

Research on the National Image Communication Mechanism of China's Foreign Vaccine Aid --Social Network Analysis Based on Recipient Country Coverage Texts

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ABSTRACT

The COVID-19 pandemic is sweeping the world and many developing countries are facing shortages of vaccines and other supplies. China has carried out a large number of foreign vaccine aid activities based on the humanitarian spirit and the concept of a community with a shared future for mankind. Based on theories and studies related to national image communication, this study proposes a mechanism model for national image communication from the political, social, and communication media perspectives. Among them, the political factor includes political values and political emotions, while the social factor includes social culture and social perception. By social network analysis, this study examines the emotional attitudes reported by recipient countries and initially confirms the communication logic contained in this mechanism. Through examining the validity of the mechanism and the attitudes from the recipient countries' side, this study considers and makes recommendations for enhancing emphatic communication at both the theoretical and practical levels.

Keywords: National image communication; communication mechanism; vaccine aid; social network analysis

1. INTRODUCTION

At present, the global situation of the COVID-19 pandemic is still severe, and vaccines are highly expected by the international community. China has provided vaccine aid to more than 80 developing countries one after another after the domestic epidemic has been effectively prevented and controlled. The World Health Organization, the Global Alliance for Vaccine Immunization and the assisted countries have all expressed their affirmation of China's vaccine aid, and China's vaccine aid has caused great repercussions in the international community, and the national image communication mechanism in the aid activities is worth studying.^[2]

Based on the implementation of China's foreign vaccine aid and its international repercussions, this topic

analyzes the factual materials and representative official positions on foreign vaccine aid from the perspective of communication and diplomacy theories, uses textual analysis and social network analysis, etc. to analyze the potential impact of foreign vaccine aid facts on the communication mechanism of China's national image, proposes an optimization mechanism of national image communication based on case studies, and provides suggestions for a new type of The study also proposes a mechanism for optimizing national image communication based on the case study, and suggests suggestions for a new type of image communication of a great nation.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The mechanism of national image communication is

influenced by many factors. These factors can be roughly divided into two categories: political factors and social factors, which can be further subdivided into five factors: "political values," "political emotions," "social culture," and "communication media". "social cognition" and "communication media".

2.1. Political factors

2.1.1. Political values

As a political phenomenon, the political value of state image is the underlying logic. The value layer of national image focuses on the conceptual essence behind the national image and plays a guiding role in the study of national image (Wang, 2013). In different historical periods, the political values of a country's image may change with policy changes, historical changes, and cultural exchanges. At the same time, political values among countries also influence and interpenetrate each other, and shape each other and their images. (Zhang Kun and Wang Zhuang 2017).

2.1.2. Political emotions

State image, as a kind of international social relationship, is a relationship of mutual recognition and identification formed in the process of interaction with the target country (Li, 2011). From the perspective of political psychology, state image includes three progressively generated components: cognitive component, affective component, and intentional component, and the empathic dimension is the affective component of state image construction (Wang Pei, 2019). The specific expression of the empathy dimension is the emotional basis of identity. The "political emotion" in national image communication is based on political identification, and the subjects of identification include both individuals and state subjects, civil organizations and social groups. In foreign aid relations, "political emotion" can be interpreted in two directions: firstly, it is the political cognitive empathy of the donor country as the subject to the recipient country as the object; in addition, it includes the political emotion of the recipient country to the donor country, which is mainly expressed in the recipient country's identification with the ruling party, political system and development achievements of the donor country. .

Emotional empathy can be seen as a deepening of cognitive empathy (Ding Fengqin and Lu Zhaohui 2016), and in the emotional dimension, political emotion can be seen as built on the basis of political value identity. Thus, we define the concept of "political emotion" in the image of the state as follows: the process of generating emotional empathy based on political value identification in the interactive interaction activities of the subject state.

