Postprint: Coordinated Development of Scientific Journals and New Quality Productive Forces

Authors: Yang Liping

Date: 2025-07-09T00:00:00+00:00

Abstract

Abstract

Objective: To fully demonstrate the innovation-led characteristics of new quality productive forces and the cultural mission of scientific journals themselves, it is essential to strengthen the two-way empowerment between scientific journals and new quality productive forces, thereby promoting their collaborative development.

Method: Based on a comprehensive review of existing research, grounded in the formation and development of new quality productive forces, and integrating the functions and roles of scientific journals, this study identifies the convergence points between the two and explores specific pathways for their collaborative development through clustered development, building high-quality teams, enhancing content quality, and expanding international influence.

Result: Promoting the collaborative development of scientific journals and new quality productive forces can not only fully reflect the cultural positioning and mission of scientific journals but also accelerate the formation and development of new quality productive forces.

Conclusion: In response to China' s new economic environment and emerging trends in global competition, strengthening the collaborative development of scientific journals and new quality productive forces not only injects greater innovative vitality into the high-quality development of scientific journals but also fosters the advancement of new quality productive forces through the timely dissemination of scientific research achievements by these journals.

Full Text

Synergistic Development of Scientific Journals and New Quality Productive Forces

(Guangxi Zhuang Autonomous Region Forestry Research Institute, Nanning, Guangxi 530002)

Abstract

Purpose: To fully demonstrate the innovation-led characteristics of new quality productive forces and the cultural mission of scientific journals themselves, we should strengthen the mutual empowerment between scientific journals and new quality productive forces to promote their synergistic development. **Method:** Based on a comprehensive review of existing research, this study examines the formation and development of new quality productive forces, combines them with the functions and roles of scientific journals, identifies synergy points between the two, and explores specific pathways for their collaborative development from perspectives such as cluster development, building high-quality teams, improving content quality, and expanding international influence. **Result:** Promoting the synergistic development of scientific journals and new quality productive forces can not only fully embody the cultural positioning and mission of scientific journals but also accelerate the formation and development of new quality productive forces. **Conclusion:** Faced with China' s new economic environment and emerging trends in global competition, strengthening the synergistic development of scientific journals and new quality productive forces will inject greater innovative vitality into the high-quality development of scientific journals while simultaneously promoting the development of new quality productive forces through the timely reporting of scientific research achievements.

Keywords: Scientific journals; New quality productive forces; Functions and roles; Synergistic development; Consortium

1. Core Concepts of New Quality Productive Forces

1.1 Core Connotation

Traditional productivity primarily refers to humanity' s capacity to transform and conquer nature. With the development of advanced science and technology in the new era, and under favorable conditions of intelligence and informatization, a new form of material productivity is emerging. Compared with traditional productivity, the formation and development of new quality productive forces represent a productivity transformation based on scientific and technological innovation—an advanced productive force state that aligns with new development concepts, emphasizing both "newness" and "quality" [1]. Consequently, new quality productive forces should be grounded in high technology, high efficiency, and high quality, with innovation as the driving force. They should be

distinguished from the strategic upgrading and transformation of current emerging industries, conform to the high-quality development and new development concepts proposed by the state, and lead the construction of a modern industrial system. In promoting the development of new quality productive forces, it is essential to establish new production relations compatible with this form of productivity, continuously deepen reforms of economic, scientific and technological, and supervisory systems in social development, optimize the allocation of production factors, improve high-standard market systems, stimulate market vitality, and create a favorable production environment.

1.2 Core Elements

Based on production relations and activities, the core elements of new quality productive forces can be broadly categorized into laborers, means of labor, and objects of labor [2]. In the formation and development of new quality productive forces, the newly constructed talent pool serves as the laborers, specifically including strategic talents with innovative thinking capabilities and applied talents proficient in using relevant tools. The formation and development of new quality productive forces often require the application of new production tools and mastery of key core technologies to provide strong technical support for industrial development, continuously innovate production technologies, industry formats, and management systems. To ensure sustained momentum for new quality productive forces, it is necessary to continuously expand the objects of labor and fully tap the potential of existing labor objects, building upon the foundation of laborers and means of labor.

1.3 Basic Characteristics

The emergence of new quality productive forces signifies the advent of a new productivity form centered on knowledge and technology, with particular emphasis on the extensive application of information technology and the importance of knowledge capital. New quality productive forces are characterized by knowledge intensity, innovation-driven development, extensive application of information technology, and interdisciplinary integration [3]. Through scientific and technological innovation, more new products and services should be developed, while continuously exploring new processes and models during development. Simultaneously, intelligent, networked, and digital production and management models should be constructed through the extensive application of various advanced information technologies.

