

Study on the image construction of the Guangdong-Hong Kong-Macao Greater Bay Area—A case study of *China Daily* reports from 2018 to 2022

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Abstract. Since its proposal, the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) has attracted widespread attention both domestically and internationally, becoming a window for showcasing China's national image. This study uses *China Daily*'s reports from 2018 to 2022 as a sample and applies a corpus-based research method combined with Python. It investigates the reporting characteristics, image construction features, and optimization pathways by analyzing trends, word frequency, sources, themes, and regional distribution. The study finds that: (1) the newspaper shapes a distinct economic image of the GBA, but it should strengthen the portrayal of the region's cultural identity; (2) there is an uneven regional distribution in the reports, and efforts should be made to promote balanced development in the Bay Area; (3) the reporting perspective is predominantly official; and (4) the diversity of information channels should be expanded.

Keywords: Guangdong-Hong Kong-Macao Greater Bay Area, *China Daily*, image construction

1. Introduction

Since the Chinese government proposed the concept of the Guangdong-Hong Kong-Macao Greater Bay Area (hereafter referred to as the Greater Bay Area) in 2015, it has attracted significant attention from both domestic and international communities. In 2019, the Central Committee of the Communist Party of China and the State Council issued the "Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area" [1], reiterating the GBA as a major national strategic development initiative. Currently, the GBA is steadily advancing towards its goal of becoming a world-class bay area. The GBA is set to become an important platform for China to engage with the world, a window for showcasing the country's image, and a focal point for international communities to observe, understand, and interpret China. Consequently, the practice of disseminating the GBA's image internationally has also gained momentum. "As an essential component of China's national image, the Greater Bay Area's image plays a significant role in advancing national strategies and attracting overseas market investments and cooperation" [2].

Media plays a crucial role in shaping the GBA's international image [3]. The media's role in constructing national image can be categorized into self-construction, other-construction, and joint-construction. Self-construction refers to domestic media independently broadcasting and constructing the national image; other-construction refers to foreign media shaping the image of a target country; and joint-construction is the collaborative effort of domestic and international media in shaping a country's image. These three forms interact with one another, creating a multifaceted national image dissemination landscape [4]. At present, research on the GBA's image construction is still in its early stages in China. In terms of media types, studies on GBA image construction primarily focus on newspapers, new media operations, and promotional videos [2,3,5-7], but the research samples, both in terms of quantity and variety, remain relatively limited.

Regarding self-construction research, Ju Yumei [5] selected news reports from South China Morning Post as the study sample, innovatively combining rhetorical analysis with corpus-based discourse analysis to systematically examine Hong Kong's media strategies in constructing national identity. Yang Liming [6] applied a research framework that integrates framing theory and digital technology to conduct a diachronic study of government Weibo accounts of 11 GBA cities. Early studies on other-construction include an empirical study by Du Mingxi [2] on 182 reports from foreign media. Xu Yanzhu [8] focused on international English-language media reports on the GBA from the Factiva database between 2020 and 2021, employing digital technology to visualize the main features of international media coverage of the GBA. It is evident that scholars' research approaches can be broadly divided into two categories: one from a communication perspective [2,6], and the other from a linguistic

perspective [5,7]. Methodologically, empirical research is dominant, with distinct interdisciplinary characteristics, often combining corpus or digital technology to break through traditional qualitative and quantitative analysis methods. In today's era of rapid digital technology development, data analysis methods are in line with the research paradigm of the big data era. Through systematic processing of large-scale text data, these methods enable deep exploration and multidimensional analysis of textual content [9], helping to analyze the textual construction mechanisms of the GBA's image in foreign communication and summarizing effective strategies and pathways for international image construction.

In image construction, the self-constructed national image in domestic media's international communication not only directly reflects the national narrative but also indirectly influences the shaping of the "other-construction" image. Hence, "it is particularly important to study how domestic media construct the national image" [10]. As China's authoritative and representative English-language newspaper, *China Daily* (hereafter referred to as *China Daily*), plays a key role in the country's external communication, shaping national image and telling China's stories to the world. A number of scholars have conducted in-depth research on the national image construction in *China Daily* [11], but research focusing on the GBA's coverage is limited to one study by Zhan Yue [12], who examined 20 articles from 2021 to 2023 on the "Guangdong-Hong Kong-Macao Greater Bay Area" and explored the international image construction of the GBA from the perspective of metaphor. However, as discussed earlier, image construction involves more than just micro-level linguistic analysis; it also requires a macro-level interpretation from a communication perspective to accurately grasp the characteristics and strategies of image construction.

