

Research on Chinese Think Tank Evaluation Based on Bibliometric Analysis

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Abstract—In recent years, the research on the evaluation of think tanks in China has been increasing day by day. Through the combing and summarization of the existing research results, the research hotspots and weak links in this field can be summarized, so that the field can get better development in the future. In this paper, 117 articles on think tank evaluation research in the China National Knowledge Infrastructure (CNKI) database are used as sample data. The bibliometric analysis and knowledge graph software CiteSpace are used to sort out and analyze the current status, research hotspots and weak links of domestic think tank evaluation research. The research finds that: at present, the domestic think tank evaluation research has entered a stage of rapid development, and The number of research results shows an increasing trend year by year; the construction of evaluation index system and think tank ranking research are the current research hotspot, but the problem of selecting indicators when constructing the evaluation index system and the reliability and validity of rankings are important issues that need to be addressed.

Keywords—think tank evaluation; Bibliometric analysis; CNKI; CiteSpace

I. INTRODUCTION

As an important part of the country's soft power, think tanks have been highly valued by the country. In the reports of the 18th and 19th National Congress of the Communist Party of China, there are clear requirements for the construction and development of new think tanks with Chinese characteristics. With the vigorous development of think tank research, the research on think tank evaluation is also increasing day by day. At first, the domestic academic circles focused on introducing and combing the mature foreign research results. In recent years, domestic think tank evaluation research focuses on evaluation system. In addition to introducing the foreign think tank evaluation system, some research institutions and scholars have begun to try to build a think tank evaluation index system that conforms to Chinese characteristics, and have achieved a series of academic achievements. At present, it is urgent to sort out and review the development of this field, and summarize the hot topics and weak links in the think tanks evaluation research to improve the quality of domestic think tank evaluation research.

Based on 117 articles on think tank evaluation research collected in CNKI database, this paper uses bibliometric

analysis and CiteSpace, a knowledge graph software, to analyze and summarize the development of think tank evaluation research in China in recent years.

II. DATA SOURCES AND RESEARCH METHODS

A. Data Source

The literature of this study is from the CNKI database, using professional search, and the retrieval expression is "SU='Think Tank Evaluation' AND TI='Think Tank' AND TI='Evaluation'". The literature types include "Journal", "PhD", "Master", "Domestic Conference", "International Conference", "Newspaper" and "Academic Collection", and the search time was February 20, 2019. 118 papers were retrieved and 117 papers were selected as the source data of this study after careful examination. According to the search, it was found that the research literature on think tank evaluation was first published in the Social Sciences in China in 2012, so this study used 2012–2019 as the analysis period of literature data.

B. Research Methods

Bibliometric analysis is a quantitative analysis method. It takes various external features of scientific literature as the research object, and uses mathematical and statistical methods to describe, evaluate and predict the current situation and development trend of science and technology [1]. This study mainly uses bibliometric analysis and CiteSpace software to do quantitative analysis of the original literature from the year of publication, subject distribution, key words, combing the development trend of think tank evaluation research, understanding and analyzing the main characteristics of think tank evaluation research, and summarizing the weak links of think tank evaluation research.

III. LITERATURE DATA STATISTICS AND ANALYSIS

A. Statistics and Analysis of the Publication Year of the Literature

The research literature of think tank evaluation in China has shown an increasing trend in recent years ("Fig. 1"). In 2012, General Secretary Xi Jinping made a series of important expositions on the development and construction

of think tanks at the Eighteenth Congress of the CPC, which promoted the development of research on think tanks in China. Think tank evaluation as one of the hotspots of think tank research, the first paper on think tank evaluation was also published in the same year. Although no relevant literature on think tank evaluation was published in 2013, But in that year, Center for Think Tank Studies (CTTS) actively drew on the well-known Global Go To Think Tank Index, developed evaluation criteria and methods for Chinese think tanks, and published the first ranking report of Chinese think tanks in January 2014. The pioneering value of this report is undoubtedly, and it has significantly promoted the development of research on Evaluation of think tanks in China. In 2014, four articles on think tank evaluation were published, and the number of articles published increased compared with the previous two years. In addition, The Chinese Evaluation Center for Humanities and Social Sciences (CECHSS) officially launched the global think tank evaluation project in that year, and released its evaluation index system in 2015. All kinds of evidences

