



# 2024 Taiwan Presidential Election Information Manipulation AI Observation Report

## Foreword by Taiwan AI Labs Founder Ethan Tu

Taiwan is among the countries most severely affected by external information manipulation globally. For a long time, numerous troll accounts have been generating non-existent volumes of discourse online to sway the political leanings of the populace and, through a deluge of messages, drown out ordinary speech, impacting individuals' freedom of expression.

In response to these extensive coordinated operations, Taiwan AI Labs has utilized large language models over the past two years to comprehend billions of social media activities, uncovering over thirty thousand troll groups and understanding the content and strategies of these accounts across more than two million issues. This approach aims to reveal the objectives and patterns behind these manipulation campaigns.

With the growing global demand for understanding information operations, international partners have shown interest in this service. Taiwan AI Labs has further developed its technical capabilities into the Infodemic platform, providing a comprehensive and real-time tool for non-technical partners to grasp domestic and international information manipulation scenarios as a strategy for digital literacy development.

In 2024, many countries will conduct elections, with Taiwan being the first democratic nation to do so and the first to use AI technology to monitor election-related information operations. Taiwan AI Labs hopes to share

the lessons learned from its experiences with information manipulation and the generative AI threats observed in Taiwan with other democratic nations. The goal is for Taiwan to start with itself, establishing technological ethics legislation to "protect digital rights" rather than controlling freedom of speech through content censorship.



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## Glossary

Term	Explanation
<b>Troll Account</b>	Taiwan AI Labs employs large language models to analyze accounts on social media platforms, identifying accounts that frequently comment on the same posts together, indicating coordinated behavior. These accounts exhibit long-term similarities in their commenting patterns, suggesting they are not controlled by natural persons but are likely automated or manipulated, thus termed “Troll Accounts.”
<b>Troll Group</b>	When Troll Accounts show long-term similarities in commenting patterns and signals, they are grouped into a “Troll Group.” These groups can be analyzed for the events they participate in and the targets they manipulate, providing insights into the political forces they may serve.
<b>Event</b>	When an event occurs, it generates extensive news coverage and social media discussions, including posts and videos. Taiwan AI Labs uses large language models to organize these reactions into an “Event,” facilitating the observation of social media manipulation related to the event.
<b>Story</b>	Events can develop over time, linking many related events into a continuous narrative. Through classification with large language models, these interconnected events can be organized into a “Story,” summarizing the coordinated manipulation and related news across a prolonged period for each story, allowing for the observation of long-term collaborative operations.
<b>Media Volume</b>	Media Volume refers to the amount of media presence, calculated by the number of news reports.
<b>(PRC) State-affiliated Media</b>	(PRC) State-affiliated Media denotes media outlets whose content is controlled or censored by the government of the People's Republic of China.
<b>Community Volume</b>	Community Volume represents the volume on social media platforms, encompassing the total number of comments observed from both troll accounts and regular accounts.
<b>Troll Volume</b>	Troll Volume pertains to the volume of comments made by troll accounts.
<b>User Behavior Features</b>	Analysis of social media data reveals a series of columns that represent user behavior features, such as the ‘destination of user interactions’ (post_id or video_id), the ‘time of user actions’, and the ‘domain of shared links by users’, among others. These data are subsequently utilized for user clustering.
<b>Co-occurrence Features</b>	Co-occurrence features aim to identify users who frequently engage with the same topics or respond to the same articles, appearing together in the same context to create a fabricated volume, a common characteristic of troll accounts. Through this method, we can identify troll accounts and cluster them into troll groups.
<b>User Clustering</b>	Taiwan AI Labs analyzes the relationship between pairs of accounts based on a series of signals and assigns a score. If the score exceeds a certain threshold, a connection is established. If multiple accounts are connected, they are clustered into a troll group.

<b>Group Analysis</b>	Taiwan AI Labs uses Taiwan LLaMa, a large language model pre-trained in Taiwanese dialects, to classify the comments and opinions of troll groups, identifying their main narratives and analyzing the primary information manipulated by troll groups and their underlying intentions.
<b>Topic Engagement</b>	Taiwan AI Labs employs large language models to analyze community platform posts and comments related to news, identifying traces of message manipulation by troll groups. This clarifies which topics troll groups participate in and manipulate discussions on.
<b>Operation Methods</b>	Taiwan AI Labs utilizes the DISARM Framework to analyze the methods and intentions behind the information operations conducted by troll groups.
<b>Leverage Existing Narratives</b>	Use or adapt existing narrative themes, where narratives are the baseline stories of a target audience. Narratives form the bedrock of our worldviews. New information is understood through a process firmly grounded in this bedrock. If new information is not consistent with the prevailing narratives of an audience, it will be ignored. Effective campaigns will frame their misinformation in the context of these narratives. Highly effective campaigns will make extensive use of audience-appropriate archetypes and meta-narratives throughout their content creation and amplification practices.
<b>Reframe Context</b>	Reframing context refers to removing an event from its surrounding context to distort its intended meaning. Rather than deny that an event occurred, reframing context frames an event in a manner that may lead the target audience to draw a different conclusion about its intentions.
<b>Flooding the Information Space</b>	Flooding and/or mobbing social media channels feeds and/or hashtags with excessive volume of content to control/shape online conversations and/or drown out opposing points of view. Bots and/or patriotic trolls are effective tools to achieve this effect.
<b>Trolls Amplify and Manipulate</b>	Use trolls to amplify narratives and/or manipulate narratives. Fake profiles/sock puppets operating to support individuals/narratives from the entire political spectrum (left/right binary). Operating with increased emphasis on promoting local content and promoting real Twitter users generating their own, often divisive political content, as it's easier to amplify existing content than create new/original content. Trolls operate wherever there's a socially divisive issue (issues that can/are to be politicized).
<b>Comment or Reply on Content</b>	Delivering content by replying or commenting via owned media (assets that the operator controls).
<b>Manipulate Platform Algorithm</b>	Manipulating a platform algorithm refers to conducting activity on a platform in a way that intentionally targets its underlying algorithm. After analyzing a platform's algorithm (see: Select Platforms), an influence operation may use a platform in a way that increases its content exposure, avoids content removal, or otherwise benefits the operation's strategy. For example, an influence operation may use bots to amplify its posts so that the platform's algorithm recognizes engagement with operation content and further promotes the content on user timelines.

## Executive Summary

During the tumultuous period surrounding Taiwan's presidential election, an extensive research endeavor unveiled a nuanced landscape of digital manipulation and misinformation. At the heart of this investigation lay the pervasive influence of generative technology, which emerged as a potent tool for shaping the informational battleground. Textual misinformation, propelled by the capabilities of generative algorithms, assumed a central role, challenging traditional debunking methodologies and rendering them less effective in the face of evolving manipulation tactics. This shift underscored the pressing need to adapt information verification strategies to contend with the sophisticated mechanisms employed in modern disinformation campaigns.