2. Functions and Roles of Scientific Journals in New Quality Productive Forces

On the path of synergistic development with new quality productive forces, scientific journals must not only fulfill their basic functions of knowledge dissemination and academic exchange but also clearly define their role as problem-

setters for enterprises, actively respond to the practical needs of industry modernization and transformation, and promote integrated collaborative development from research to application in cultivating and developing new quality productive forces. Led by leading enterprises and supported by the scientific research operations of universities and research institutes, they should integrate other innovation entities to build highly synergistic innovation consortia and jointly accomplish scientific and technological innovation [6]. On this foundation, as important nodes for integrating scientific and technological resources and improving knowledge service systems, scientific journals should take cluster development as the starting point, strengthen the promotion and application of scientific and technological innovation achievements, achieve effective guidance of strategic emerging industries and future industries, and accelerate the formation and development of new quality productive forces. In the synergistic development of scientific journals and new quality productive forces, the goal should be to continuously improve the effectiveness of scientific and technological achievement transfer and transformation. Innovation consortia should be established to unite relevant universities, research institutes, and other innovation entities across regions, actively build shared technology supply systems, and integrate advantageous resources from all parties. This will enhance the scale and intensification of journal operations while assisting the development of various innovation entities. In building such innovation consortia, publishing units can obtain talent and technological support from universities, research institutes, and other innovation organizations, while these innovation entities can gain practical venues and platforms for showcasing scientific research achievements from forestry journals, achieving deep integration of industry, academia, and research [7].

2.1 Disseminating Scientific Knowledge

In the process of scientific and technological progress and knowledge dissemination in contemporary society, scientific journals play a vital role. As important platforms for publishing scientific and technological achievements, scientific journals safeguard research integrity through rigorous review systems, ensure the quality and innovativeness of published content, provide researchers with platforms for sharing new knowledge and showcasing new achievements, and offer readers relatively professional and authoritative knowledge acquisition platforms. Through knowledge dissemination, they promote scientific and technological development and continuously enhance the overall scientific literacy of society.

2.2 Strengthening Innovation Drive

By publishing cutting-edge research reports, thematic special issues, and review articles, scientific journals reflect the latest research progress and future development directions in various scientific fields, providing researchers with important academic resources and rich sources of inspiration, offering reliable theoretical

and technical support for their scientific research, and supplying momentum for scientific and technological innovation [4]. As important drivers of new quality productive forces development, scientific journals can disseminate advanced production technologies and concepts to relevant industries, enhance industrial innovation capabilities, and promote sustainable industrial development.

2.3 Promoting Academic Exchange

Compared with traditional print media, and with the continuous development of new media, the scientific journal publishing system has been continuously improved, breaking the geographical and cultural boundaries of traditional academic exchange. As important windows for international academic exchange, scientific journals can provide platforms for global researchers to exchange ideas and learn from each other, offering them opportunities for international academic dialogue, promoting global scientific research cooperation and exchange, exploring diversified problem solutions from different perspectives, and simultaneously accelerating the international dissemination of scientific research achievements while enhancing the international influence of scientific journals.

2.4 Enhancing Research Capacity

Scientific journals facilitate the cultivation of research talent and enhancement of research capabilities by showcasing the latest scientific research achievements. Based on their participation in one or more scientific research projects, researchers write articles relying on the research process and its outcomes and publish them in scientific journals [5]. Throughout this series of activities, researchers' scientific thinking, critical analysis abilities, and academic writing skills are fully exercised, helping them summarize research achievements and develop new ideas.

3. Specific Pathways for Synergistic Development of Scientific Journals and New Quality Productive Forces

3.1 Establishing Innovation Consortia and Promoting Cluster Development

With the formation and development of new quality productive forces, to drive the innovative transformation of scientific journal entities in the new era, scientific journal publishing units should accurately grasp the core position of scientific and technological innovation in new quality productive forces, strengthen top-level design, establish innovation consortia, integrate multiple forces, promote the cluster development of scientific journals, and accelerate the construction of a world-class scientific journal system. In practice, when creating innovation consortia for forestry scientific journals, the journal *Nature Reserve*, sponsored by the East China Survey, Planning and Design Institute of the National Forestry and Grassland Administration, has undertaken the project "Research

on the Construction Model and Operation Mechanism of Forestry and Grassland Science and Technology Journal Clusters." In accordance with the relevant requirements of the National Forestry and Grassland Administration's *Notice on Supporting the High-Quality Development of Journals Managed by the Administration*, and based on current editorial research, the journal conducts leading scientific research to build a comprehensive knowledge service platform for the forestry and grassland industry, supporting the construction and development of a "green, smart, digital ecological civilization."