indicate that think tank evaluation research is becoming a hot spot in think tank research. In 2015, the General Office of CPC Central Committee and the General Office of the State Council issued "Opinions on Strengthening the Construction of New Think Tanks with Chinese Characteristics " (hereinafter referred to as "Opinions"). The Opinion has further promoted the development of think tank research in China. Meanwhile, research on think tank evaluation has sprung up like mushrooms after a spring rain. The ranking of think tank evaluation has become a hot spot. Twelve papers on think tank evaluation were published in the same year, and the number of them increased significantly compared with previous years. From 2016 to 2018, the research of think tank evaluation has entered a period of rapid development. In the three years, 35, 31 and 30 articles of think tank evaluation have been published, and the number of them has increased significantly. According to the forecast of CNKI, the number of publications about think tank evaluation will reach 45 in 2019.

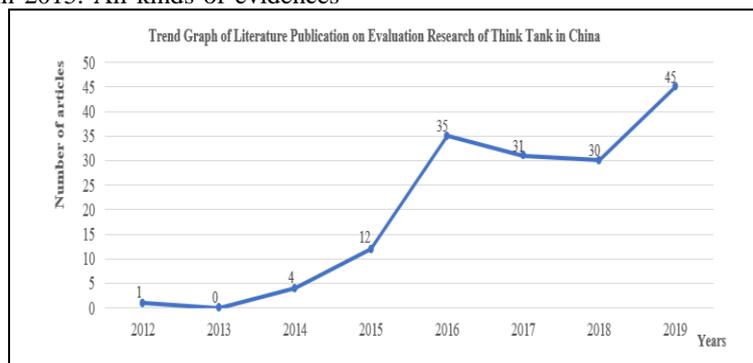


Fig. 1. Trend graph of literature publication on evaluation research of Think Tank in China.

B. Statistics and Analysis of Document Topic Distribution

Top 10 topics were selected from 117 literatures on think tank evaluation ("Fig. 2"). From the topic distribution map, it can be concluded that:

- "Evaluation System", "Think Tank Evaluation System", "Evaluation Index System" and "Evaluation Index" can be regarded as the same theme, which reflects that the core of the relevant literature of think tank evaluation at this stage is the evaluation index system. Many domestic literatures on think tank evaluation start from the evaluation index system. Through reading literature, it can be divided into two types: One belongs to the category of experience introduction, that is, domestic scholars introduce and sort out the evaluation system that has been proposed or the problems that should be paid attention to notice in evaluation research; The other belongs to the category of practical innovation, That is, domestic scholars establish a new evaluation index system with the reference of the existing evaluation index system.
- "Impact" and "Impact Assessment" rank third and fourth in the research topic of think tank evaluation. This is because "influence is the life source, work

goal and core task of think tank. The center of all work of think tank should be carried out around influence, so the core element of think tank evaluation is the influence of think tank" [2]. At present, the evaluation research of think tanks is centered on the evaluation index system, which makes the influence index become the "frequent visitor" in the evaluation index system of think tanks. Many think tank evaluation index systems regard it as a primary index. If the index is given weight, its weight is basically the highest. For example, in the Global Think Tank Evaluation Report of the CECHSS, the weight of impact index is as high as 180 points (355 points in total). To be sure, influence is still a hot topic in think tank evaluation research in the future.

- As the Opinion puts forward the proposition of building a new think tank with Chinese characteristics, the "New Think Tank" and the "Chinese Think Tank" have successfully entered the hot topic of the evaluation field of think tank. Blindly using the experience of other countries for reference can't really be developed. Only by making full use of the learned knowledge and experience to build a new think tank with Chinese characteristics and formulating an

evaluation index system of think tank that is suitable for its own reality, can the cause of think tank in

China develop vigorously.