Thus, this study uses *China Daily*'s reports on the GBA from 2018 to 2022 as the sample, building a *China Daily* GBA corpus. It applies a research framework that integrates communication theory, digital technology, and corpus linguistics, delving into the content characteristics of *China Daily*'s GBA-related reports. By combining quantitative and qualitative analysis, this research aims to deconstruct the image construction features in *China Daily*'s coverage and provide insights for its future image-building efforts.

2. Research design and methods

This study selects *China Daily*'s English website as a case study and uses the English term "Greater Bay Area" as the key search term to retrieve articles focusing on the "Guangdong-Hong Kong-Macao Greater Bay Area" from 2018 to 2022. After excluding articles unrelated to the Greater Bay Area or duplicated entries, a total of 3,233 news reports were retrieved, with 529 articles in 2018, 1,010 in 2019, 476 in 2020, 679 in 2021, and 539 in 2022. To enhance the representativeness and relevance of the research data, and ensure a high correlation between the research sample and the Greater Bay Area theme, this study restricts the sample to news texts where the key term "Greater Bay Area" appears in the headline or lead. To emphasize the focus reflected by the key term, this study only considers news texts where "Greater Bay Area" appears in the headline or lead, with the articles distributed from January 1, 2018, to December 31, 2022.

This study addresses two key questions: What are the characteristics of *China Daily*'s reports on the Greater Bay Area? Through these reports, what image of the Greater Bay Area has been constructed, and what optimization paths can be suggested? To comprehensively and deeply explore the current status and strategies of Greater Bay Area image construction, this study employs multiple research methods. First, the internet collection method was used, utilizing Python web scraping to gather Greater Bay Area-related reports from *China Daily*'s official platform from 2018 to 2022, constructing the basic corpus after screening. Then, content analysis software and visualization tools were used to conduct quantitative analysis of the reports, examining the overall characteristics and image construction of the Greater Bay Area in *China Daily* reports from dimensions such as media agenda-setting, high-frequency vocabulary, message sources, and reporting themes.

3. Research results and analysis: reporting characteristics

3.1. Trend analysis of reports

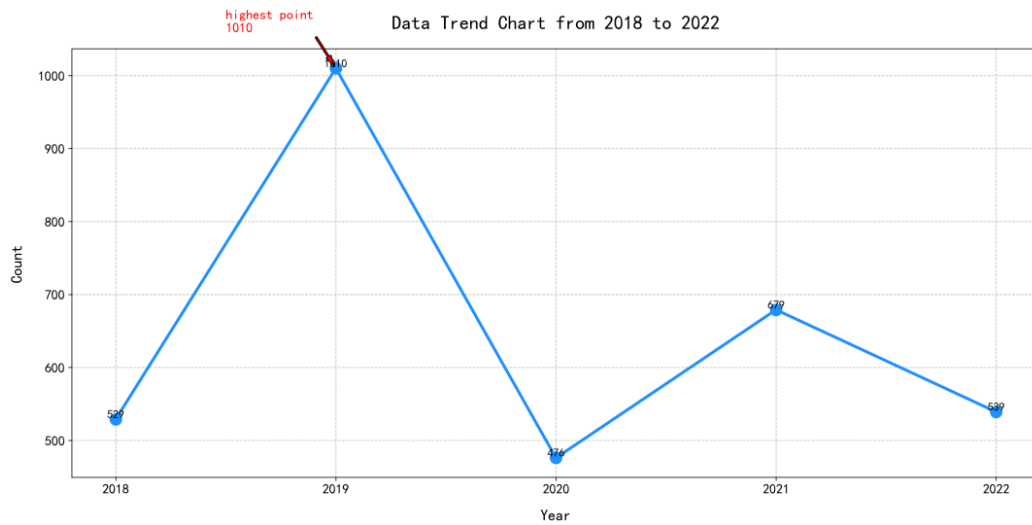


Figure 1. Trend of report quantity

From the data on the total number of reports each year (Figure 1), the total number of reports peaked in 2019, reaching 1,010 articles, showing a significant increase. This sharp rise is highly related to the release of the “Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area” by the Central Committee of the Communist Party of China and the State Council in February 2019, which was a major policy event. This suggests that as a national strategic regional development plan, the Greater Bay Area construction gained significant attention from both domestic and international media during the early stages following the policy’s announcement, highlighting its important status as a pilot area for China’s new round of reform and opening-up.

