

RESEARCH ARTICLE

Research on evaluation of network discourse power: Taking the Twitter accounts of Chinese diplomats as an example

Rongying Zhao^{ab}, Xiaoyu Wang^{ab*}, Ruru Chang^{ab}, Tianyang Zhang^{ab}

a. Research Center for Chinese Science Evaluation, Wuhan University, Wuhan, China

b. School of Information Management, Wuhan University, Wuhan, China

ABSTRACT

[Purpose/Significance] Changes in network technology and the network environment have caused profound changes in the publication, dissemination, and influence of network discourses. The main body of a network discourse demonstrates the characteristics of civilians, which can impact the discourse power status of national discourse institutions. Research on the evaluation of network discourse power is conducive to clarifying the determinants of network discourse power and of considerable importance to the enhancement of the network discourse power of national public opinion institutions and improvement of the network environment. [Method/Process] First, this study explores the connotation of network discourse power and analyzes its generation process. Second, this study establishes a network discourse power evaluation indicator system and evaluation model based on information metrology and evaluation theory. Finally, this study conducts empirical research using the Twitter accounts of Chinese diplomats as the research object. [Result/Conclusion] Results show that the evaluation of network discourse power is a comprehensive evaluation of the network leading power, network communication power, and network influence of the main body of a network discourse. Moreover, the findings reveal that Chinese diplomats have a certain amount of network discourse power in society and demonstrate a trend of continuous improvement.

KEYWORDS

Network discourse power; Discourse power evaluation; Network leading power; Network communication power; Network influence

1 Introduction

Since China gained access to the Internet in 1994, Chinese Internet business developed rapidly, especially after the rise of mobile Internet in 2009, and the number of netizens grew quickly. According to the "49th Statistical Report on the Development of China's Internet" (2021), as of December 2021, the number of Chinese netizens reached 1.032 billion, and the Internet penetration rate reached 73.0%. The development of the Internet profoundly affect-

* Corresponding Author: w1942679056@163.com

ed all aspects of social life, especially information transmission and communication. The development of Weibo, Zhihu, WeChat, Tiktok, and other online platforms provided netizens with convenient and rich online voice channels and accelerated and broadened the transmission of words. In addition, the development of the Internet provided people with a convenient tool for transmitting and obtaining information. However, the discourse of authoritative organizations can be easily buried among the complex discourses on the Internet, thereby weakening their power of discourse. According to Chinese state leader Jinping Xi, "We should take online public opinion work as the top priority of propaganda and ideological work, and grasp the initiative in this public opinion battlefield as soon as possible" (Xu, 2021). Jinping Xi's instructions pointed to the direction of online public opinion work, emphasizing the importance of official institutions to have power to discourse on the Internet. However, how to enhance the voice of official institutions in communication and influence is an urgent problem that must be solved. Strengthening research on the evaluation of network discourse power is conducive to clarifying the main factors affecting current network discourse power and can provide relevant institutions and individuals with directions and methods for improving their online discourse power, which is of considerable importance to the enhancement of the country's international discourse power and improvement of the online public opinion environment.

After reviewing the relevant literature, this study identifies various types of research on network discourse power but observes that studies on the evaluation of network discourse power are few. Most of the studies on network discourse power start from the perspective of law, ideology, and politics. Research on law mainly discussed the normative issue of network discourse power, and research on ideology and politics mainly defined the connotation of the right to discourse on the Internet and explored how to rely on a network platform to exert practical influence on ideological and political education activities. Some scholars examined network discourse power at the conceptual level and international influence level. For example, Xu (2007) defined network discourse power as the power to speak in real life, which takes the network as its platform. Shi (2011) interpreted network discourse power from the two aspects of media functions and symbols and believed that network discourse power is, first and foremost, media function power. People communicate with the outside world through networks. At the same time, network discourse power is symbolic and constructs reality by acting on human cognition. Zhang (2018) asserted that in the current international situation, the establishment of China's mainstream ideological network discourse power must deal with new problems. Li (2010) argued that competition in international communities is a competition of not only comprehensive national strength but also political concepts. The author posited that Western countries achieved international discourse hegemony by preempting the advantage of occupying discourse positions. Therefore, in the competition for international status, examining discourse power comprehensively is necessary.

From the above literature survey, this study shows that many general discussions on the concept, connotation, and jurisprudence of network discourse power exist, but in-depth research on the evaluation indicators and evaluation theories of network discourse power is relatively scarce. However, research in this area is of considerable importance to the governance of the network environment and the promotion of the network discourse power of national institutions. Therefore, this study combines informatics and evaluation theory to discuss the connotation and generation mechanism of online discourse power, builds an online discourse power evaluation model, and conducts empirical research to provide a reference for research on online discourse power evaluation.