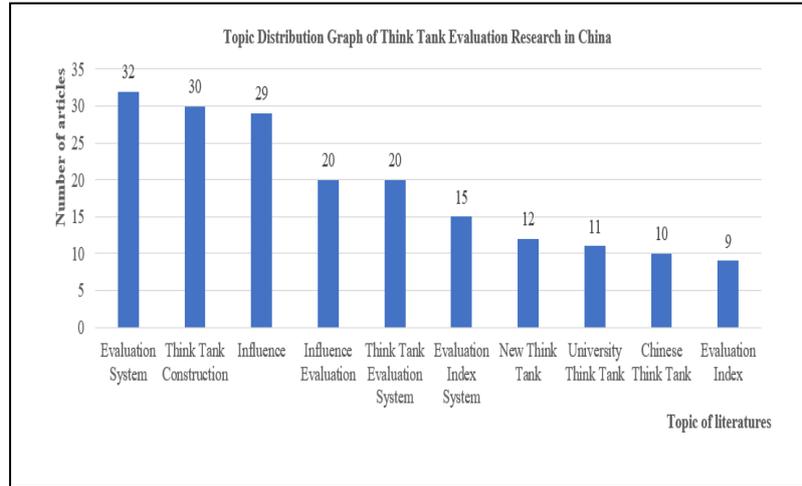


Fig. 2. Topic distribution graph of Think Tank Evaluation research in China.

C. Keyword Statistics and Analysis

The keywords of 117 articles were analyzed by CiteSpace software, and the top 25 high frequency keywords list of domestic think tank evaluation research was obtained ("Table I"). These keywords are the most widely used and representative professional vocabulary in the domestic think tank evaluation research. The top 10 are: Think Tank (52), Evaluation System (20), Think Tank Evaluation (17), Influence (9), Evaluation Index (8), Evaluation (6), New Think Tank (6), Evaluation Index System (6), Think Tank Construction (5) and University Think Tank (4). These high frequency keywords reflect some of the main characteristics of think tank evaluation research in China:

- The research of think tank evaluation mainly starts with the evaluation index system.
- Impact is an important part of think tank evaluation research.
- Research on Evaluation of new think tanks with Chinese characteristics is gradually moving towards the center of the stage.
- Innovative elements are constantly integrated into think tank evaluation research, such as "WeChat Public Platform" and "Network".

TABLE I. HIGH FREQUENCY KEYWORD LIST

No.	Keyword	Count	Years
1	Think Tank	52	2012
2	Evaluation System	20	2016
3	Think Tank Evaluation	17	2016
4	Influence	9	2016
5	Evaluation Index	8	2015
6	Evaluation	6	2016
7	New Think Tank	6	2017
8	Evaluation Index System	6	2017
9	Think Tank Construction	5	2017
10	University Think Tank	4	2017

No.	Keyword	Count	Years
11	Evaluation Method	4	2016
12	Social Think Tank	3	2018
13	Analytic Hierarchy Process	3	2018
14	Chinese Characteristics	2	2017
15	WeChat Public Platform	2	2018
16	Influence Evaluation	2	2017
17	Think Tank Influence	2	2018
18	Think Tank Evaluation System	2	2018
19	New Think Tank with Chinese Characteristics	2	2018
20	Index System	2	2017
21	Seminar	2	2016
22	Influence Evaluation	2	2016
23	Evaluation Process	2	2018
24	Differentiation	2	2017

"Fig. 3" is a graph of the evolution of think tank evaluation research in the context of time, from which we can see that the domestic think tank evaluation research presents a dynamic evolution process. Combining the changes of keywords and the actual situation of domestic think tank evaluation research, this paper can roughly divide the domestic think tank evaluation research into two stages: The initial stage (2012-2014) and The development stage (2015-present). In 2012, after General Secretary Xi Jinping made an important exposition on the construction and development of China's new think tanks at the 18th National Congress of the CPC, the research on domestic think tanks showed an increasingly in-depth research trend [3]. The keyword "Think Tank" was outstanding. At the same time, think tank evaluation, as an important part of think tank research, has begun to become a research field for domestic scholars, and the research of think tank evaluation has entered the initial stage. In 2015, the promulgation of the Opinions further promoted the development of evaluation research of think tanks in China. Evaluation research with ranking of think tanks as the main way has rapidly become a hotspot, and evaluation research of think tanks has entered the development stage. The key words "Evaluation Index",

