Analysis of National Science and Technology Academic Works Publishing Fund Projects (2013-2022) Postprint

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Abstract

Purpose: To analyze the development trends of the National Science and Technology Academic Monograph Publishing Fund, clarify the funding orientation for selected topics, and provide references for publishing houses in fund application and topic planning.

Method: Based on the list of funded projects of the Academic Monograph Publishing Fund from 2013 to 2022, this study conducts classified statistics on the scope, quantity, host institutions, and language varieties (English) of the funded projects, simultaneously utilizes Excel software and word frequency software to analyze the funded projects, and combines literature to classify and elaborate on the above content.

Results: From 2013 to 2022, the Academic Monograph Publishing Fund funded a total of 1,848 projects, showing an overall upward trend; the number of publishing houses undertaking Academic Monograph Publishing Fund funding from 2013 to 2022 exhibited an upward trend, reaching its peak in 2021; the National Academic Monograph Publishing Fund from 2013 to 2022 was completed by 83 publishing houses, among which China Science Publishing & Media Ltd. undertook the most projects, accounting for 54% of the total, while the other 82 publishing houses accounted for 46% of the projects. From 2018 to 2022, funded English projects showed a downward trend, particularly experiencing a cliff-like decline in 2021-2022; words such as technology, theory, research, China, and method were high-frequency terms in funded topics.

Conclusion: The fund' s funding orientation is gradually becoming more precise, oriented toward the frontiers of science and technology, and funding for English works is declining; publishing houses should prioritize basic theory and applied technology topics in their application for topic selection.

Full Text

Analysis of National Science and Technology Academic Monograph Publication Fund Projects (2013-2022)

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Abstract

Objective: This study examines the development trends of the National Science and Technology Academic Monograph Publication Fund, clarifies its prioritized funding directions, and provides references for publishers' fund applications and topic planning. **Methods:** Using the fund' s project lists from 2013-2022, we conducted categorical statistics on project scope, quantity, participating publishers, and language categories (English), supplemented by Excel and word frequency software analyses, with findings contextualized through literature review. **Results:** From 2013-2022, the fund supported 1,848 projects, showing an overall upward trend. The number of participating publishers increased annually, peaking in 2021. A total of 83 publishers received funding, with China Science Publishing & Media Ltd. accounting for 54% of all projects (1,001 projects), while the remaining 82 publishers shared 46%. English-language projects declined from 2018-2022, with a sharp drop in 2021-2022. High-frequency words in funded titles included "technology,""theory,""research,""China,"and "methodology."**Conclusion:** Funding priorities have become increasingly precise, focusing on cutting-edge science and technology, while support for English works has declined. Publishers should prioritize foundational theory and applied technology topics in their applications.

Keywords: science and technology; academic monograph fund; publishing houses; topic selection; high-frequency words
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1. Funding Scope

The National Science and Technology Academic Monograph Publication Fund (hereafter "Academic Monograph Fund") was established in 1997 with State Council approval to support outstanding and important academic publications in natural and technical sciences. Based on the fund' s annual application guidelines, we categorize its scope into three areas: regular funding scope, key funding scope, and non-funding scope.

1.1 Regular Funding Scope

According to Article 18 of the *National Science and Technology Academic Monograph Publication Fund Management Measures*, the fund supports three categories based on research objects and targets in basic science, technical science, and engineering: (1) **Academic monographs:** Works where authors have conducted systematic, long-term research in a discipline, producing theoretically innovative or experimentally significant discoveries; (2) **Basic theoretical works:** Works where authors have deeply explored fundamental theories, drawing on domestic and international literature and previous achievements to produce theoretically innovative systematic works that significantly advance science or cultivate scientific talent; and (3) **Applied technology works:** Works where authors apply established scientific theories to production practice, promoting industrial progress and generating substantial economic benefits.

1.2 Key Funding Scope

While the regular funding scope has remained relatively stable over the past decade, the key funding scope has undergone notable adjustments. Three distinct periods emerge:

1.2.1 2013–2016: Key support focused on (1) academic works representing important research achievements in basic science and strategic emerging industries; (2) outstanding scientific and technological works promoting western region development and enhancing science and technology among ethnic minorities; and (3) excellent English-language scientific and technological works.

1.2.2 2017–2020: This period largely continued the previous scope, with the removal of "promoting western region development."

1.2.3 2021–present: 2021 marked a significant turning point. The key funding scope no longer mentions "enhancing science and technology among ethnic minorities" or "English-language works," instead emphasizing "three orientations": (1) **Facing the world's scientific frontiers** in quantum science and technology, life sciences and biotechnology, artificial intelligence, mathematics, and applied research; (2) **Facing the economic main battlefield** in high-quality development areas including digital economy, smart agriculture, modern energy, intelligent manufacturing, ecological protection, medical health, and new materials; and (3) **Facing major national demands** in major equipment and engineering, key industrial bottlenecks, network information security, and major infectious disease prevention and control.

The 2022 guidelines further refined these priorities into seven specific areas: (1) new-generation artificial intelligence; (2) quantum information; (3) integrated circuits; (4) brain science and brain-inspired research; (5) genes and biotechnology; (6) clinical medicine and health; and (7) deep space, deep earth, deep sea, and polar exploration. The 2023 guidelines remained largely consistent with 2022, indicating a stabilization of key funding priorities.

1.3 Non-Funding Scope

The non-funding scope has remained unchanged from 2013–2023, explicitly excluding: (1) translations, anthologies, and reprinted works (academic works by the same author republished within five years with identical or similar content); (2) popular science readers; and (3) textbooks and reference books. Notably, the 2023 application guidelines added "series" to the non-funding scope, representing a significant adjustment that reinforces the fund' s focus on single-volume, specialized works, complementing the National Publication Fund' s support for larger comprehensive series.

