Measurement and Enhancement Strategies for the International Dissemination Capacity of China's English-language Academic Journals

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Abstract

Objective To measure the international dissemination capacity of Chinese English-language academic journals, and to provide decision-making support for enhancing their international influence and strengthening China's voice in international academic discourse. Methods Construct metrics including dissemination breadth, intensity, and speed for Chinese English-language academic journal articles based on social media, measure the international dissemination capacity of these journals, and employ statistical analysis and non-parametric tests to reveal the dissemination characteristics of articles across various disciplines. Results The study reveals significant differences in the overall distribution of dissemination breadth, intensity, and speed across disciplines. In natural sciences and engineering technology, articles in Engineering Technology II, Basic Sciences, and Medical and Health Technology demonstrate significantly superior dissemination capacity compared to those in other disciplines; in humanities and social sciences, the journal *Journal of Sport and Health Science* stands out prominently. Conclusion Proposed measures including identifying trending topics across disciplines, strengthening journal development, publicity, and promotion, advancing the implementation of development action plans, increasing support for English-language humanities and social sciences journals, encouraging researcher participation in science communication, and enhancing social media communication skills can further improve the dissemination capacity of Chinese English-language journals.

Full Text

Preamble

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Abstract

[**Purpose**] To measure the international dissemination capacity of Chinese English-language academic journals and provide decision-making support for enhancing their international influence and strengthening China's international academic discourse power.

[**Methods**] We construct social media-based indicators for dissemination breadth, intensity, and speed of Chinese English-language academic journal articles, measure the international dissemination capacity of these journals, and employ statistical analysis and non-parametric tests to reveal the dissemination characteristics across disciplines.

[**Results**] The study finds significant differences in the overall distribution of dissemination breadth, intensity, and speed across disciplines. In natural sciences and engineering, papers in Engineering Science & Technology II, Basic Sciences, and Medical & Health Sciences demonstrate markedly superior dissemination capacity compared to other disciplines. In the humanities and social sciences, *Journal of Sport and Health Science* stands alone as exceptionally prominent.

[**Conclusion**] The dissemination capacity of Chinese English-language journals can be further enhanced through: identifying hot topics across disciplines; strengthening journal development, promotion, and publicity; advancing implementation of development action plans; increasing support for English-language humanities and social sciences journals; encouraging researchers to participate in science communication; and improving social media communication skills.

Keywords: Chinese English-language academic journals; dissemination breadth; dissemination intensity; dissemination speed; international dissemination capacity

Introduction

President Xi Jinping has emphasized that "telling China's stories well, spreading China's voice effectively, and presenting a true, multi-dimensional, and comprehensive view of China are important tasks in strengthening China's international communication capacity." As a crucial component of international science communication, academic journals have become vital platforms and windows for showcasing China's scientific and technological progress and promoting academic exchange. Academic journal dissemination capacity emphasizes the ability to diffuse information through specific communication methods, means, and technological combinations, encompassing information volume, dissemination speed and precision, coverage, and impact effects [1][2][3]. Building and enhancing this capacity can promote and expand influence [4]. Leveraging language advantages, English-language academic journals serve as important carriers for Chinese research to reach the international stage, playing a key role in facilitating international academic exchange, expanding the influence of Chinese academic journals, and elevating China's international academic discourse power [5][6].

Based on analyses of the current state of Chinese English-language academic journals [7][8][9][10][11], researchers have conducted extensive studies on enhancing their international dissemination capacity and development pathways. Zhang Jing et al. [12] propose that new media, unconstrained by time and space, provide novel approaches for journal dissemination, helping expand domestic and international readership and author groups while strengthening academic promotion. Meng Yao [13] argues that journals should fully utilize new media tools, including Twitter, Facebook, ResearchGate, Weibo, and WeChat, to attract target audiences, and employ multi-channel dissemination and promotion through websites, search engines, and email to enrich the presence of English-language academic journals and create conditions for dynamic, three-dimensional dissemination. Wang Yajiao et al. [14] employed literature and website surveys to comprehensively examine 37 English-language scientific journals established after 2010 and selected for the "Excellence Action Plan for Chinese Science and Technology Journals," analyzing key influencing factors such as cooperation with international publishers, international editorial boards, international manuscript sources, adoption of new publishing models like open access and online-first publication, and attention to database indexing. Li Haiying [15] elaborated on the international development path of Chinese medicine English-language journals. Existing research primarily employs qualitative analysis, examining international development paths and strategies from perspectives of journal construction and promotion to provide recommendations for enhancing dissemination capacity, while few studies quantitatively reveal the current