Amidst the cacophony of digital discourse, a select cadre of troll groups emerged as influential arbiters of media framing, transcending mere mischief to exert substantial sway over public opinion. Contrary to initial assumptions, these groups were revealed to be non-native to Taiwan, operating with remarkable agility across linguistic and cultural boundaries. Their strategic maneuvers, characterized by narrative manipulation and geopolitical intrigue, underscored the transnational nature of contemporary information warfare and its implications for democratic processes. As the election approached, their influence surged, casting a pervasive shadow over the democratic landscape and underscoring the need for heightened vigilance against external interference.

Furthermore, collaborative efforts between mainstream entities and official media channels served to amplify the reach and impact of manipulated narratives. The alignment of these groups with state-supported agendas, particularly evident on Chinese-owned social media platforms, underscored the symbiotic relationship between information manipulation and political influence. Within this complex ecosystem, the emergence of short videos as a prevalent medium for cognitive manipulation added another layer of complexity, blurring the lines between fact and fiction in the digital realm. Thus, within the context of Taiwan's presidential election, the convergence of technological innovation, geopolitical maneuvering, and media manipulation underscored the multifaceted challenges confronting modern democracies in safeguarding the integrity of public discourse.

## Introduction

In 2024, many countries held elections, and Taiwan emerged as a benchmark for the impact of foreign information operations worldwide. As the first democratic country to conduct elections in 2024 and the pioneer in using AI technology to observe information manipulation during the election, Taiwan AI Labs hopes to share Taiwan's experiences and lessons in dealing with information manipulation, along with the threats of generative AI, with other democratic nations.

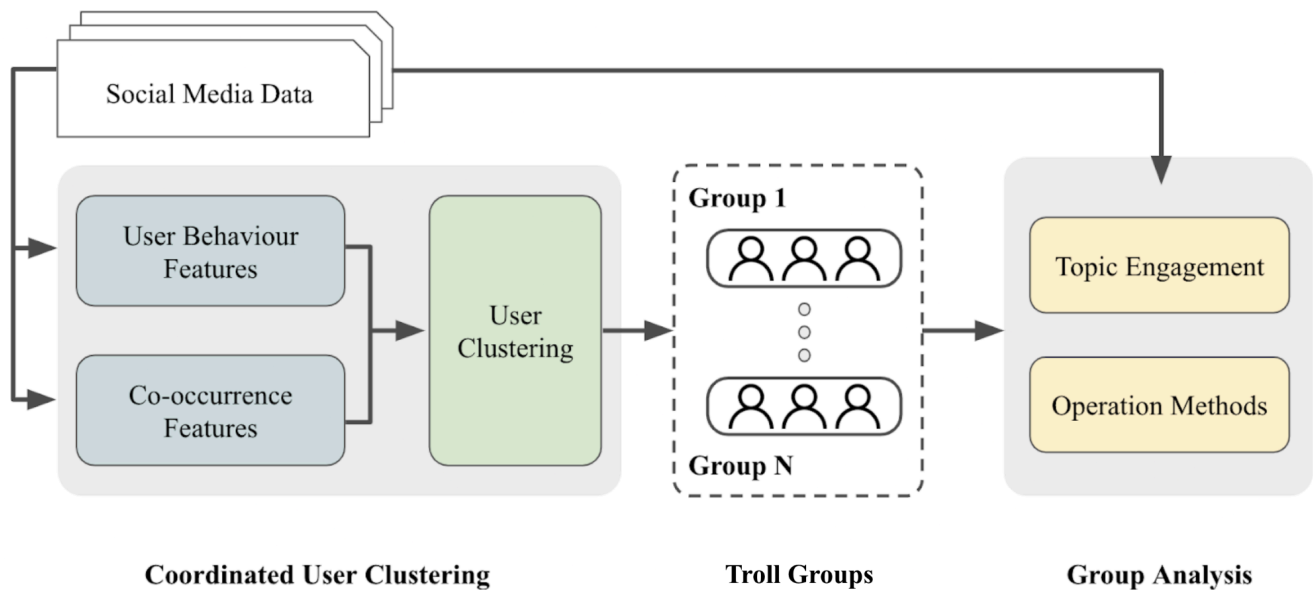
Taiwan AI Labs, by observing and analyzing the coordinated behavior of troll accounts on social media platforms, identifies these accounts and groups them into troll groups. Utilizing large language models and AI, we developed the Infodemic platform to not only reveal the activities of these troll groups but also to delve deeper into the abnormal behaviors behind these accounts.

During this presidential election period, Taiwan AI Labs conducts weekly analyses of online anomalies using the Infodemic platform, inviting scholars and experts to discuss and share insights derived from our analyses. This report compiles the key findings from our organized data.

## Methodology

Taiwan AI Labs uses our analytical platform "Infodemic" for investigating information operations toward multiple social media platforms. The detailed algorithm information is below.

## Building Similarity Nodes Between User Accounts



Graph 1: An overview of the coordinated behavior analysis pipeline

Graph 1 illustrates the analysis pipeline of this report, consisting of three components:

- **User Features Construction:** We analyze and quantify the behavioral characteristics of a given user and transform the user features as user vectors.
- **User Clustering:** Leveraging the user vectors, we build a network of related users and apply a community detection algorithm to identify highly correlated user groups, and categorize them as collaborative entities for further analysis.
- **Group Analysis:** We delve into the operational strategies of these collaborative groups, examining aspects such as the topics they engage with, their operation methods, and their tendencies to support or oppose specific entities.

In the subsequent sections, we will provide detailed explanations of each of these components.

## User Feature Construction

To capture user information on social forums effectively, we propose two feature sets:

### User Behaviour Features

Data preparation for user behavior features is a critical step in extracting meaningful insights from the given dataset, which encompasses a wide range of information related to social posts (or videos) and user interactions.

We collected a broad spectrum of raw social data, which was then transformed into a series of columns representing user behavior features, such as the 'destination of user interactions' (post\_id or video\_id), the 'time of user actions', and the 'domain of shared links by users', and so forth. These user behavior features will be further transformed and organized for use in user similarity evaluation and clustering.

## Co-occurrence Features

The purpose of co-occurrence features is to identify users who frequently engage with the same topics or respond to the same articles. We employ Non-Negative Matrix Factorization (NMF) to quantify co-occurrence features among users.

NMF is a mathematical technique used for data analysis and dimensionality reduction by decomposing a given matrix into two or more matrices in a way that all elements in these matrices are non-negative.

Specifically, to construct the features for  $M$  users and  $N$  posts, we build an  $M * N$  dimensional relationship matrix to record each user's engagement with various posts. Subsequently, we apply NMF to decompose this matrix, and we utilize the obtained user vectors as co-occurrence features for each user.

## User Clustering

### User Similarity Evaluation

After completing the construction of user features, our next step involves evaluating the coordinated relationships between users. For behavioral features, we compare various behaviors between user pairs and normalize the comparison result to a range between 0 and 1. For instance, concerning user activity times, we record the activity times for each user within a week as a 7x24-dimensional matrix. We then calculate the cosine similarity between pairs of users based on their activity times. In the case of co-occurrence features, we use cosine similarity to assess the similarity between co-occurring vectors of users.

By computing the cosine of the inclination between these vectors, we can deduce the level of similarity between user response or their actions. This tactic is notably useful in the study of social media, where it permits the collection of users according to common behavior patterns.[3] Users who have analogous cosine similarity demonstrate a highly coordinated pattern of behavior.

