

What's Hot in Regional Diplomacy? Tracking ASEAN Foreign Policy Trajectories Through Entity-Based Text Analysis

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Abstract

Understanding foreign policy trajectories across Southeast Asia requires tracking dynamic public diplomatic narratives. Existing computational models often prioritize prediction accuracy over qualitative interpretability. This study aims to establish an automated entity-based text-mining framework to track and visually map regional diplomatic themes across eleven Southeast Asian nations. Using a Python pipeline on a 2025 Google News corpus of 3,312 articles and 107,460 sentences, candidate topics were extracted via spaCy natural language processing, ranked through multi-factor composite scoring, mapped using NetworkX co-occurrence graphs, and grouped via K-Means clustering with Silhouette Analysis. The empirical findings reveal a clear structural hierarchy in media visibility, led by Singapore, Indonesia, and Malaysia. Bilateral connectivity peaks sharply around mainland border dynamics, particularly between Thailand and Cambodia. Semantic clustering demonstrates a dual-track narrative: localized economic integration and cross-border trade drive internal cooperation, whereas major-power competition, China's economic footprint, and South China Sea maritime claims dominate external security discourse. This transparent, low-latency framework bridges computational text processing with qualitative policy analysis, offering a scalable tool for real-time diplomatic monitoring.

INTRODUCTION

Within modern international relations, diplomatic events operate as critical mechanisms through which sovereign states and international bodies advance their strategic agendas, cultivate bilateral relationships, and address complex transnational crises (Leguey-Feilleux, 2017; Ociepka, 2018). Rather than remaining passive observers, public audiences that infact continuously monitor, interpret, and debatethese diplomatic occurrences across media ecosystems, generating dynamic collective sentiments (Yiu et al., 2022). When public sentiment trends positively, it provides essential domestic legitimacy and political capital, enabling governments to project a cohesive national vision and build broader support for strategic initiatives (Rhee et al., 2024; Huh & Park, 2024; Yiu et al., 2022).

(in million US\$)

Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Brunei Darussalam	18,100.5	17,102.6	12,789.9	11,411.4	12,136.0	13,556.0	13,511.0	12,003.2	13,924.7	16,678.4
Cambodia	15,442.9	16,763.6	18,088.9	19,426.6	22,041.8	24,809.2	27,103.7	25,960.2	27,164.7	29,610.9
Indonesia	904,691.9	889,384.6	854,953.1	930,536.7	1,014,090.4	1,040,051.4	1,121,147.7	1,059,777.5	1,186,189.1	1,317,259.3
Lao PDR	11,955.3	13,274.1	14,452.3	15,901.5	17,060.6	18,128.9	18,718.4	19,097.3	18,981.6	15,049.2
Malaysia	322,159.3	337,455.7	301,354.5	301,255.8	319,109.1	358,783.5	365,177.8	337,455.9	373,832.4	407,027.4
Myanmar ¹⁾	61,862.6	66,331.1	53,667.1	60,139.5	61,503.9	67,145.0	66,499.8	70,174.1	72,862.6	60,967.3
Philippines	280,771.9	297,831.8	306,465.0	318,643.5	328,831.2	344,886.5	376,792.7	361,781.0	394,087.3	404,284.2
Singapore	307,578.0	314,849.5	308,004.1	319,040.7	343,328.8	376,797.4	376,826.0	348,529.0	423,634.1	466,709.6
Thailand	420,616.2	407,303.5	401,269.4	413,324.0	456,354.3	506,757.7	543,934.6	500,356.2	505,522.1	495,301.9
Viet Nam	171,219.3	186,223.6	239,426.7	257,116.2	281,298.4	310,052.8	334,308.3	346,609.6	366,123.2	408,694.6
ASEAN	2,514,397.7	2,546,520.3	2,510,471.1	2,646,795.9	2,855,754.5	3,080,768.3	3,244,020.0	3,081,744.0	3,382,321.9	3,621,582.7

Figure 1. GDP at Current Prices in ASEAN, 2013-2022 (ASEAN Secretariat (2023))

Diplomatic dynamics within the Association of Southeast Asian Nations (ASEAN) offer a vital domain for examining these public communication flows (Sriyai, 2026). As detailed in Table 1.1: GDP at Current Prices in ASEAN, the aggregate economic output of ASEAN member states grew substantially from US\$ 2.51 trillion in 2013 to over US\$ 3.62 trillion in 2022. This expanding economic scale positions ASEAN as an economic powerhouse within the global political economy. However, rapid growth also attracts intense major-power competition, placing ASEAN at the strategic crossroads of global economic and diplomatic interests. Managing regional stability amid these competing foreign priorities makes strategic communication and diplomacy crucial for preserving diplomatic autonomy and cohesion.