3.2 Building High-Quality Talent Teams and Optimizing Talent Structure

The formation and development of new quality productive forces are rooted in four major elements: human capital, scientific innovation, industrial upgrading, and production revolution. Among these, human capital holds the primary position and serves as the core for forging new quality productive forces and driving the high-quality leap forward of scientific journals [8]. In the process of synergistic development between scientific journals and new quality productive forces, emphasis should be placed on building self-innovation capabilities, with innovation-driven development as the core and talent as the primary resource. This involves cultivating innovative talents adaptable to the development of new quality productive forces and enhancing the professional skills of scientific journal editorial teams through multi-level, comprehensive training systems, enabling them to adopt a global perspective and innovative thinking to promote the internationalization and high-quality development of scientific journals.

In cultivating innovative talents for new quality productive forces, scientific journal publishing entities must correctly understand the necessity for scientific journals to adapt to the development of new quality productive forces, increase emphasis on cultivating compound publishing talents, focus on the innovation capabilities and professional qualities of publishing personnel, formulate differentiated talent training plans according to job divisions, and construct a well-structured, systematically complete talent training chain and echelon [9]. The synergistic development of scientific journals and new quality productive forces requires not only that scientific journal practitioners possess certain professional knowledge and skills but also that they can keenly capture the forefront dynamics of industry science and technology in their work.

Taking forestry scientific journals as an example, practitioners must continuously enhance their publishing and forestry professional knowledge and skills through publishing professional training and participation in industry conferences. They should also stay informed about smart forestry that applies advanced technologies such as the Internet of Things, big data, and artificial intelligence; precision forestry that utilizes remote sensing technology, geographic information systems, and precision fertilization and irrigation techniques; and biotechnology and genetic improvement involving gene editing, transgenic technology, and biological breeding, thereby gaining a comprehensive understanding

of the latest applications of new quality productive forces in the forestry industry [10]. Meanwhile, based on keen industry insight and innovative consciousness, practitioners can fully apply modern technological means in data analysis, promotion, and other operational aspects of scientific journals, using new media channels to intensify publicity efforts and expand the influence and competitiveness of scientific journals.

3.3 Interdisciplinary Integration and Improving Content Quality

According to the requirements of the 14th Five-Year Plan for the development of the publishing industry, publishing work should implement content and editorial quality improvement plans to effectively enhance content construction levels and service supply capabilities of publishing units. To develop new quality productive forces, it is necessary to continuously expand and extend the objects of labor, and strengthening content innovation in scientific journals constitutes an important component of building new quality productive forces in scientific journals [11]. Faced with continuously evolving technologies and industry formats under the development of new quality productive forces, scientific journals should always regard high-quality published content as their foundation for existence. Simultaneously, they should keep pace with the era' s digital and informational development, promote continuous deepening of content innovation, and provide strong support for scientific and technological development and technological innovation in related industries while meeting the reading needs of a broad readership.

With innovation as the primary driving force for development, scientific journals should adhere to national policy guidance on interdisciplinary studies, fully demonstrate their powerful driving force, create a strong atmosphere for interdisciplinary integration, and enhance innovation capabilities in various scientific research fields through proactive planning, active integration, and multi-domain collaboration [12]. Cultivating high-quality specialized talents should be considered one of the key links in achieving interdisciplinary integration. While focusing on enhancing professional capabilities, attention should also be paid to expanding relevant disciplinary knowledge to help develop scientific literacy and innovative spirit.

In light of the information age, scientific journals should not only strengthen interdisciplinary integration within professional fields but also focus on interdisciplinary knowledge fusion and innovation, actively facilitating cross-disciplinary integration between various disciplines and artificial intelligence, big data, and other fields. They should flexibly employ various forms such as special issues and columns to expand the breadth and depth of interdisciplinary integration. Simultaneously, facing market demands for scientific research achievements, modern new media interactive exchange platforms should be built to provide strong support for developing new interdisciplinary fields in forestry. Taking forestry scientific journals as an example, they should leverage their research advantages in the forestry field to continuously explore and expand interdisciplinary inte-

gration pathways between forestry and chemistry, biology, artificial intelligence, and other disciplines, provide high-quality publishing services according to different research directions, and lay a rich material foundation for subsequent related research [13].