2 Definitions

2.1 Discourse power

Research on discourse power witnessed the evolution of "discourse" from "discourse power" to "media discourse power" and to "national soft power." The study of "discourse" begins with the study of speech. Saussure believed that the process of "speech" contains the two connotations of "language" and "speech." Specifically, the connotation of "speech" focuses on expressing the personal voice, individual behaviors, and speech content. This connotation exists in group communication scenarios, as they are based on the discourse system built by the group and can reveal the meaning of "power." The study of "power discourse" was pioneered by French scholar Michel Foucault, who integrated the concept of power into discourse theory in the 1970s in his article "Discourse and Order." Foucault believed that power discourse is a tool and right given by the subject of discourse activities to serve the struggle of the activities (Shi & Wang, 1999). Walter Lippmann's "mimicry environment" was the first to involve "media discourse power." On this basis, American communication scientists M. E. McCombs and D. L. Shaw examined the effect and influence of mass communication (Yuan, 2013). Meanwhile, Roland Barthes, Pierre Bourdieu, and Jurgen Habermas focused on news and media criticisms and investigated the relationship between media discourse and power. Italian scholar Antony Gramsci was the first to discuss discourse power from the perspective of national soft power and proposed the theory of "cultural hegemony," arguing that "cultural hegemony" is the process through which the head of state promotes mainstream values to the public. In other words, in addition to the social system and law, culture and morality imply the existence of a national governance system and norms (Sun, 2002). Foucault made significant contributions to theory of discourse power, and this study is based on Foucault's discourse theory.

Foucault's understanding of power has four perspectives: (1) Foucault believed that power is a type of relationship. However, this belief differed from Marxist and legalist views that power corrupts. Influenced by structuralists, Foucault paid considerable attention to the investigation of the structure and relationship of objects/concepts. (2) Foucault asserted that power is a net through which individuals pass, and individuals are the subjects and users of power. (3) Foucault argued that power is not dependent on who is in charge, because everyone is a point in the network of power. (4) Finally, Foucault believed that power is decentralized (Tao, 2011).

Combining research on "discourse" and "power," this study defines discourse power as the right to have an opportunity to speak to express thoughts and engage in verbal communication. From the perspective of political rights, discourse power is the basic right of every citizen and part of the right of expression. From the perspective of society, the power of discourse is the right of an individual to express his/her views in a certain way and spread them in society to attract social attention, which may have certain social repercussions. Discourse power can be classified according to different classification standards. For example, from the perspective of subject classification, discourse power can be divided into individual discourse power, national discourse power, and so on; from the perspective of social activities, discourse power can be divided into political discourse power, economic discourse power, cultural discourse power, and so on; and from the perspective of use, discourse power can be classified into civil discourse power and government discourse power (Shen, 2014; Zhang et al., 2021). With the development of network platforms, the discourse power of networks has

become a growing concern and evolved rapidly.

2.2 Network discourse power

From a technical point of view, the Internet is a network system of computers and communication tools that can enable users to mutually access, share, publish, and browse information under certain rules and protocols (Wang, 2007). At the application level, the Internet is essentially different from previous "networks" such as "power grids" and "legal networks". On the Internet, the "net" is connected to terminal devices such as computers and mobile phones, and through terminal devices, users can establish "connection" relations in different places and engage in information communication and issue instruction (Zhang & Li, 2017). From the perspective of culture, cultural exchange is a process of mutual exclusion and absorption. The Internet intensifies cultural integration, facilitates cross-regional communication, and promotes frequent and in-depth cultural exchanges among countries. The role that the Internet plays enables it to penetrate every aspect of social life. Clothing, food, housing, transportation, learning, and other aspects of life have changed because of the Internet; thus, it is believed that the Internet is reshaping the world.

Network discourse power is the dominant network leading power, network communication power, and network influence of corresponding network discourse subjects within a certain space and time range. Network discourse power is a new form of discourse power that evolved in the context of the network era. As part of discourse power, network discourse power has more display forms than discourse power. In the current Web 3.0 era, various types of media are integrated comprehensively, and "discourse" is expressed through not only words and sounds but also pictures, videos, and other rich media forms. Moreover, in the 5G era, all forms of discourse can be instantly transmitted to all parts of the world. The transmission of discourse hardly needs to consider the transmission time of information, which can substantially increase the transmission speed and frequency of a discourse and make it easy for a discourse with considerable influence to be disseminated widely. From the perspective of communication, compared with traditional discourse, network discourse no longer relies on physical communication media, such as paper and CDs, and is characterized by dematerialization, rich forms, and wide influence (Cui, 2015). From the perspective of individuals, network discourse subjects can make their voice heard after creating an account on a network platform. Compared with other discourse subjects, network discourse subjects are more civilian. The development of the Internet provided people with an opportunity to make their voice heard on public platforms, such as traditional media, thereby improving the public's discourse power.

