Online Activity and Influence of University Think Tanks in China: A Baidu Search Index Analysis (Postprint)

Authors: Chen Guoying, Zhang Jie, Chen Ming

Date: 2017-11-05T00:00:00+00:00

Abstract

[Purpose/Significance] In the Internet era, university think tanks need to actively and fully leverage the advantages of network technology to promote and expand their institutional visibility and influence. The Baidu search index serves as a dimension and metric for evaluating the online attention, activity, and influence of university think tanks. [Method/Process] This paper conducts searches across four indicators for university think tanks: webpages, news, and academic content under the institutional name, and "institution + chief expert," analyzing characteristics including name, geographical distribution, host university background, and disciplinary and base background; simultaneously, the accuracy of the Baidu search index is influenced by factors such as network stability, Baidu search technology precision, and the development history and stability of university think tanks. [Results/Conclusion] University think tanks need to further strengthen their efforts in utilizing and promoting online platforms to enhance their activity and online influence; they must fully capitalize on the relative advantages of their host universities, while think tanks at local general universities need to integrate their own strengths and pursue a path of distinctive and differentiated development.

Full Text

Internet Activity and Influence of Chinese University Think Tanks: Analysis Based on Baidu Search Index

Chen Guoying[1], Zhang Jie[2], Chen Ming[1]

[1]Center for Global Think Tank Research, Zhejiang University of Technology, Hangzhou 310023
[2]School of Politics and Public Administration, Zhejiang University of Technology, Hangzhou 310023

Abstract

[**Purpose/Significance**] In the Internet era, university think tanks should actively leverage network technologies to promote and expand their institutional visibility and influence. The Baidu search index serves as a valuable dimension and metric for evaluating the online attention, activity, and influence of university think tanks.

[**Method/Process**] This paper examines four indicators: web page retrieval volume, news retrieval volume, academic retrieval volume, and "institution + chief expert" retrieval volume for university think tank names. It analyzes characteristics including institutional naming conventions, geographic distribution, host university backgrounds, and disciplinary foundations. The accuracy of the Baidu search index is affected by factors such as network stability, the precision of Baidu' s search technology, and the developmental history and stability of university think tanks.

[**Result/Conclusion**] University think tanks need to further intensify their utilization and promotion of online platforms to enhance their activity and digital influence. They should fully leverage their host universities' comparative advantages, while local ordinary universities should pursue distinctive and 错位 development paths aligned with their unique strengths.

Keywords: university think tanks; Internet activity; Baidu search index
Classification Numbers: C934; D60

University think tanks constitute an important component of China' s new type of think tank system with distinctive Chinese characteristics. Compared with party/government/military think tanks, enterprise think tanks, and social think tanks, university think tanks enjoy comparative advantages including dense talent pools, comprehensive disciplinary coverage, extensive international exchanges, and solid foundational research. They play crucial roles in promoting scientific and democratic public decision-making, advancing China' s governance system and capacity modernization, and enhancing national soft power. Unlike traditional research institutions within universities, university think tanks are dedicated to policy research and consultation, aiming to influence policy processes and public opinion. As a new type of think tank, they must step out of the academic ivory tower, engage with society, focus on public issues, strengthen policy research, speak out courageously and effectively, expand social influence, and contribute policy recommendations to shape public decision-making.

To some extent, in the Internet age, a think tank that neglects or fails to fully utilize networks cannot be considered an excellent think tank. Humanity has entered the network era, with the Internet becoming the primary platform for the public to access information. According to the 38th Statistical Report on China' s Internet Development by the China Internet Network Information Center, as of June 30, 2016, China' s internet user population reached 710 million, with a penetration rate exceeding 51.7%. Among them, mobile internet users totaled

660 million, search engine users reached 590 million (83.5% usage rate), and online news users hit 580 million (81.6% usage rate). The Internet has transformed how people obtain information, communicate, and disseminate content. Network information shapes public cognition and perceptions of the world. In this context, university think tanks must harness online platforms—including institutional websites, Weibo accounts, and WeChat official accounts—to report academic research, exchanges, and policy advisory activities, promptly release and publicize research findings, actively voice their perspectives, expand online influence, and thereby enhance overall institutional visibility and create a more favorable environment for development.