The main source of political emotions is first and foremost the government, which, not surprisingly, is the representative of the public power of the state and one of the important components of the political dimension of the country's image. The government conducts public diplomacy and international exchange activities, becoming a direct medium for promoting traditional culture and conveying attitudinal ideas. The current state of political affinity is closely related to the ideology between countries and the density of interaction. Developing countries generally have higher political emotional closeness to China than developed countries. According to the Global Survey on China's National Image 2019, nearly 80% of respondents from developing countries consider their country's relationship with China to be "important", more than 63% of respondents from developed countries. On the whole, the political and emotional favorability of China's national image has continued to rise in recent years, as evidenced by the increase in the number of respondents who believe that China's development path has significance for their own country's development, and the growing number of overseas respondents who recognize China's "community of human destiny" concept, the "Belt and Road" initiative and the exchange of civilizations. "and the idea of exchange and mutual appreciation of civilizations.

2.2. Social factors

2.2.1. Social culture

To solve the problem of limited effect of national image communication, it is necessary to take into account the cultural environment and individual differences of the country where the communication target is located, and to localize and localize the communication methods and contents. ^[5]Only by targeting the target country, familiarizing with the needs of the target, and optimizing the localization strategy, can we achieve the communication purpose and realize the expected effect.

Most researchers have proposed the concept of "innovation" to make our national image more acceptable to audiences from different socio-cultural backgrounds. Tian Mi (2021) categorizes this innovation into three areas: "conceptual innovation," "narrative innovation," and "institutional innovation," through which to seek the Through these innovations, we seek to find the right point of cultural integration between China and foreign countries, build political, economic and cultural exchange mechanisms based on cultural identity, and build bridges of communication.

In his speech at the "2016 Tsinghua National Image Forum", Liu Jiebin analyzed the current situation and problems of national image communication and proposed to build a communication strategy for national

image with "three innovations" as the fulcrum, namely, innovative concept, innovative system and innovative narrative. ^[15]He proposed to speed up the integration of communication subjects, content and media, explore the integration point and maximum convention of Chinese and foreign cultures, and build a bridge between Chinese and foreign cultures and civilizations. Fan Hong proposes that national image communication needs to adhere to "four innovations" and "four integrations", namely, strategic innovation, conceptual innovation, content innovation and method innovation, and cultural integration, industry integration, discipline integration and media integration. Cross-border sharing enables the research on national image to break through the limitations of the industry and establish three-dimensional cutting-edge thinking on the construction of national image, resulting in comprehensive, multi-dimensional, interdisciplinary and cross-industry fruitful results.^[4]

2.2.2. Social perception

The national image is the comprehensive expression of the material power and spiritual power of the country (Zhang Kun, 2007), and material power is equivalent to hard power and spiritual power is equivalent to soft power, which together constitute the cognitive dimension of the national image. ^[13]The state image has thus become a variable of social cognition, which has similar characteristics to the state image. For example, social cognition is systematic, multidimensional, dynamic, relatively stable and different from internal to external. At the same time, social cognition, due to its dynamic characteristics, further shapes the national image with the process of time and events. ^[8]However, from a macro perspective, social cognition is still the underlying logic of national image, bearing the main influencing factors of mirroring and folding changes in national image communication.

National image also belongs to the category of cognitive psychology, which reflects the reproduction of perceptual objects in people's minds (Zhang Kun and Wang Venture 2017). Social cognitive theory (SCT) was proposed by Albert Bandura on the basis of social learning theory and is mainly applied in the fields of psychology, education and communication. The theory considers that some of the sources of personal information are directly related to observations, experiences in social interactions, and mass media, and emphasizes the influence of changes in the environment on individuals.

In communication studies, social cognition can be elucidated in terms of agenda-setting theory. Agenda-setting theory suggests that mass media can determine what people think and influence audiences' perceptions of reality by choosing to present certain specific topics. ^[6]In foreign aid relations, social cognition includes both

internal and external directions. Internal social cognition is reflected in public national identity, the strength of which has an important impact on the overall national spirit, policy implementation and external image, and thus becomes an important area of concern in the process of national development; while external social cognition is reflected in the perception of the overall national image of the recipient country.