dissemination status of Chinese English-language journals on social media.

Notably, existing studies emphasize using various new social media platforms to promote Chinese English-language journals and enhance their dissemination capacity. As academic journals transition from traditional to modern communication models, social media platforms have become important channels alongside academic exchange platforms [16]. In the "Internet Plus" era, academic journals and social media are inextricably linked; losing this battlefield would undoubtedly hinder rapid journal advancement [14]. In recent years, diverse forms of new social media have been increasingly used for academic exchange and promotion, with social media promotion gradually becoming a new pathway for enhancing academic journal influence and dissemination capacity [17].

In the social media environment, scientific knowledge spreads through both citation networks within the scientific community and through social media for more timely and extensive impact [18][19]. Citation frequency, impact factor, and journal citation indicators are important tools for measuring dissemination capacity in traditional academic exchange platforms. Altmetrics provides innovative tools for exploring academic journal dissemination capacity on social media [20]. From an international communication effectiveness perspective, domestic academic journals' social media platform construction remains in its infancy. Compared to other social media platforms, Twitter offers the strongest timeliness and synchronization, with faster information sharing and dissemination speed and broader reach, serving as a specialized information release and sharing platform [21]. Based on the dissemination of Chinese English-language journal articles across various foreign social media platforms, Twitter shows the highest coverage at 99.526% and performs best in basic descriptive statistics across all indicators [22]. Altmetrics indicators perform particularly prominently on Twitter [23][24]. Haustein [25] provides detailed discussion on academic exchange in Twitter and measuring academic paper impact through tweets, proposing six Twitter indicators for academic papers: Tweets, Retweets, Users, Hashtags, @mentions, and Time. Among them, Number of Tweets represents the total sum of tweets, and Tweet Span represents the total days between the first and last tweet.

On this platform, users can conduct various exchange activities including tweeting, replying, mentioning, and retweeting [26]. Compared to liking, bookmarking, and commenting, retweeting plays a more active role in information diffusion, especially enabling exponential growth in information dissemination to expand audiences [27]. Retweeting plays a central role in information dissemination [28][29]. Through retweeting, users forward messages originally posted by others, causing these messages to appear in their feeds and then be displayed to their followers [30]. Retweeting can achieve goals including sharing information with new and broader audiences [31].

Therefore, this study utilizes the Altmetric.com platform API to collect basic Twitter data and constructs social media dissemination indicators based on tweet and retweet counts to reveal the dissemination status of Chinese English-

language academic journals on Twitter.

As important carriers for academic communication and exchange in the open science context, the international dissemination of Chinese English-language academic journals holds significant meaning for enhancing their international influence and strengthening discourse power. Improving academic journal dissemination capacity aims to enhance the breadth, depth, and speed of article dissemination [32]. Therefore, this study uses basic Twitter data from Altmetric.com to construct measurement indicators for article dissemination breadth, intensity, and speed, calculating the social media dissemination capacity of Chinese English-language academic journals to reveal the international dissemination capacity across disciplines, clarify the international dissemination characteristics of various Chinese English-language journals, and provide recommendations for improving visibility, expanding influence, and enhancing international dissemination capacity.