Given the Internet era' s profound and far-reaching impact on human political, economic, and social life, the network perspective represents a potentially important indicator for evaluating think tank attention, activity, and influence. This paper attempts to employ Baidu Index analysis to assess the online attention, activity, and influence of Chinese university think tanks, evaluate their digital engagement, and identify patterns and characteristics. The aim is to encourage university think tanks to strengthen their emphasis on and utilization of networks, accelerate capacity building, enhance comprehensive influence, and make positive contributions to policy research and institutional development.

1.1 Sample Selection

The official document *Opinions on Strengthening the Construction of New Type of Think Tanks with Chinese Characteristics* issued by the General Office of the CPC Central Committee and the State Council provides relatively clear criteria, including eight standards: substantive research institutions, long-term focus on decision-making consultation research areas with corresponding outputs, professional representative figures and full-time researchers, financial guarantees, academic exchange platforms and achievement transformation channels, information collection and analysis systems, governance structures, and conditions for international cooperation and exchange. As components of new-type think tanks, university think tanks should also adhere to these standards.

Therefore, it is inappropriate to simply categorize all internal university research institutions as think tanks, let alone regard entire universities as think tank institutions. Instead, selection should be based on these fundamental criteria. Not all internal university research institutions can be transformed into think tanks, and those suitable for such transformation need to accelerate their transition and strengthen think tank capacity building.

The sample selection process for this study involved two steps: First, the research scope was limited to research institutions within 985 universities, 211 universities, and the top 100 universities in the Wu Shulian ranking. The official websites of these universities were then searched for research institutions approximating think tank models. Second, based on backgrounds including Ministry of Education Key Research Bases for Humanities and Social Sciences,

key disciplines, 2011 Collaborative Innovation Centers, provincial/municipal key philosophy and social science bases, provincial/municipal key disciplines, and 2011 Collaborative Innovation Centers, and according to the aforementioned criteria for new-type think tanks, institutions engaged in pure basic research with little or no connection to policy research and consultation were eliminated. Substantive or near-substantive university research institutions with policy research and consultation functions were retained, resulting in a final list of 145 university think tank institutions for evaluation.

It should be noted that this does not imply these institutions fully meet the criteria for new-type think tanks or possess complete think tank structures; rather, they approximate think tank models.

1.2 Analysis Methods

This paper primarily employs Baidu search index to evaluate and analyze university think tank activity, which can also assess their influence from one perspective. Baidu (baidu.com) is the world' s largest Chinese search engine and China' s leading search website. According to the *2015 China Internet User Search Behavior Research Report* by the China Internet Network Information Center, as of December 2015, China' s search engine users reached 570 million, with an 82.3% usage rate. Baidu' s overall penetration rate far exceeded competitors at 93.1%, with mobile Baidu search penetration at 87.5%.

Given Baidu's large user base, market share, and high penetration rate, its search index can to some extent reflect the academic research, external exchanges, and policy advisory activity of university think tanks, as well as media and social attention, thereby measuring their influence from one dimension.

Baidu search-based data reflects "user attention" and "media attention" for different keywords over time. This paper' s Baidu search index comprises four indicators: institutional web page retrieval volume, news retrieval volume, academic retrieval volume, and "institution + chief expert" retrieval volume. Computer programming was used to automatically search according to these four keywords, with results weighted at a ratio of 2:5:2:1 to calculate a comprehensive Baidu search index for each university think tank institution. Based on this index, the top 100 university think tanks were selected for analysis and evaluation.