3 Generation mechanism of network discourse power and evaluation model construction

3.1 Generation mechanism of network discourse power

Network discourse power is not merely demonstrated online nor generated for self-identification or self-promotion but derives from the process of online discourse, from generation to transmission. From the perspective of the transmission process of online discourse, network discourse power is generated by the joint action of comprehensive factors, including the online platform operation, network discourse receivers, and secondary network discourse disseminators, and the network effect is generated after one or multiple transmissions. Overall, individuals, media, and platforms receiving network discourse in the process of communi-

cation can create a communication environment to generate new network discourse. Online discourse can be published and explored by network discourse subjects, which is the output of and regarded as the expression of network discourse. Network discourse is spread on the platform, can be seen by numerous visitors owing to the advantages of the platform, and can be disseminated to others twice or repeatedly. When a network discourse is explored and disseminated and exerts a certain influence on the information receivers, public opinion, and network discourse subjects, network effects will be generated, such as influence on the thoughts or behaviors of the information receivers and emergence of social concern or discussions.

The generation process diagram of network discourse power is drawn (Figure 1) based on the above research and analysis. This study holds that network discourse power is generated by network discourse subjects publishing network discourses, which are verified and promoted to network discourse receivers by online platforms. Online discourse receivers engage in communication or secondary or multiple communication behaviors or draw social attention and ultimately exert an impact on the network discourse recipients, spreaders, and subjects. First, the network discourse published by network discourse subjects, such as the online platform accounts or websites of institutions and individuals, on an online platform can attract a certain amount of attention and express conviction, which is the embodiment of the subjects' leading power. Second, after an online discourse subject publishes an online discourse, it is reviewed by the network platform and recommended to the network platform users, or network discourse receivers, according to certain rules. If the network discourse receivers engage in transmission behaviors, such as forwarding or sharing the network discourse, then the network discourse will continuously be recommended to other network discourse recipients and induce new transmission behaviors, thereby facilitating secondary or multiple transmissions. In the process of network discourse communication, the communication effect is reflected by network communication power. Third, when a network discourse is disseminated and explored by a certain number of network discourse receivers, they can comment and express their thoughts on the network discourse, which will lead to social discussions and public opinions within a certain range, thereby generating network effects. The network effects will affect the network information receivers and network discourse subjects, which is the embodiment of network influence.

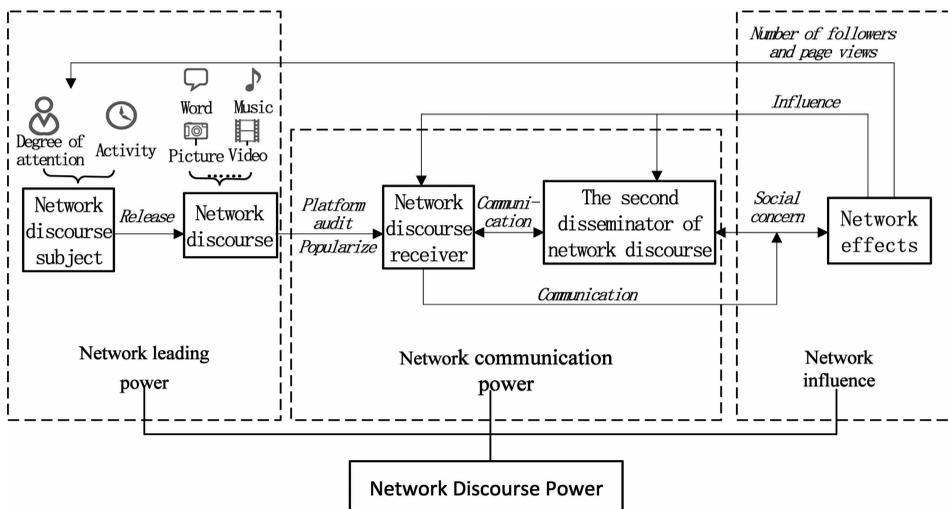


Figure 1 Generation process of network discourse power

3.2 Network discourse power evaluation indicator system

According to the characteristics of the network discourse power generation process, including network leadership, network communication, and network influence, this study reviews the literature-related research and defines three first-level indicators of network discourse power evaluation, namely, network leading power, network communication power, and network influence.

