

Topic Mining and Evolution of U.S. Mainstream Media Reporting on “Belt and Road Initiative” (2013-2023)

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Abstract: The year 2023 marks the 10th anniversary of the the Belt and Road Initiative. A comprehensive analysis and evaluation of mainstream media reports in the United States offer valuable insights into the overall understanding and strategic trends of the United States over the past decade. Such insights hold significant importance for shaping the future development of the Belt and Road Initiative. This study utilizes Factiva’s extensive self-compiled “Belt and Road Initiative” news corpus, employing social network analysis, multiple correspondence analysis, and co-occurrence network analysis to visualize the topic distribution and evolution in American media reports on Belt and Road Initiative. The identified topics in American “Belt and Road Initiative” reports encompass transportation, finance and trade, diplomacy and politics, science and technology, ecological environment, and medical care and health. From a diachronic perspective, the evolution of US “B&R” reporting unfolds in three distinct stages. The period from 2013 to 2015 is characterized by a focus on macro-policy reports, shifting to economic and technological reports from 2016 to 2019. The subsequent stage, spanning 2020 to 2023, centers on ecological sustainability and debt reporting. Furthermore, this study observes that the content of US “B&R” reports exhibits a pronounced political nature, gradually leaning towards characterizing Belt and Road Initiative as China’s geostrategic layout for developing countries.

Keywords: “Belt and Road Initiative”, Topic Mining, Topic Evolution.

1. Introduction

Since the inception of the Belt and Road Initiative in 2013, it has evolved from a conceptual framework to a tangible reality, gaining widespread acknowledgment within the international community. As of February 2022, China has entered into over 200 cooperation agreements with 148 countries and 32 international organizations, collectively undertaking the construction of the Belt and Road Initiative. Positioned as a novel endeavor and a manifestation of opening to the global arena in contemporary times, the Belt and Road Initiative has emerged as a pivotal operational platform fostering the establishment of a global community with a shared future for humanity. Simultaneously, China must comprehend the international community's perception of the Belt and Road Initiative, proactively construct a discourse framework tailored to the international community, and facilitate the establishment of a human-shared future community characterized by political mutual trust, economic integration, and cultural tolerance through international communication.

Numerous scholars have investigated the Belt and Road Initiative from diverse disciplinary perspectives, employing various theories and methodologies. Regarding the selection of textual data for the Belt and Road Initiative, three primary data sources prevail: 1. Online news reports (Zhu & Huang, 2016; Liu, 2020; Fang, 2018; Jun & Wang, 2020; Zhong, 2018); 2. Think tank articles (Qi & Fu, 2022; Zhang, Wang & Li, 2022; Ding & Liu, 2021; Han & Shu, 2021; Zhan, 2018); 3. Research papers (Wang & Chen, 2022). The analytical approaches in related research can be broadly categorized into two types. One involves corpus-based discourse analysis, primarily grounded in critical discourse analysis. This approach entails analyzing self-constructed corpus data to examine the image construction of the Belt and Road Initiative, media reporting attitude tendencies, topic evolution, and related issues. Another approach employs text mining

methods, including machine learning and social network mapping, to undertake quantitative research on the textual topics of Belt and Road Initiative reports.

However, currently, the majority of studies on media reports related to the Belt and Road Initiative concentrate on a synchronic level, with limited exploration into diachronic investigations regarding the evolution of finely-focused topics. In light of this, the paper aims to undertake a diachronic study of American reports on the Belt and Road Initiative from 2013 to 2023, utilizing a self-constructed large-scale corpus and employing text mining methods. This study can offer valuable insights for research on the overseas communication of the Belt and Road Initiative.

2. Data and Methodology

This study aims to address two primary questions: 1) What are the key domains of English reporting on the Belt and Road Initiative in the United States? 2) How has the focus of American mainstream media on the Belt and Road Initiative evolved diachronically over the past ten years (September 7, 2013, to May 31, 2023)?