In contrast, the total number of reports from 2020 to 2022 showed a clear decline compared to 2019. First, as the “news effect” of the policy announcement waned, media attention naturally decreased. Second, the outbreak of the COVID-19 pandemic in early 2020 caused a major shift in the global media agenda, with public health and pandemic control topics dominating media resources, which somewhat diluted the focus on the Greater Bay Area. This phenomenon reflects the significant impact of major unforeseen events on existing media agendas and also highlights the fluctuation of the Greater Bay Area’s media coverage intensity with the policy cycle.

3.2. Word frequency analysis

Table 1. Report word frequency statistics

Year									
2018		2019		2020		2021		2022	
Key	Fre.	Key	Fre.	Key	Fre.	Key	Fre.	Key	Fre.
Hong	0.1351	Hong	0.1005	Kong	0.0892	Hong	0.1322	Hong	0.1097
Kong	0.1326	Kong	0.0994	Hong	0.0890	Kong	0.1309	Kong	0.1097
development	0.0527	China	0.0539	China	0.0773	China	0.0562	China	0.0669
Bay	0.0458	Bay	0.0538	said	0.0610	said	0.0495	said	0.0567
Area	0.0429	Macao	0.0511	development	0.0500	development	0.0443	development	0.0436
mainland	0.0377	Area	0.0495	Bay	0.0360	Bay	0.0365	Bay	0.0329
China	0.0370	said	0.0490	new	0.0351	Chinese	0.0314	also	0.0313
said	0.0347	development	0.0472	Area	0.0323	Area	0.0313	Greater	0.0299
also	0.0287	Greater	0.0302	also	0.0301	Greater	0.0310	Area	0.0287
government	0.0287	also	0.0289	Shenzhen	0.0289	people	0.0293	new	0.0267

Through the five-year word frequency statistics of *China Daily*'s reports on the Guangdong-Hong Kong-Macao Greater Bay Area from 2018 to 2022 (as shown in Table 1& Figure 2), it was found that words such as “Hong Kong (香港),” “Macao (澳门),” “Guangdong (广东),” “Greater Bay Area (大湾区),” “development (发展),” “economy (经济),” “government (政府),” “trade (贸易),” and “innovation (创新)” appeared frequently, highlighting key development areas. This result intuitively indicates that, during the development of the Greater Bay Area, there has been a focus on regional collaborative development, economic construction, the role of government, trade exchanges, and the enhancement of innovation capabilities. Regional collaborative development emphasizes cooperation and resource integration between Hong Kong, Macao, and Guangdong, aiming for complementary advantages. Economic construction is one of the core objectives of Greater Bay Area development, while trade exchanges are a key driver of economic growth. The government plays a crucial role in planning, policy formulation, and resource allocation within the Greater Bay Area. Meanwhile, enhancing innovation capacity is essential for maintaining the region's competitiveness and achieving sustainable development.

The keywords for each year reflect changes in government strategy. From 2018, when emphasis was placed on the “Belt and Road” and “international,” to 2022, when the focus continued to be on “international” and “cooperation,” it indicates that the Greater Bay Area continuously expanded in international cooperation and communication, actively integrating into the global economic system and laying a solid foundation for becoming a world-class bay area. In 2019, “technology,” “investment,” and “manufacturing” highlighted technological innovation, showing that the Greater Bay Area drove the transformation and upgrading of traditional industries and fostered emerging industries by leveraging technological innovation, leading to an optimized and upgraded industrial structure. In 2020, due to the pandemic, “pandemic,” “medical,” and “digital” became focal points, reflecting the acceleration of digital transformation in the region in response to the pandemic, enhancing the economy's resilience and risk resistance through digital economy development and digital governance. In 2021, the focus on “carbon,” “green,” and “environment” indicated that the Greater Bay Area regarded sustainable development as a key strategic goal, actively promoting green industry development, energy structure adjustments, and ecological environmental protection, achieving positive interaction between economic growth and environmental protection. In 2022, the focus on “cooperation,” “international,” and “supply chain” indicated the deepening of regional cooperation. The Greater Bay Area is expected to continue playing an important role in the national strategy, promoting high-quality development and global influence, and becoming an important demonstration zone for addressing global challenges.