(1) Network leading power

The network leading power indicator mainly evaluates the strength and network appeal of a network discourse subject's account from the time of its establishment. Although online platforms are virtual spaces, each network discourse subject needs to authenticate his/her account, create an account name, set the profile picture, and so on to obtain the right to publish network discourses on the online platform. After an online discourse subject publishes a network discourse on his/her online account, the network platform directly pushes the information to the account followers, or fans. This process is the first round of the network discourse transmission. Therefore, the network discourse subject's number of fans will directly affect the dissemination effect of the published discourse, and the strength of his/her account is closely related to his/her number of fans.

In online platforms, following an account and becoming a fan signify recognition of, trust in, and fondness for the discourse subject. Therefore, the number of fans of an online account is also a reflection of the appeal of the discourse subject. Individuals follow certain network discourse subjects, because they trust the account information of the network discourse subjects, that is, their identity, account information authenticity, and other content, and are interested in and willing to continue disseminating the network discourse information published by the account. Therefore, network discourse subjects' account information authenticity, published online discourses, and other information are among the evaluation indicators of network discourse subjects' leading power. In terms of account information authenticity, the more comprehensive the network information authentication, the higher the reliability. Moreover, the more the published network discourses and the more active the account, the more likely the account will be viewed and followed. Leading fans exist among followers, so information on an account has a high probability of being spread twice or repeatedly. Therefore, this study identifies three secondary indicators for network leading power evaluation, that is, account integrity, account credibility, and account attention.

(2) Network communication power

The network communication power indicator is used to evaluate the communication effect of a network discourse after its publication. The communication effect of a certain network discourse is affected by multiple factors, such as publication time, content attractiveness, and the network environment. Therefore, the evaluation of network communication power must comprehensively assess the communication effect of multiple network discourses within a certain period. Existing studies showed that the activity of an online account and specific content of network discourses have a positive impact on the communication effect of the discourses published by the online account, that is, the higher the publication frequency and interaction frequency of account discourses and the richer the form and content of the discourse, the better the communication effect. Users of other online platforms forward the information published by network discourse subjects because it resonates with the content of online discourses or intend to spread and comment on it, which will expose the fans of the

former to the network discourse. Forwarding behavior will also increase the network popularity of the network discourse to obtain an opportunity to be pushed to the browsing page of non-fans by the platform, thereby inducing increased communication. Therefore, the number of forwarded network discourse is the most direct response to its network communication effect. Therefore, this study identifies three secondary indicators for the evaluation of diplomatic staff's network communication ability: account activity, content brilliance, and content communication.

(3) Network influence

Network influence refers to the evaluation of the network discussion effect caused by the network discourse and influence on the leading power of the network discourse subject after he/she publishes a network discourse. Owing to the timeliness of communication and discussions and users' freedom of speech on network discourse platforms, a network discourse will likely generate heated online discussions after its publication. Such network discourse discussions will facilitate network users' personal judgment on the network discourse subject, thereby influencing them to follow or ignore the subject's account (Zhao & Wei, 2017). At the same time, if the network discourse discussion is popular, it may trigger a large-scale social discussion and influence the emergence of social public opinion and official policies, which are also the embodiment of network influence on the network discourse subject. Therefore, the evaluation of network influence must be conducted from three aspects: the degree of discussion on a network discourse, influence on the main account of the network discourse subject, and the influence of network public opinion. Thus, this study identifies three secondary indicators, namely, user recognition, topic discussion, and account promotion.

Based on existing studies and research, this study establishes an indicator system for network discourse power evaluation, as shown in Table 1, on the basis of ensuring the systematic, hierarchical, and scientific principles of the indicator design.

Table 1 Evaluation indicator system for network discourse power

First-level indicator	Second-level indicator	Third-level indicator	Indicator attributes
1 2 3 4 5 6 7 8 Network leading power	Account integrity	Account name	Qualitative indicator
		Recognizable avatar	Qualitative indicator
		Account introduction	Qualitative indicator
	Account credibility	Official certification	Qualitative indicator
		Platform link	Qualitative indicator
		Establishment time	Quantitative indicator
	Account attention	Number of fans	Quantitative indicator
		Number of influential fans	Quantitative indicator
9 10 11 12 13 14 15 16 Network communication power	Account activity	Publication frequency	Quantitative indicator
		Rate of interaction with fans	Quantitative indicator
		Rate of account likes	Quantitative indicator
	Content brilliance	Content originality rate	Quantitative indicator
		Picture usage rate	Quantitative indicator
		Video usage rate	Quantitative indicator
	Content communication	Average number of reposts	Quantitative indicator
		Highest number of reposts	Quantitative indicator