3.4 Strengthening Academic Exchange and Expanding International Influence

In the context of globalization, scientific journals serve as important platforms for the dissemination and exchange of scientific research achievements, and their influence and internationalization level are directly related to promoting scientific and technological innovation and cultivating new quality productive forces. Since the release of the *Opinions on Deepening Reform to Cultivate World-Class Scientific Journals* in 2019, various departments have continuously advanced the construction of a world-class scientific journal system through various measures. It is necessary to expand the international influence of scientific journals from multiple dimensions.

Strengthening academic exchange is the primary task. Scientific journals should proactively participate in various domestic and international academic conferences, which not only helps to keep abreast of the latest research developments but also enables them to solicit high-quality manuscripts through conference platforms, injecting fresh vitality into the journals. Meanwhile, journals should closely monitor national policies and strategic orientations to ensure that published content aligns with national development needs. In manuscript screening, priority should be given to new theories and technological achievements that can promote economic construction and social development, with rapid publication and wide dissemination to accelerate the pace of scientific and technological innovation [14].

International cooperation is key to broadening horizons and enhancing the influence of scientific journals. Scientific journals should actively establish partnerships with internationally renowned journals and research institutions, achieving resource sharing and complementary advantages through collaborative publishing, joint research, or hosting high-end forums. Simultaneously, attracting internationally renowned experts to join editorial boards can not only improve the academic level of journals but also increase their recognition in the international academic community. Hosting international academic conferences is also an important pathway to promote international cooperation and exchange, as it builds open and inclusive exchange platforms that foster the collision and fusion of research ideas [15]. Additionally, policies such as open access can lower the threshold for obtaining scientific information, further promoting the widespread dissemination and application of research achievements.

Promotion and publicity are effective means to enhance the influence of scientific journals. Scientific journals should fully utilize social media platforms such as Twitter to regularly publish high-quality content abstracts or research

findings, maintain close interaction with the academic community, and attract more readers' attention. Collaborating with internationally renowned academic platforms such as Google Scholar can improve journals' ranking and visibility in search engines through data sharing and link building. Establishing regular evaluation mechanisms to widely collect feedback from readers and authors, and timely adjusting and improving publishing and promotion strategies, ensures that journals remain vibrant and competitive.

3.5 Building Service Platforms and Leveraging Advanced Technology Advantages

Based on the interactive relationship where scientific journals promote the development of new quality productive forces and new quality productive forces empower the high-quality development of scientific journals, we should actively build a nationally unified, powerful journal publishing service platform to better empower the development of new quality productive forces. Such a platform would achieve the aggregation and sharing of data and resources, improve publishing efficiency, and provide personalized information services for readers through technologies such as big data and artificial intelligence, thereby stimulating the output of more scientific research achievements. This would promote scientific and technological innovation while driving the high-quality development of scientific journals and providing support for the development of new quality productive forces [16].

When building scientific journal publishing service platforms, we should integrate technological means such as digitalization, datafication, informatization, and intelligence, and attempt to apply advanced technologies including big data, blockchain, and cloud computing to strengthen the core capabilities of scientific journals and comprehensively transform their publishing processes, business formats, and models. The platform should focus on multimedia promotion, scientific resource sharing, and scientific achievement transformation, design intuitive and concise interfaces, improve functions such as personalized recommendations, keyword retrieval, and interactive reading, and optimize user experience [17].

Integrating comment, like, and share functions from new media social software can support interactive exchanges between readers and authors, readers and platforms, readers and readers, and between scientific journals and authors and readers, fostering a good interactive atmosphere and sense of community and enhancing the platform's appeal to users. From the perspective of improving the quality of scientific journals, emphasis should be placed on the editing and proofreading process, with vigorous development of intelligent proofreading systems and active construction of artificial intelligence proofreading service platforms.

In building artificial intelligence proofreading service platforms, professional corpora should be constructed by selecting authentic language materials through a combination of human standards and machine annotation. When connecting professional corpora with AI proofreading service platforms, attention should

be paid to Chinese information processing, with appropriate selection of general corpora for detecting spelling errors and typos, as well as professional corpora from relevant scientific fields, to serve as training data in Chinese information processing and improve the accuracy of proofreading systems. AI proofreading service platforms should also integrate common sensitive words, prohibited terms, and other vocabulary to provide more comprehensive proofreading samples and reduce the workload of manual editing and proofreading [18].

