Quality Management Mechanism for Strategic Research Outputs of Top-tier Think Tanks (Post-print)

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Abstract

While numerous factors determine the influence attained by world-class think tanks, the critical determinant lies in the high quality of their strategic research and policy advisory reports—a quality that fundamentally depends on high standards for research outcomes and robust quality management mechanisms. This article systematically reviews the quality management mechanisms and processes for rigorous independent peer review of research outcomes, as well as the standards or guidelines for high-quality research, at selected world-class think tanks, and synthesizes valuable experiences and insights concerning these quality management mechanisms. The article notes that in the construction of new-type think tanks in China, quality management mechanisms for high-quality analysis and research have not yet been prioritized as an essential component of think tank development. This manifests as a deficiency in management philosophy pertaining to high-quality research outcomes, a lack of institutional norms and regulatory frameworks, and an absence of rigorous procedures for quality management control. Accordingly, the article proposes recommendations for standards of high-quality analysis and research and for quality management mechanisms in the development of China' s new-type think tanks.

Full Text

Abstract

Among the many factors that determine the influence of world-class think tanks, the key lies in the high quality of their strategic research and policy advisory reports, which in turn depends on high standards and quality management mechanisms for their research output. This article examines the high-quality research standards or guidelines established by several leading international think tanks,

as well as their quality management mechanisms and processes based on rigorous independent peer review. It summarizes valuable experiences and insights from these quality management systems. The article points out that in the construction of China' s new-type think tanks, quality management mechanisms for high-quality analysis and research have not yet been treated as a critical component of think tank development. There is a lack of both the conceptual framework for quality management of research output and institutional norms for management, not to mention rigorous processes for quality management and control. To address these deficiencies, the article proposes recommendations for high-quality analysis and research standards and quality management mechanisms for China' s new-type think tanks.

Keywords think tank, strategy and policy research institute, high-quality standard for research and analysis, guidelines for review, peer review, quality management mechanism

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In January 2015, the Central Committee of the Communist Party of China and the State Council issued the "Opinions on Strengthening the Construction of New-Type Think Tanks with Chinese Characteristics," marking the development of such think tanks as a national strategy. In November 2015, the "Work Plan for the Construction of High-End Think Tank Pilots" was approved, designating the first batch of 25 pilot units for high-end think tank construction, thereby launching the comprehensive development of high-end think tanks with Chinese characteristics. The goal of building these new-type and high-end think tanks is to establish world-class think tanks with international influence.

Modern think tanks have undergone nearly 70 years of development, with some emerging as leaders in the international community. World-class think tanks possess distinctive characteristics: conducting forward-looking research on important strategic issues and anticipating policy trends; maintaining sound management mechanisms and fundraising capabilities to consolidate decision-making consultation service networks; attracting talented thinkers to conduct policy design research; and producing influential research results to support decision-making. A crucial feature and management component that enables world-class think tanks to achieve influence is their high-quality standards for research output and quality management mechanisms based on rigorous internal and external expert review [1].

2. High-Quality Analysis and Research Standards of International First-Class Think Tanks

World-class think tanks not only pursue high-quality research output as their core value but also, under the guidance of these values, formulate and implement institutionalized high-quality analysis and research standards as fundamental guidelines for achieving excellence. Such standards are continuously revised

and improved through practice, becoming normalized institutional frameworks for think tanks.

2.1. Research Report Review Standards of the U.S. National Research Council

The National Research Council (NRC) was established in 1916 as a non-profit research organization under the U.S. National Academy of Sciences to expand its functions in science and technology policy consultation. Serving as the operating arm of the National Academy of Sciences, National Academy of Engineering, and National Academy of Medicine, the NRC is responsible for the majority of U.S. government science and technology policy consulting projects. The NRC currently comprises seven research divisions: the Division of Behavioral and Social Sciences and Education, the Division on Earth and Life Studies, the Division of Engineering and Physical Sciences, the Health and Medicine Division, the Policy and Global Affairs Division, the Transportation Research Board, and the Gulf Research Program. As a typical national academy-type think tank and a representative of world-class science and technology think tanks, the NRC publishes approximately 400 important strategic research reports annually, most of which address strategic directions in science and technology fields. These reports provide crucial strategic guidance and decision-making consultation for relevant scientific and technological fields internationally.