2.1 Data Collection

The *Chinese English-Language Academic Journals Citation Report (2019)* provides in-depth analysis of citation patterns for Chinese English-language academic journals from a citation perspective, including basic information and citation data for 286 natural science and engineering journals and 28 humanities and social sciences journals. This study examines these 314 journals as research subjects, collecting their complete data from social media platforms. We used Altmetric.com, accessing data through the Altmetric API and Altmetric Explorer. Specifically, we selected "Articles" in the "TYPE OF OUTPUT" interface and sequentially entered each journal's ISSN number in the "JOURNAL OR COLLECTION" field for retrieval.

Since the *Chinese English-Language Academic Journals Citation Report (2019)* only provides CN numbers for Chinese English-language journals, we retrieved ISSN numbers by searching CN numbers sequentially in CNKI's "Publication Search" function. Based on the journal directories from the report, we extracted CN numbers for 314 Chinese English-language journals in natural sciences/engineering and humanities/social sciences. We then looped through these CN numbers in CNKI's publication search, collecting corresponding ISSN numbers, album names, and subject names for each journal. By calling the Altmetric API to access Altmetric Explorer and entering journal ISSN numbers sequentially, the search interface displayed basic information for each article indexed by Altmetric.com. We then entered each article's detail page to collect relevant data.

In the SUMMARY window, we collected data from the Geographical breakdown section, storing each article's dissemination countries/regions in Excel. In the TWITTER window, we collected the dissemination time of each tweet on Twitter, also stored in Excel.

Data collection was implemented through a self-developed JAVA program, with

fields including journal ISSN, article ID, tweet time, and dissemination country/region. Data analysis was conducted using self-developed Python programs and SPSS. Data collection occurred from October 2021 to January 2022. After excluding articles with non-existent accounts, deactivated accounts, missing tweet times, or unknown dissemination countries, the final dataset comprised 14,077 articles in natural sciences and engineering, covering 8 albums and 53 subjects across 98 journals; and 588 articles in humanities and social sciences, covering 4 albums and 5 subjects across 5 journals.

2.2 Measurement Methods

To measure the international dissemination capacity of Chinese English-language academic journals, this study uses journal articles as the carrier, drawing on existing citation-based dissemination capacity indicators to construct Twitter-based international dissemination capacity measurement indicators. The specific formulas are as follows:

(1) Calculation formula for article dissemination breadth (Formula 1): Dwidth represents dissemination breadth, defined as the total number of mentions of Chinese English-language journal articles, i.e., the sum of tweets and retweets.

Dwidth

(2) Calculation formula for article dissemination intensity (Formula 2): Dstrength represents dissemination intensity, where C represents the number of dissemination countries.

Dstrength = C + Dwidth

(3) Calculation formula for article dissemination speed (Formula 3): Dspeed represents dissemination speed, where M is the actual number of dissemination months for Chinese English-language journal articles.

Dsrength Dspeed

The dissemination cycle of Chinese English-language journal articles on Twitter (the time interval between the first and last tweet, measured in months) varies. For most articles, the months with actual tweets may only constitute a portion of the longer dissemination cycle. Therefore, we calculate the actual number of months with tweet dissemination activity. For example, if an article was first mentioned on Twitter in January 2021 and last mentioned in December 2021 at the time of data collection, its dissemination cycle would be 12 months. However, if tweets only occurred in January, February, and December 2021, the actual dissemination months would be 3. Articles were classified by discipline according to their journal categories, and the dissemination capacity of Chinese English-language journal articles in each discipline was calculated using the above formulas. Data fields were stored in Excel format and imported into SPSS for descriptive analysis of dissemination breadth, intensity, and speed

across disciplines to reveal overall dissemination capacity. We then examined whether significant differences existed across disciplines. Since the distributions of dissemination breadth, intensity, and speed did not follow normal distributions, we employed the Kruskal-Wallis non-parametric test for multiple independent samples. Notably, the mean dissemination intensity was not directly taken from SPSS results. To maintain consistency with the indicator's meaning, the average dissemination intensity for each discipline was calculated as the sum of the mean number of countries (rounded to one decimal place) and the mean of (dissemination breadth/country count) (rounded to four decimal places). For example, a mean intensity of 1.7028 indicates dissemination to an average of 1.7 countries with approximately 2.8 mentions per country.