### User Clustering

After constructing pairwise similarities among users based on their respective features, for user pairs with a similarity exceeding a predefined threshold, we establish an edge between them, thereby creating a user network. Subsequently, we applied Infomap for clustering of this network. Infomap is an algorithm for identifying community structures within networks using the information flow. The detected community in this network would be considered as troll groups, in the following sections.

## Group Analysis

### Opinion Clustering

To efficiently understand the narratives proposed by each user group, we employed a text-cluster grouping technique on comments posted by troll groups. Specifically, we leveraged a pre-trained text encoder to convert each comment into vectors and applied a hierarchical clustering algorithm to cluster relevant posts into the same group, which would be used in the following analysis.



## Stance Detection and Narrative Summary

Large Pretrained Language Models have demonstrated its utility in extracting entities mentioned within textual content while simultaneously providing relevant explanations. [5] This capability contributes to the comprehension of pivotal elements within the discourse, particularly in understanding how comments and evaluations impact these identified entities.

In this report, we use Taiwan LLaMa for text analysis. Taiwan LLaMa is a large language model pre-trained on native Taiwanese language corpus. After evaluation, it has shown remarkable proficiency in understanding Traditional Chinese, and it excels in identifying and comprehending Taiwan-related topics and entities. To be more specific, we leverage Taiwan LLaMa to extract vital topics, entities, and organizational names from each comment. Furthermore, we request it to assess the comment author's stance on these entities, categorizing them as either positive, neutral, or negative. This process is applied to all opinion clusters.

Finally, we would calculate the percentage of each main topic/entity mentioned in the opinion group, the percentage of positive/negative sentiment associated with each topic/entity, and generate summaries for each opinion cluster using LLM for facilitating data analysts in grasping the overall picture of the event efficiently.

## Data Coverage

AI Labs utilized its proprietary Infodemic platform to analyze the recent Taiwan presidential election. The Infodemic analyzed both domestic and international events, drawing data from major news outlets, Facebook, YouTube, Twitter, TikTok, and Taiwan's community platform PTT, analyzing a total of 8.49 million news articles, 99.3 million social media posts, and 2.2 billion comments on social media platforms, observing 682.68 thousand videos. Using large language models (LLMs) for analysis, AI Labs organized 2.2 million events from news and social media posts, identifying 31.27 thousand troll groups.

News Articles	Social Posts	Social Comments	Social Videos	Events	Troll Groups
8.49 M	99.3 M	2.2 B	682.68 K hr	2.2 M	31.27 K

Table 1: Analyzed data quantity by Infodemic (from <https://infodemic.cc>)

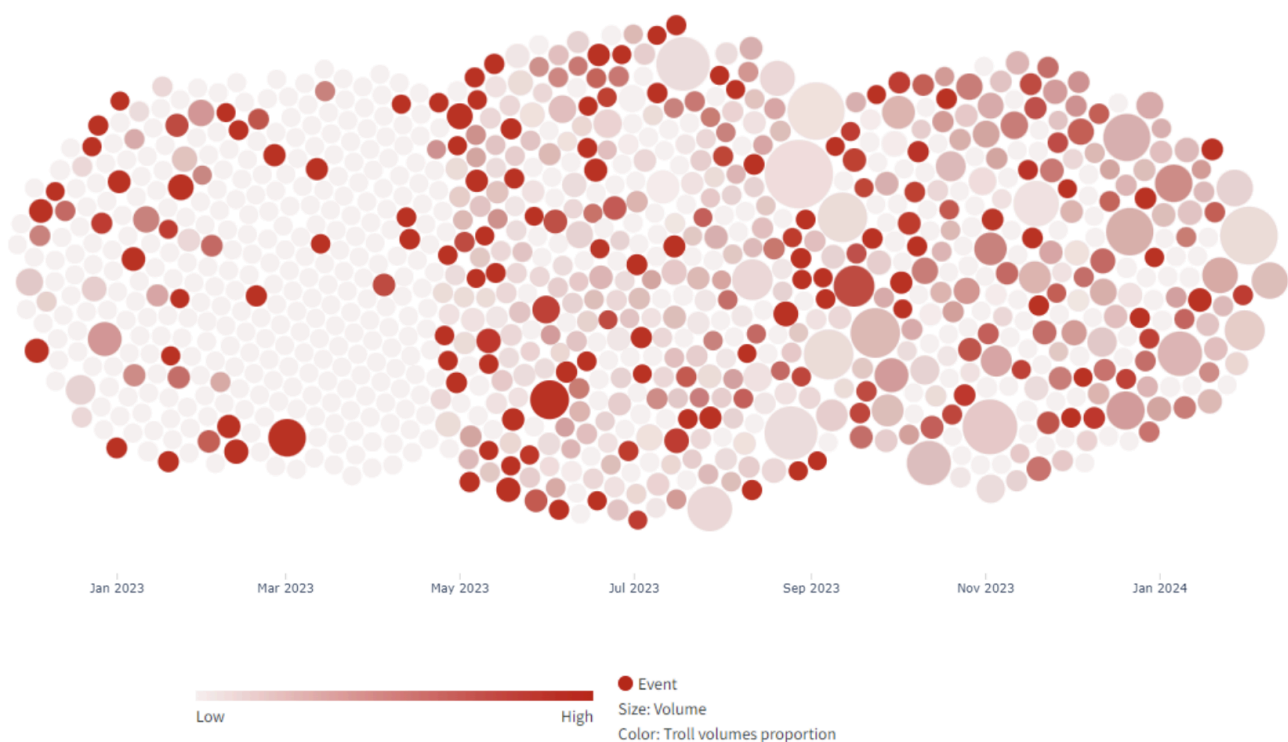
During the period of the Taiwan presidential election covered in this report, specifically from January 1, 2023, to January 12, 2024, AI Labs examined data across Facebook, PTT, YouTube, and TikTok. The Infodemic platform consolidated 48,511 events and 279,746 news articles, with a social media volume reaching 45,062,322. Out of this, 1.62% or 14,354 instances were recognized as coordinated manipulation efforts.

Taiwan AI Labs utilized the Taiwan LLaMa model, which was trained using approximately 50 billion tokens. During the analysis period, it analyzed a total of around 4.7 billion tokens.

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
48,411	279,746	8,038 (2.87%)	14,354	45,062,322	731,383 (1.62%)

Table 2: Analyzed data quantity during the period of the Taiwan presidential election (from <https://infodemic.cc>)

The events analyzed by the Infodemic platform are presented in a BeeSwarm Plot, as shown in Graph 2. It reveals that from January to April 2023, there were no significant battlefields, but as the election date approached, the number of battlefields increased significantly after May, along with a clear rise in volume. Compared to the period from January to April 2023, the volume of significant events noticeably increased on the eve of the January 2024 election.