The NRC' s strategic research reports in science and technology fields have significant strategic directional guidance and decision-making consultation effects on the development of related scientific and technological fields internationally. The NRC produces several types of research output, including consensus reports, letters and abbreviated documents, workshop reports and summaries, and workshop proceedings. Among these, consensus reports constitute the NRC' s primary strategic research output, while the latter three categories are non-original works compiled based on existing research reports. The NRC has developed specialized quality review guidelines for each type of output [2-5].

Taking the NRC' s "consensus reports" as an example, the review guidelines contain nine criteria [2]: (1) Does the report clearly describe the problem to be addressed? Have all issues been resolved? Are the authors qualified for the work? (2) Is there sufficient evidence, analysis, and argumentation to support conclusions and recommendations? Are uncertainties and incompleteness in the evidence clearly identified? If recommendations are based on authors' value judgments or unanimous opinions, is this acknowledged, and are there adequate reasons for these judgments? If the report is based on working group efforts, were the research findings and conclusions reached by individuals or by an NRC committee? (3) Are data and analyses appropriate? Are statistical methods applied appropriately? (4) Are sensitive policy issues handled with caution? If recommendations involve institutional reorganization or establishment of new institutions, are the advantages and disadvantages of different options and the status quo considered? Is this consistent with other parts of the report? (5)

Is the report' s presentation and organization effective? Are titles appropriate? (6) Is the report impartial? Is the tone fair and free of sophistry? (7) Does the report summary provide concise and accurate descriptions of key findings and recommendations? Is it consistent with other parts of the report? (8) Are there signed articles or appendices? If so, are they relevant to the problem addressed? If the report relies on signed articles to support its consensus conclusions or recommendations, do these articles meet the above standard (3)? (9) Are there possibilities for improvement? If so, what important improvements could be made to the report?

"Letters" or "abbreviated documents" are primarily formed based on materials from existing research reports and do not contain new research findings or recommendations (documents containing new findings and recommendations are subject to research report review standards). The NRC' s quality standards for "letters" and "abbreviated documents" comprise five criteria [3], mainly concerning the clarity of research origin and purpose, the comprehensiveness of the basis for conclusions and recommendations, the appropriateness of research arguments and references, the reasonableness and credibility of recommendations, limitations of data and information resources, cautious handling of sensitive policy issues, effectiveness and improvability of report organization and presentation, and whether the report language is sophistical or biased.

The review standards for "workshop reports"and "summaries"contain five criteria [4], mainly involving the clarity of report purpose and background introduction, content coverage and clarity, accuracy of discussion, comprehensiveness and consensus of report viewpoints (whether they represent individual participants' views or collective understanding), fairness in material selection, cautious handling of sensitive policy issues, and the possibility of misleading statements. The review standards for "workshop proceedings" contain two criteria [5], including the clarity and comprehensibility of paper content and the quality of papers and their relevance to the proceedings.

These quality review standards for NRC research output are highly specific and detailed, with strong operability that helps review experts understand and apply them, thereby ensuring high-quality research output.

2.2. High-Quality Research and Analysis Standards of the RAND Corporation

The RAND Corporation, renowned for its research in security and defense issues, completes more than 500 research reports annually. Its institutional vision is "to be the world' s most trusted source of policy ideas and policy analysis," with core values of "high quality and objectivity."

As a leading think tank in public policy, the Brookings Institution network employs over 300 world-class experts conducting public policy research across all fields. Its values are "quality, independence, and impact" —a value pursuit that has now become a universal value for think tanks internationally. The

institution also formulates and continuously revises a series of policies ensuring research independence and integrity, including the "Research Independence Policy," "Conflict of Interest Policy," and "Nonpartisan Policy," which are updated on its website.