2. Statistics on Funded Projects (2013–2022)

2.1 Overall Project Statistics

From 2013–2022, the Academic Monograph Fund supported 1,848 projects: 103 in 2013, 150 in 2014, 168 in 2015, 176 in 2016, 203 in 2017, 211 in 2018, 201 in 2019, 239 in 2020, 199 in 2021, and 198 in 2022, demonstrating an overall upward trend [Figure 1: see original paper].

2.2 Publisher Variety Statistics

The number of participating publishers also increased annually, peaking in 2021: 23 publishers in 2013, 33 in 2014, 23 in 2015, 25 in 2016, 29 in 2017, 27 in 2018, 31 in 2019, 39 in 2020, 47 in 2021, and 37 in 2022 [Figure 2: see original paper].

2.3 Individual Publisher Performance

Significant disparities exist among the 83 participating publishers. The top ten recipients from 2013–2022 were: (1) China Science Publishing & Media Ltd. (1,001 projects, 54%); (2) People' s Medical Publishing House (93 projects, 5%); (3) Chemical Industry Press (86 projects, 4.6%); (4) Higher Education Press (57 projects, 3.0%); (5) Shanghai Scientific and Technological Literature Press (49 projects, 2.6%); (6) Shanghai Jiao Tong University Press (44 projects, 2.3%); (7) Zhejiang University Press (34 projects, 1.8%); (8) Metallurgical Industry Press (30 projects, 1.6%); (9) China Architecture Publishing & Media Co., Ltd. (29 projects, 1.5%); and (10) Tsinghua University Press (28 projects, 1.5%).

In the medical and health category, People' s Medical Publishing House led with 93 funded projects, far exceeding other publishers, followed by Peking University Medical Press and Second Military Medical University Press .

2.4 Language Category Statistics (English)

English-language projects accounted for: 5 in 2013, 9 in 2014, 10 in 2015, 11 in 2016, 10 in 2017, 21 in 2018, 20 in 2019, 18 in 2020, 9 in 2021, and 2 in 2022. While the decade-long trend showed initial growth, the past five years

(2018–2022) reveal a clear decline, with a precipitous drop in 2021–2022, likely attributable to the removal of "excellent English-language scientific and technological works" from the key funding scope [Figure 3: see original paper].

2.5 High-Frequency Word Analysis

Analysis of the 1,848 project titles using word frequency software provides insights into funding priorities.

2.5.1 Two-Character Words (Including Single Characters): The top ten high-frequency words were: technology (251 occurrences), theory (206), research (138), China (138), methodology (112), design (72), principle (73), system (68), analysis (66), and control (65) . The prominence of "technology" and "theory" indicates the fund' s emphasis on basic theoretical and applied technology topics. Examples include *Modern Solid-State Fermentation Technology: Theory and Practice*, *Theory and Technology of Photonic Crystal Fiber Fusion and Tapering*, and *Complex Network Coordination Theory* for theory-based works, and *Harmless and Energy-Recovering Thermal Disposal Technology for Sludge*, *Quantum Information Processing Technology and Algorithm Design*, and *Hopkinson Bar Experimental Technology* for technology-focused works. The frequent appearance of "China" reflects numerous titles representing national scientific frontiers. Other notable words appearing dozens of times include "science" (46 occurrences), as seen in titles such as *Chinese Trematology*, *Animal Virology*, *Chemistry of Traditional Chinese Medicine Processing*, *Chinese Spleen-Stomach Disease Studies*, and *Vascular Mechanobiology*.

2.5.2 Four-Character Words: High-frequency four-character terms included key technologies (18 occurrences), composite materials (10), and control technology (10) . The word cloud visualization [Figure 4: see original paper] further illustrates these patterns.

3. Conclusions

3.1 Increasingly Precise Funding Direction

Our multi-angle statistical analysis reveals a trend toward greater precision in funding priorities. The key funding scope has evolved from broad categories like "important research achievements in basic science and strategic emerging industries" to specific domains: new-generation artificial intelligence, quantum information, integrated circuits, brain science, gene and biotechnology, clinical medicine and health, and deep space/earth/sea/polar exploration. Strategically, the focus has shifted from simply supporting "excellent English-language works" to a "three orientations" framework: facing world science frontiers, facing the economic main battlefield, and facing major national demands.

3.2 Declining Advantage for English Publications

While English-language support grew during the first five years, the past five years show a marked decline, with "excellent English-language scientific and technological works" removed from the key funding scope in 2021–2022. This indicates diminishing competitive advantages for English publications.

3.3 Significant Disparities in Publisher Academic Output Capacity

Despite overall growth in funded projects, substantial gaps exist among publishers. China Science Publishing & Media Ltd. alone accounted for 54% of all projects, with the remaining 82 publishers sharing 46%. In the medical field, People's Medical Publishing House's 93 projects far exceeded competitors. These disparities underscore the need for science and technology publishers to strengthen talent development, enhance editors' topic planning capabilities, align with current scientific development and market demands, accelerate scientific knowledge accumulation and dissemination, promote transformation of scientific achievements into productive forces, and balance social and economic benefits.

3.4 Preference for Technology-Oriented Topics

High-frequency word analysis demonstrates that "technology," "theory," and "research" appear far more frequently than other terms, indicating the fund's orientation toward basic theoretical and applied technology topics. Projects whose titles directly reflect this positioning have higher funding probabilities—a crucial insight for publishers.

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