\* Each circle represents an event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

Graph 2: Events overview by timeline (from <https://infodemic.cc>)

## Major Timeline and Most Representable Battlefields

Taiwan AI Labs, through its Infodemic platform, conducted monthly analyses to identify key events from early 2023 to January 13, 2024, before the Taiwan presidential election. During January to April 2023, the discussion was relatively low-key, with the most notable event being President Tsai Ing-wen's meeting with U.S. House Speaker Kevin McCarthy at the Reagan Library. Between May and June, the focus shifted to Taiwan's defense military budget and the false report by United Daily News about Taiwan developing biological weapons. The period of July

to August was dominated by discussions on housing justice and the controversy over Lai Ching-te's ancestral home being an illegal construction. In September and October, the shortage of eggs leading to political turmoil and the resignation of Agriculture Minister Chen Chi-chung became the central topic. November and December saw intense discussions on the failed KMT and TPP alliance. In January 2024, China's rocket launch, triggering a national alert in Taiwan, and the earthquake in Japan became hot topics. Post-election, the visit by U.S. officials to Taiwan to congratulate the successful election became a key focus of manipulation.

## January to April 2023: U.S.-Taiwan Diplomacy

From January to April 2023, the election-related issues were relatively subdued, with the most significant event being President Tsai Ing-wen's visit to the United States. Active operations began to ramp up in May, with an increasing number of battlefronts emerging.

## Taiwan President Visiting US

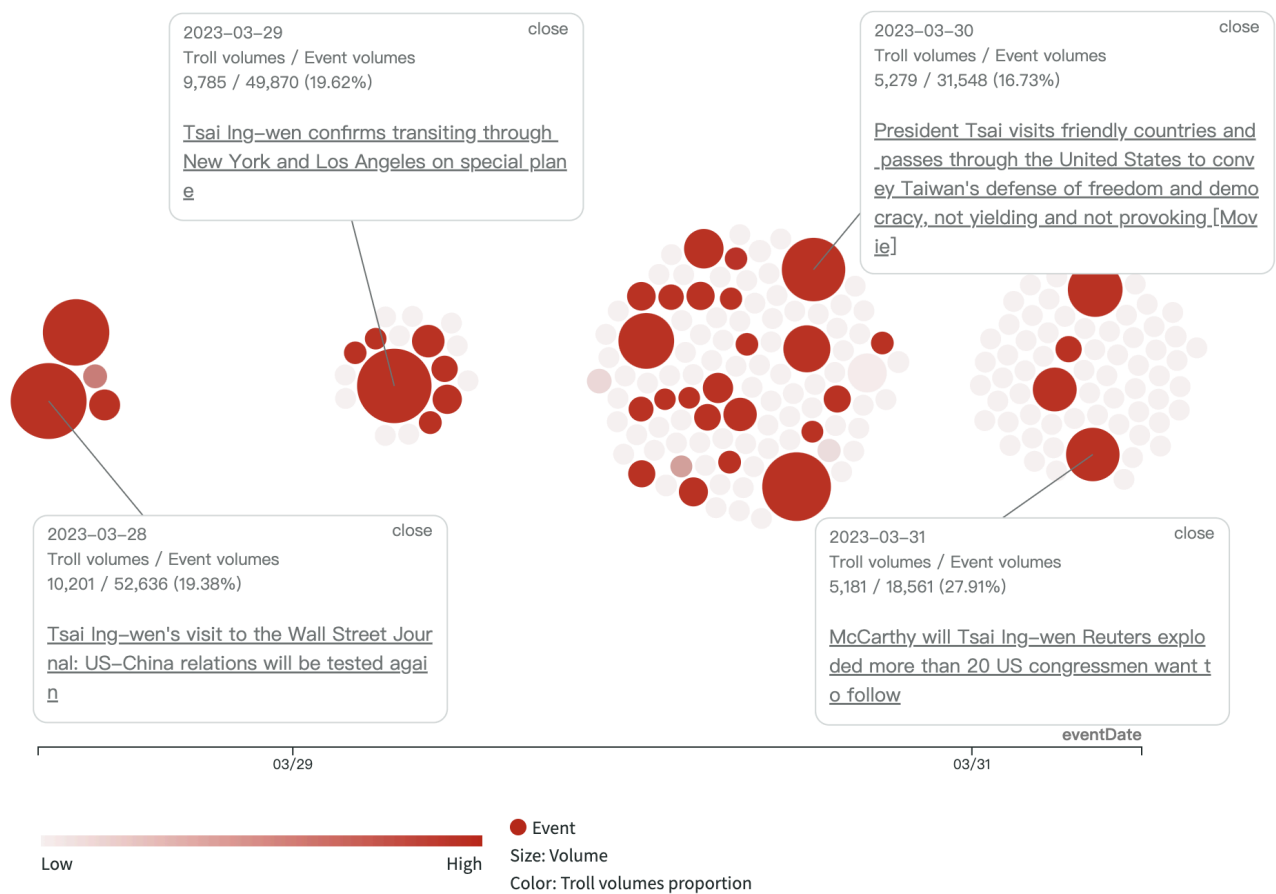
Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
186	1,147	35 (3.05%)	2,275	112,357	17,559 (15.63%)

Table 3: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/s2ba2b3814c7>)

President Tsai Ing-wen embarked on the "Journey of Democracy and Shared Prosperity" on March 29. The itinerary included transits in New York and Los Angeles, with state visits to Guatemala and Belize, two diplomatic allies. She was scheduled to meet U.S. House Speaker Kevin McCarthy during the trip back to Taiwan on April 7, completing a 10-day and 9-night journey.

In the lead-up to President Tsai's visit, U.S.-China relations had become increasingly strained over issues like the Russia-Ukraine war and China's spy balloon incursion into U.S. airspace. President Tsai's transit through the U.S. during her state visits could potentially escalate tensions further.

On April 5, 2023, President Tsai Ing-wen met with U.S. House Speaker McCarthy at the Reagan Presidential Library in California. China subsequently issued a statement on April 6, expressing opposition and strong condemnation, and announced on April 8 that it would conduct "Combat Readiness Patrols around Taiwan" and the "Joint Sword" exercises from April 8 to 10.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

Graph 3: Events overview by timeline (from <https://infodemic.cc/en/story/s2ba2b3814c7>)

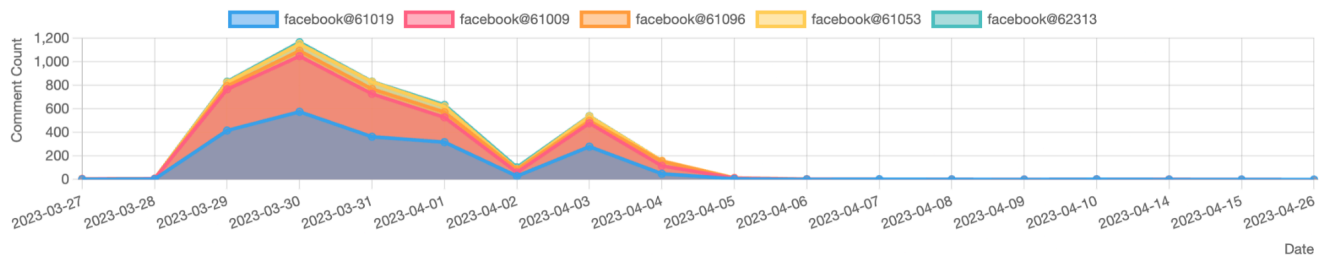
Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-03-28 08:45 2023-03-30 06:42	Tsai Ing-wen's visit to the Wall Street Journal: US-China relations will be tested again	52,636	10,201 (14.71%)
2023-03-29 23:09 2023-03-31 01:09	Tsai Ing-wen confirms transiting through New York and Los Angeles on special plane	49,870	9,785 (14.11%)
2023-03-28 07:40 2023-03-30 06:43	Taoyuan Baboon Shot Dead Body Transferred to Beishi Zoo for Examination	36,143	8,398 (12.11%)
2023-03-30 04:44 2023-03-30 09:58	President Tsai visits China for the first time in 3 years to fight for diplomacy-China Vision News Network	39,755	6,991 (10.08%)
2023-03-30 04:44	"Journey of Democracy Partners for Common	21,161	5,385 (7.77%)