This study relies on Dow Jones & Company’s Factiva Global News Database for data collection. Factiva stands as the world's most extensive and oldest news and company database, encompassing data from nearly 200 countries and regions, 28 languages, and almost 36,000 media outlets. It updates with no fewer than 500,000 news items daily and incorporates 100 news sources each month. Factiva serves as an authoritative big data platform that integrates multilingual data from both domestic and international sources. On September 7, 2013, President Xi delivered a speech titled “Promoting People's Friendship and Creating a Better Future” at Nazarbayev University in Kazakhstan, introducing for the first time the concept of jointly building the Silk Road Economic Belt. In view of this, regarding time selection, this paper designates the period from September 7, 2013, to May 31, 2023, as the primary analysis timeframe. Secondly,

concerning keyword selection, drawing from prior studies (Hu & Chen, 2018; Li & Zhang, 2020; Ding & Liu, 2021; Wang, 2021; Yu & Yi, 2022; Li & Xuan, 2022; Wang & Hu, 2023) on the English translation of “the Belt and Road Initiative”, this paper identified the following terms for title searching: "one belt, one road" OR "one belt and road" OR "the belt and road" OR "belt & road" OR "Silk Road Economic Belt and the 21st-Century Maritime Silk Road" OR "Silk Road Economic Belt" OR "21st-Century Maritime Silk Road" OR "the Land and Maritime Silk Road" OR "new silk road". The news or journal region was selected as "America". After removing duplicates, a total of 1058 reports were collected, forming the "American B&R Corpus" with a storage capacity of 653,618 words (excluding punctuation).

3. Synchronic Topic Distribution of American “B&R” Reporting

3.1. Keyword List Analysis

Based on data from the New York Times official website covering the years 2011 to 2022, 44,752 news reports, totaling 39,552,444 words (excluding punctuation), are annually randomly extracted to compose reference corpus 1,

subsequently referred to as the "American NYT Corpus." Simultaneously, utilizing the Factiva database, 9872 English reports on China's “the Belt and Road Initiative” from September 7, 2013, to May 31, 2023, totaling 6,048,494 words (excluding punctuation), form reference corpus 2, hereinafter designated as the "Chinese B&R Corpus." Employing AntCon 3.5.9, the "American B&R Corpus" undergoes comparative analysis with reference corpus 1 (i.e., "American NYT Corpus"), generating keyword list 1 to explore the focal points of American “the Belt and Road Initiative” reports in contrast to media reports in other fields in the United States. Similarly, the paper compares "American B&R Corpus" with reference corpus 2 (i.e., "Chinese B&R Corpus"), generating keyword list 2 to examine the topics of American “the Belt and Road Initiative” reports that are more prevalent in the US compared to Chinese “the Belt and Road Initiative” English reports. The Log-Likelihood algorithm is employed for calculating keyness, with the threshold value set at $p < 0.05$ (+ Bonferroni). Exclusion criteria involve functional words, terms used in the English translation of “the Belt and Road Initiative”, and words highlighted by news genre. Any eliminations result in the sequential addition of the subsequent subject words. The study selects the top 60 keywords, yielding the following results:

Table 1. Keyword list 1

Rank	K Value	Keyword	Rank	K Value	Keyword	Rank	K Value	Keyword
1	9433.08	development	21	1780.58	construction	41	1196.24	hong
2	9016.08	cooperation	22	1770.56	logistics	42	1191.14	regional
3	7796.1	infrastructure	23	1658.09	sustainable	43	1185.57	transport
4	7640.31	projects	24	1565.95	strategic	44	1165.25	europa
5	6790.38	economic	25	1528.66	developing	45	1142.17	guangdong
6	6374.98	investment	26	1505.81	railway	46	1034.45	findings
7	5488.47	trade	27	1504.87	growth	47	1013.92	fdi
8	5393.73	beijing	28	1446.74	port	48	998.84	sri
9	5208.56	asia	29	1419.07	environmental	49	997.82	gdp
10	5127.21	international	30	1344.52	yuan	50	982.81	markets
11	4041.68	global	31	1339.27	expo	51	950.93	central
12	3552.29	forum	32	1326.41	kazakhstan	52	946.85	lanka
13	2368.86	debt	33	1323.67	companies	53	931.71	eu
14	2175.06	overseas	34	1287.03	shanghai	54	928.59	asean
15	2165.62	connectivity	35	1279.35	financial	55	926.04	implementation
16	2117.12	pakistan	36	1262.8	africa	56	925.1	southeast
17	2102.55	opportunities	37	1241.52	promote	57	918.13	bilateral
18	2067.32	regions	38	1239.86	technology	58	871.91	ecological
19	2020.41	enterprises	39	1236.17	sustainability	59	855.99	resources
20	2007.11	energy	40	1216.43	kong	60	853.36	export