"Evaluation System" and "Influence" appearing in this stage are all professional vocabulary closely related to evaluation research. Since 2016, there have been some keywords which are different from the earlier research. such as "New Think Tank" and "New Think Tank with Chinese Characteristics", these two keywords mainly reflect that domestic think tank evaluation research has begun to take the road of

independent innovation and started to study how to build a new think tank and evaluation system with Chinese characteristics; Such as "Analytic Hierarchy Process", "WeChat Public Platform" and "Network Impact", these three keywords reflect that domestic scholars began to try to evaluate think tanks in different ways or from different perspectives.

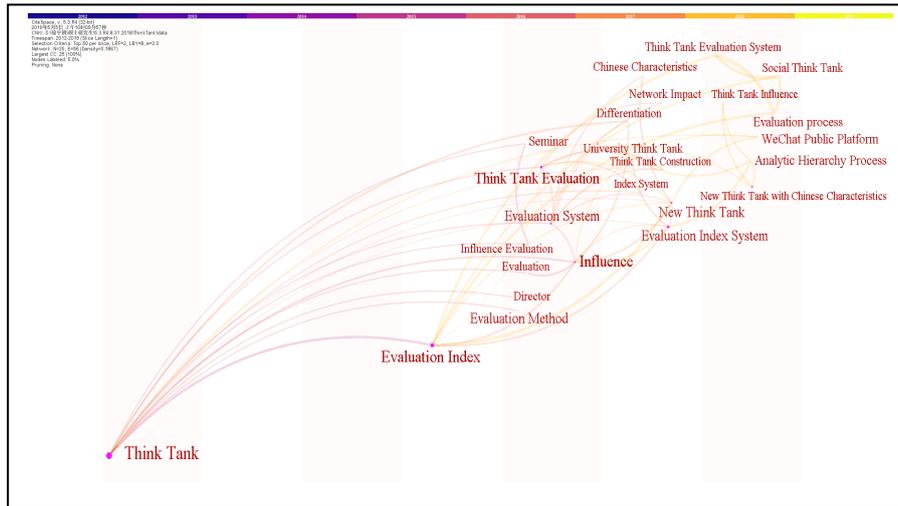


Fig. 3. A graph of the evolution of Think Tank Evaluation Research in the context of time.

IV. SUMMARY OF HOT TOPICS IN DOMESTIC THINK TANK EVALUATION RESEARCH

Based on the analysis of literature topics, high-frequency keywords and their time evolution maps, we can see that the hot topics of domestic think tank evaluation research are focusing on the evaluation index system of think tanks, which mainly includes introducing the research results of the evaluation system of think tanks at home and abroad and building a new evaluation system of think tanks.

Think tanks have sprung up in western developed countries. The systematic research on this policy group began after the 1960s, while the research on think tanks evaluation appeared later. It also originated from western developed countries. Compared with Western countries, the domestic think tank evaluation research has just started, and the research results are almost always in the past few years and the number is small. Therefore, drawing on the mature research results is the only way to realize the research and development of China's think tank evaluation. Scholars who are engaged in the evaluation of think tanks in China are also inclined to this. For example, Zhang Ning introduced and analyzed the Global Go To Think Tank Index in an all-round way from the process and method of evaluation, summarized the advantages and disadvantages of the report, and summarized the four key points of the development of Western think tanks according to the index system [4]. Zhang Shuliang and Zhang Zhiqiang classify the types of think tank evaluation into five categories according to the nature of the founder of the evaluation system and the main purpose of evaluation, and introduce the internationally famous evaluation system in detail according to the types. Finally, the development of the international think tank