2023-03-30 11:30

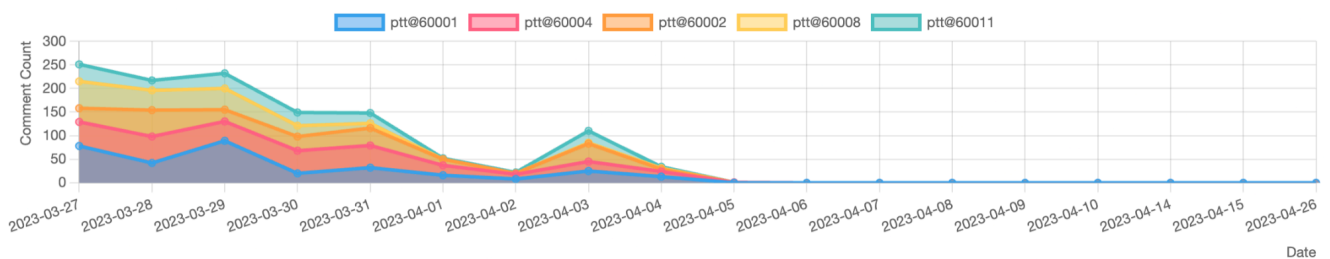
Prosperity” starts today President Tsai Ing-wen gives a speech

Table 4: Top 5 operated stories (from <https://infodemic.cc/en/story/s2ba2b3814c7>)

## Facebook



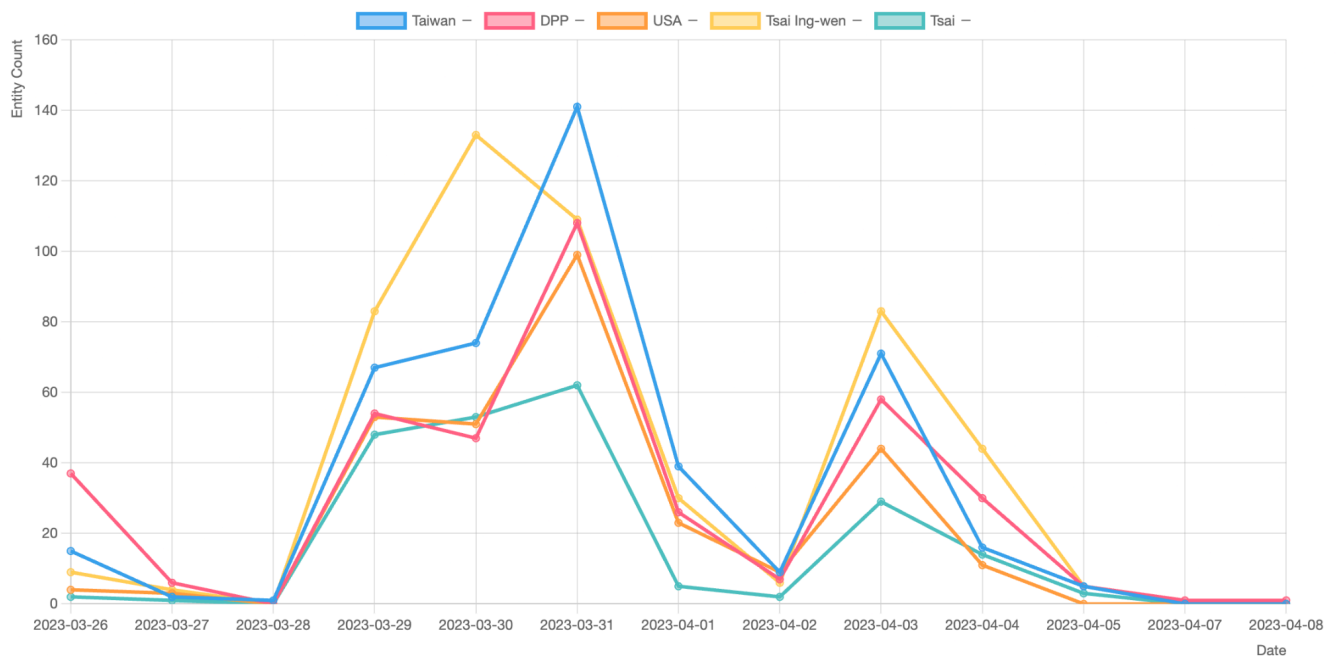
## PTT

Graph 4: Troll Group Activities (from <https://infodemic.cc/en/story/s2ba2b3814c7>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61019	17.62%	17.62%
Facebook #61009	14.78%	32.40%
PTT #60001	2.78%	35.19%
PTT #60004	2.13%	37.82%
Facebook #61096	2.09%	39.95%

Table 5: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/s2ba2b3814c7>)





Graph 5: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/s2ba2b3814c7>)

## May and June 2023: Defense Budget and Biological Warfare

In May and June 2023, discussions around military aid and related issues began to ferment. U.S. President Biden expressed support for Taiwan's defense in May, during which numerous troll accounts were observed stoking tensions in U.S.-Taiwan relations and spreading conspiracy theories about the U.S. In June, discussions revolved around Taiwan's military budget, with both Taiwan and the U.S. being subject to influence operations aimed at clouding public perception. The South China Sea Working Conference also emerged as a major battleground.