Table 2. Keyword list 2

Rank	K Value	Keyword	Rank	K Value	Keyword	Rank	K Value	Keyword
1	1317.74	research	21	137.16	right	41	102.8	energy
2	502.8	quote	22	136.87	method	42	102.65	investigators
3	362.38	study	23	136.12	military	43	101.63	funders
4	320.51	concluded	24	135.83	fbi	44	99.12	gVc
5	314.83	findings	25	129.25	university	45	95.45	causality
6	311.4	obtained	26	129.05	renewable	46	95.37	ecology
7	288.26	debt	27	128.62	risk	47	94.55	usaid
8	264.82	data	28	128.49	hawtai	48	94.09	medicine
9	228.8	environmental	29	123.01	fintech	49	93.68	defense
10	226.9	program	30	121.08	model	50	92.15	evidence
11	203.48	missile	31	118.11	effect	51	92.01	panel
12	198.2	analysis	32	116.81	conservation	52	88.71	influence
13	182.66	originating	33	116.09	researchers	53	88.7	labor
14	171.2	results	34	116.08	pharma	54	83.32	health
15	162.01	according	35	115.56	unidentified	55	82.14	foundaion
16	155.27	malaria	36	115.31	technology	56	80.07	camera
17	154.44	science	37	113.52	fch	57	77.82	companies
18	151.93	spatial	38	111.41	empirical	58	77.48	unionpay
19	144.55	ecological	39	109.43	supporters	59	74.85	arable
20	141.71	creditors	40	103.11	impact	60	72.96	healthcare

By examining keyword list 1, it becomes evident that US “the Belt and Road Initiative” reports emphasize the following five areas more than reports in other fields in the US:

- 1) Transportation: infrastructure, connectivity, construction, logistics, railway, port, transport, Guangdong, etc.
- 2) Financial trade: economic, overseas, global, debt, investment, trade, financial, GDP, markets, etc.
- 3) Ecological environment: energy, environmental, sustainability, resources, ecological, and so on.
- 4) Diplomatic politics: Asia, Beijing, international, strategic, regional, Kazakhstan, Pakistan, Africa, Hong Kong, Europe, bilateral, etc.
- 5) Science and technology: enterprises, companies, promote, technology, etc.

Examining the top 10 keywords in K value alone, it is evident that American media’s “the Belt and Road Initiative” reports focus on the impact of this initiative on promoting international cooperation and economic development, with “cooperation” and “development” as the core keywords in this field. Generally, media reports on the Belt and Road Initiative emphasize transportation, finance, and trade but pay less attention to culture and art.

3.1.1. Topic of Transportation

The keyword “infrastructure” representing transportation, holds the 3rd position. Infrastructure interconnection is a priority area in the construction of “the Belt and Road Initiative.” Over the past 10 years, numerous domestic and overseas infrastructure projects, including railways, highways, ports, airports, and cross-border bridges, have commenced construction one after another. Simultaneously, international transportation service networks such as China-Europe trains, international roads, shipping, aviation, and express delivery have gradually improved. This progress not only enhanced facility connectivity but also played a leading and fundamental role in strengthening economic and trade cooperation with countries along the route. It facilitated personnel exchanges and promoted the comprehensive construction of the “the Belt and Road Initiative.” The transportation industry of “the Belt and Road Initiative” has shouldered vital tasks, making positive strides in promoting its construction, presenting the world with “China’s plan” and exemplifying “China’s efficiency” and “China’s wisdom.”

American media has focused extensively on the impact of transportation on the economic, political, cultural, ecological, and social development of countries along the “the Belt and Road Initiative” concentrating on the field of transportation. Notably, the reports emphasize land transportation and land-sea transportation, aligning directly with the development of the Silk Road on land and the Silk Road on sea. Conversely, there are limited reports on air transportation. Additionally, four Chinese place names—Beijing, Shanghai, Hong Kong, and Guangdong—appear in keyword list 1. Unsurprisingly, Beijing, Shanghai, and Hong Kong, as national capitals, international metropolises, and super-large transportation hub cities, have become top keywords. Guangdong has also garnered attention from the United States due to the construction of the “Hong Kong-Zhuhai-Macao Greater Bay Area.” This underscores that the construction of the “Greater Bay Area” has captured significant interest from American media, regarding it as a crucial component of the Maritime Silk Road.