By integrating theories and perspectives from related fields, it is easy to see that social cognition has complex influencing factors and covers a wide range of dimensions. In this paper, we introduce the social cognitive perspective of state image communication, which mainly refers to the holistic perceptions of state actors about the comprehensive national power and international status of third-party countries in the mass media environment.^[14]

2.3. Dissemination medium

At present, it is an undisputed fact that the role of the media in shaping the audience's judgment of emotions and foreign policy is becoming more and more significant. It is worth mentioning that the mass media itself is part of Althusser's "ideological state apparatus", and the media itself is both a carrier of power and a part of many powers. (Sun Baoguo and Shen Yue, 2019) Innovative communication media is one of the means to enhance the effectiveness of national image communication mechanism. Sun Baoguo (2019) points out that China, as a high-context country, has long been less effective in foreign communication. The audiovisual media, as a mass narrative medium, is much less difficult to accept and understand information than diplomatic rhetoric, literary works and other carriers. Therefore finding the value fit between China and other countries, the cross-cultural communication effect of the national image will also be expected to improve.

In addition to traditional media carriers, national leaders, national brands and other carriers can also become carriers for the dissemination of national image. According to Lv Yandan and Zhang Yaping, brand is related to national image and strength, and is a symbol of national core competitiveness. The national image presented through independent brand communication has also become the most important component of national image in the vision of the international community today.

However, the role of the media in the process of national image communication is not decisive. Lazarsfeld, one of the four founding fathers of communication, proposed the theory of Political Predisposition, which argues that the media merely reinforces, rather than changes, the perceptions of audiences, who tend to and are selectively exposed to content that is more consistent with their own attitudes.

Willnat, L., conducted two studies in 2011 and 2012 on the general public's perception of China's national image in the U.S. The results show that the U.S. public's perception of China's national image is not as heavily influenced by the media as Chinese scholars believe, and that U.S. news with a negative bias has a more limited impact on the audience, and that television news about China is focused on TV news about China focuses on China's political, economic, and diplomatic spheres and less on social and cultural news, which are so far removed from people's lives that people tend not to pay attention to them.

3. PERCEPTION OF RECIPIENT COUNTRIES BASED ON SOCIAL NETWORK ANALYSIS

3.1. Recipient report corpus construction

China's foreign vaccine aid is characterized by its wide scope, long cycle, and large impact. These characteristics are formed, on the one hand, by China's fine tradition of good neighborliness and assistance from all sides in distress since ancient times, and its successful experience in the pre-epidemic period, which makes China's aid activities more timely and generous when the world epidemic situation is severe. On the other hand, aid at a time when many countries are facing shortages of supplies such as vaccines, out of humanitarian empathy can also bring emotional impact to people in various countries, and this impact, due to its subjective nature, is not yet known and needs to be analyzed through empirical studies.

According to the influence and search index of the mainstream media in each country, [7]the mainstream media including The Herald, EQUATORIAL GUINEA, Awoke newspaper, Journal du Tchad, Jornal de Angola, La Nation in Africa, GMANews, South Asia Monitor, Teller Report, Thaiger, and mainstream media in Europe and America, including BarbadosToday, The New York

Times, The Belarusian Telegraph Agency, Napi.hu, Bild, Balkan Insight, etc. The search was conducted by using "China vaccine aid" as the keyword, and the time range was set from January 20 to December 21 according to the intensity of coverage. 58,600 words of text were collected and organized, and 60% of the valid text was retained after manual screening according to the length of coverage. For the analysis of the issue attributes of the recipient reports, [3]firstly, the study indexed the text keywords and their collocations by AntConc software (word frequency less than 40 was ignored, and the top 10 collocations in order of frequency were taken for each keyword), and a total of 300 valid analysis units were obtained; secondly, the corpus of recipient reports was analyzed by using social network analysis, and on the basis of the analysis of issue attributes, the study will discuss recipient countries' cognitive and affective attitudes, and further reflect on the national image communication path.