Trading Partner	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ASEAN	617,751.6	608,113.8	535,380.4	517,954.4	589,116.7	644,654.1	632,604.3	567,105.8	711,839.5	856,465.5
Trading Partner	1,915,317.6	1,927,094.6	1,737,481.4	1,721,943.0	1,982,183.5	2,163,451.6	2,183,827.8	2,102,745.5	2,634,971.3	2,989,716.9
Australia	69,053.1	73,395.2	57,492.6	52,878.8	59,108.1	65,633.2	63,090.9	54,876.8	82,162.8	101,098.1
Canada	13,529.3	13,331.2	12,655.2	12,633.6	13,796.7	15,544.7	17,141.9	16,279.5	18,971.1	23,120.3
China	351,583.4	366,711.2	363,496.8	368,567.3	440,973.3	478,535.0	507,963.2	518,617.7	670,255.1	722,103.1
EU-27	214,703.2	218,259.7	201,504.4	205,371.9	230,369.9	252,190.0	245,073.6	226,783.0	269,455.8	295,161.9
India	68,269.4	67,993.1	60,165.7	58,592.2	73,668.7	80,427.7	77,097.8	65,711.1	91,618.2	113,084.2
Japan	240,430.9	229,094.7	202,800.1	202,417.6	218,805.8	230,112.8	226,029.2	204,981.3	241,338.7	268,585.7
Korea, Republic of	134,864.2	131,438.3	120,566.7	124,466.9	154,849.5	160,727.7	156,506.5	154,966.7	189,793.5	222,768.1
New Zealand	9,789.0	10,706.0	8,753.0	7,899.6	9,504.6	10,231.8	10,341.3	9,044.7	11,149.5	14,899.4
Russia	19,984.1	22,571.1	13,969.0	11,956.8	16,748.0	19,922.0	18,198.0	14,096.5	18,167.8	15,369.2
United Kingdom	31,831.4	29,919.4	29,150.7	28,207.2	30,389.7	34,678.9	35,744.9	31,805.4	31,660.5	34,321.4
USA	205,313.1	211,507.9	210,582.4	211,810.0	233,833.8	262,126.2	294,793.3	309,088.8	365,599.6	420,444.6
Rest of The World	555,966.6	552,166.6	456,344.9	437,141.2	500,135.5	553,321.8	531,847.1	496,494.0	644,798.5	758,760.9
TOTAL	2,533,069.2	2,535,208.4	2,272,861.8	2,239,897.4	2,571,300.2	2,808,105.7	2,816,432.0	2,669,851.4	3,346,810.8	3,846,182.4

Figure 2. ASEAN Trade in Goods by Trading Partners, 2013-2022 (ASEAN Secretariat, 2023)

The strategic stakes of diplomacy in ASEAN are further highlighted by its trade relationships with external partners. As shown in Table 1.2: ASEAN Exports and Imports of Goods by Trading Partners (2013-2022), Intra-ASEAN trade remained the single largest trade block at US\$ 856.46 billion in 2022 (22.27% of total regional trade). Concurrently, external trade flows remain heavily weighted toward major foreign powers, led by China at US\$ 722.10 billion (18.77% of total trade) and the US at US\$ 420.44 billion (10.93% of trade).

Because ASEAN member states maintain strong commercial ties, public diplomatic messaging directly impacts stability and cooperation. According to Agenda-Setting Theory (McCombs & Shaw, 1972), news media outlets influence public priorities not by selecting which topics receive prominent coverage. In foreign affairs, citizens rarely observe diplomatic negotiations directly; instead, they rely on the news media as the primary mediator of international events, determining which events gain public visibility and interpretation. Heightened public hostility or skepticism serves as a constraint, frequently forcing leaders to adopt risk-averse strategies, scale back political objectives, or pivot away from controversial foreign policy agendas (Hartig, 2017; Holsti, 2009; Barston, 2019). Given that public opinion exerts such significant leverage over state action, communication through news media has become a priority for contemporary diplomatic research.

Understanding how news media shapes these perceptions relies on foundational theoretical paradigms, anchored by Agenda-Setting Theory (McCombs & Shaw, 1972) and Framing Theory (Entman, 1993). Scheufele (1999) and Iyengar (1990) operationalized framing

within political communication, Chong and Druckman (2007) provided empirical extensions showing that subtle shifts in the emotional tone or structural framing of foreign policy agreements can alter public support, Narrative Persuasion Theory (Bilandzic & Busselle, 2013) explained that when individuals become cognitively immersed within a cohesive story arc, qualitative narratives far more influential in shaping public alignment. Together, these theoretical contributions establish a clear continuum: news media determines event visibility, structures narrative interpretation, and primes evaluative standards, ultimately governing how public diplomacy is perceived across nations.



Figure 3. ASEAN Preferred News (ISEAS, 2026)

According to the State of Southeast Asia 2026 Survey conducted by the ISEAS - Yusof Ishak Institute, 87.2% of ASEAN residents prefer using online news sources to stay informed about political and diplomatic affairs. Therefore, analyzing what is trending across news media provides vital clarity on international affairs.