2 Characteristics of Highly Active University Think Tanks

Through institutional name web retrieval, news retrieval, academic retrieval, and "institution + chief expert" retrieval, combined with weighting calculations, we derived a comprehensive online activity index for university think tanks. Analysis of the top 100 active think tanks reveals patterns and characteristics in institutional naming, geographic distribution, host universities, and disciplinary backgrounds.

2.1 Institutional Naming Characteristics

Historically, university think tanks have either evolved from existing faculties, departments, or institutes (e.g., Tsinghua University Institute for Contemporary China Studies), integrated from related institutions (e.g., Peking University National School of Development), or been newly established in recent years (e.g., Huazhong University of Science and Technology National Governance Institute).

In terms of naming conventions, institutions with "Center" as their suffix account for the largest share at 46, followed by 43 with "Institute" as their suffix, 10 with "Research Institute," and 1 with "Think Tank." The combined share of "Center" and "Institute" names reaches 89%, and these named entities demonstrate higher online activity than those named "Research Institute" [Figure 1: see original paper].

University names typically follow the pattern of "X University" or "X College," with many colleges having upgraded to university status. In the Chinese context, whether an institution is named a "college" or "university" generally reflects its comprehensive strength. While we cannot evaluate think tank activity solely by institutional names, many university think tank names do reflect their scale and administrative status within their host universities, particularly those designated as "Institutes." It can be roughly stated that university think tanks named "Center" or "Institute" possess certain scale and research achievements, with historical accumulation in faculty and research foundations. By contrast, think tanks named "Research Institute" show lower online activity and relatively smaller scale. Wuhan University Institute of International Law is an exception, though its Baidu search index remains relatively low compared to its status as a first-batch national high-end think tank.

2.2 Geographic Distribution of Highly Active Think Tanks

Spatially, the top 100 active university think tanks cover 23 provincial-level administrative regions, primarily concentrated in Beijing, Shanghai, and Hubei, forming the first tier. Specifically, Beijing has 24, Shanghai 14, and Hubei 14 think tanks among the top 100. Other institutions are geographically dispersed across various provinces and municipalities: Zhejiang (6), Shaanxi (5), Guangdong (5), Jiangsu (4), Sichuan (4), Tianjin (4), Yunnan (3), Gansu (2), Jilin (2), Shandong (2), Chongqing (2), Anhui (1), Fujian (1), Guangxi (1), Hainan (1), Henan (1), Heilongjiang (1), Hunan (1), Jiangxi (1), and Shanxi (1), as detailed in Figure 2 [Figure 2: see original paper].

From an eastern/western regional perspective, among the top 100 active think tanks, eastern regions account for 61%, central regions slightly outpace western regions at 22% and 17% respectively. Moreover, think tanks in eastern regions show significantly higher activity scores than those in western regions, as shown in Table 1 and Table 7 .

The geographic distribution of highly active university think tanks partially

aligns with China' s university distribution. For instance, Beijing hosts China' s largest number of undergraduate institutions, particularly 985 and 211 universities; correspondingly, it leads in highly active think tanks with 24 institutions (24% share), exceeding its proportion of high-level universities. Shanghai follows with 14 institutions, while Hubei performs notably, tying with Shanghai. However, Jiangsu' s number of highly active think tanks does not fully correspond to its quantity of high-level universities.

Regionally, aside from Beijing's concentration of high-level universities due to its status as the political capital, China' s eastern coastal economically developed regions host numerous high-level universities and consequently attract highly active think tanks. Provinces with abundant higher education resources and numerous high-level universities tend to have more highly active think tanks, reflecting that university strength and influence partially determine think tank attention, activity, and influence—though not perfectly. Local regions need to leverage their high-level universities'comparative advantages to strengthen think tank construction.