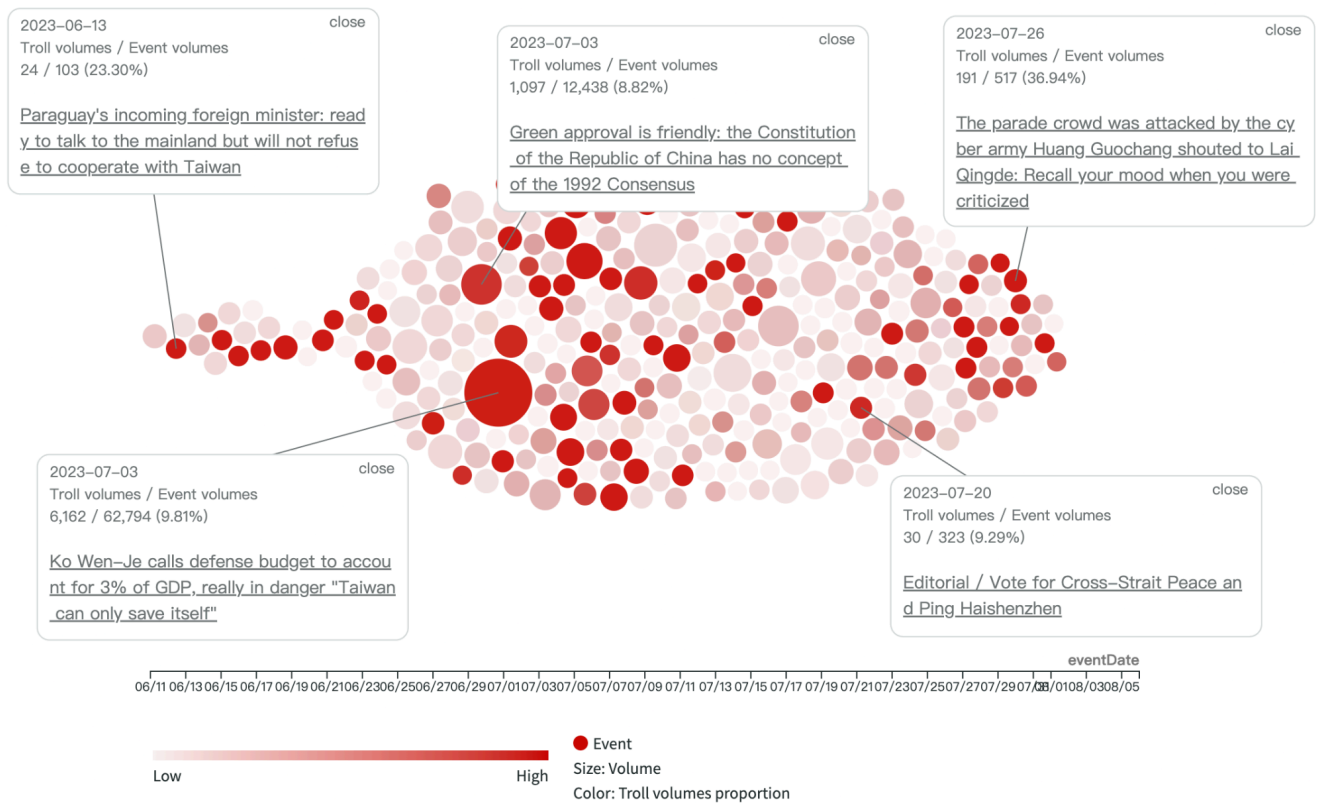
### Taiwan Military Budget and Service

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
330	3,403	0 (0.00%)	1,264	203,752	5,569 (2.73%)

Table 6: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)

The Ministry of Education proposed a '3+1' scheme, allowing conscripts to complete university education in three years followed by one year of military service, making the issue of conscription a focal point in recent political discourse among various party candidates.

KMT presidential candidate Hou Yu-ih stated that if elected, he plans to reduce mandatory military service to four months. On the other hand, Ko Wen-je argued that reducing the service period to four months would make combat training impractical. Ko explicitly stated that Taiwan's military equipment and personnel organization should be adjusted in line with the national defense strategy, advocating for an increase in defense spending to 3% of GDP and an enhancement of training content.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

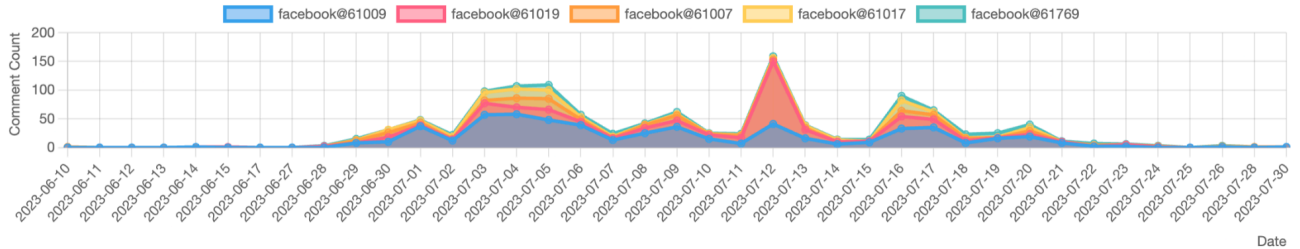
Graph 6: Events overview by timeline (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-07-03 11:46 2023-07-05 10:10	Ko Wen-Je calls defense budget to account for 3% of GDP, really in danger "Taiwan can only save itself"	62,794	6,162 (33.27%)
2023-07-04 12:38 2023-07-04 12:38	Criticizing the DPP's ruling on both sides of the Taiwan Strait, "events will change." Hou Youyi supports the 1992 Consensus of the Constitution	7,982	1,360 (7.34%)
2023-07-03 10:25 2023-07-05 08:48	Green approval is friendly: the Constitution of the Republic of China has no concept of the 1992 Consensus	12,438	1,097 (5.92%)
2023-07-05 02:41 2023-07-05 02:41	Hou Yu-ih throws away restarting the core and Dai Weishan satirizes: Scared by the old polls? The chair can steal the core and cannot be restarted	5,606	507 (2.74%)

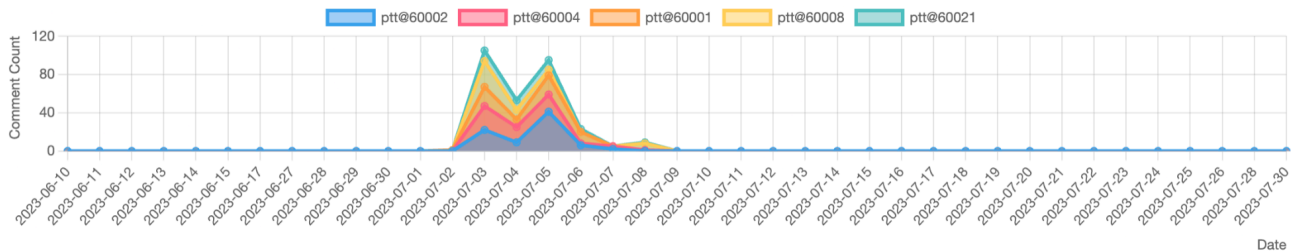
2023-07-05 04:52 2023-07-05 04:52	Guo Taiming's hen with chicks is huge Hou Youyi accepts Zhao Shaokang's exclusive interview and throws "Constitution 1992" can compete?	5,232	493 (2.66%)
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Table 7 : Top 5 operated stories (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)