Established in 1982, the World Resources Institute (WRI) is committed to the harmonious coexistence of humanity and the environment, focusing on six goals: climate, energy, food, forests, water, and cities and transportation. WRI currently has three research centers on governance, industry, and finance, and maintains offices in Africa, Brazil, China, India, Indonesia, Mexico, and Europe. WRI has become the most renowned environmental research think tank internationally.

WRI is dedicated to providing high-quality research that must align with its mission and values—integrity, innovation, urgency, independence, and respect—as well as traditional standards of academic excellence, including accuracy, objectivity, timeliness, ability to meet user needs, and capacity to propose strategic plans that actively promote positive world development [7]. The quality requirements for reports are: comprehensive reports, well-written content, neutral viewpoints, and outstanding value.

Founded in 2005, the Bruegel Institute in Belgium has as its cornerstone values "evidence-based policy recommendations; demand-driven questions, independent and objective answers; close contact with government, research institutions, enterprises, and the public; based in Europe, focusing globally." With approximately 60 permanent and non-permanent research and management staff, it completes more than 50 research reports annually and has become a top-tier think tank in international economics.

The values of these typical world-class think tanks all reflect the basic value orientation of pursuing high-quality research results and achieving high-impact decision-making consultation effects, guiding these think tanks to become international models.

2.3. High-Quality Research and Analysis Standards of the World Resources Institute

WRI' s research output must meet both WRI' s mission and values—integrity, innovation, urgency, independence, and respect—and traditional standards of academic excellence, including accuracy, objectivity, timeliness, ability to meet user needs, and capacity to propose strategic plans that actively promote positive world development [7]. Report quality requirements are: comprehensive reports, well-written content, neutral viewpoints, and outstanding value.

2.4. Information Quality Guidelines of the U.S. Energy Information Administration

The U.S. Energy Information Administration (EIA), established in 1977, is a statistical agency under the U.S. Department of Energy and one of the ten major statistical agencies of the U.S. federal government. EIA' s primary function is to collect, manage, and apply energy-related data services, while also providing analysis and special reports on current hot topics. EIA provides independent data, forecasts, and analysis to policymakers to promote sound policies and establish effective markets.

EIA' s information production, collection, maintenance, and dissemination activities mainly include developing concepts, methods, and approaches for data collection; collecting, processing, and editing data; analyzing data and making forecasts; reviewing information products; and publishing reports, electronic documents, or other formats as users desire. To ensure information quality, EIA requires that its published information products must comply with the "Information Quality Guidelines" [8].

In fact, the "Information Quality Guidelines" were issued by the U.S. Office of Management and Budget in January 2002 to ensure the quality of federal government information, requiring all federal agencies to meet three principles: objectivity, utility, and integrity. The guidelines require each federal agency to develop specific "Information Quality Guidelines."

To embody the principles of objectivity, utility, and integrity, EIA' s "Information Quality Guidelines" require that published information and data must have objectivity, utility, and integrity. Additionally, EIA is committed to improving the transparency of information and methods to enhance data understanding and ensure reproducibility. Specific standards include four aspects:

(1) **Objectivity**. Use credible data sources; employ reliable analysis and forecasting techniques; emphasize information product quality; conduct quality reviews before product release; provide information on methodological and quantitative quality issues; and make corrections and revisions to published information when appropriate.

(2) **Utility**. Release information on schedule; use distribution methods that facilitate user access; provide materials that help users understand and interpret information; analyze user information needs; evaluate products themselves to ensure timeliness and relevance; and discuss tools for information collection and dissemination with decision-makers at different levels.

(3) **Security**. Use reliable information control technologies and specialized protection procedures for confidentially committed data, following relevant regulations to ensure information integrity.

(4) **Transparency and Reproducibility of Influential Informa-**

tion. EIA stipulates that influential scientific, financial, or statistical information should have high "transparency" to support "reproducibility." "Transparency" means clear information sources and accurate, trustworthy survey and analysis methods. "Reproducibility" means that the information production process can be replicated within an acceptable margin of error—that is, independent analysis of original data using the same methods can produce substantially similar results.