	First-level indicator	Second-level indicator	Third-level indicator	Indicator attributes
17	Network influence	User recognition	Average number of likes	Quantitative indicator
18			Highest number of likes	Quantitative indicator
19		Topic discussion	Average number of comments	Quantitative indicator
20			Highest number of comments	Quantitative indicator
21			Network discussion degree	Quantitative indicator
22		Account promotion	Number of new fans	Quantitative indicator
23			Number of new views	Quantitative indicator

3.3 Network discourse power evaluation model

As qualitative and quantitative indicators are included in the evaluation indicator system for diplomats' network discourse power, this study adopts the analytic hierarchy process (AHP) and expert investigation method to determine the weight of the evaluation indicators after careful consideration. To facilitate the examination and avoid deviating from the manual calculation operation, this study uses the AHP software Yaahp to calculate the indicator weights and check the consistency. After the calculation, the weights of the network discourse power evaluation indices are obtained, and the network discourse power evaluation model is constructed, as shown in Figure 2.

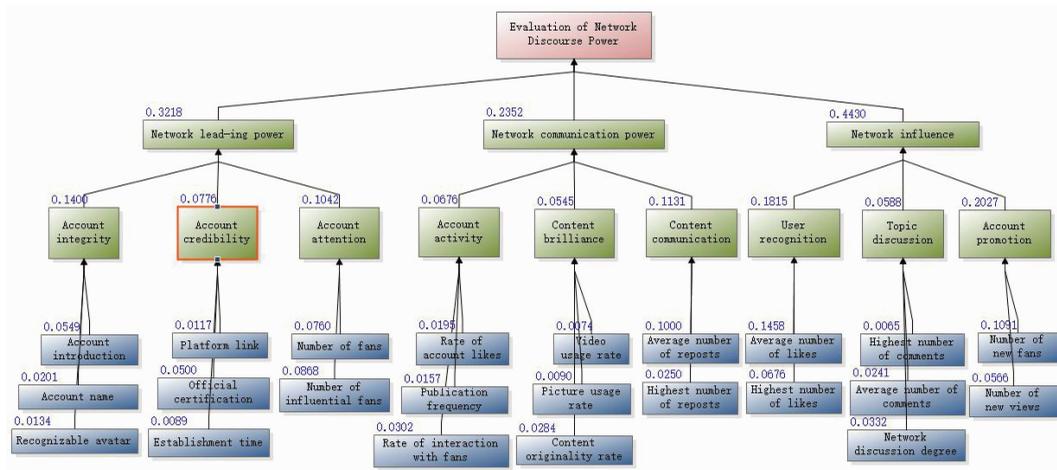


Figure 2 Evaluation model of network discourse power

4 Empirical analysis

4.1 Selection of evaluation object

Currently, the most popular and widely used network platforms in the world are Twitter and Facebook. Although both platforms are popular, certain differences exist between them. Information publication and communication on Facebook are dependent on social relations and social networks in reality, whereas Twitter is a tool for information dissemination. On Facebook, users share information with social relations, whereas on Twitter, social relations are used to disseminate information. Therefore, Twitter is more suitable than Facebook for the evaluation and examination of the network discourse power of diplomats.

With the continuous development of new media and rise of online public diplomacy, Chinese foreign ministry spokesmen and ambassadors have also registered Twitter accounts to release information and present China's image to the world. In this study, the Twitter accounts of Chinese diplomats are selected as the empirical object for the network discourse power evaluation, the discourse power of the Chinese diplomats in Twitter diplomacy is evaluated, and the influencing factors of network discourse power are analyzed.

After careful consideration of their account activity, account attraction, and other information, 30 Twitter accounts are selected as the empirical research object for evaluation, as shown in Table 2.

Table 2 Subjects of empirical research on Twitter accounts of Chinese diplomats

Account name	Number of followers	Number of accounts following	Number of tweets	Official media label	Platform link
zlj517	1,258,159	173,326	68,800	Yes	Yes
SpokespersonCHN	1,191,488	186	6,104	Yes	No
zhang_heqing	161,232	21,313	162,900	Yes	Yes
AmbQinGan	117,794	16	392	Yes	No
China_Amb_India	92,014	320	8,622	Yes	Yes
WanmingYang	91,442	112	2,807	Yes	No
AmbChenWeiqing	78,063	92	2,177	No	No
China2ASEAN	68,774	421	5,865	Yes	Yes
PRCAmbNepal	64,690	47	332	No	Yes
AmbNong	52,778	27	385	No	Yes
li_xiaosi	41,790	2,220	5,978	No	Yes
xuejianosaka	30,505	1,399	23,500	No	No
MahuiChina	26,106	1,890	13,000	Yes	Yes
ChinaEmbKabul	23,128	204	1,853	No	Yes
AmbChangHua	22,550	169	5,425	No	No
ZhaLiyu	20,450	1,933	28,800	No	No
WuPeng_MFACHina	19,624	341	1,891	No	Yes
EmbZhangRun	18,754	460	5,147	No	Yes
weiasecas	18,076	474	21,600	No	No
China_Amb_Mdv	17,858	481	3,869	No	No
oujianhong	15,198	328	2,482	No	No
Ydunhai	14,949	52	1,904	No	No
Amb_Yiming	14,917	136	554	No	Yes
China_Amb_Zim	14,882	165	1,440	No	Yes
ChinaAmbSA	14,240	435	3,387	No	Yes
AmbLiaoLiqiang	13,324	122	14,600	No	Yes
ChinainLebanon	12,619	928	1,504	No	Yes
Amb_ZhuJing	12,535	362	2,157	No	No
AmbChenBo	11,649	62	1,654	No	Yes
Amb_ChenXu	11,155	70	219	No	No