2.3 Host University Background Analysis

Among the top 100 think tanks, 985 and 211 universities dominate absolutely. Ninety-five percent of these think tanks belong to 211 or 985 universities—specifically, 95 institutions are affiliated with 211 universities, and 64 with 985 universities. These think tanks feature relatively high research standards, influential experts and scholars, strong research capabilities, and early engagement in think tank research and operations. Their active participation in academic research and exchanges, policy consultation, and relatively large influence translates into higher online attention and activity.

Only five think tanks among the top 100 are affiliated with universities that are neither 985 nor 211 institutions: Heilongjiang University Russian Research Institute, Zhejiang Normal University Africa Research Institute, Zhejiang University of Technology China Small and Medium Enterprises Research Institute, Henan University Central Plains Development Research Institute, and Shanxi University Management and Decision Research Institute. The inclusion of these non-985/non-211 university research institutions, besides their strong capabilities comparable to some 211 universities, stems importantly from their distinctive research and regional comparative advantages, such as Heilongjiang University Russian Research Institute, Zhejiang Normal University Africa Research Institute, and Zhejiang University of Technology China Small and Medium Enterprises Research Institute.

2.4 Disciplinary Background Analysis

Many university think tanks have evolved from or are based on Ministry of Education Key Research Bases for Humanities and Social Sciences, provincial/municipal key philosophy and social science research bases, Ministry of

Education or provincial/municipal 2011 Collaborative Innovation Centers, or key disciplines. They possess deep historical development, with long-term accumulation in basic and theoretical research. Analysis reveals that among the top 100 active think tanks, 27 have Ministry of Education Key Research Base backgrounds, 16 have Ministry of Education key discipline support (with 9 simultaneously being Key Research Bases), 1 has a Ministry of Education 2011 Collaborative Innovation Center background, 18 have provincial/municipal philosophy and social science key base support, 5 have been selected as first-batch national high-end think tanks, and Shanghai has 2 institutions selected among its first batch of 18 university think tanks. These data partially demonstrate that, compared with party/government/military, enterprise, and social think tanks, university think tanks excel through comprehensive disciplines and solid basic research. Think tank construction and development must fully leverage these advantages in basic and theoretical research while accelerating research 成果转化.

Notably, by 2010, the Ministry of Education had approved over 150 Key Research Bases for Humanities and Social Sciences, and by 2007, had designated more than 200 key humanities and social science disciplines. However, only 27 and 16 of the highly active think tanks have these backgrounds respectively, again illustrating that think tanks are not equivalent to humanities and social science key research bases or key disciplines. During university think tank construction, not all Ministry of Education and provincial/municipal key humanities and social science bases should transform into think tank institutions.

2.5 Comprehensive Ranking Analysis of University Think Tank Internet Activity

Based on Baidu searches, Chinese university think tank rankings according to web page retrieval index, news retrieval, academic retrieval, and "institution + expert" retrieval indices are as follows:

In web page retrieval, the Institute of WTO Studies at the University of International Business and Economics ranks first with 6,850,000 retrieved pages. The mean retrieval volume for the top ten think tanks is 4,552,910 pages, with three institutions exceeding this average: the Institute of WTO Studies at the University of International Business and Economics, Tsinghua University Center for China in the World Economy, and Peking University National School of Development. Among the top ten, Tsinghua University has two think tanks, while Peking University, Ocean University of China, Huazhong University of Science and Technology, Zhejiang University, Fudan University, Nanchang University, and Nanjing University of Aeronautics and Astronautics each have one .

In news retrieval, Zhejiang University China Academy for Rural Development ranks first. Among the top ten, two focus on "three rural issues" (the other being China Agricultural University Rural Issues Research Institute), while others address public welfare, income distribution, finance, national development

strategy, public management, economic reform, and international relations—reflecting hot topics in news attention .

In academic retrieval, the Institute of WTO Studies at the University of International Business and Economics again ranks first. Among the top ten, six focus on economic research, including the Institute of WTO Studies at the University of International Business and Economics, Northwest University China Western Economic Development Research Center, Jilin University China State-owned Economy Research Center, Zhejiang University Innovation Management and Sustainable Competitiveness Research Center, Anhui University Economic Law Research Center, and Zhejiang University Regional Economic Opening and Development Research Center, indicating that economics remains a hot research field in universities .