To support the "Information Quality Guidelines," EIA has formulated various work standards and specifications, such as the "Information Collection and Processing Standards" and "Information Dissemination Standards," to ensure information quality. EIA' s information products also undergo rigorous peer review before release.

3. Quality Management Mechanisms for Results Review in International First-Class Think Tanks

International first-class think tanks, on the one hand, formulate high-quality research and analysis standards for research results and data products; on the other hand, they establish organizational mechanisms for quality management (such as scientific committees and review committees) to conduct and implement rigorous internal and external peer expert review and supervision, thereby ensuring high-quality research output.

3.1. External Expert Review Mechanism of the National Research Council

The NRC has a standard research organization process for strategic consulting research [9], while implementing supervision and conflict-of-interest review throughout the strategic research process, enabling its strategic consulting reports to have high value and gain government and public trust and recognition. All NRC research and analysis reports must undergo independent, rigorous review by an external review panel approved by the Report Review Committee (RRC) according to specified review standards (guidelines) before release or submission. Reports that have not been reviewed by an RRC-approved review panel or have not been revised according to review requirements cannot be released.

The RRC is an institutionalized review committee of the NRC, composed of approximately 30 experts from the National Academy of Sciences, National Academy of Engineering, and National Academy of Medicine, with five staff members responsible for supervising the review process. The project management unit and the RRC negotiate to designate a group of independent review experts holding various viewpoints on key issues addressed in the report. Report authors submit draft reports to review experts, who provide written review comments based on the "Review Standards Manual." After receiving all review comments, authors must provide written responses, which are ultimately evaluated by supervising review personnel (designated by the RRC) and/or review

coordinators (designated by management). Only after the review process is fully completed, all authors agree, and the revised report is finalized will it be submitted to the project sponsor or made public as an officially released research result.

For example, the NRC' s 2008 report "Origin and Evolution of Earth: Research Questions for a Changing Planet" [10], completed under joint commission from the U.S. National Science Foundation (NSF) and other government agencies, proposed ten major scientific questions for solid Earth science research in the 21st century—questions that will constitute significant scientific challenges for the international Earth science community for a long time. Before its release, the draft report was independently reviewed by 13 review experts and one supervising expert designated by the NRC' s RRC according to review procedures. Similarly, the NRC' s 2010 report "Understanding the Changing Planet: Strategic Directions for the Geographical Sciences" [11], also commissioned by the NSF and other agencies, proposed 11 strategic directions for geographical science research in the next decade in the form of scientific questions. Before its release, the draft report was independently reviewed by seven review experts and two supervising experts designated by the RRC. The purpose of these reviews was to invite experts to provide candid and critical suggestions to help the NRC maximize the authority of its reports.

3.2. Internal Expert Review System of the RAND Corporation

RAND Corporation' s research output review mechanism is called the "internal review system" [12]. For each research project, RAND' s division director selects 2-3 senior researchers in the field who did not participate in the research plan to serve as reviewers, responsible for mid-term review after project initiation and final review near project completion. They write review reports to determine whether RAND' s requirements have been met. During review meetings, project completers answer questions raised by reviewers. Reports must be reviewed and approved by two people from the same department and one from another department before they can pass. Subsequently, they must be approved by the vice president overseeing that department before final release or publication.

RAND Corporation, renowned for its research in advanced military science and technology and major military strategies, has evolved into a political, military, economic, scientific, technological, social, and other comprehensive, famous international large-scale networked think tank. It currently has four research divisions and seven research centers (research project departments) in a matrix organizational structure representative of international think tanks. In 2014, it had more than 1,700 ongoing projects, including 630 new projects that year, completing over 500 research reports and publishing more than 500 articles. RAND has established a "Research Quality Assurance" department specifically responsible for quality control of research output.

RAND published its "Standards for High-Quality Research and Analysis" on its

website in 1997, which was subsequently revised multiple times in 1999, 2003, and 2009, and officially reissued in 2010 as the "Standards for High-Quality Research and Analysis" (2010) document [6].