To evaluate how foreign policy narratives move across societies, scholars historically relied on qualitative content analysis, structured focus groups, and representative public opinion polling (Berinsky, 2017; Moretti et al., 2011). As international relations research expanded, incremental extensions introduced early machine learning protocols to automate sentiment tracking (Weiss et al., 2010). The emergence of modern Natural Language Processing (NLP) and transformer-based architectures marked a seminal paradigm shift in computational text analysis. Scholars began deploying advanced language models to classify policy documentation (L. Zhou et al., 2022). However, despite their impressive predictive power and statistical precision, these complex computational models introduced a critical methodological gap: they operate as opaque "black boxes" that prioritize prediction accuracy over qualitative interpretability. Foreign policy research lacks an efficient framework that combines the processing speed of automated text retrieval with the interpretive depth needed.

The novelty of this research lies in its development of a transparent, entity-based text-mining framework that bridges computational text processing with qualitative policy analysis, offering a scalable tool for real-time diplomatic monitoring. This study provides empirical evidence of regional narrative structures through network analysis and semantic clustering, demonstrating a dual-track narrative pattern across ASEAN: localized economic integration drives internal cooperation, whereas major-power competition and maritime security dominate external discourse.

This study directly addresses this gap by establishing a simple, automated framework that combines qualitative news extraction with automated processing to efficiently track and identify trending diplomacy topics across digital media. The primary goal of this study is to establish a simple, automated framework that combines qualitative news extraction with

automated processing to track and identify trending diplomacy topics across digital media. Ultimately, this framework offers a scalable and reproducible mechanism to track regional media agendas as they unfold Southeast Asia.

METHOD

This study adopted a qualitative text-mining framework designed to extract, analyze, and visually map cross-border narrative themes across eleven Southeast Asian nations: Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam using Python.

This qualitative text-mining methodology extracts and maps diplomatic narratives across eleven ASEAN nations using 2025 Google News data. The pipeline collects news with queries, and tokenizes content at the sentence level. Using spaCy natural language processing, entity-focused candidate topics are isolated and ranked via a multi-factor composite scoring engine. Relationships are mapped into two network graphs based on absolute mention volume and pairwise sentence co-occurrences. Finally, topics are clustered using K-Means with Silhouette Analysis and Cosine Similarity, generating a spatial Semantic Venn Diagram to highlight regional policy overlaps.

The primary empirical dataset is assembled through systematic web scraping from Google News to capture regional reporting on diplomatic relations across Southeast Asia. To ensure balanced temporal distribution throughout the year 2025, search queries are executed iteratively across twelve distinct monthly windows for each ASEAN nation.

$$\text{Query}_{c,m} = \text{Country}_c + \text{"diplomacy"} + \text{before:}T_{\text{end},m} + \text{after:}T_{\text{start},m}$$

In this query formulation, Country_c represents one of the eleven ASEAN member states, while "diplomacy" serves as the core thematic anchor. The parameters $T_{\text{start},m}$ and $T_{\text{end},m}$ bound the search window to a specific month $m \in \{1, 2, \dots, 12\}$ in 2025 (e.g., before:2025-02-01 after:2024-12-31 for January 2025). Once raw article contents are extracted from the web scraper, non-English reporting undergoes automated translation routines to standardize all text into English. The normalized full-text articles are then processed through the NLTK sent_tokenize engine to segment long texts into discrete sentence units. This sentence-level tokenization isolates surrounding contextual descriptions.

To determine the primary narrative topics associated with each nation, the pipeline isolates sentences containing explicit country mentions. Candidate topic phrases are extracted using Part-of-Speech tagging and noun-chunk filtering via spaCy. To rank candidate topics without relying solely on simple counts, each term is evaluated through a multi-factor composite scoring engine using three equal dimensions:

$$S = (0.33 \times R) + (0.33 \times C) + (0.33 \times D)$$

where S is the score, R represents term frequency (repeats), C denotes contextual entity coreferences, and D measures syntactic dependency depth calculated by summing token head linkages and child modifiers. Alongside that, to capture macro-level thematic trends across the entire unstructured corpus without restricting analysis to specific country mentions, a global WordCloud visualization is implemented.

To understand diplomatic relationships and media focus in Southeast Asia, sentence-level data is turned into network maps using the NetworkX tool. The analysis is divided into two main approaches: (1) Mention Framework (which tracks overall media attention) and the (2) Interaction Framework (which tracks connections between countries). The Mention framework answers *which countries dominate news headlines*, while the Interaction framework shows *which countries are linked together in diplomatic discussions*. The Mention framework measures how often each country appears in the news. The size of a country's node shows its total number of sentence appearances (u):

$$\text{Mention Count}(u) = \sum_{s \in S} \mathbb{I}(u \in s)$$

A mention is counted whenever a country's name appears in a sentence. In this formula, u stands for a specific ASEAN country, while S represents the full collection of tokenized sentences. The letter s refers to a single sentence within that collection. The symbol $\mathbb{I}(u \in s)$ is a simple counting rule: it equals 1 if country u is named in sentence s , and 0 if it is not. The sum symbol adds up these values across all sentences to find the total mentions.