evaluation system is prospected for reference by domestic research institutions and scholars [5]. Luan Ruiying and Chu Jingli evaluated four evaluation index systems of think tanks at home and abroad in the form of case analysis, summarized their respective advantages and disadvantages, analyzed the theoretical basis behind the construction of the index system, and put forward the conclusion that different evaluation index systems should be designed according to the operation characteristics of different types of think tanks [6]. Cui Yujun also introduced some typical cases of foreign think tank evaluation research in the form of case analysis. In addition, some scholars have also introduced research and understanding of evaluation indicators and mechanisms. Finally, from the aspects of innovation, quality of research results and ranking of think tanks, some pertinent suggestions are put forward for the construction of new think tanks in China [7]. Yang Yaqin and Li Ling pointed out that think tank evaluation is the baton leading the healthy development of think tank. The evaluation system of think tank can realize the long-term development of think tank organizations. At the same time, they believed that independence, transparency and scientificity are the three main problems faced by the construction of evaluation system of think tank in China. In order to solve these problems, it is more appropriate to use the "social structure" paradigm to construct a Chinese think tank influence evaluation system [8]. In general, through reference and learning, we can not only understand how to build a good evaluation system, but also take less detours in the process of independent research by summarizing the disadvantages of various evaluation systems, which is a good thing to kill two birds with one stone.

In recent years, in addition to introducing the relevant research results at home and abroad, domestic scholars began to try to build an evaluation index system of think tanks. Some people cut in from different angles, some use innovative methods, and others conduct evaluation studies based on think tank types. Undoubtedly, these attempts will contribute to the construction of China's new think tanks, and will become a treasure in the development of think tank evaluation research in China. Lu Jiangyang and Wu Xiangling put forward the list of indicators reflecting the strength of think tanks by drawing on and sorting out the available indicators in the Global Go To Think Tank Index and the Chinese Think Tanks Report. Then they screened the list of indicators by means of online questionnaire survey, and finally established the evaluation index system model of the competitiveness of think tanks [9]. Lu Hongru, Chen Ya and Liang Ying think that influence is the core element of think tank evaluation. Starting from the operation mechanism and function of think tank, they use the "structure-function" analysis paradigm in the concept of "social structure" to explore the implicit structure form in the evaluation system of think tank, and construct the evaluation system of think tank [10]. Xu Jia and Cheng Wenyuan have synthetically considered the evaluation indexes in Global Go To Think Tank Index, Chinese Think Tanks Report and Chinese Think Tanks Impact Report, and combined with Chinese characteristics, constructed the evaluation index system of National Defense Science and Technology Think Tank from four aspects of basic ability, professional characteristics, industry influence and decision-making service experience [11]. Zhu Xufeng and Han Wanqu put forward the concept and basic dimensions of think tank transparency, and constructed an evaluation index system of think tank transparency according to the basic dimensions. Finally, according to the evaluation index system, 100 domestic think tanks were evaluated for transparency [12]. Chen Jie, Gao Liang and Xu Hu believe that effectiveness is the core and key to the construction of new think tanks with Chinese characteristics. From the perspective of effectiveness, an evaluation index system for the effectiveness of new think tanks in China is constructed. In addition, they also use analytic hierarchy process to determine the weight of each index [13].

V. THE WEAK LINK OF THINK TANK EVALUATION RESEARCH

At present, China has ushered in an unprecedented period of policy opportunities in the development of think tanks. A "think tank construction fever" has been set off all over the country, and the evaluation research of domestic think tanks has sprung up like mushrooms after a spring rain. Although the policy and research boom have strongly promoted the development of think tank evaluation research in China, due to the short research time, some serious problems have gradually emerged, and they still need to be explored and innovated by domestic scholars.

A. Reliability and Validity of Think Tank Rankings

After 2015, with the rise of Chinese think tank research, think tank evaluation quickly became the focus. Among them, think tank evaluation ranking is the "focus of the focus", because nearly every think tank evaluation report will have a think tank ranking table, but is it appropriate to focus on the ranking of think tank evaluation? The answer is No.