4.2 Data collection and processing

The empirical research is conducted by collecting data from February 1 to February 28, 2022. In the evaluation indicator system for network discourse power, the "account promotion degree" indicator compares and calculates the increase and decrease in the number of account page views and fans, so the data from January 1 to January 31, 2022, are selected as the comparison data.

In this study, Octoparse is used as the data collection tool, and a total of 31,960 Twitter accounts of 30 diplomatic staff are retrieved. After the removal of repeated data, null values, and so on, 15,469 valid accounts are retained. The data attributes include the user name, user ID, tweet content, tweet publication time, number of retweets, number of likes, number of replies, number of pictures and videos, and so on. Through analysis and processing, the crawled data are transformed into the corresponding data of the network discourse power evaluation indices, and the subjective indices are scored according to a scoring standard to determine the score of the indicator data of each diplomatic staff. As quantitative standard differences exist in the evaluation indicator data, such as the number of fans, number of likes, and subjective rating of numerical differences, the unit differs. If the direct use of the original data value-weighted score can easily impact the evaluation results, then standardized processing must be conducted for the evaluation data. In this study, the min-max method is adopted to standardize the original evaluation indicator data, which converts the data to [0,1]. In the specific calculation steps, the maximum and minimum values of the evaluation object score of each indicator are used to calculate the range, and the standardized data value can be obtained by subtracting the minimum value from the original data and dividing it by the range.

4.3 Evaluation results

According to the indicator weights in the evaluation model of the diplomatic personnel's network discourse power, the score of each diplomatic personnel's Twitter accounts can be obtained by multiplying the standardized data and summing up the corresponding weights, and the evaluation results of the Chinese diplomatic personnel's network discourse power on Twitter can be determined, as shown in Table 3.

Table 3 Evaluation results and ranking

Ranking	Account name	Network leading power (ranking)	Network communication power (ranking)	Network influence (ranking)	Network discourse power
1	zlj**7	0.2784 (01)	0.0696 (03)	0.3993 (01)	0.7473
2	Spo*****rsonCHN	0.2554 (02)	0.0458 (06)	0.2174 (03)	0.5186
3	Wan*****ang	0.1190 (13)	0.0177 (21)	0.3068 (02)	0.4435
4	Mah*****na	0.2178 (03)	0.1237 (01)	0.0493 (07)	0.3908
5	zha*****qing	0.1709 (07)	0.0950 (02)	0.0723 (05)	0.3383
6	Chi*****SA	0.1960 (04)	0.0341 (13)	0.0012 (29)	0.2313
7	Amb*****n	0.1262 (10)	0.0377 (11)	0.0666 (06)	0.2305
8	Chi*****EAN	0.1582 (09)	0.0493 (04)	0.0151 (18)	0.2227
9	Amb*****Xu	0.1769 (06)	0.0273 (18)	0.0017 (27)	0.2058