The Interaction framework looks at bilateral relationships and shared diplomatic discussions. A connection is created only when two or more distinct ASEAN countries appear in the exact same sentence. Mentioning two countries in different sentences or paragraphs does not count, with this equation:

$$W_{u,v} = \sum_{s \in S} \mathbb{I}(u \in s \wedge v \in s) \quad \text{for } u \neq v$$

In this equation, $W_{u,v}$ represents the connection strength between country u and country v . The symbol $\wedge$ means "AND," requiring both country u and country v to appear in sentence s for the system to count it as 1. The condition $u \neq v$ ensures a country is not paired with itself. The formula totals these shared appearances across all sentences in collection S . To see how well-connected each nation is within the ASEAN network, Degree Centrality (C_D) calculated for country v : $C_D(v) = \frac{\sum_{u \neq v} \mathbb{I}(W_{u,v} > 0)}{|V| - 1}$ Here, $C_D(v)$ gives country v a connectivity score. The top part of the fraction counts how many different neighboring nations (u) share at least one joint mention with country v . The bottom part, $|V| - 1$, divides this count by 10 (the total of 11 nations minus 1), normalizing a scale from 0 to 1.

To analyze specific thematic linkages between country pairs, sentences mentioning two or more ASEAN nations are processed to capture active interaction topics. For every pairwise combination of countries identified in a shared sentence, extracted topic candidates are scored and accumulated in a topics ledger.

To group overlapping policy themes across Southeast Asia, unique diplomatic topics extracted from shared sentence interactions are organized using machine learning text clustering. Rather than manually sorting themes, the pipeline converts raw text into numerical representations and groups them based on conceptual similarity. To allow algorithms to process human text, every unique topic extracted from the interaction ledger is transformed into a word vector using spaCy's pre-trained English language model (en_core_web_md).

K-Means clustering algorithm groups them into distinct thematic categories (K). To determine the optimal number of clusters (K^*) automatically without human bias, the system uses a cluster quality test (commonly known in machine learning as Silhouette Analysis): $K^* = \arg \max_k (\text{Mean Cluster Quality Score}(k))$ This cluster quality test calculates how well-separated the topic groups are. For every candidate number of clusters ($k \in \{2, 3, 4, 5\}$), it

measures two distances for each topic vector:

1. *a*: The average distance to all other topics in the same cluster (measuring how compact the group is).
2. *b*: The average distance to topics in the nearest neighboring cluster (measuring how well-separated the groups are).

After K-Means assigns each topic to a primary cluster centroid (the mathematical average vector of that group), the pipeline evaluates whether a topic belongs exclusively to one group or overlaps into another. The similarity between topics are calculated using Cosine Similarity. The resulting spatial layout is rendered as a Semantic Venn Diagram. Every topic is displayed inside a clean text badge alongside country code tags representing the associated ASEAN member states, such as Trade Agreement (1, 5) for Brunei(1) and the Philippines(5).

RESULTS AND DISCUSSION

Table 1. ASEAN Countries News Data EDA

No.	Category	Count
1	Singapore News	443 articles (13.38%)
2	Indonesia News	397 articles (11.99%)
3	Malaysia News	397 articles (11.99%)
4	Myanmar News	380 articles (11.47%)
5	Thailand News	369 articles (11.14%)
6	Philippines News	349 articles (10.54%)
7	Laos News	286 articles (8.64%)
8	Vietnam News	282 articles (8.51%)
9	Cambodia News	239 articles (7.22%)
10	East Timor News	94 articles (2.84%)
11	Brunei News	76 articles (2.29%)
	Total Articles	3,312 articles
	Total Sentences	107,460 sentences

This exploratory data analysis outlines the volume and structural distribution of the 2025 news dataset for Southeast Asian diplomacy. Based on Table 1, the final corpus comprises 3,312 scraped news articles, which yield 107,460 sentences. Media visibility across the eleven analyzed nations reveals a clear structural hierarchy: Diplomatic News is heavily concentrated among major ASEAN economies and active political centers, led by Singapore with 443 articles (13.38%), followed closely by Indonesia and Malaysia with 397 articles each (11.99%). Small-scale economies display the lowest media presence, with East Timor recording 94 articles (2.84%) and Brunei registering 76 articles (2.29%).