3.1.2. Topic of Finance and Trade

The keyword “economic” representing finance and trade, ranks 5. The “the Belt and Road Initiative” put forward in 2013 established a multilateral cooperation mechanism from a new perspective, providing Chinese wisdom and solutions for promoting the sustainable development of the global economy and aiding the world economy’s recovery. Financial cooperation serves as a pivotal component of economic, trade, and investment collaboration among countries along the “the Belt and Road Initiative.” Since the initiative’s inception, China has engaged in diverse forms of financial cooperation with countries along the route, playing a vital role in expanding the overseas business of Chinese-funded financial institutions, promoting RMB internationalization, and fostering pragmatic financial cooperation.

American media focus on overseas direct investment, foreign lending, trade credit, and energy exchange of countries along the Belt and Road in China, primarily centering on import and export trade, RMB internationalization, GDP of countries along the route, and more. Noteworthy is the American media’s inclination to concentrate on the debt situation of China’s “the Belt and Road Initiative” countries. On the one hand, the COVID-19 pandemic has led to decreased tax revenue and exports in various countries, causing a sharp economic decline. For many “the Belt and Road Initiative” countries, public debt has become a crucial concern, with some nations struggling to pay debt interest or facing debt default (as seen in Zambia in November 2020). However, the reports from the United States on debt sustainability in countries along the “the Belt and Road Initiative” and other regions tend to adopt a negative stance, asserting that China has accumulated excessive debts from low- and middle-income countries along the “the Belt and Road Initiative” infrastructure construction, leading to economic and financial challenges, and even crises, in countries along the route.

3.1.3. Topic of Diplomacy and Politics

The keyword “Beijing” representing diplomacy and politics, ranks 8. It is worth noting that three country names (excluding organization or region names, such as EU, ASEAN, Africa, etc.) appear in keyword list 1, namely Pakistan, Kazakhstan, and Sri Lanka. In 2013, the China-Pakistan Economic Corridor commenced construction, bringing a total investment of 25.4 billion US dollars to Pakistan since its launch. Kazakhstan, a pioneer of the “the Belt and Road Initiative” was among the first countries to engage in “the Belt and Road Initiative” cooperation with China, serving as a crucial partner in Central Asia. Sri Lanka, an important stop on the ancient Maritime Silk Road, joined the “the Belt and Road Initiative” early on. Over the past decade, the jointly built “the Belt and Road Initiative” by China and Sri Lanka has produced significant results, proving essential for Sri Lanka’s economic development and improvement of people’s livelihood.

Pakistan, Kazakhstan, and Sri Lanka, as the initial countries to join the “the Belt and Road Initiative” hold high representativeness and significance in studying the impact and effect of the initiative. On one hand, the key reports from American media on Pakistan, Kazakhstan, and Sri Lanka underscore their remarkable achievements under the Belt and Road Initiative. On the other hand, this also indicates that the United States is distilling lessons from these classic cases of “the Belt and Road Initiative” suggesting a sense of vigilance

and concern about both the Silk Road on land and the Silk Road on sea. Correspondingly, while the core idea advocated by the “the Belt and Road Initiative” is “building a community with a shared future for mankind” the United States generally uses “strategic” to modify the “the Belt and Road Initiative” and perceives it as a strategic deployment of China's geopolitics.

3.1.4. Topic of science and technology

The keyword “enterprises” representing science and technology, ranks 19. Scientific and technological innovation cooperation is a vital component of building the “the Belt and Road Initiative” and a significant force driving the high-quality development of “the Belt and Road Initiative.” In recent years, scientific and technological innovation cooperation led by “the Belt and Road Initiative” has played a crucial role in facilitating the flow and gathering of innovation elements, as well as the deep integration of scientific and technological innovation across various countries. China has emerged as a key contributor to global scientific and technological innovation.

The US “the Belt and Road Initiative” report also focuses on the field of science and technology, emphasizing transnational scientific and technological cooperation between China and countries along the “the Belt and Road Initiative” particularly in the realm of scientific and technological innovation. Reports from American domestic media on science and technology not only center on global issues such as ecological environment, health, food security, and natural disasters but also delve into emerging technology frontiers, including new-generation information and communication technology, new materials, artificial intelligence, intelligent manufacturing, biomedicine, and the digital economy. Notably, the scientific and technological reports on American “the Belt and Road Initiative” place special emphasis on blockchain and electronic information and communication.