Ranking	Account name	Network leading power (ranking)	Network communication power (ranking)	Network influence (ranking)	Network discourse power
10	Chi*****ebanon	0.1814 (05)	0.0130 (23)	0.0063 (22)	0.2008
11	Chi*****b_India	0.1597 (08)	0.0315 (14)	0.0087 (20)	0.1998
12	Amb***g	0.1028 (17)	0.0459 (05)	0.0481 (08)	0.1968
13	Amb****o	0.0686 (28)	0.0409 (09)	0.0847 (04)	0.1942
14	PRC****pal	0.1080 (14)	0.0351 (12)	0.0240 (13)	0.1672
15	Amb****ng	0.1194 (12)	0.0306 (15)	0.0019 (26)	0.1519
16	xue****saka	0.0896 (20)	0.0419 (07)	0.0163 (17)	0.1478
17	WuP****FACChina	0.0936 (19)	0.0414 (08)	0.0105 (19)	0.1455
18	Zha****u	0.1196 (11)	0.0204 (20)	0.0010 (30)	0.1411
19	Chi****Kabul	0.0621 (29)	0.0390 (10)	0.0397 (09)	0.1407
20	Amb****iqiang	0.0687 (27)	0.0299 (16)	0.0379 (10)	0.1365
21	Amb****eiqing	0.0754 (24)	0.0252 (19)	0.0291 (12)	0.1297
22	Ydu***i	0.0743 (25)	0.0291 (17)	0.0232 (14)	0.1267
23	Chi****b_Mdv	0.1079 (15)	0.0113 (25)	0.0027 (25)	0.1219
24	ouj****ng	0.1077 (16)	0.0013 (30)	0.0086 (21)	0.1177
25	ouj****ng	0.0849 (21)	0.0138 (22)	0.0186 (16)	0.1173
26	lj_****i	0.0844 (22)	0.0088 (28)	0.0217 (15)	0.1149
27	Amb****ing	0.0977 (18)	0.0052 (29)	0.0036 (23)	0.1065
28	Chi****b_Zim	0.0790 (23)	0.0121 (24)	0.0032 (24)	0.0943
29	wei****s	0.0431 (30)	0.0093 (27)	0.0320 (11)	0.0843
30	Amb****Hua	0.0690 (26)	0.0096 (26)	0.0014 (28)	0.0801

4.4 Analysis of evaluation results

More than half of the Twitter accounts of the respondents were established more than two years ago, and more than a third of the accounts have over 40,000 followers, thereby indicating that the Chinese diplomats achieved satisfactory results in Twitter diplomacy. However, a third of the accounts have between 10,000 and 20,000 followers, which is related to the number of Twitter users in the country where the ambassador is based. The scores of the top Twitter accounts in the evaluation results are higher than those of the accounts of the other diplomatic personnel, which is closely related to the comprehensive strength of their leading power, network communication power, and influence. From the perspective of the gap in the overall score, the highest ranking diplomatic account has a score of 0.7473 points, whereas the lowest ranking diplomatic Twitter account has a score of only 0.0801 points. The exaggerated score gap demonstrates that in promoting Chinese diplomats' network voice on this path, there is considerable room for improvement.

Evaluation of the network leading power means the evaluation of the overall strength and appeal of the diplomatic staff's Twitter account. The data on network leading power are the comprehensive results of an account's performance from the time of its establishment, whereas network communication power and network influence focus on the account data results in a certain period. Regardless of the intuitive results obtained after the Twitter data collection or comprehensive results obtained after the network discourse power evaluation, the findings indicate that the network communication power of the Chinese diplomatic staff's Twitter accounts is not optimistic and must be improved further. In addition to having

a small number of Twitter account likes, in terms of information release frequency and positive interactions with fans, most of the diplomats' Twitter accounts demonstrate a low publication frequency, and some months show a fan interaction rate of zero, which are not conducive to the sharing of the accounts and dissemination of content and creation of a positive impression on the fans and other users and may have an indirect negative impact on their leading power.

Through the expert research and hierarchy analysis, it is determined that among the evaluation indicators, network influence is the most important indicator of the power of a network discourse. The results of the data analysis also show that network influence exhibits the largest difference in the scores of the Twitter accounts. The influence of this evaluation indicator is from the network and network integrity qualitative indices, such as the leading power of the account; content of the disseminated discourse; ratio of the different indicators of network influence; number of likes, comments, and existing and new fans; and the rate of traffic for a certain period. The network performance data ranking is completely determined by the network platform fans, who explore the data. Therefore, the evaluation results of network influence are completely objective and can easily cause disparities.

5 Conclusion

With the development of Internet technology, network discourse has profoundly affected all aspects of people's political, economic, and cultural lives. Network discourse power has an important impact on the entity status of individuals, institutions, and countries. Research on the evaluation of network discourse power as well as on its components and evaluation elements, plays a clear role in improving the direction of the network discourse power of countries and institutions. The evaluation of network discourse rights is not an evaluation of the established speaking rights of network discourse subjects, but a comprehensive evaluation of the network leadership, network communication power and network influence formed by network discourse subjects using their established rights. There is no correlation between network communication power and network influence. Content excitement has a positive influence on content communication degree, account activity has a positive influence on fan identification and topic discussion degree, and fan identification has a positive influence on account promotion degree.

Against the background of the rapid development of technology, the influence of the discourse power of network discourse subjects in a network and in reality will be further strengthened, and the enhancement of the network environment will induce changes in the generation process and evaluation factors of network discourse power. Therefore, research on the evaluation of network discourse power will become an increasingly important long-term concern.