3.1 Analysis of Article Dissemination Breadth

In natural sciences and engineering, Kruskal-Wallis test results show significance below 0.05, rejecting the null hypothesis and indicating significant differences in dissemination breadth distribution across the eight disciplines. As shown in Figure 1 [Figure 1: see original paper], examining mean dissemination breadth, Engineering Science & Technology II, Basic Sciences, and Medical & Health Sciences achieve averages above 10. Medical & Health Sciences articles reach 8.22, significantly outperforming the other five disciplines. From a mode perspective, articles with dissemination breadth of 1 constitute a large proportion across all disciplines. Except for Basic Sciences with a median of 3, all other disciplines have a median of 2. Notably, Basic Sciences has the largest number of articles and a relatively high median, indicating that Basic Sciences articles generally perform better in dissemination breadth and are more likely to gain attention on Twitter.

In humanities and social sciences, Kruskal-Wallis test results show adjusted significance below 0.05, indicating significant differences in dissemination breadth distribution across disciplines. As shown in Figure 2 [Figure 2: see original paper], the discipline category with the most articles on Twitter is Social Sciences II with 499 articles. Its maximum dissemination breadth also significantly exceeds other disciplines, reaching 375. Examining mean, median, and mode values, Social Sciences II demonstrates markedly superior dissemination breadth compared to other disciplines.

Across all articles, the highest dissemination breadth (7,624 mentions) belongs to a 2020 article in *National Science Review* titled "On the origin and continuing evolution of SARS-CoV-2." Following closely is a 2020 article in *Cell Research* titled "Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro" with 7,386 mentions. Two 2020 and 2021 articles in *Cellular & Molecular Immunology*—"RETRACTED ARTICLE: SARS-CoV-2 infects T lymphocytes through its spike protein-mediated membrane fusion" and "The spike protein of SARS-CoV-2 variant A.30 is heavily mutated and evades vaccine-induced antibodies with high efficiency"—also achieved extremely high Twitter attention with dissemination breadth of 4,685 and 5,503,

respectively. Among 11 articles with dissemination breadth exceeding 1,000, disciplinary distribution spans Engineering Science & Technology II; Basic Sciences, Basic Sciences, and Medical & Health Sciences across 7 different journals. Basic Sciences and Medical & Health Sciences each contribute 5 articles. In terms of research topics, 9 articles focus on healthcare-related themes, while the remaining 2 articles from the same journal address ocean warming. Evidently, both healthcare-related research and ocean warming represent globally discussed issues that tend to attract greater social attention.

3.2 Analysis of Article Dissemination Intensity

Kruskal-Wallis test results for multiple independent samples indicate significant differences in dissemination intensity distribution across natural science and engineering disciplines. As shown in Figure 1 [Figure 1: see original paper], maximum dissemination intensity for Engineering Science & Technology II; Basic Sciences, Basic Sciences, and Medical & Health Sciences significantly exceeds other disciplines. Median values are relatively similar across disciplines, with identical modes.

In humanities and social sciences, as shown in Figure 2 [Figure 2: see original paper], minimum dissemination intensity across four disciplines concentrates at 1.001 or 1.002, indicating articles are disseminated in an average of 1 country. Mean dissemination intensity for all disciplines except Social Sciences II ranges from 1.6-1.7. Social Sciences II shows a markedly higher median. Multiple independent sample non-parametric test results show adjusted significance below 0.05, rejecting the null hypothesis and confirming significant differences in dissemination intensity distribution across the four humanities and social sciences disciplines. Pairwise non-parametric tests further reveal significant differences between Social Sciences II and both Economic & Management Sciences and Philosophy & Humanities.