In "institution + chief expert" retrieval, Fudan University China Center for Economic Studies ranks first. Tsinghua University has three institutions, Peking University has two, and Renmin University of China, Shanghai Jiao Tong University, Tianjin University, and Zhejiang University each have one among the top ten. This suggests that the university factor most significantly influences "university + expert" page volume, with institutional academic level, ranking, and expert visibility substantially affecting retrieval volumes .

Among the top 30 think tanks in comprehensive internet activity, all are from 985 or 211 universities, with 985 universities accounting for 22 institutions. Peking University has three think tanks, Tsinghua University five, Renmin University of China three, Fudan University four, and Zhejiang University and Huazhong University of Science and Technology each have two among the top 30. Peking University National School of Development ranks first, followed by Tsinghua University Center for China in the World Economy, and Peking University Institute of Political Development and Governance ranks third .

The rankings across these indicators reveal that highly active Chinese university think tanks are closely related to their host universities' comprehensive strength and research fields. Except for Heilongjiang University Russian Research Institute in academic retrieval, all top ten think tanks across individual and composite indicators are affiliated with 985 or 211 key universities, with 985 universities being more predominant. For instance, among the top ten in comprehensive activity, 985 universities occupy seven positions, and all top ten in news retrieval and "institution + chief expert" retrieval are based at 985 universities. In terms of research fields, top-ranked think tanks across indicators primarily focus on hot issues and major strategic concerns in national economic and social development.

3 Limitations and Reflections

Using Baidu search index to evaluate university think tank online activity has limitations in accuracy and precision, arising from inherent constraints of networks and search technology, partial origins in think tank development history

and changes, and biases caused by different naming conventions for think tank activities.

3.1 Research Limitations

First, the sample selection method may exclude some highly active university think tanks. This study primarily limited its scope to research institutions within 985 universities, 211 universities, and the Wu Shulian top 100 universities, then filtered them based on disciplinary, base, and collaborative innovation center backgrounds. Additionally, to prevent excessive representation from single universities, each institution was limited to no more than six candidate think tanks. This may have excluded some highly active university think tanks, affecting conclusion accuracy.

Second, network stability and search technology limitations reduce retrieval precision. Using different Internet access systems yields varying retrieval indices for the same institution, partly due to maintenance or disconnection of some think tank websites and other unknown technical reasons. Additionally, Baidu search precision is insufficient when inputting certain keywords, with some retrieved information not being completely accurate. Since retrieval volumes for university think tanks are calculated in tens of thousands of pages, manual verification is impractical and technical verification has limitations.

Third, information changes in university think tanks affect data quality. Different think tanks have different development histories, and specific institutional names, website domains, chief experts, and even host university names may change. However, this study' s Baidu search index did not account for such changes, using only current information at the time of retrieval.

Fourth, the study did not consider institutional history duration. Different university think tanks were established at different times, and Baidu search results represent cumulative volumes without temporal distinction. For example, Think Tank A established for two years with an index of 100 may have higher activity intensity than Think Tank B established for ten years with an index of 120, but current retrieval technology cannot distinguish time periods and only calculates cumulative totals, potentially leading to biased conclusions.

Fifth, naming conventions for think tank academic activities create precision biases. Many think tanks and their experts participate in various academic research, exchanges, policy consultation, and media interviews, possibly holding multiple positions or, due to information sensitivity and confidentiality requirements, not using their host university or think tank names. Such activities naturally cannot be reflected in network searches.