3.2. Recipient Coverage Topic Attribution Code

According to agenda-setting theory, although the mass media cannot determine the public's opinion on a certain issue, they can influence the audience's attention and opinion on the issue by providing relevant information and arranging issues. The media is "objective" in nature, and the issue of the relevance of media opinion to public opinion has been a controversial media effect, which makes a textual sentiment analysis of news articles unconvincing. The factual act of Chinese vaccine aid has been widely reported by most of the recipient countries, and the agenda-setting effect can be intuitively reflected by coding the issue attributes of these reports and analyzing the co-occurrence relationships among them.

All samples were coded for this study, and units of analysis containing only a single attribute were not included (see Table 1).

Table 1 Attribution Coding Table of Issues Reported by Recipient Countries on Chinese Vaccine Aid

Type	Attribute	Description	Selected Keywords
	Covid-19	Background of China's foreign vaccine aid activities; current worldwide challenges	Covid,coronavirus,pandemic,unprecedented,terrible,cases recorded
	Vaccine	Major Chinese Foreign Aid Materials	vaccine,vaccination,shortage,batch,doses
	China Aid	China's foreign aid is an important force in the world's common fight against the new crown epidemic	aid,helps,assist,sinovac,sinopharm, received,offered,donation
	Cooperation	China's foreign vaccine aid promotes international cooperation	bilateral,cooperation

Core Attributes	Humanitarian	China's foreign vaccine aid is motivated by humanitarian concerns	Supported,wishes,humanitarian, virtue
	Health	Vaccines in the service of global public health	medical testing,bio,welfare,vulnerable health system
	Effective Results	China's foreign aid activities achieve effective results during Newcastle outbreak	Victories,success,successful, effective
	Critical Situations	The New Pneumoconiosis Epidemic Does Not Look Good	woe,struggling,suffer,emergency
Derived Attributes	Political	Foreign aid has had a significant impact on government engagement and diplomatic activities	president,officials, Wenbin Wang,envoy, ambassador,foreign affairs
	Economic	Foreign aid has had an impact on economic recovery and trade between countries	export,trade
	Friendship	Foreign aid promotes friendly relations with recipient countries	relations,welcomed,friendship, brotherhood
	War	The new crown epidemic is the common enemy of mankind	fight,against,war
	Unity	Foreign aid activities promote solidarity among countries, and the epidemic makes the destiny of mankind shared	solidarity,unites
	Cross-regional	China's foreign aid activities are carried out worldwide as the new vaccine epidemic sweeps through the world	worldwide,regions
	Appreciation for Recognition	China's foreign vaccine aid has gained the gratitude and recognition of recipient countries	appreciated,thanked,approve
	Trust	Foreign aid enhances mutual trust between countries	trusts,confidence
	Technology	Many high-tech products are included in foreign aid, reflecting the country's scientific and technological strength	technical,vehicles

3.3. Analysis of the Centrality of Recipient Coverage Agenda

This project investigates the agenda attributes of recipient country coverage using social network analysis. The team first used Ucinet software to conduct social network analysis of co-occurrence relationships and visualized the representation using NetDraw software. From the perspective of social networks, keywords are individual nodes in a network, and their co-occurrence is reflected by a direct connection between nodes (Wei, Rui-Bin, 2009). The size of a node indicates the degree centrality of the topic attribute, and by knowing the centrality of a node, the importance occupied by this node in the network can be judged.