Acknowledgement

This research is funded by the National Social Science Fund Major Project of China (18ZDA325).

References

CNNIC. (2021). The 47th "Statistical reports on internet development in China" was released. *China Broadcasts*, 2021 (04), 38.

- Cui, Z. (2015). Study on characteristics of mobile network information dissemination in universities. *International Journal of Multimedia and Ubiquitous Engineering*, 10 (3), 365–374. (In Chinese).
- Lei, H. (2017). Web impact of Library: From the We Media perspective of microblog and WeChat. *Library Forum*, 37 (01), 109–114. (In Chinese).
- Li, G. (2010). "China's Political Development Model" and the Breaking of "Western Discourse Power". *Frontiers*, 2010 (05), 40–42. (In Chinese).
- Meguire, W. J. (1989). Theoretical foundations of campaigns. *Public communication campaigns*, 1989 (08), 43–65.
- Ren, H. (2020). *Research on the leading force of the socialist ideology and its promotion mechanism in the new era network field* [Master thesis, Shandong University]. CNKI. (In Chinese).
- Shen, H. (2014). *On the internet discourse power and its legal regulation* [Master Thesis, Hunan Normal University]. CNKI. (In Chinese).
- Shi, Y., & Wang, Y. (2010). Commentary on Foucault's discourse theory. *Journalism and Communication Review*, 2010 (00), 26–33. (In Chinese).
- Shi, F. (2011). *Seeing the change of internet discourse power from the development of internet media* [Master Thesis, South-Central University for Nationalities]. CNKI. (In Chinese).
- Sun, J. (2002). Gramsci's thought of cultural leadership. *Marxist Studies*, 2002 (03), 88–96. (In Chinese).
- Tao, R. (2011). From discourse analysis to power analysis: On Foucault's "Order of Discourse". *Young Writers*, 2011 (10), 145–146. (In Chinese).
- Wang, X. (2021). Research on the construction of theoretical framework for the evaluation of discourse power in Chinese academic journals. *Library and Information Work*, 2021 (12), 83–92. (In Chinese).
- Wang, Y. (2019). Wittgenstein's leading contribution to linguistic theory. *Journal of Xihua University (Philosophy and Social Sciences)*, 2019 (01), 56–64. (In Chinese).
- Wang, Y. (2007). Survival countermeasures in the internet age. *Software Engineer*, 2007 (Z1), 112–114. (In Chinese).
- Xu, D. (2007). *Concerns and reflections on the right to speak on the Internet* [Master thesis, Sichuan University]. CNKI. (In Chinese).
- Xu, S. (2021). Do a good job of online public opinion and build concentric circles online and offline. *Network Communication*, 2021 (06), 20–23. (In Chinese).
- Yuan, S., & Chen, G. (2013). Exploration of the ideological logic behind the production of Western discourse power. *Ideological Front*, 2013 (01), 118–122. (In Chinese).
- Zhang, G. (2018). *Research on the construction of the discourse power of the mainstream ideological network in contemporary China* [Doctoral dissertation, Southwest Jiaotong University]. CNKI. (In Chinese).
- Zhang, L., Li, H., Zhao, C., & Lei, X. (2017). Social network information propagation model based on individual behavior. *China communications*, 14 (7), 1–15. doi: 10.1109/CC.2017.8010980. (In Chinese).
- Zhang, Z., Chang, R., Dai, Y., & Zhao, R. (2021). Research on the evaluation model and demonstration of patentee's discourse power: A case study of cyber security. *Data Science and Informetrics*, 1 (3), 93–108.
- Zhao, R., Wang, X., Yu, B., Li, D., & Li, X. (2019). Construction of a scientific research framework for the evaluation of China's discourse power. *Books and Information*, 2019 (04), 122–131. (In Chinese).
- Zhao, R., & Wei, M. (2017). Academic impact evaluation of Wechat in view of social media perspective. *Scientometrics*, 112 (3), 1777–1791. (In Chinese).
- Zhao, R., Wang, X., Qi, Y., Chang, R. & Zhang, Z. (2019). Review of Evaluation Scientific Research from the Perspective of China's Discourse Power. *Modern Information* 2019 (10), 145–153. (In Chinese).
- Zheng, L. (2010). Multiplicative index of media influence and its validity analysis. *Contemporary Communication* 2010 (06), 20–23. (In Chinese).
- Zhu, Y. (2019). *Analysis of Alienation of Internet Discourse Power and Research on Reconstruction Strategies* [Master Thesis, Nanjing University of Posts and Telecommunications].CNKI. (In Chinese).