Table 2. ASEAN Countries News Key Topics

No.	Category	Key Topics
1	Singapore News	Minister, Nation, Ties, Port, Land
2	Indonesia News	Nation, China, Asean, State, Prabowo
3	Malaysia News	Asean, China, Thai, Prime Minister, Rate
4	Myanmar News	China, Asean, Nation, Military, Port
5	Thailand News	Thai, Land, Cambo, China, Border
6	Philippines News	China, South China Sea, Asean, Land, Nation
7	Laos News	China, Thai, China Asean Community, China Development, Cooperation
8	Vietnam News	China, Nation, Names, Port, Land
9	Cambodia News	Land, Order, China, Border, Nation
10	East Timor News	ASEAN, ASEAN Member States, ASEAN Membership, East, Year ASEAN Summit
11	Brunei News	Second Secretary, Secretary, Attache, Economic, Ali Ms

The multi-factor topic scoring engine from Table 2, extracts and ranks the top five diplomatic themes for each Southeast Asian nation from the 2025 news corpus. By evaluating term frequency, coreferences, and syntactic dependencies, the pipeline identifies key domestic and things driving regional discourse.

China emerges as the most prominent geopolitical entity across the dataset, appearing among the top themes in eight out of the eleven analyzed countries. In nations like Cambodia, Laos, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam, China features prominently alongside core sovereignty and territorial keywords such as Land, Border, and Port. This pattern reflects China's deep economic footprint through infrastructure investments, trade routes, and ongoing maritime discussions in the region. The specific prominent appearance of the South China Sea in the Philippines dataset highlights ongoing territorial discussions, whereas in Laos, terms like China Asean Community and Cooperation reflect regional economic integration initiatives.

Regional multilateralism centered around the Association of Southeast Asian Nations is another primary structural theme across the dataset. The keyword Asean ranks highly for East Timor, Indonesia, Laos, Malaysia, Myanmar, the Philippines, and Vietnam. East Timor displays a heavy focus on institutional integration, with terms such as Asean Member States, Asean Membership, and Year Asean Summit reflecting its formal accession efforts to the regional bloc during 2025 summits. Similarly, Indonesia's top topics link state-level leadership (State, Nation) directly with Asean and Prabowo, reflecting diplomatic coverage surrounding President Prabowo Subianto's regional and foreign policy initiatives.

State leadership and administrative governance also form a major component of media focus across several member states. Singapore and Malaysia highlight institutional authority through terms like Prime Minister, Minister, and Rate, alongside broader diplomatic relations marked by Ties and Port. Cambodia and Thailand show strong bilateral geographic links, with both countries sharing keywords like Land, Border, and cross-border references such as Cambo. Meanwhile, Brunei exhibits a unique administrative focus in the extracted dataset, dominated by official diplomatic designations such as Secretary, Attache, and Economic. Overall, the scoring results illustrate a clear division between localized border governance, institutional ASEAN expansion, and macro-level superpower engagement.



This chart displays the relative importance of key topics extracted for each ASEAN member state. The scores are calculated using a composite topic scoring formula that combines term frequency, coreferences, and syntactic dependencies to measure reporting intensity. The distribution shows clear variation across member states. Thailand dominates the dataset with the highest overall metrics. Its top keyword, Thai, reaches 2,768.37 points, followed closely by Land at 2,516.58 points and Cambo at 970.86 points. Paired with China (458.37) and Border (451.77), Thailand displays an extreme concentration of coverage on bilateral border matters. Cambodia mirrors this focus, led by Land at 946.44 points alongside Order (444.84), China (444.18), and Border (425.70), proving that cross-border territorial dynamics represent the most intense media focus in the region.

Vietnam, Malaysia, and the Philippines form a second tier centered on regional foreign affairs. Vietnam recorded its highest score for China at 651.09 points. Malaysia shows very strong regional orientation with Asean leading at 600.93 points, while the Philippines is led by China (483.45) and South China Sea (264.00), emphasizing maritime sovereignty issues in the coast of the ASEAN Nations.

The remaining nations display moderate scores tied to state governance, institutional membership, and domestic security. Myanmar records moderate scores for China (458.70) and Military (313.17). Indonesia balances Nation (414.48) with Prabowo (256.41). Singapore remains focused on governance through Minister (359.70), while East Timor peaks at Asean (422.07) during its accession push. Brunei records the lowest overall scores (155.76 to 228.36) for administrative diplomatic titles.



This WordCloud visualizes the most frequent terms across the entire 2025 news dataset for Southeast Asian diplomacy. The size of each word directly represents its raw frequency

count within the scraped news articles after standard text preprocessing and noise filtering for the driving topics (by frequency) of the ASEAN Diplomacy News, to see the leading topics in the news.

The generated WordCloud reveals that China is the single most dominant external entity shaping Southeast Asian diplomatic news. Its prominence outpaces all individual member states and even the regional organization itself. This highlights how heavily regional media coverage is rooted to China's diplomatic, economic, political presence across ASEAN.