3.2 Reflections

University think tank construction and development must fully utilize their host universities' resource advantages. As internal university research institu-

tions engaged in policy research and consultation, university think tanks rely fundamentally on their host institutions. Among the top 100 in online activity, non-211 universities account for only five institutions. Except for Heilongjiang University Russian Research Institute ranking in the top ten for academic retrieval, all other top ten rankings and top 30 composite rankings are dominated by 985 or 211 key universities. This demonstrates that host university comprehensive strength is the primary factor influencing think tank online activity. University think tank construction must fully leverage host university superior resources to accelerate think tank development.

University think tanks need to capitalize on basic research advantages while accelerating transformation toward applied and policy research. A major comparative advantage of university think tanks over party/government/military, enterprise, and social think tanks lies in their comprehensive disciplines and solid basic research. Among the top 100 in online activity, 27 have Ministry of Education Key Humanities and Social Science Base backgrounds, 16 have Ministry of Education key discipline backgrounds, and 18 have provincial/municipal philosophy and social science base backgrounds. This shows that basic research forms the foundation of university think tank research. University think tanks should leverage disciplinary and other advantageous resources to accelerate theoretical research 成果转化, with qualified disciplines and base-affiliated research institutions accelerating their transformation into think tanks.

Local ordinary universities need to excavate resources and pursue distinctive and 错位 development paths. The rankings reveal that think tanks in Beijing, Shanghai, and provincial capitals hold overwhelming advantages, with 985 or 211 universities dominating absolutely. However, local ordinary university think tanks are not without opportunities. By excavating their unique advantages and pursuing distinctive and 错位 development, they can secure positions in the competitive think tank landscape. Heilongjiang University Russian Research Institute achieves high activity through geographically proximate Russian studies; Zhejiang Normal University Africa Research Institute gained first-mover advantage by proactively studying Africa before it gained national attention, despite being a local ordinary university located in Jinhua rather than the provincial capital Hangzhou. Similarly, Henan University Central Plains Development Research Institute, though neither a key university nor located in the provincial capital Zhengzhou, entered the top 100 by focusing on Central Plains studies; Zhejiang University of Technology Small and Medium Enterprises Research Institute leveraged Zhejiang' s developed private economy and SME sector to rank among the top 100.

In the network era, the Internet serves as a crucial platform and window for university think tanks to showcase and promote themselves. Currently, only some Chinese university think tank websites are readable. Many lack dedicated websites, or have content-poor, infrequently updated, non-readable sites, let alone network influence. Therefore, university think tanks must proactively utilize networks, establish and improve dedicated institutional websites with

rich, regularly updated content, and effectively operate new media tools such as WeChat official accounts and Weibo. They should leverage network technological advantages to strengthen institutional promotion, increase research output dissemination, enhance interaction with the public and media, and expand online influence. Additionally, university think tanks must actively step out of the ivory tower, with think tank experts taking the forefront to participate in social services, policy research, and policy consultation. By organizing academic conferences, high-level forums, and releasing research findings and policy reports, they should actively voice opinions on major issues through media channels, attract media and social attention, increase online and social visibility, and fulfill roles in public opinion guidance and public diplomacy.

Finally, it should be noted that Baidu search index represents only one dimension of university think tank online activity (which also includes website links, visit clicks and downloads, and mobile platform attention on Weibo and WeChat), while online activity itself constitutes only one aspect of overall university think tank activity (which additionally includes print media activity, academic activity, and policy consultation activity).

References

[1] Research Group of the Center for Global Think Tank Research, Zhejiang University of Technology. Evaluation Research on Internet Activity of University Think Tanks in Zhejiang Province[J]. *Journal of Zhejiang University of Technology (Social Science Edition)*, 2006(2): 121-127.

[2] China Internet Network Information Center. The 38th Statistical Report on China's Internet Development[R]. http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/201608/t20160803_5439

[3] Yu Qingjin, Zhang Bing. Investor Limited Attention and Stock Returns—An Empirical Study Using Baidu Index as Attention Measure[J]. *Journal of Financial Research*, 2012(8): 152-165.

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