observe from the table that Taiwan authors cited

Table 11
The Citations of Non-History JCR Journals in the Taiwan-Based Journals (Area Studies)

Journal Title	Number of Citations	Rank by Number of Citations	JCR Impact Factor	Rank by Impact Factor	Subject Category
1. *The Journal of Asian Studies*	21	1	0.600	6	Area Studies
2. *The China Quarterly*	12	5	0.974	2	Area Studies
3. *Modern China*	12	5	0.667	4	Area Studies
4. *Modern Asian Studies*	4	30	0.094	30	Area Studies
Average	12.3	–	–	–	–

Note. The subject categories were assigned by JCR.

Table 12
The Citations of Non-History JCR Journals in the Taiwan-Based Journals (Interdisciplinary)

Journal Title	Number of Citations	Rank by Number of Citations	JCR Impact Factor	Rank by Impact Factor	Subject Category
1. *New Left Review*	8	12	0.846	19	Political Science
2. *Human Rights Quarterly*	8	12	0.757	25	Political Science; Social Issues
				11	
3. *International Social Science Journal*	8	12	0.172	52	Social Sciences, Interdisciplinary
4. *American Journal of Sociology*	7	16	3.262	1	Sociology
5. *American Sociological Review*	7	16	2.933	2	Sociology
6. *American Economic Review*	7	16	1.806	15	Economics
7. *Signs*	7	16	0.493	12	Women's Studies
8. *Public Opinion Quarterly*	4	30	1.509	1	Communication; Political Science; Social Sciences, Interdisciplinary
				5	
				4	
9. *World Politics*	4	30	1.308	8	International Relations
10. *Journal of Communication*	4	30	1.134	7	Communication
11. *Law and Social Inquiry*	4	30	1.034	40	Law
12. *Cultural Anthropology*	4	30	0.649	23	Anthropology
13. *American Journal of Comparative Law*	4	30	0.442	74	Law
14. *Feminist Studies*	4	30	0.155	23	Women's Studies
15. *Columbia Law Review*	3	47	3.383	5	Law
16. *Virginia Law Review*	3	47	2.758	9	Law
17. *Annual Review of Sociology*	3	47	2.521	3	Sociology
18. *Current Anthropology*	3	47	2.289	3	Anthropology
19. *World Development*	3	47	1.504	25	Economics; Planning and Development
				3	
20. *Population Studies*	3	47	1.341	4	Demography
21. *Sociology*	3	47	1.096	18	Sociology
22. *Journal of Democracy*	3	47	0.692	27	Political Science
Average	4.7	–	–	–	–

Note. The subject categories were assigned by JCR.

more journals in political science, sociology, women's studies, and law, even though the average number of citations to the journals was rather small.

The low use of Western journals as information resources in Taiwan's history research, especially the JCR history journals, can be explained in part by the high percentage of researchers studying Chinese history in Taiwan, and in part by the underlying Western assumptions in the JCR subject categorization. Wu et al. found that, in Taiwan, only 10% of the research had focused on foreign histories in the pervious 5 years.[59] However, the journals classified by JCR as history journals included none that focused on Chinese/East Asian histories. Most of such journals were classified by JCR as area studies journals, and many were not included in JCR at all. This once again suggested that JCR inclusion of journals was not a good indicator of journal value and importance for the purposes of research evaluations in Taiwan. Were JCR data used in evaluations, the ways it categorized journals by subject disciplines could very likely misinform evaluations. Huang's study findings were consistent with this viewpoint.[60] The report further showed that journal articles were actually not a significant source of information at all in Taiwan's history research. Between 2001 and 2005, only 18.94% of citations were to journal articles. 78.04% of the citations were to monographic publications, of which a large portion (28.38% of the total citations) was ancient works such as the *Book of Han* (*Han Shu*) and the *Records of the Grand Historian* (*Shiji*).

Moreover, we ran a Spearman correlation analysis and found that the correlation coefficient between the ranks by Taiwan author's citations and by JCR impact factor was as low as -0.097 ($p = 0.819$). This negative low correlation confirmed the irrelevance of JRC impact factor in determining the real use of history journals in Taiwan. The low use of journal articles as information resources[61] as well as what was found in this study together suggested the inadequacy of using JCR as an evaluation tool in history.

Conclusion

Findings from this study suggested that ISI citation data and JCR impact factor, due to ISI's inclusion/exclusion of journals and the ways it categorized journals by subject discipline, may not successfully represent scholarly journals' real contribution to SS&H research in non-English-speaking countries. Consequently, SS&H research evaluations using ISI citation data can be biased.

This is not to totally deny the value of ISI data and JCR rankings for research evaluations. In fact, our data suggest that JCR ranking may partially represent the contribution of Western LIS journals in Taiwan's research. In a highly social science-oriented discipline like LIS, Taiwan authors did cite a significant portion of JCR journals in their works. The JCR LIS journals were cited 74.8 times in average, much more frequently than the non-JCR LIS journals, which were cited 35.6 times (see Tables 4, 5). The rankings by JCR impact factor and by actual citation were also moderately correlated. This suggests that JCR inclusion does to some extent indicate the importance of certain Western journals for Taiwan's LIS research.

But in a more humanities-oriented area like history, the use of JCR data can, to a greater extent, negatively misinform research evaluations. As our data show, the actual influence of Western history journals was much less from comparing the average citation numbers of the history and LIS journals (see Tables 8–12). Although the numbers were too few to arrive at a definite conclusion, one can observe the obvious inconsistency between the JCR ranking and ranking by actual citation (see Table 7). The negative low correlation of the rankings also indicates that a more serious misevaluation can occur when JCR data are used for assessing history research.

"Research evaluations in non-English countries should take caution and avoid over reliance of JCR and ISI tools in the evaluations of SS&H research."

The findings point out that ISI citation data and JCR rankings have their constraints in research evaluations. In a non-English-speaking country like Taiwan, what was actually cited by LIS and history researchers was rather inconsistent with what was included and classified in JCR. Research evaluations in non-English countries should take caution and avoid over reliance of JCR and ISI tools in the evaluations of SS&H research. It is particularly the case in the humanities disciplines. Our data corroborate with other studies, which showed that humanities research is more likely to take on a stronger regional focus than social sciences research and may cite a larger portion of literature in the authors' native languages and a wider array of information sources other than journal articles.[62] These together indicate the inadequacy of ISI and JCR tools for humanities research evaluations.[63]

Journal selection bias also manifested in the fewer inclusion of practice-oriented journals in the ISI databases, and this constitutes another problem that may affect all research evaluations in the English and non-English world. This study found that Taiwan's LIS authors cited a good number of library science journals, among which practice-oriented journals constituted a rather large proportion. But not all of the frequently cited sources were included in JCR, especially not those oriented toward library science and library practices. This again points out the need for more cautions in using ISI and JCR tools to evaluate a highly practice-oriented social science discipline. Future studies are needed to see whether similar problem also exist in other practice-oriented fields, e.g., education, social work, business management, etc., and whether the practitioner/research journal selection bias also affect the research evaluations in the English-speaking countries.

In summary, this study examined the citations of Western journals in the fields of LIS and history to reflect on the validity of JCR as an evaluation tool for SS&H research. Our findings showed that in both cases, JCR impact factor was not a satisfactory indicator of journals' contribution to SS&H research in a non-English-speaking country. Evaluations may be misled or distorted if JCR is used as the major or the sole basis. We recommend that future research may compare citation usages in other SS&H subject areas and across countries in order to better understand the impact of JCR on research evaluations in the local and global environments and derive better ways of using ISI and JCR tools to evaluate SS&H research.

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