Behind China, the term ASEAN serves as the primary institutional focal point, confirming that regional multilateralism remains a core framework for reporting. Among individual member states, Thailand, Indonesia, and Singapore lead in media visibility, followed closely by Vietnam, Myanmar, Malaysia, and Cambodia. This distribution indicates that larger economies and active diplomatic hubs receive the highest coverage.

Thematic words across the corpus highlight a strong focus on economic and official state relations. Key structural terms such as cooperation, economic, trade, and security demonstrate that economic ties and regional stability form the main substance of diplomatic discussions. Meanwhile, functional titles like foreign, minister, and president reflect an emphasis on formal high-level government meetings, visits, and summits across the region.

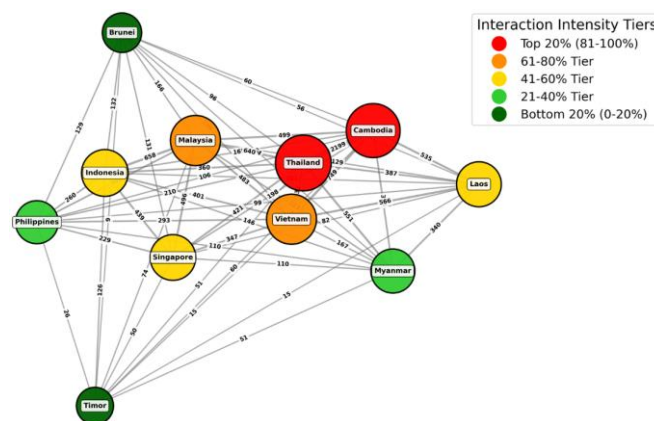


Figure 6. ASEAN Countries' Interaction in News

This interaction graph illustrates bilateral diplomatic connectivity between ASEAN member states based on co-occurrence in the 2025 news corpus. Edge weights measure shared sentence appearances between country pairs, while total node degree reflects a nation's overall bilateral interaction intensity across quintile tiers. The network highlights a heavily centralized diplomatic core dominated by Thailand and Cambodia, which form the top 20% tier. Thailand records the highest total weighted degree at 5,446, closely followed by Cambodia at 4,895. The bilateral connection between Cambodia and Thailand represents the strongest edge in the entire network by a massive margin, registering 2,199 shared interactions. This overwhelming connection reflects intense reporting surrounding shared border negotiations, bilateral disputes, and economic relations. Cambodia also maintains strong ties with Vietnam (749 interactions), reinforcing the primary role of mainland Indochina in driving regional news co-occurrences.

Malaysia and Vietnam lead the second tier (61-80% tier) with total degrees of 3,731 and 3,691, respectively. Malaysia functions as a key diplomatic bridge between mainland and

maritime ASEAN, showing strong bilateral links with Indonesia (658 interactions), Thailand (640 interactions), and Singapore (496 interactions). Similarly, Vietnam shows strong connectivity with neighboring mainland states like Laos (566 interactions) while maintaining balanced connections across the broader region. Indonesia, Singapore, and Laos occupy the middle tier (41-60%), while the Philippines and Myanmar form the lower-tier clusters (21-40%). In contrast, Brunei and East Timor occupy the lowest tier (bottom 20%). Brunei records a total degree of 982, while East Timor records the lowest connectivity at 477, with its strongest link being with Indonesia (126 interactions). Overall, the graph demonstrates that geographic proximity and active bilateral border dynamics generate far stronger interaction signals than general multilateral diplomatic coverage.

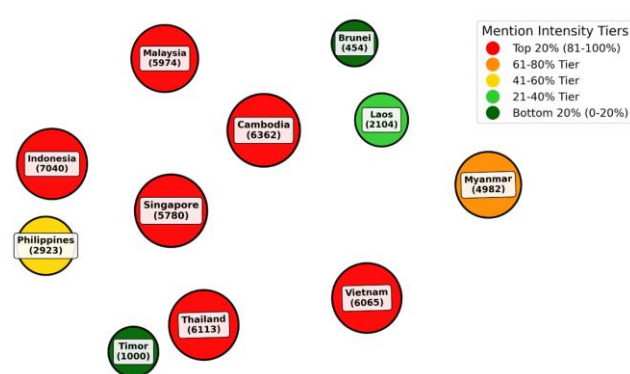


Figure 7. ASEAN Countries' Frequency in News

This raw mention graph illustrates the overall diplomatic media visibility of individual ASEAN member states within the 2025 news corpus. The self-loop edge weights represent total sentence-level mentions for each of the countries shown, while node size and tier colors reflect total media presence divided into quintile tiers.