3.1.5. Topic of Ecological Environment

The keyword “energy” representing ecological environment, ranks 20. Eco-environmental cooperation is a fundamental requirement of green “the Belt and Road Initiative” construction. Since the initiation of “the Belt and Road Initiative” ecological environment protection has held a crucial position. In June 2016, President Xi emphasized in his speech the necessity to deepen environmental protection cooperation, practice the concept of green development, strengthen ecological environment protection, and collaborate to build a 'Green Silk Road'. Most of the countries along the “the Belt and Road Initiative” are developing countries and emerging economies, generally facing multiple challenges such as environmental pollution and ecological degradation brought about by industrialization and urbanization. The call for accelerating transformation and promoting green development is continually increasing. By observing keyword list 2, compared with domestic English reports on the Belt and Road Initiative, American media reports on the Belt and Road Initiative tend to pay more

attention to terms such as “findings”, “environmental”, “missituation”, “Malaria” and “science”. In other words, they are more inclined to report the impact of the Belt and Road Initiative with the help of survey results or evidence from various sources and place greater emphasis on the ecological sustainable development, military strategic layout, disease transmission, and scientific and technological innovation of countries along the Belt and Road Initiative. Therefore, combining keyword list 1 and keyword list 2, the core topics of media reports on the Belt and Road Initiative from 2013 to 2023 in the United States can be roughly summarized into six major topics: transportation, finance and trade, diplomacy and politics, science and technology, ecological environment, and medical health.

3.2. Social Network Analysis

The corpus-based keyword list is limited to single words, restricting the displayed information. Therefore, utilizing the Python programming language, this paper segments the corpus into N-gram phrases (N=2-5). To prevent excessive overlapping clustering due to numerous words, the paper opts for 3-5 gram phrases with a frequency greater than or equal to 8 and 2 gram phrases with a frequency greater than or equal to 20. Compiling 442 items into dictionaries, the paper extracts high-frequency subject phrases, creates the adjacency list of these phrases, calculates the clustering module using Pajek and Vosviewer visualization software, and generates the clustering map of high-frequency subject phrases. Refer to the figure below to explore the topic focus of media reports on “the Belt and Road Initiative.”

As illustrated in the figure, the topic cluster map reveals 12 clusters of the “the Belt and Road Initiative” report topics in the United States. Through in-depth textual analysis, these 12 clusters can be summarized as follows:

- 1) Hong Kong Topic
- 2) Sri Lanka Topic
- 3) Economic Development Topic
- 4) Central Asia Topic
- 5) Developing Countries Topic
- 6) Sustainable Development Topic
- 7) Chinese Companies Topic
- 8) Sino-US Trade Topic
- 9) Belt and Road Initiative Impact Survey Topic
- 10) Belt and Road Initiative and EU Topic

In essence, reports on the Belt and Road Initiative in the United States from 2013 to 2023 primarily revolve around these 10 topics. It is noteworthy that the United States places particular emphasis on the Hong Kong topic, indicating that media reports on the Belt and Road Initiative in the United States have a political dimension and a propensity for covering political disputes. Simultaneously, American media also exhibit interest in the topic of Sri Lanka, revealing the American government's heightened attention to the 21st Century Maritime Silk Road and underscoring the United States' concerns about the potential impact of the Maritime Silk Road on its global standing.