Conclusion

In summary, under the strategic background of building a strong science and technology nation, actively promoting the synergistic development of scientific journals and new quality productive forces can not only accelerate the transformation and application of the latest scientific research achievements in relevant industries and stimulate the vitality of scientific and technological innovation but also drive the high-quality and international development of scientific journals. This effort should be based on innovative talents and scientific and technological innovation strength, optimize the layout of scientific journals, and assist in building new quality productive forces for scientific journals.

References

[1] Cao Bing, Li Jie, Tang Shuai, et al. Strategies and Practice for Promoting High-Quality Development of Scientific Journals through New Quality Productive Forces [J]. Metallurgical Information Review, 2024(6): 53- [2] Zhang Jihua, Feng Wei. Exploring Pathways for Empowering High-Quality Development of Agricultural Journals through New Quality Productive Forces [J]. Communication and Copyright, 2024(20): 14-18. [3] Zhang Li, Wang Haiyan, Yan Meijuan. The Value Implications and Practical Pathways of New Quality Productive Forces Empowering the High-Quality Development of China' s Scientific Journals [J]. Acta Editologica, 2024(5): 485-490. [4] Cheng Zhibo, Cen Zhi. Analysis on the Role and Strategies of Scientific Journals in Promoting the Generation and Development of New Quality Productive Forces [J]. Chinese Journal of Scientific and Technical Periodicals, 2024(10): [5] Cao Bing, Li Jie, Tang Shuai, et al. Scientific Journals Assisting in Cultivating "New Quality Productive Forces" [J]. China Media Technology, 2024(9): 39-42. [6] Pan Xue, Wang Weilang, Guo Lei. Response Strategies for Enhancing New Quality Communication Capacity of Scientific Journals in the Era of Artificial Intelligence [J]. Acta Editologica, 2024(4): 360-364. [7] Liu Jiansheng. Two-Way Empowerment between Scientific Journals and New Quality Productive Forces—Also on the Cultural Positioning and Mission of Scientific Journals under the Guidance of the Spirit of the Third Plenary Session of the 20th CPC Central Committee [J]. Digital Publishing Research, 2024(3): 1-7. [8] Fan Jia. Building a Medical Journal Matrix and Cultivating Academic New Quality Productive Forces [J]. Chinese Journal of Clinical Medicine, 2025, 32(1): 1-2. [9] Long Jie, Yu Dapin. Constructing Publishing New Quality Productive Forces through High-

Quality Journal Development [J]. Publishing Reference, 2025(1): 82-85. [10] Lin Long, Zhou Huaqing, Li Laibin. The Internal Logic, Practical Dilemmas, and Implementation Pathways of High-Quality Scientific Journal Development Empowering New Quality Productive Forces [J]. Chinese Journal of Scientific and Technical Periodicals, 2025, 36(1): 44-51. [11] Lu Chen. The Knowledge Service Transformation of Scientific Journals under the Background of New Quality Productive Forces [J]. Acta Editologica, 2024, 36(S1): 96-100. [12] Jin Huiping, Wu Zhiping. Reflections on the Pathways for Scientific Journals to Promote Scientific and Technological Innovation and Drive the Development of New Quality Productive Forces [J]. Science-Technology and Publication, 2024(12): [13] Liu Chenhui, Peng Jin, Li Wanzhong, et al. Research on the Innovative Development of Industry Journals from the Perspective of New Quality Productive Forces—Taking the Journal "Special Casting and Nonferrous Alloys" as an Example [J]. Journal of Huanggang Normal University, 2024, 44(6): 41-45. [14] Zhuang Hongquan. The Connotative Dynamics, Value Implications, and Practical Approaches of New Quality Productive Forces Empowering High-Quality Development of the Publishing Industry [J]. Chinese Editors Journal, 2024(11): 4-10. [15] Wu Qian. The Two-Way Driving Logic between Academic Journal Publishing and New Quality Productive Forces [J]. Public Communication of Science & Technology, 2024, 16(18): 51-54. [16] Pan Xue, Wang Weilang, Guo Lei. Response Strategies for Enhancing New Quality Communication Capacity of Scientific Journals in the Era of Artificial Intelligence [J]. Acta Editologica, 2024, 36(4): 360- [17] Dai Zhidong. Reflections on Corporate Core Competitiveness [J]. Co-operative Economy & Science, 2024(19): 93-95. [18] Bao Xiaoyun. Promoting the High-Quality Development of China' s Scientific Journals [J]. Scientific Management Research, 2024, 42(2): 49-56.

Author Biography: Yang Liping (1986—), female, Han ethnicity, from Huaihua, Hunan, Master' s degree, Editor (intermediate level), research interests: journal publishing, forestry science popularization.

Responsible Editor: Li Yansong

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