To further understand disciplinary dissemination across countries, we conducted in-depth analysis of major dissemination countries in natural sciences and engineering, including the United States, United Kingdom, Spain, and Germany. Articles disseminated in each discipline across different countries were sorted in descending order by discipline. Except for Ghana, Basic Sciences and Medical & Health Sciences consistently rank in the top two across all countries. Both disciplines exceed 2,200 articles in the United States, nearly ten times higher than the third-ranked Engineering Science & Technology I and Engineering Science & Technology II; Basic Sciences. Within Basic Sciences, biology articles and within Medical & Health Sciences, basic medical science articles each constitute over 50% of their respective discipline totals. Similar patterns appear in Canada, the United Kingdom, France, Spain, Germany, Australia, Japan, India, Mexico, Brazil, and other countries, where disseminated Chinese English-language journal articles primarily belong to biology and basic medical science. In South Africa, 89% of disseminated articles also belong to Basic Sciences. However, Ghana shows a different pattern, with 64% of articles in Engineering

Science & Technology I concentrated in chemistry. Basic Sciences ranks second in Ghana. In humanities and social sciences, *Journal of Sport and Health Science* is the most disseminated journal across all countries.

3.3 Analysis of Article Dissemination Speed

In natural sciences and engineering, non-parametric test results show adjusted significance below 0.05, rejecting the null hypothesis and confirming significant differences in dissemination speed distribution across disciplines. As shown in Figure 1 [Figure 1: see original paper], all disciplines show a mode of 1 for dissemination speed. Median values show Basic Sciences at 2, Engineering Science & Technology II and Medical & Health Sciences at 1.5, and other disciplines at 1. Meanwhile, Basic Sciences and Medical & Health Sciences show significantly more dissemination occurrences on Twitter, indicating these disciplines' articles are more likely to gain attention.

Kruskal-Wallis non-parametric test results for humanities and social sciences also show adjusted significance below 0.05, confirming significant differences in dissemination speed distribution. As shown in Figure 2 [Figure 2: see original paper], Social Sciences II shows the highest maximum and mean dissemination speed. Philosophy & Humanities shows the highest mode and minimum values across four disciplines, primarily because this discipline only has 6 articles with minimal Twitter dissemination. Social Sciences II has significantly more disseminated articles than other disciplines and the highest median dissemination speed, indicating its overall superior performance and greater likelihood of gaining Twitter attention.

D1-Medical & Health Sciences D2-Engineering Science & Technology I D3-Engineering Science & Technology II D4-Engineering Science & Technology II & Basic Sciences D5-Economics, Management & Information Science D6-Basic Sciences D7-Agricultural Science D8-Information Science
Figure 1 Distribution of dissemination capacity across disciplines in natural sciences and engineering

D1-Chinese Politics D2-Social Sciences II D3-Foreign Languages & Linguistics D4-Economic System Reform
Figure 2 Distribution of dissemination capacity across disciplines in humanities and social sciences

3.4 Analysis of Journals with Strong Dissemination Capacity

To further reveal journal dissemination performance on Twitter across disciplines, this study calculated the number of sub-disciplines, journals, and articles in the top 20% for dissemination breadth, intensity, and speed, with results shown in Table 1 .