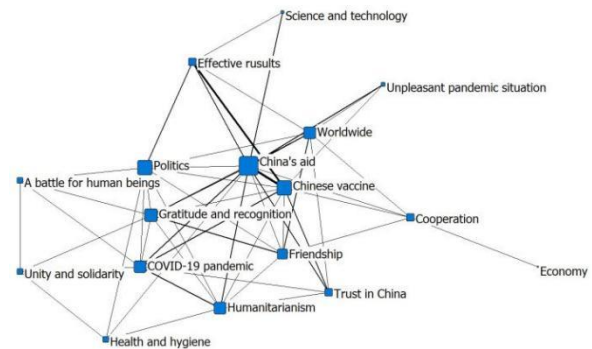


Figure 1 Visual image of the centrality of the recipient's coverage agenda

As can be seen from the above figure, among the

topics reported by the recipient countries, Chinese aid, vaccines, and politics are interlinked and occupy the center of the network. Among the derived attributes, thanks for recognition, friendship, cross-territory, and humanitarianism all show high degree centrality. Although correlations do not represent causality, the centrality of issues reflects the overall agenda setting of the sample reflecting positive sentiments toward vaccine aid. The core attributes are closely connected to each other and to other derived attributes. Foreign aid activities act as an influence factor that positively contributes to recipient sentiment. The media in the recipient countries placed more emphasis on the relational dimension of aid behavior in their reporting than on the status of the epidemic itself and the effect of aid on overcoming the epidemic, emphasizing the emotional connection and relationship facilitation between the donor and recipient countries.

Politics as a derived attribute is also in a more central position, and together with other derived attributes, it constitutes three dimensions of the coverage of aid facts: political, social (including science and technology, economy, cooperation, etc.) and emotional (including appreciation of identity, friendship, solidarity, etc.). According to network centrality and node density, the degree of issue centrality is political, emotional, and social in descending order. Jiang Xiancheng (2021) argues that agenda-setting effects exist among media, but different agendas can fold and change. Combined with the idea of Chinese national image communication, it can be found that the coverage of vaccine aid by recipient countries fits China's communication logic to a certain extent, and at the same time reflects the fold change due to independence in its own practice.^[1] The perceived level of vaccine aid in recipient countries not only reflects the current agenda-setting effect, but also feeds into the practice of national image communication.

4. REFLECTIONS ON CHINA'S NATIONAL IMAGE COMMUNICATION MECHANISM AND SUGGESTIONS FOR OPTIMIZATION

According to the research, the explanatory power of existing mechanisms can be concluded as: "Political value - the orientation of national image communication mechanism", "Political sentiment - the yardstick of national image communication mechanism", "Social culture - the soil of national image communication mechanism", "Social awareness - the guarantee of national image communication mechanism"^[9], "Communication media - the bridge of national image communication mechanism".^[10]

As for the challenges and additions to existing mechanisms, according to the results of existing studies, the construction of national image mechanism can be started from two aspects: communication mechanism

and psychological mechanism (Wang, H., 2013). Combined with the empirical study of China's foreign vaccine aid during the New Crown epidemic, the existing mechanism can be improved in three aspects: concept, content, and channel, in terms of macro communication mechanism.

First, to build an innovative concept to provide guidance for the later national image communication work. We insist on "four innovations" and "four integrations", i.e. strategic innovation, conceptual innovation, content innovation and method innovation, and cultural integration, industry integration, discipline integration and media integration. Cross-border sharing enables the research on national image to break through the limitations of the industry, and to establish a three-dimensional and cutting-edge thinking on the construction of national image, resulting in comprehensive, multi-dimensional, interdisciplinary and cross-industry fruitful results.

Secondly, we should optimize the content and improve the effect of communication. When editing communication content, we should "prescribe the right medicine", fully consider the cultural environment and individual differences of the recipient countries, make our communication content as close as possible to the cultural background and relevant cognition of the recipient, and do a good job of localization and localization of communication methods and content. In order to do so, we need to find the biggest potential convention in Chinese and foreign cultures, that is, the cultural common ground that can resonate with both sides.

Third, broaden the media channels and improve the efficiency of communication. In terms of media, the battlefield of national image dissemination is expanded from diplomatic rhetoric, official media and other platforms to comprehensive video portals with wider audiences; in terms of form, it is expanded from traditional media such as paper and TV news to short video platforms with stronger communication capacity; in terms of content, it gradually evolves from text-based reporting to a composite communication message combining text, cartoons, videos and pictures.