The main content of RAND' s "Standards for High-Quality Research and Analysis" [6] includes: (1) Research questions should be clearly expressed and research objectives should be clear; (2) Research methods should be appropriately designed and applied; (3) Research should demonstrate thorough understanding of existing relevant research; (4) Data and information should be easily accessible; (5) Research assumptions should be clear and reliable; (6) Research findings should advance knowledge and address important policy issues; (7) Implications and recommendations should be logical and supported by research findings, with full elaboration and appropriate caveats; (8) Research report documents should be accurate and understandable, with clear structure and moderate tone; (9) Research should be compelling and useful, relevant to clients and decision-makers; (10) Research should be objective and independent.

In addition to these conventional standards, RAND has also formulated standards for "exceptional" research that reflect its strategic research ambitions and heritage: (1) Research should be comprehensive and integrative; (2) Research should be innovative; (3) Research should be enduring. RAND uses these standards as markers of "RAND-like" strategic research. These high-quality research and analysis standards constitute RAND' s distinctive characteristics and forge the high-quality features of RAND' s products.

3.3. Internal and External Expert Review Mechanism of the World Resources Institute

WRI has a dedicated Science and Research Department (S&R, similar to the "Science and Technology Office" in domestic research institutions) responsible for reviewing knowledge output. WRI has strict internal and external expert review procedures for different products, including research reports, issue briefs, working papers, technical notes, online tools and application software, and data infographics. The selection of internal and external experts for results review is organized by the S&R Department based on the specific professional content of the research results. Taking research reports and issue briefs as examples, they undergo a cycle of "publication plan (approved by research department director and S&R) –draft report (approved by research department director and S&R) –internal review (S&R agrees and sends to internal experts) –external review (S&R agrees and sends to external experts) –formally published report (S&R agrees to publish or release)." This process, requiring approval from both the research department director and the S&R Department, generally takes six months to complete. Strict quality requirements and results review processes have made WRI a top international think tank in the resource and environmental field.

3.4. Evaluation and Results Review Mechanism of the Bruegel Institute

The Bruegel Institute has a Scientific Committee (SC) responsible for institutional evaluation and results review to ensure high-quality research standards, independence, and impact. The Bruegel Institute's evaluation and review mainly include four categories [13]:

(1) **Triennial Development Assessment**. The institute conducts an institutional assessment every three years. The Board of Directors appoints a diversified independent assessment group—the Review Task Force (RTF)—every three years to conduct comprehensive assessments of all aspects from research fields to institutional management. The Scientific Committee submits a preliminary institutional assessment report (including research strategy and consulting services, etc.) as the basis for RTF' s independent assessment. The RTF forms an independent assessment report (including development recommendations) and submits it to the Board of Directors.

(2) **Annual Development Assessment**. The Scientific Committee meets with researchers annually to discuss research relevance and impact. The committee chair attends Board meetings to report the committee' s views on strategic issues.

(3) **Quarterly Development Assessment**. Every three months, the communications team submits an institutional development monitoring report, providing the influence of policy recommendations in media, social networks, blogospheres, and other communication tools.

(4) **Ongoing Report Review**. Research report quality control relies on a thorough discussion mechanism during the pre-publication stage, including a series of exchanges, discussions, and report reviews among internal and external peers, series editors, and research field coordinators (senior researchers who serve as editors responsible for reports). This ensures quality throughout the publication process.

4. Enlightenment from High-Quality Standards and Management Mechanisms of International First-Class Think Tanks

4.1. High-Quality Research Analysis Standards as Foundational Institutional Design

The high-quality standards for research output of typical world-class think tanks have rich connotations, covering important aspects such as selection and analysis of research questions, application and innovation of normative research methods, systematic analysis of existing relevant research, strong support from data and information, construction of theoretical basis and assumptions, logical require-

ments of research, pursuit of new discoveries and new understandings, targeting of policy design and consulting recommendations, writing norms and rigorous language expression, and management of results release and user consultation. These standards directly guide think tanks toward high goals and high impact.