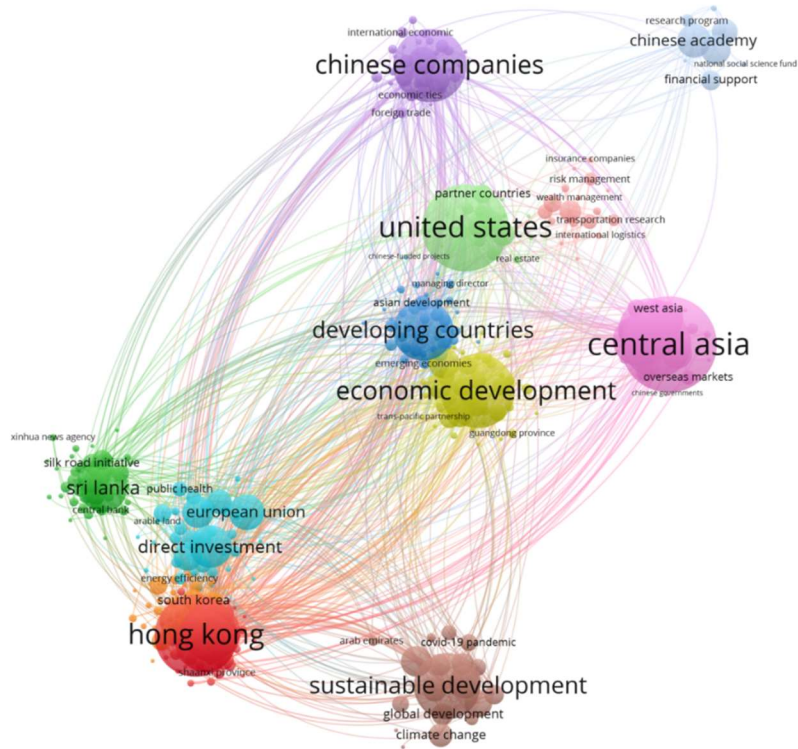


Figure 1. Social network analysis of US “B&R” reporting

4. Diachronic Evolution of Topics of American “B&R” Reporting

4.1. Diacronic Corresponding Analysis

To elucidate the historical changes in the topics reported by

the Belt and Road Initiative in the United States, this study conducts a corresponding analysis of the reports from 2013 to 2023 using KH Coder software. The findings are as follows:

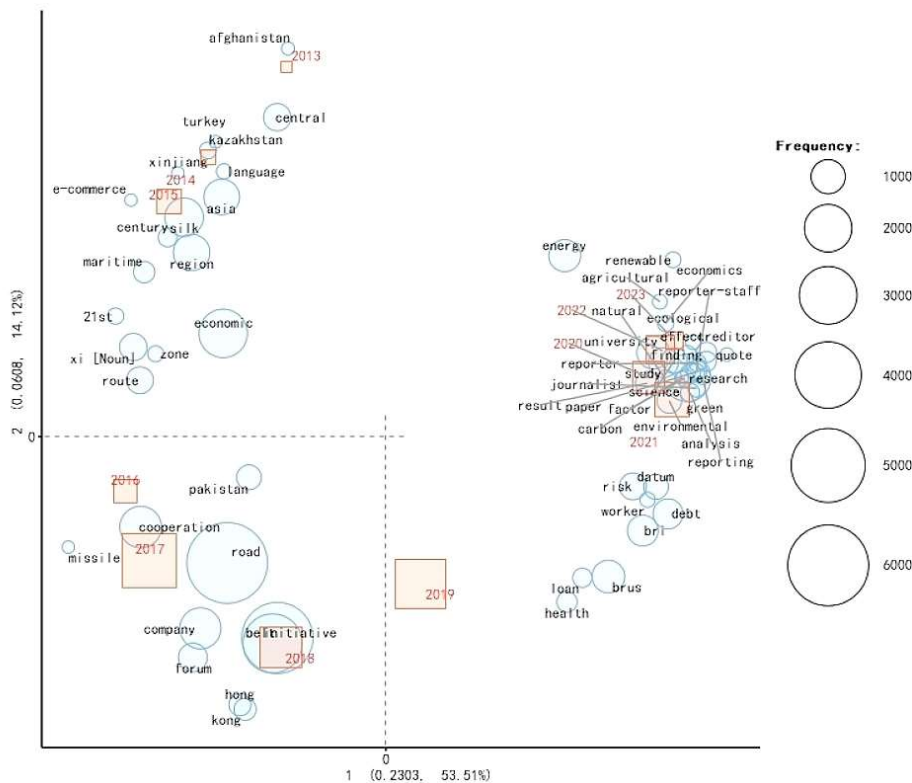


Figure 2. Diachronic corresponding analysis of US “B&R” reporting

The correspondence analysis chart indicates distinctive temporal characteristics in the American “the Belt and Road Initiative” reports. During 2013, 2014, and 2015, the American media discourse on “the Belt and Road Initiative” exhibited a tendency to address the initiative from a macroscopic perspective. Concurrently, the focus of “the Belt and Road Initiative” reports during this period leaned towards the implementation in Central Asia. Specifically, the U.S. Belt and Road Initiative report in 2013 predominantly centered on "Afghanistan." In 2014, regional reports diversified, extending attention to "Xinjiang" "Turkey" "Kazakhstan" and other locations. Simultaneously, the belt and road initiative reports during this stage broadened their coverage to include "language" while the key topics of the belt and road initiative reports in 2015 transitioned to "e-commerce" and "maritime." Language exchange within the belt and road initiative countries also emerged as a significant content in American reports, recognizing that language serves as the carrier of culture, and language exchange essentially equates to cultural exchange. The United States astutely seized upon this point and conducted concentrated reporting. In summary, the key topics of American the belt and road initiative reports from 2013 to 2015 can be encapsulated as "Central Asia" "language" and "e-commerce."

In 2016, 2017, 2018, and 2019, the reports on the Belt and Road Initiative in the United States became increasingly focused. During 2016 and 2017, American media primarily concentrated on reporting "Pakistan" "cooperation" and "miss." It is discernible that, during this stage, the Belt and Road Initiative entered a promotional phase, prompting the United States to closely monitor the cooperative relations between countries along the Belt and Road Initiative and China. This also reflects heightened U.S. vigilance at the military level regarding the Belt and Road Initiative. Reports on the Belt and Road Initiative in 2018-2019 shifted focus to centralized tracking of important summits. Concurrently, there was an emerging focus on Hong Kong and major large-scale technology companies in China, leading to political and technological reporting on China within the context of the Belt and Road Initiative reports. This shift is indicative of the comprehensive key topics in American the Belt and Road Initiative reports from 2016 to 2019, which can be encapsulated as "cooperation" "miss" "Hong Kong" and "company."

The clustering of American reports in 2020, 2021, 2022, and 2023 holds significant prominence, coinciding with the four years following the outbreak of the COVID-19 pandemic. The reports on the Belt and Road Initiative in the United States during this stage distinctly differ from those in the preceding stages, placing emphasis on "ecological environment" "agriculture and carbon emissions" and highlighting investigative evidence. Notably, there is a

discernible shift in media sources during this period, with a notable trend towards citing interview materials from domestic university researchers or the scientific research conclusions of relevant research units on a large scale. This shift is reflected in the high-frequency keywords of this stage, including "quote" "research" and "university." Simultaneously, reports during this period give particular attention to "ecological" "renewable" "energy" "carbon" "culture" and similar topics. Against the backdrop of escalating global challenges such as global warming, extreme weather events, food crises, energy shortages, and the ongoing COVID-19 pandemic, ecological environment, climate issues, and sustainable development have progressively emerged as the core topics of the Belt and Road Initiative reports in the United States. In summary, the key topics of American the Belt and Road Initiative reports from 2020 to 2023 can be encapsulated as "ecological" "carbon" "energy" and "environmental".

4.2. Diachronic Co-occurrence Network Analysis

Based on these three historical stages, the co-occurrence network diagram is depicted as follows:

Through the co-occurrence network diagram of the three periods, we observe that reports from 2013 to 2015 predominantly concentrate on the macro policy reporting level, aligning with the initial stage of the Belt and Road Initiative. Moving into the period from 2016 to 2019, six years into the implementation of the Belt and Road Initiative, numerous noteworthy achievements have been realized, significantly impacting global trade and the economic development of the United States, garnering considerable attention from American officials. In contrast to other core words in each stage, "growth" and "U.S." emerge singularly in this stage, indicating substantial progress in the implementation of the Belt and Road Initiative and heightened attention from the United States. From 2020 to 2023, coinciding with the outbreak of the COVID-19 pandemic and exacerbation of global issues such as the climate and energy crisis, there is a substantial shift in the topic of Belt and Road Initiative reports in the United States. This period places greater emphasis on environmental issues and delves into the debt problems of Chinese Belt and Road Initiative countries during the pandemic. Consequently, the thematic characteristics of media reports in the three periods can be summarized as follows: 2013-2015: Macro policy reports; 2016-2019: Reports on achievements and impact on the United States (with a focus on the economy and technology); 2020-2023: Reports on Ecological Sustainability and Debt.