The results reveal a clear hierarchy in overall media coverage across Southeast Asia. Indonesia leads the entire dataset with 7,040 raw mentions, making it the most visible nation in regional diplomatic news. It belongs to the top 20% tier alongside Cambodia (6,362 mentions), Thailand (6,113 mentions), Vietnam (6,065 mentions), Malaysia (5,974 mentions), and Singapore (5,780 mentions). These six nations form the core group driving regional news coverage, reflecting their large economies, active diplomatic agendas, and strategic significance in ASEAN affairs. Myanmar occupies the second tier (61-80%) with 4,982 raw mentions, maintaining a strong media footprint due to ongoing domestic political developments and international reporting. In contrast, the Philippines falls into the middle tier (41-60%) with 2,923 mentions, showing a notable gap in total volume compared to the primary core group despite its maritime diplomatic role.

The lower tiers consist of nations with significantly lower media visibility. Laos falls into the 21-40% tier with 2,104 mentions. Meanwhile, East Timor and Brunei occupy the lowest tier (0-20%). East Timor records 1,000 mentions during its ongoing accession process to ASEAN, while Brunei registers the lowest media visibility across the entire region at 454 mentions. Overall, the mention distribution demonstrates that regional diplomatic news is heavily concentrated among the larger ASEAN economies and key mainland actors.

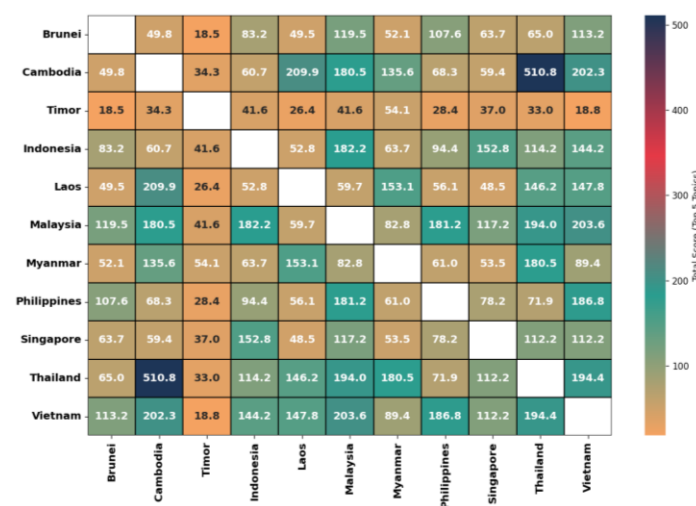


Figure 8. ASEAN Topic Interaction Heatmap

The data reveals that cross-country topic discussions in Southeast Asia are heavily driven by shared borders, regional maritime security, and economic partnerships. The highest interaction intensity in the entire dataset occurs between Cambodia and Thailand, recording a peak score of 510.84. Shared news coverage between these two mainland neighbors is strongly anchored to border security, ceasefire discussions, and territorial dynamics. Other mainland Indochinese pairings also demonstrate significant topic co-occurrence, including Cambodia and Laos at 209.88, as well as Cambodia and Vietnam at 202.29. In these pairs, reporting on discussing shared land and borders, cross-border infrastructure, and China's regional economic presence. Similarly, the bilateral relationship between Myanmar and Thailand registers a high score of 180.51, where discussions frequently highlight border trade, regional stability, and border economic hubs such as Myawaddy.

Maritime security and South China Sea narratives form a second major cluster of high interaction scores. Pairings involving maritime nations show strong topic overlaps regarding sovereignty and maritime jurisdiction. Vietnam and Malaysia reach an interaction score of 203.61, while Vietnam and the Philippines record 186.78. In all these pairs, the underlying news coverage is dominated by terms like South China Sea, China, and ASEAN, showing how overlapping maritime claims and freedom of navigation unite their diplomatic reporting.

Economic integration and bilateral statecraft drive significant interactions among major ASEAN economies. Malaysia and Indonesia achieve an interaction score of 182.16, with coverage focusing on regional economic cooperation, trade, and ASEAN leadership. Indonesia and Singapore also record strong mutual engagement, where discussions center on state visits, executive diplomacy, and President Prabowo's regional initiatives. Furthermore, Singapore and Vietnam exhibit topics structured around comprehensive strategic partnerships and regional investment. In contrast, East Timor and Brunei register the lowest interaction scores across almost all bilateral pairs, with East Timor connecting to Indonesia.