The objectivity and independence of think tank strategic and policy research directly determine the scientific nature and quality of their research output. This requires think tank research to explore the objective laws of research problems themselves and propose various policy options based on revealed patterns. If research cannot guarantee objectivity and independence, it cannot guarantee the scientific nature, authority, and consulting value of its output. Based on the values and missions of think tank institutions, establishing high-quality standards and management mechanisms for research output can effectively generate insights and consulting recommendations regarding the inherent laws of research problems and policy mechanisms. This can effectively avoid explicit "interest group bias" in result viewpoints, inertial "me-too" conclusions, and even the "spokesperson role" that directly advocates for interest groups.

4.2. Strict Independent Expert Review Mechanisms as Binding Management Mechanisms

Independent peer review is an effective means to ensure the objectivity and high quality of research output. To achieve high-quality standards for analysis and research, the aforementioned typical world-class think tanks have all adopted independent peer expert review mechanisms, with the basis for review being high-quality standards or guidelines for results. These think tanks' expert review mechanisms differ only in the sources of review experts: some use external expert review (such as the NRC, which has no permanent expert pool and selects experts from outside the institution), some use internal expert review (such as RAND, which as a large think tank has a large pool of available experts), and some use both internal and external expert review (such as WRI and the Bruegel Institute, which as small think tanks have limited in-house experts and therefore establish review expert pools containing both internal and external experts). However, what they share is that the selection and approval of review experts follow specialized procedures, emphasizing independence and conflict-of-interest avoidance. The review process even employs dedicated supervisors and cannot allow researchers or research groups to freely select review experts from their own networks. This is a very valuable lesson for Chinese think tank institutions to learn.

4.3. Facts, Data, Information, and Research Methods as Main Review Content

Facts, data, and information are the foundation and key inputs for strategic research, while research methods constitute the logical roadmap of research work and directly relate to the reliability and scientific nature of research conclusions. Therefore, in the high-quality research standards and guidelines of world-class

think tanks, particular emphasis is placed on the importance of facts, data, information, and research methods for research conclusions.

The NRC' s quality guidelines specifically stipulate the importance of data and information as research support and evidence, emphasizing that reports must be based on facts and rigorous analysis. The rationale for any research findings, conclusions, and recommendations must be fully explained in the report, including references to literature, data analysis, or statements of pros and cons for alternative options and reasons for preferring one choice. RAND' s high-quality research standards emphasize that data and information must be easily accessible, including clear descriptions of data sources and production methods, correct and verifiable factual information, appropriate data screening and processing, clear statements of data limitations, and that data research methods must be suitable for research questions and objectives. In addition to emphasizing clear information sources, reproducibility of information production processes, and accurate and trustworthy survey and analysis methods, EIA specifically points out that using the same methods for independent analysis of original data during the research process should yield substantially similar results.

Strategic research reports aim to provide consulting recommendations for decision-makers. Report conclusions should generally represent the consensus of project members, but sometimes, despite extensive deliberation, individual members may not agree with the majority. The NRC' s report review guidelines address this by stating that reports should clearly describe dissenting opinions. Project members may prepare a brief statement of dissent (no more than 5,000 words) describing the issue and arguments supporting the minority view. This statement should be included as an appendix at the end of the report and mentioned in the main text and table of contents. Any questions about the appropriateness of materials related to dissenting opinions should be communicated to the review committee chair. Dissenting opinions should not involve issues outside the research scope. The NRC also notes that special attention should be given to recommendations involving increased government department budgets or institutional reforms. Generally, such recommendations should be avoided unless specifically requested in the research objectives. RAND' s high-quality research standards also state that research and findings should advance knowledge and address important policy issues, and that implications and recommendations should be logical and supported by research findings, with full elaboration and appropriate caveats.