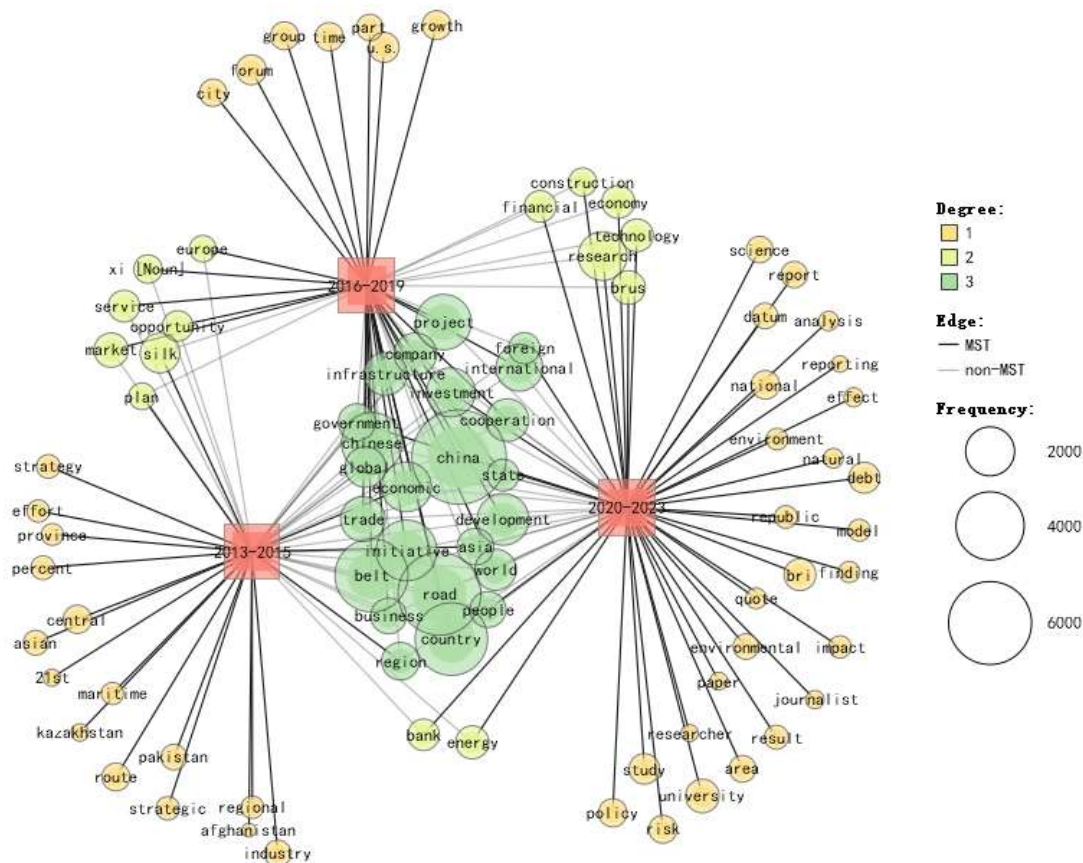


Figure 3. Diachronic co-occurrence network analysis of US “B&R” reporting

5. Conclusion

Combining a large-scale corpus, this study employs tools such as KH Coder, VosViewer, Python, and others, utilizing social network analysis, multiple correspondence analysis, and co-occurrence network analysis to investigate the thematic changes in Belt and Road media reports in the United States from 2013 to 2023 at a historical level. The reported topics of the Belt and Road Initiative in the United States are categorized into six major topics: transportation, finance and trade, diplomacy and politics, science and technology, ecological environment, and medical health. Furthermore, as time progresses, the thematic focus of Belt and Road Initiative reports in the United States undergoes historical transformations. Over the past decade, these reports can be roughly divided into three stages based on their topics. The stage spanning 2013-2015 emphasizes macro reporting, while the period from 2016 to 2019 shifts focus to economic and technological impact reporting. From 2020 to 2023, the emphasis transitions to ecological sustainability and debt reporting.

This study reveals a notable lack of attention in Belt and Road Initiative reports in the United States to topics related to Chinese medicine and Chinese culture communication. Additionally, the content of these reports tends to be highly political, characterizing the Belt and Road Initiative as China's strategic layout for developing countries. This suggests that in the later stages of overseas communication for the Belt and Road Initiative, there is an opportunity to enhance the promotion of Chinese medicine and Chinese culture, thereby expanding the communicative influence and impact of Chinese culture. Overall, the design, tools, and

analysis modules employed in this study offer valuable reference points for future research in various fields.

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