Figure 2. Word cloud of reports

3.3. Analysis of news sources

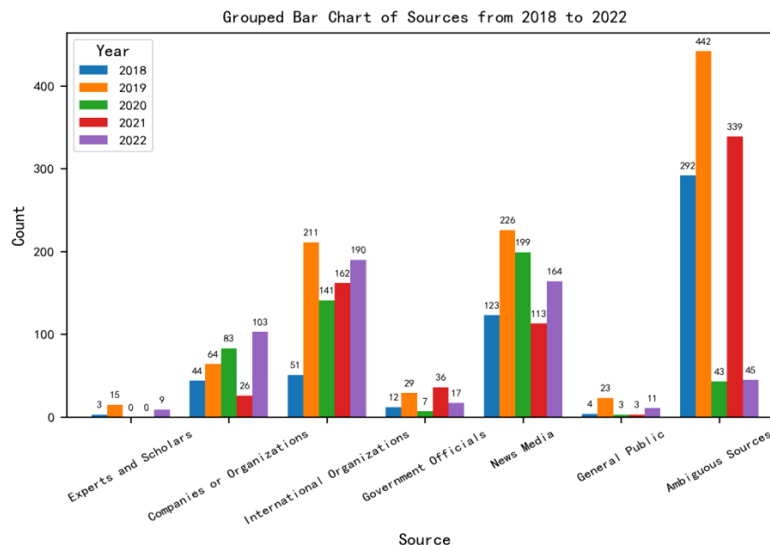


Figure 3. Bar chart of news sources

Based on an empirical analysis of news sources (Figure 3), the study found significant differences in the volume of reports from different sources over the years. The core sources of information consist of news media, government officials, and experts. In 2019, the volume of media reports peaked, closely linked to the policy window created by the release of the “Outline Plan.” Topics such as policy interpretation, project launches, and regional cooperation attracted extensive media attention. The volume of reports from government officials remained relatively stable, confirming the dominant position of the government in strategic communication. The volume of reports from experts also showed a noticeable increase following the policy release, reflecting that significant policy announcements are often accompanied by active academic participation and knowledge supply. Notably, reports from the general public, international organizations, and vague sources were significantly lower, indicating the following characteristics: First, as a national strategy, the information dissemination of the Greater Bay Area construction is still dominated by official and elite discourse; second, the participation and voice of the general public need to be expanded; third, the low participation of international organizations reflects that the international influence of Greater Bay Area construction has yet to be fully transformed.

3.4. Analysis of report themes

Table 2. Report theme statistics

Theme/Attribute	Year/Quantity					Total
	2018	2019	2020	2021	2022	
Economy	187	249	200	192	123	951
Comprehensive	75	182	83	183	163	686
Society	79	207	68	89	29	472
Politics	81	76	10	68	38	273
Other	9	78	47	73	55	262
Science and Education	39	53	37	16	68	213
Culture	14	20	4	21	24	83
Diplomacy	12	33	10	15	8	78
Tourism	17	17	15	8	2	59
Media	1	1	1	3	1	7
Military	1	2	1	0	0	4

The analysis of the number of headlines based on thematic attributes (Table 2) shows that reports on economic themes consistently maintain a high level of attention, a characteristic that aligns closely with the Greater Bay Area’s positioning as the national economic development engine. Notably, social themes saw a significant peak in 2019 (207 articles), a change closely related to the implementation of policies in the “Guangdong-Hong Kong-Macao Greater Bay Area Development Plan Outline” focusing on livelihood security and social governance. The science and education theme increased in 2022, reflecting the accelerated advancement of the Greater Bay Area’s science and technology innovation strategy. In contrast, the number of headlines on cultural, diplomatic, tourism, media, and military themes was generally low (military reports were zero in 2021 and 2022), reflecting the focus of Greater Bay Area development on economic growth and improving people’s livelihoods, with the construction of a humanistic Bay Area image yet to be fully developed.

3.5. Regional analysis of reports

Table 3. Regional report statistics

Region	Year/number of articles					Total
	2018	2019	2020	2021	2022	
Hong Kong Special Administrative Region	178	240	118	198	144	878
Greater Bay Area	134	203	95	126	153	711
Other Chinese Cities	26	85	48	58	42	259
Guangzhou	17	31	29	24	24	125
Shenzhen	14	28	38	17	12	109
Macao Special Administrative Region	10	59	9	12	10	100
Zhuhai	7	11	2	2	1	23
Dongguan	2	1	2	1	2	8

Table 3. (Continued)

Foshan	4	2	0	1	0	7
Zhongshan	2	2	0	1	0	5
Zhaoqing	0	0	0	1	0	1
Jiangmen	0	0	0	0	1	1

Based on the regional dimension analysis (as shown in Table 3), it was found that the geographical distribution of the Greater Bay Area-related reports exhibits a significant core-periphery feature. The study revealed that the Hong Kong Special Administrative Region consistently maintained a high volume of reports. Hong Kong's unique advantages in financial innovation, professional services, and international connections have made it the core focus of Greater Bay Area reporting. China's report volume peaked in 2019 (245 articles), a change closely linked to the nationwide impact of the policy. However, after 2020, this indicator showed a downward trend, reflecting a shift in the reporting perspective from national strategic levels to specific implementation aspects. Cities such as Guangzhou and Shenzhen maintained relatively stable reporting volumes, reflecting their leadership roles in regional development. In contrast, other cities in the Greater Bay Area received little attention, reflecting issues such as unclear positioning, untapped news features, and insufficient regional influence.