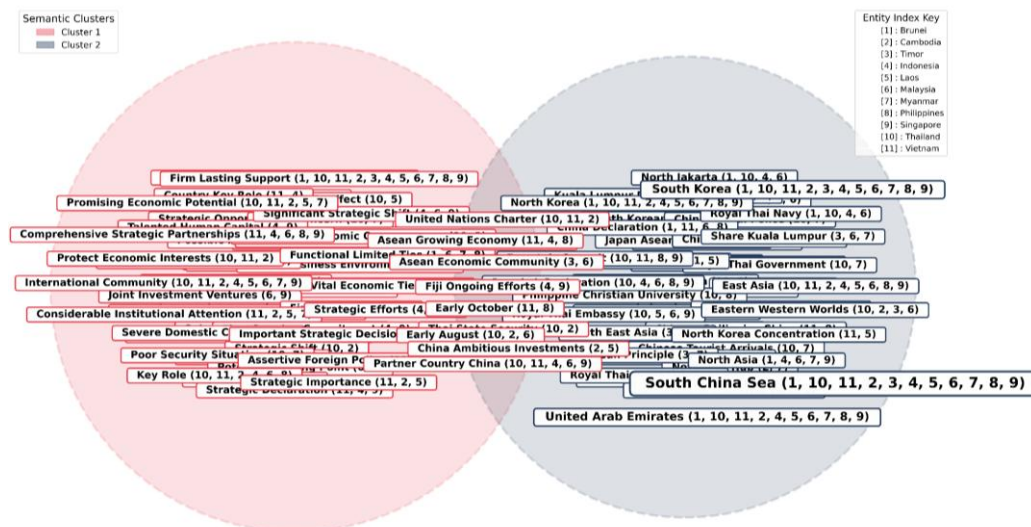


Figure 9. ASEAN Diplomacy Topic Venn Diagram

This dynamic semantic Venn diagram visualizes the structural grouping of regional diplomatic topics into two optimal semantic clusters identified through K-means clustering and Silhouette analysis based on topic vector embeddings across all eleven ASEAN member states. The visual structure demonstrates a clear functional division between internal regional cooperation and external geopolitical governance. Cluster 1 focuses primarily on intra-regional economic ties, institutional development, cross-border infrastructure projects, and domestic stability. In contrast, Cluster 2 captures broader external security issues, defense diplomacy, maritime jurisdiction, and official diplomatic relations with international partner countries outside the immediate regional bloc.

The intersection zone between Cluster 1 and Cluster 2 represents key bridging topics where economic development intersects with geopolitical realities. China plays a central role in this overlapping space, represented by bridging terms like Partner Country China and China Ambitious Investments across states such as Indonesia, Malaysia, Singapore, Thailand, Vietnam, Cambodia, and Laos. Institutional trade frameworks like the ASEAN Economic Community and international legal commitments under the United Nations Charter also occupy this shared space, connecting national growth initiatives to international rules.

Across both clusters, the most prominent topics center on high-stakes geopolitical stability and formal economic partnerships. Prominent exclusive themes in Cluster 1 include Comprehensive Strategic Partnerships, Promising Economic Potential, and Joint Investment Ventures among major Southeast Asian economies, alongside localized border concerns like Future conceptInfrastructure Projects and Vital Economic Ties in mainland Indochina. In Cluster 2, the most dominant topics spanning all member states are universal security issues, led overwhelmingly by the South China Sea, alongside external diplomatic ties involving South Korea, North Korea, and the United Arab Emirates.

Looking ahead, regional diplomacy is heading toward deeper strategic dual-track alignment. ASEAN member nations are increasingly balancing localized economic integration and cross-border trade with macro-level maritime defense strategies. As external superpower competition intensifies across ASEAN, member states are actively structuring their national

diplomatic agendas to protect domestic economic growth while maintaining institutional unity on regional maritime security, defense cooperation, and international law.

CONCLUSION

This study addressed the methodological gap between computational text processing and qualitative policy analysis by establishing an entity-based text analysis framework to track foreign policy trajectories across ASEAN. By deploying sentence tokenization, role-aware Named Entity Recognition, and Subject-Verb-Object tuple extraction, the proposed pipeline provides an agile, low-latency solution for monitoring diplomatic narrative dynamics in real time. The empirical findings illuminate a dual-track regional narrative: intra-regional economic ties, institutional expansion, and localized border dynamics drive internal cooperation, whereas major-power competition, China's economic footprint, and South China Sea maritime claims dominate external security discourse across member states. Despite its practical utility, several research limitations should be noted. First, relying on English-translated online news coverage from Google News may introduce editorial framing biases and miss nuanced domestic political discourse published in local Southeast Asian languages. Second, the lightweight NLP parsing engine uses general-purpose spaCy models and rule-based regex filtering, which can occasionally struggle to process complex diplomatic metaphors, subtle strategic ambiguity, or intricate grammatical sentence structures. Third, analyzing sentence-level co-occurrences within a single-year timeframe restricts long-term longitudinal tracking and causal forecasting capabilities across broader political cycles. To build upon this framework, future research directions should advance both dataset scope and technical sophistication across multiple domains. Future work can integrate multilingual transformer models fine-tuned on specialized diplomatic and legal corpora to enhance entity extraction across native regional languages. Furthermore, implementing dynamic temporal graph neural networks across multi-year datasets would allow researchers to track narrative evolution over time and forecast diplomatic alignments during emerging geopolitical crises. Finally, merging text-derived narrative scores with real-world foreign direct investment, bilateral trade flows, and public sentiment metrics will offer a comprehensive multi-dimensional perspective on Southeast Asian statecraft.

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