## Facebook

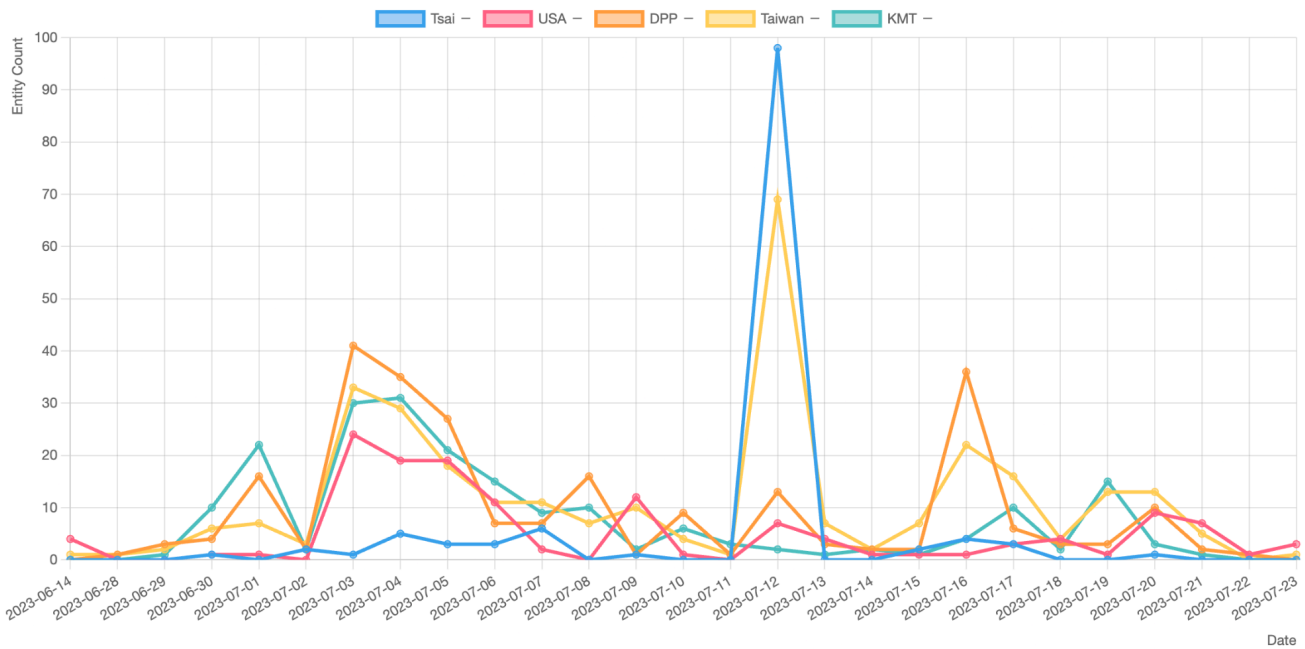


## PTT

Graph 7: Troll Group Activities (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61009	15.21	15.21
Facebook #61019	7.86	23.07
Facebook #61007	3.27	26.34
Facebook #61017	3.00	29.34
Facebook #61769	2.30	31.63

Table 8: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)



Graph 8: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/s2a21c7bc7b7>)

## Discredit Military Aid as Biological Warfare

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
28	308	0	54	54,299	83 (0.15%)

Table 9: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/sfd4b91da98a>)

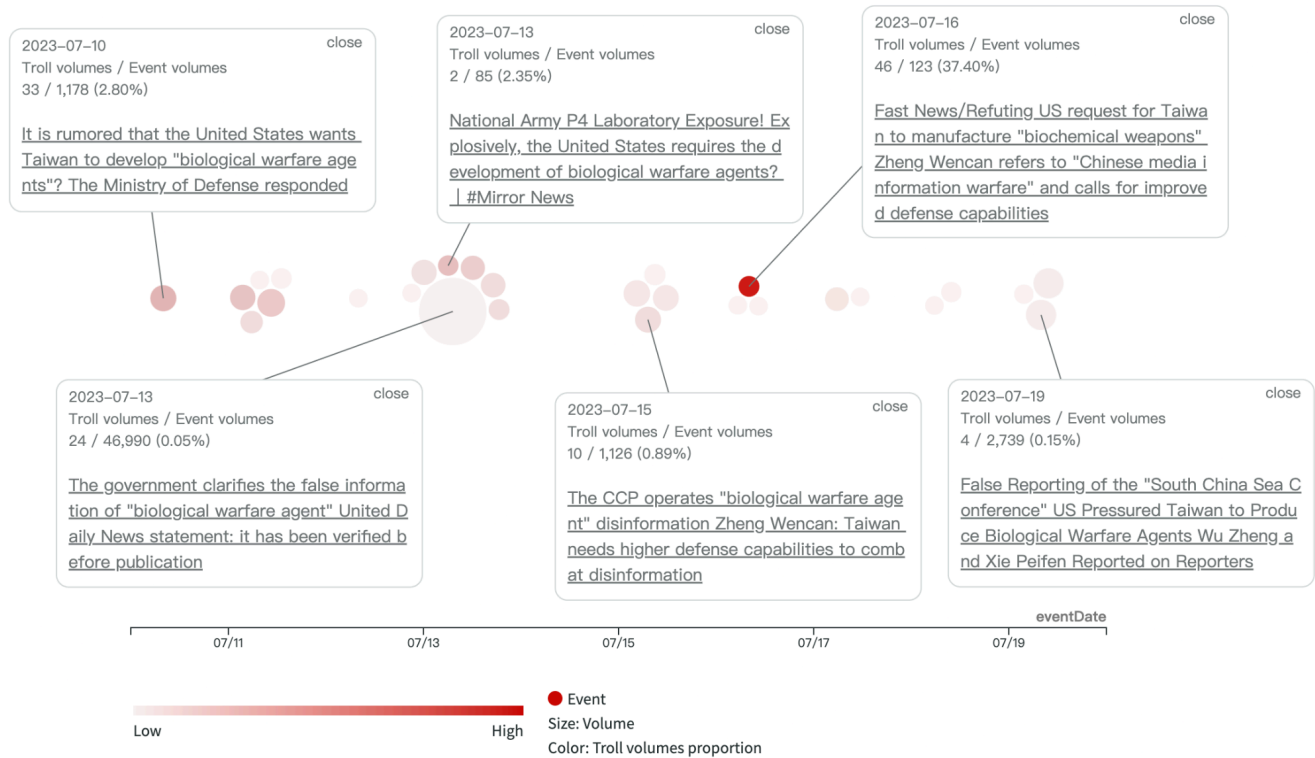
On July 10, the United Daily News reported an event held on June 23, 2022, chaired by then-Premier Su Tseng-chang, about a South China Sea Working Conference. The report mentioned a U.S. request for Taiwan's Ministry of Defense to invest in the construction of a new P4 laboratory, secretly establishing capabilities for developing biological warfare agents. On July 12, the paper also published records of the alleged meeting.

The Presidential Office, Ministry of Defense, Ministry of Foreign Affairs, and the U.S. side all issued statements refuting these claims. They highlighted that the wording in the meeting record was uncharacteristic of Taiwanese government documents and emphasized that no such meeting ever took place, labeling it as classic misinformation. The Presidential Office also reminded that in recent years, China has frequently manipulated information through fabricated documents, repeatedly accusing other countries of developing biological warfare agents to manipulate international opinion.

Presidential Office spokesperson Lin Yu-chan stated on July 10 that Taiwan, adhering to international conventions and humanitarian principles, has never and will not have any plans to develop biological warfare agents. The American Institute in Taiwan (AIT) also responded on the same day, noting that the U.S. was one of the first signatories of the Biological Weapons Convention, which explicitly prohibits the development of biological weapons and forbids assisting or encouraging any entity to produce or acquire them.

On July 12, the Executive Yuan also refuted the news, pointing out that there was no such meeting on the reported date and that numerous inaccuracies in the meeting record indicated clear fabrication, urging an immediate correction of the false information.