First of all, the fundamental purpose of think tank evaluation should be to promote the better development of think tanks. A qualified evaluation report should allow the evaluated think tank to find its own shortcomings or gaps with the excellent think tanks, rather than sketching out a list of think tank rankings. To be sure, the ranking table does not play a very important role in promoting the development of think tanks, and even makes evaluation lose its original significance.

Second, there is a question of credibility in the think tank ranking itself. The reasons are mainly reflected in the following two aspects:

- The credibility of the reference materials in the evaluation ranking process needs to be evaluated.
- Most of the evaluation reports adopt qualitative evaluation method, which has obvious shortcomings, that is, influence of subjective orientation is too large. The region in which the evaluator is located, the viewpoints held, and the fields studied will have different degrees of influence on the evaluation results, which inevitably affects the accuracy of the think tank rankings. Taking the Global Go To Think Tank Index as an example. In the 2012 report, it took the Institute of World Economic and Political, a subsidiary body of the Chinese Academy of Social Sciences, to participate in the ranking together with the Chinese Academy of Sciences. Obviously, it did not understand the previous affiliation of the institution [15].

In summary, the evaluation report's enthusiasm for the think tank ranking may not be desirable, because it does not really play a role in evaluation, and even inadvertently encourages the comparison between think tanks. This research orientation of ranking for ranking is not only helpful to think tank evaluation and research itself, but also not helpful to the actual needs of the current construction of new think tank, and will even leads the construction direction of our think tank into a wrong direction.

B. Selection of Evaluation Indicators

The evaluation index is an important part of the evaluation system. When choosing the index, we should be based on the actual situation and consider the conciseness, scientificity and operability of the index. Never choose freely by feeling. However, the domestic academia did not seriously consider the above points when choosing the evaluation index. The main problems are as follows:

- Some research institutions only pay attention to the innovation of evaluation methods, but do not pay too

much attention to evaluation indicators. Evaluation indicators and evaluation methods are the core of the evaluation system. The two complement each other. If only one of them is concerned, there may be poor matching between evaluation method and evaluation index.

- There are a large number of evaluation indicators, and some indicators are difficult to understand. When the number of evaluation indicators is too large, the simplicity of the entire evaluation system will inevitably be affected. In addition, there will be cases where the indicators are repeatedly evaluated or the indicators are difficult to evaluate.
- The operability of some quantitative indicators is poor. For example, "The Number and Level of Permission for Think Tank Research Achievements" and "The Number and Level of Lectures that Think Tanks Are Invited To Give Decision Makers" in the Chinese Think Tanks Report can reflect the influence level of the evaluated think tank in the government, but because of the reasons of information transparency, it is too difficult to obtain data.
- There are too many qualitative indicators. Affected by the Global Go to Think Tank Index, the qualitative indicators are the main evaluation indicators of many think tank evaluation systems in China. The evaluation of qualitative indicators usually incorporates subjective factors of the evaluators, which inevitably affects the reliability of the evaluation results. In order to eliminate the influence of subjective factors, a large number of multi-level quantitative indicators are usually added to the evaluation system. Only by combining quantitative indicators with qualitative indicators can we make a relatively fair and objective evaluation of think tanks.

VI. CONCLUSION

By sorting out 117 relevant literatures on think tank evaluation, it is found that domestic research institutions and scholars pay more and more attention to think tank evaluation research, and the number of research results is increasing. The construction of evaluation index system and think tank ranking research has become a hot topic in think tank evaluation research. However, the selection of evaluation indicators and the reliability and validity of think tank rankings still need domestic academic circles to explore and innovate.

At present, China has come to an era in which think tanks are needed to show their talents. However, China does not have a top think tank with real world influence. The current situation of think tanks does not match the national strength and international status seriously, which undoubtedly increases the demand for think tank evaluation research. Through a variety of excellent think tank evaluation research results, we can evaluate all kinds of Chinese think tanks, so that the evaluated think tanks can find their own shortcomings or gaps with the excellent think tanks, and then

make the evaluated think tanks more competitive and influential.

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