5. Recommendations for Quality Management Mechanisms for High-Quality Research Results of Chinese Characteristic New-Type Think Tanks

Chinese characteristic new-type think tanks should be able to produce high-level strategic and policy research results. Most of these results primarily serve user decision-making needs rather than direct publication, with some research reports

never being published at all. Without a publication process, there is no format review by publishers or expert review by editorial departments. In this context, think tank institutions' quality control standards and mechanisms for their research reports become even more important. Therefore, think tank institutions strengthening their own quality management of research output is essential for building high-level think tanks. To produce high-level strategic research results, think tanks must make breakthroughs in strategic research organization mechanisms and quality standard norms [14]. This is also a current shortcoming that must be addressed in China' s think tank construction. Accordingly, this article proposes the following recommendations regarding high-quality analysis and research standards and quality management mechanisms for China' s think tanks.

5.1. Recommendations for High-Quality Analysis and Research Standards

The high-quality analysis and research standards proposed here primarily target strategic research report-type results. Different types of think tanks can formulate their own high-quality analysis and research standards based on these aspects, adapted to local and institutional conditions.

(1) **Accurate problem formulation, clear research objectives, and clear logical framework**. In grasping research themes and objectives, thorough analysis and clear expression are essential. Specific objectives to be achieved through research and analysis should be clearly defined, rather than conducting research aimlessly. An analytical plan for research questions or themes should be developed, establishing a reasonable and clear analytical logical framework and analytical approach.

(2) **Review of relevant research, comprehensive grasp of current status, and analysis of progress and deficiencies**. In analyzing relevant research backgrounds, systematic investigation and thorough review of existing research work and literature should be conducted. The current status and understanding of the latest relevant research should be analyzed, along with research progress and existing deficiencies. Key directions and perspectives for problem analysis should be clarified, simultaneously analyzing research methods used in related research and their advantages and disadvantages.

(3) **Appropriate method selection, matching with problems, and standardized design application**. In selecting and applying research methods, appropriate and matching methods should be chosen based on the nature and characteristics of research questions or themes. The essence of research problems and the essentials of research methods should be grasped, with standardized design and application of research methods, even scientific innovation of research methods. Standardized and scientific method application ensures the scientific authority of research conclusions

and understanding.

(4) **Appropriate theoretical application, clear and reliable assumptions, and sufficient theoretical construction**. In theoretical application or assumption construction, facing research questions or themes, existing appropriate scientific theories should be reasonably applied to support observation and analysis of research problems, strengthening the theoretical basis and support for research and analysis. Facing research questions or themes, reasonable, clear, and reliable theoretical assumptions can also be proposed to compensate for gaps and deficiencies in existing theoretical foundations. Through research and analysis processes, theoretical assumptions should be thoroughly argued, and theoretical foundations for related problem research should be constructed or enriched.

(5) **Accessible data and information, establishment of computational models, and scientific analysis results**. In data and information preparation and analytical computation, cited data and information should be reliable and authoritative, while independently surveyed and generated data and information should be authentic and credible. Data and information required for research and analysis must be accessible to ensure the implementation of research plans and approaches, rather than being unable to realize seemingly perfect research plans due to inaccessible data.

(6) **Comprehensive and integrated research, incisive innovative thinking, and objective and independent understanding**. In terms of research systematicness, comprehensiveness, independence, and innovation, research should be comprehensive, integrated, and systematic strategic analysis around research problems, rather than partial, fragmented, and localized observation and analysis. Research and analysis should generate innovative ideas, with incisive and penetrating analysis and thinking. Research understanding should be objective, independent, and balanced insights, rather than biased, non-objective understandings influenced by researcher emotions or stakeholder influences.

(7) **Novel implications and recommendations, focused research questions, and research finding support**. In summarizing implications and proposing countermeasures and recommendations, implications derived from research and analysis should be novel and unique, and relevant countermeasures and recommendations should have unique insights. Moreover, implications and recommendations should be strongly supported and evidenced by research findings and understanding, rather than unrelated separate elaborations. Implications and countermeasures should closely focus on and center around research questions or themes, avoiding clichés and stereotypical statements without consulting value, and avoiding irrelevant, unfocused discussions that miss the point.