In Engineering Science & Technology I, Organic Chemical Engineering and

Chemistry have the most top 20% articles, concentrated across 4 journals. *SCIENCE CHINA Chemistry* accounts for over 91% of articles across all indicators. Environmental Science & Resource Utilization only includes *Journal of Environmental Sciences*. In Engineering Science & Technology II, *Friction* published by Tsinghua University stands alone, with its articles constituting over 67% of the sub-discipline total across all dimensions. In Engineering Science & Technology II; Basic Sciences, *National Science Review* under the category of Basic Sciences Comprehensive and Comprehensive Science B has the most top 20% articles. Basic Sciences has the most sub-disciplines and journals. *Advances in Atmospheric Sciences* accounts for over 91% of articles across all dimensions. Among top 20% articles, 8 journals belong to biology. *Cell Research* ranks first across all dimensions in Basic Sciences, followed by *Journal of Integrative Plant Biology*. In Agricultural Science, *Journal of Animal Science and Biotechnology* in Animal Husbandry & Veterinary Medicine has the most articles. In Information Science, *Machine Intelligence Research* and *IEEE/CAA Journal of Automatica Sinica* have more articles. Medical & Health Sciences has the second most journals after Basic Sciences, with Basic Medicine, Pharmacy, and General Medical & Health showing significantly higher proportions than other fields. *Acta Pharmaceutica Sinica B* and *Chinese Medical Journal* account for over 57% and 94% of top 20% articles across dimensions, respectively. Basic Medicine has the most top 20% articles in Medical & Health Sciences, distributed across 4 journals, with *Cellular & Molecular Immunology* and *Neural Regeneration Research* showing higher proportions than the other two journals, particularly the former having the most articles in Medical & Health Sciences' top 20%.

In humanities and social sciences, except for two Chinese English-language journals in Social Sciences II, the other three journals belong to different disciplines. Across all three dimensions' top 20%, *Journal of Sport and Health Science* published by Shanghai University of Sport dominates.

Overall, top 20% articles in dissemination intensity, breadth, and speed show significantly higher counts in Basic Sciences, Engineering Sciences, and Medical & Health Sciences than other disciplines, indicating these fields receive broader global attention. Many journals with strong dissemination capacity are selected as leading or key journals in the Excellence Action Plan for Chinese Science and Technology Journals, demonstrating superior social media dissemination capacity. Chinese English-language journals such as *Friction* and *Journal of Sport and Health Science* have benefited from identifying hot topics and targeted commissioning to enhance dissemination capacity. Additionally, most strong dissemination capacity journals are indexed in JCR, including high-impact-factor journals like *Cell Research*, *SCIENCE CHINA Chemistry*, *Journal of Integrative Plant Biology*, and *Acta Pharmaceutica Sinica B*, which possess international recognition and are more likely to gain social media attention.

Table 1 Distribution of top 20% research directions and journals by dissemination capacity indicators in natural sciences and engineering

Discipline	Top 20%	Journals
Engineering Science & Technology I	Environmental Science & Resource Utilization; Organic Chemical Engineering; Chemistry	*Journal of Environmental Sciences*; *SCIENCE CHINA Chemistry*
Engineering Science & Technology II	-	*Friction*
Engineering Science & Technology II; Basic Sciences	Comprehensive Science B; Basic Sciences Comprehensive	*National Science Review*
Basic Sciences	Atmospheric Sciences; Cell Research; Plant Biology	*Advances in Atmospheric Sciences*; *Cell Research*; *Journal of Integrative Plant Biology*
Agricultural Science	Animal Husbandry & Veterinary Medicine	*Journal of Animal Science and Biotechnology*
Information Science	Automation Technology	*Machine Intelligence Research*; *IEEE/CAA Journal of Automatica Sinica*
Medical & Health Sciences	Basic Medicine; Pharmacy; General Medical & Health	*Cellular & Molecular Immunology*; *Neural Regeneration Research*; *Acta Pharmaceutica Sinica B*; *Chinese Medical Journal*

4 Conclusions and Implications

Significant differences exist across disciplines in the overall distribution of dissemination breadth, speed, and intensity. Overall, Chinese English-language journal articles in Basic Sciences, Medical & Health Sciences, and Engineering Science & Technology II; Basic Sciences demonstrate the strongest international dissemination capacity. In dissemination breadth, Basic Sciences and Medical & Health Sciences rank top two. In dissemination intensity, Basic Sciences and Engineering Science & Technology II; Basic Sciences show similar performance in mean, maximum, and median values. In dissemination speed, Basic Sciences has the most articles with the highest mean and median values, again indicating this discipline's journals are more likely to gain Twitter attention. By contrast,

in humanities and social sciences, only *Journal of Sport and Health Science* in Social Sciences II stands out.