In terms of micro-psychological mechanisms, there is a lack of attention to the empathic dimension in foreign aid discourse. In the subsequent foreign aid discourse, recourse to empathic rhetoric promotes the transformation of empathic rhetorical theory into a systematic model of news discourse practice. Since national image has a stable and differentiated psychological basis and political cognitive schema (Ma Deyong and Lu Yizhou 2022), attacking the psychological mechanism of national image communication is a long-term exploration that needs to overcome ideologies and stereotypes. For the construction of related theories, more empirical results are needed to support in the future.^[11]

5. CONCLUSION

National image is the overall impression of people all over the world of the a country's comprehensive national power. The international reputation and world influence of a country comes not only from a country's interaction with other countries in the international arena, but is closely related to the current national image of that country.

This research offers reflections and suggestions theoretically and practically. Conducted based on theories and studies related to national image communication and with the aid of social net work analysis, this research proposed a mechanism model for national image communication and confirm the communication logic contained in the external communication mechanism. Through this research, we deeply realized that external communication is an effective mean to shape the national image and is an important bridge connecting one country with overseas people. The reflection and optimization of the current communication mechanism are required for shaping and popularizing China's national image in line with our national interests of the new era. More importantly, China's national image should be established by the medium through the integration of various resources and targeted dissemination.^[12] In order to achieve our goal, we need to continuously reform and innovate the way of national image communication, switch the core of policies form "other-shaping" to "self-shaping", and pay more attention to the application of empathy communication.

REFERENCES

- [1] Jian Wang. The power and limits of branding in national image communication in global society[J]. *Journal of International Communication*,2008,14(2):
- [2] Kim Insook. The Effects of Direct Experience, Relation Route and Text Route on the Formation of National Image of China[J]. *Journal of China Studies*,2018,21(1):
- [3] Wuhan Zhu,Siyun Ji. The Discursive Construction of the Chinese National Image in China Daily's Reports on the G20 Summit[J]. *English Language and Literature Studies*,2018,8(1)
- [4] Zhu Hailong. The Change and Construction of Chinese National Image in 1949-2019[J]. *English Language Teaching*,2019,12(11):
- [5] Hu Baijing. Beijing Winter Olympic Games and the Construction of China's National Image in the New Era[J]. *Contemporary World*, 2022(02):10-14.
- [6] Li Huiqun,Xia Yongmin. Turkish people's "China imagination" and Chinese mainstream media's national image communication--a survey on Chinese national image perception based on Turkish people (2016-2019)[J]. *Foreign Languages and Cultures*,2021,5(04):103-115.DOI:10.19967/j.cnki.flc.2021.04.010.
- [7] Ni Litao, Liu Lu. An exploration of China's image in British and American mainstream media's coverage of the Tokyo Olympics involving China--a critical discourse analysis based on corpus[J]. *Journal of Changchun Normal University*,2022,41(01):105-113.
- [8] Niu Fengyan, Zhao Feng, Li Jianmin. Strategic thinking on China's national image shaping and communication under the centennial change[J]. *All Media Exploration*,2021(03):6-9.
- [9] Qiu Yuanyuan. International communication of China's national image in the perspective of participatory communication[J]. *China Publishing*,2021(20):45-49.
- [10] Song Haiyan. The "other" communication of China's national image: the mediation mechanism of foreign students coming to China[J]. *News Lovers*,2021(08):27-30.DOI:10.16017/j.cnki.xwahz.2021.08.007.
- [11] Wang Mengjia. The optimization path of Chinese national image communication in cross-cultural perspective[J]. *Public Relations World*,2022(02):18-19.
- [12] Xing Liju,Zhao Jing. New media and international communication of China's national image[J]. *Modern International Relations*,2021(11):51-59+61.
- [13] Xu Zhi. Theory and path:A study of soft communication in national image construction[J]. *New Media Research*,2019,5(03):127-128.DOI:10.16604/j.cnki.issn2096-0360.2019.03.055.
- [14] Yi D., Xiao J. Dong. The construction of China's national image in the context of the "four comprehensive" strategy[J]. *Journal of Heilongjiang Socialist Academy*,2021(04):51-57.
- [15] Zhang Kun, Liu Shuang. National treasure communication: a new way to build China's national image [J]. *Journal of Central South University (Social Science Edition)*,2022,28(01):182-190.