4. Conclusions and reflections

This study collected and organized *China Daily*'s English news texts on the Greater Bay Area, constructing a bilingual parallel corpus and using Python programming for text mining and data analysis to explore the characteristics and optimization strategies of the Greater Bay Area's international image construction. By analyzing the reporting characteristics, this study sought to explore the features and optimization pathways of the Greater Bay Area's image construction. The research found that *China Daily* primarily shapes the Greater Bay Area's international image through positive reporting frameworks from the dimensions of economic development, regional cooperation, and technological innovation. This effectively demonstrates the development achievements of the Greater Bay Area as a key national development strategy region and its strategic position in the global economic landscape. However, the study also revealed several issues in the current image construction: the cultural dimension is relatively weak, the construction of Bay Area cultural identity and soft power needs to be strengthened; there is insufficient diversification of information sources, and the voices of various stakeholders are not fully reflected; furthermore, the image portrayal of non-core regional cities is imbalanced, with regional development differences not receiving adequate attention in media reports. The characteristics and optimization pathways for the Greater Bay Area's image construction are as follows:

4.1. Shaping a distinct economic image and strengthening the Humanistic Bay Area

The reporting content focuses heavily on themes like economic development and regional cooperation, highlighting a distinctive economic image but paying insufficient attention to issues related to the Bay Area's history, culture, and society. The Greater Bay Area has a rich cultural heritage, including the long-standing Cantonese culture, the diverse and inclusive Hakka culture, and the vibrant Chaoshan culture, along with the foreign-influenced cultures gradually formed through interactions with other regions. The revolutionary red culture is also a strong part of the Bay Area's cultural identity. These elements build the important cultural foundation for the "humanistic Bay Area." In its external communications, China should enrich cultural symbols and showcase the Bay Area's diverse cultural landscape, shaping a unique regional image rooted in its deep historical and cultural heritage, as well as in emotional resonance with the people.

4.2. Imbalanced regional distribution and promoting balanced Bay Area development

Hong Kong and Macao, as international windows, maintain their core position, while the twin cities of Guangzhou and Shenzhen play a leading role. Other cities remain relatively peripheral, and the internal regional image influence is imbalanced. To optimize the regional reporting structure, it is necessary to follow the principle of "highlighting priorities, balancing development," focusing on exploring the unique positioning and development highlights of each city. It is crucial to plan concentrated and differentiated reporting content for different cities, enrich the international image communication of non-core cities, and create unique images for each city, avoiding the phenomenon of "one strong, many weak" in reports. This will help construct a more balanced regional communication pattern.

4.3. Officially dominated reporting perspectives and enriching information from diverse channels

The sources of information in the reports heavily rely on mainstream voices such as government officials and experts, while the participation of ordinary citizens and international organizations is relatively low. The inclusion of diverse discursive subjects in news reports contributes to the diversification and three-dimensionality of regional image construction, providing multiple reporting perspectives and enriching the depth of the news coverage. Firstly, encouraging grassroots voices by sharing the real stories of ordinary citizens can evoke emotional resonance and enhance the affability of the communication. Secondly, introducing the perspectives of international organizations and utilizing third-party narratives can improve the credibility of the communication. Thirdly, innovating the structure of communication subjects and creating a collaborative communication ecology with multiple voices will help build a more authentic, three-dimensional, and approachable image of the Bay Area.

In the future, optimization of communication strategies should focus more on balance and comprehensiveness, presenting a more authentic, three-dimensional, and diverse image of the Greater Bay Area, enhancing its international discourse power in specialized fields, balancing regional development, and contributing to the development of the Bay Area into a world-class benchmark region. These findings not only deepen the theoretical understanding of the Bay Area's image construction but also provide practical guidance for improving its international communication effectiveness. Future studies could explore a co-constructive perspective to examine the Greater Bay Area's image in English media news texts and offer more targeted communication strategies for creating a globally influential world-class Bay Area.

Funded project

This paper is the research outcome of the National Innovation and Entrepreneurship Project "Study on the Image Construction of the Guangdong-Hong Kong-Macao Greater Bay Area—A Case Study of *China Daily* Reports from 2018 to 2022" (Project Number: 202310577029).

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