Based on these findings, we propose the following recommendations for further enhancing the international dissemination capacity of Chinese English-language academic journals:

(1) Identify hot topics across disciplines and strengthen journal development, promotion, and publicity. Chinese English-language journals must accurately assess international readership needs, proactively identify relevant researchers, and attract attention. During dissemination, they should enhance topic guidance, leverage disciplinary advantages to initiate scientifically valuable discussions, and make social media communication a new pathway for enhancing international "discourse power" [33]. In natural sciences and engineering, the most widely disseminated articles address global issues like healthcare research and ocean warming; journals can strategically organize or increase relevant topics to participate in global discussions and enhance exposure. For example, *Friction* conducts extensive systematic research to identify current hot research areas and capture the most valuable topic information for special issues [34]. In humanities and social sciences, *Journal of Sport and Health Science* uses big data to identify high-frequency terms, excavate hot topics, and employ targeted commissioning to rapidly focus on hot issues, yielding positive results.

(2) Advance implementation of development action plans and increase support for English-language humanities and social sciences journals. Among our sample, leading and key journals selected for the Excellence Action Plan for Chinese Science and Technology Journals show the following Twitter dissemination performance: Among 22 leading journals, 10 received Twitter attention, with *National Science Review*, *Cell Research*, and *Cellular & Molecular Immunology* ranking top three in dissemination breadth, total mentioned articles, and average dissemination breadth per article, each having widely disseminated articles with over 1,000 mentions. Among 29 key journals, 17 received Twitter attention, with *Geoscience Frontiers* and *Science China-Life Sciences* each exceeding 10 in average dissemination breadth per article. Among 梯队 journals, *Advances in Atmospheric Sciences* and *Journal of Genetics and Genomics* performed impressively with average dissemination breadth per article reaching approximately 17.3 and 13.1, respectively. This demonstrates that leading and key journals under the Excellence Plan indeed hold "leading" and "important" positions in Twitter dissemination capacity among Chinese English-language journals, providing valuable references for leveraging new media platforms.

Journal of Sport and Health Science is the only humanities and social sciences journal with the strongest dissemination capacity on Twitter. From the perspective of international excellent academic journal selection criteria and domestic authoritative evaluation standards, only 2 social science journals are included in the SSCI index list and "China's Most Internationally Influential Academic Journals" (60 journals total), with *Journal of Sport and Health Science* being one of them. Policy documents typically favor natural science journals; social

science journals should learn from natural science journals' advanced experience to resolve content, scale, model, and institutional contradictions [35], seek common ground while reserving differences, improve publication quality, strengthen promotion, and actively seek development strategies to enhance international dissemination capacity.

(3) Encourage researchers to participate in science communication and improve social media communication skills. Social media has become an important platform for scientific knowledge dissemination, with scientists' participation being indispensable. The U.S. National Science Foundation (NSF) encourages researchers to use Facebook, Twitter, or YouTube, establish their own accounts, and interact with media and the public, providing detailed guidance on how to better disseminate science, including using social media to publicize academic achievements to attract broader audiences. China's *National Natural Science and Engineering Technology Fund 11th Five-Year Development Plan* also mentions encouraging and supporting science communication. In promoting the internationalization of Chinese English-language journals, they should fully leverage researchers' important role in academic achievement dissemination, encouraging authors, especially overseas scholars, to use social media platforms to promote their work and gain more attention, which may also benefit manuscript source diversification.

This study constructs international dissemination capacity measurement indicators for Chinese English-language journal articles by collecting raw Twitter data through the Altmetric API, calculating dissemination capacity across three dimensions—breadth, intensity, and speed—to explore disciplinary dissemination characteristics and provide recommendations for enhancing dissemination capacity and influence. Future research could conduct fine-grained identity mining of actors behind numerical indicators to clarify interactions among different stakeholders participating in Chinese English-language journal dissemination and further reveal dissemination mechanisms on social media.

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Note: Figure translations are in progress. See original paper for figures.