(8) **Compelling research, policy issue relevance, and outstanding ap-**

plication value. In terms of research conclusions, viewpoint understanding, result innovation, and decision-making consultation value, research and analysis results should form innovative outcomes that improve or advance existing knowledge, attract attention, and guide commentary and analysis, as well as guide and educate public opinion. Research results should center around research questions or themes, closely relate to relevant policy issues, have significant application value for policy decision-making on relevant issues, and provide significant consulting value for decision-makers.

(9) **Reasonable report structure, fluent and standardized writing, and rigorous and expressive language**. In terms of research report form and presentation, the overall structure of research report documents should be reasonably arranged with clear logic. Report language should be rigorous and expressive, straightforward and moderate, concise and to the point. Report writing and content arrangement should comply with standard norms, be illustrated with charts and figures, and fully and clearly express researchers' thinking and ideas to attract readers and decision-makers to read, absorb viewpoints, and adopt and utilize them.

5.2. Implementation Management Mechanisms for High-Quality Analysis and Research Standards

While establishing high-quality analysis and research standards, think tank institutions must first establish effective implementation management mechanisms. The core of these mechanisms includes three aspects.

(1) **Implementation of quality management rules and regulations**. Establishing and continuously improving rules and regulations for quality management of research results is the basic foundation for conducting quality management. As research institutions primarily conducting strategic and policy issue research, think tanks' main research results are strategic research reports, policy consultation letters, conference proceedings, conference reports, commercial books, academic papers, etc. Different result types should have different review regulations and requirements. With the rise of big data computational strategic and policy research, information visualization charts, databases, and computational analysis methods have also become important think tank results. Since these results are directly applied to strategic and policy research work, they should also have quality review management mechanisms.

(2) **Implementation of organizational management department responsibilities**. First, a dedicated department (or at least a dedicated management position) responsible for quality management of results must be established as the specific implementing department for the quality control mechanism, responsible for tracking report progress, formulating review plans, nominating review experts, and organizing and implement-

ing the review process. Second, a permanent review expert committee and an academic review mechanism for approving specific research result review expert panels should be established. The review expert committee is a permanent review committee established based on the think tank' s professional fields and expertise, with a certain term of office. The review committee does not review specific results but approves nominated review expert panels for specific results, determining the professional direction matching, professional competence, and conflict-of-interest avoidance of nominated review experts. The expert panel approved by the review expert committee is the "independent review expert" authorized by the think tank.

(3) **Implementation of independent peer review mechanisms**. The key link in quality management of research results is independent peer review. A complete review process involving independent peer experts must be formed: submission of report review draft —peer review (including process supervision) —feedback of review results —report revision —re-review of revised draft —final report submission (or release). Even during the review process, independent supervisors should be assigned to monitor the review process to ensure solid, effective, independent, and objective review work.

All position-based research results completed in the name of the think tank must be reviewed according to quality management system regulations. Quality management of think tank research results should become the think tank' s proactive and preemptive action. The internal review control link cannot be missing, even for publicly published result reports and papers, which also require internal think tank review, not just review by publishers and journals. Think tank results peer review must adhere to the principle of independence, adopting the method of quality management departments nominating review experts and review committees approving review experts. It cannot allow result completers to find review experts themselves. The current situation where result review, project completion acceptance, and graduate thesis defenses involve experts operating on their own, exchanging favors, and creating a "everyone' s happy" situation must be overcome.

Only by implementing the above steps can the accuracy of data and analysis, scientific nature of research method selection, rigor of research processes, independence and objectivity of research conclusions, and thus the decision-making consultation value of research recommendations be ensured.

"Stones from other hills can polish jade." The construction of Chinese characteristic new-type think tanks should learn from the successful management experiences of world-class think tanks in producing high-quality research results. They should truly emphasize establishing high-quality analysis and research standards, conducting rigorous peer review quality control, and pursuing objective and rigorous research conclusions and policy recommendations in core capacity building. Through the cluster effect of think tank results quality control, the goal of "the sage' s governance values not solitary governance but the

ability to achieve collective excellence" can be realized.

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