In response, the United Daily News issued a statement, asserting that it had fulfilled its verification duties before publication, inquiring and balancing the report with responses from relevant units, and urged the government to respect media freedom and the public's right to know.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

Graph 9: Events overview by timeline (from <https://infodemic.cc/en/story/sfd4b91da98a>)

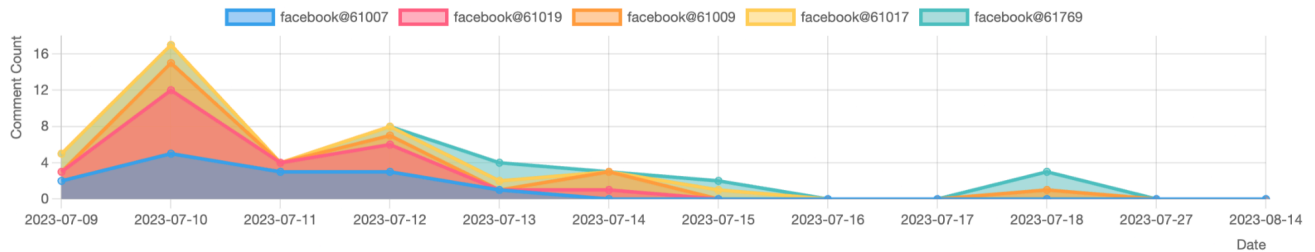
Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-07-16 03:13 2023-07-16 03:13	Fast News/Refuting US request for Taiwan to manufacture "biochemical weapons" Zheng Wencan refers to "Chinese media information warfare" and calls for improved defense capabilities	123	46 (21.00%)
2023-07-11 07:06 2023-07-13 05:06	Presidential Palace: False reports on "development of biological warfare agents" are being manipulated by PRC state-affiliated media	1,739	33 (15.07%)
2023-07-10 03:44	It is rumored that the United States wants	1,178	33 (15.07%)



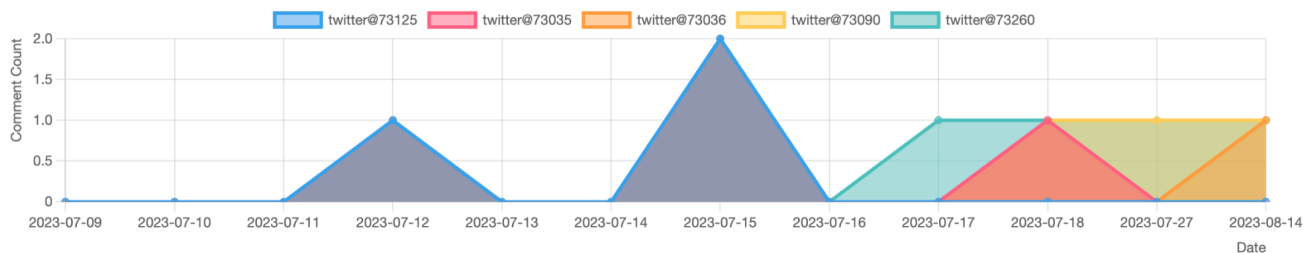
2023-07-12 00:58	Taiwan to develop "biological warfare agents"? The Ministry of Defense responded		
2023-07-13 04:23 2023-07-14 21:30	The government clarifies the false information of "biological warfare agent" United Daily News statement: it has been verified before publication	46,990	24 (10.96%)
2023-07-11 13:01 2023-07-11 13:01	The United States wants me to develop biological warfare agents? He warned: Bush Jr. used this excuse to fight Iraq	969	21 (9.59%)

Table 10: Top 5 operated stories (from <https://infodemic.cc/en/story/sfd4b91da98a>)

## Facebook

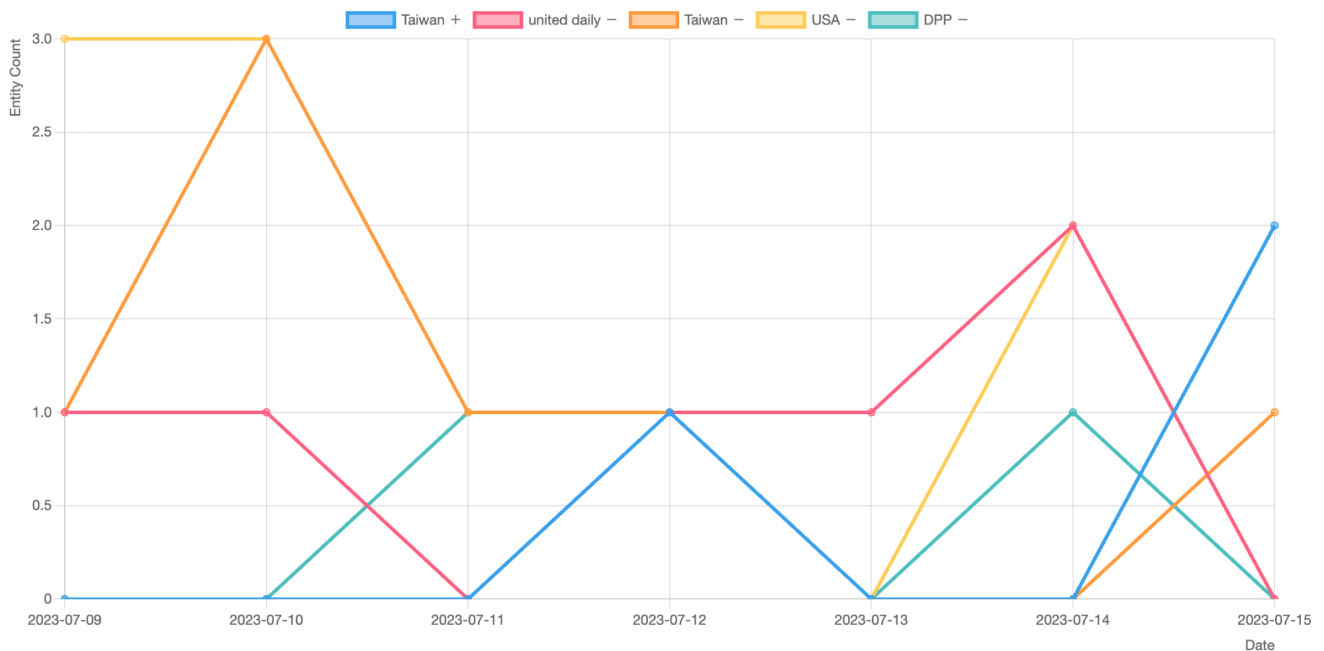


## Twitter

Graph 10: Troll Group Activities (from <https://infodemic.cc/en/story/sfd4b91da98a>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61007	18.18%	18.18%
Facebook #61019	16.88%	35.06%
Facebook #61009	9.09%	44.16%
Facebook #61017	9.09%	53.25%
Facebook #61769	6.49%	59.74%

Table 11: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/sfd4b91da98a>)



Graph 11: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/sfd4b91da98a>)

## July and August 2023: Housing and Land Disputes

During July and August 2023, significant and influential battlegrounds emerged more densely, focusing on housing justice and illegal construction, which directly impact and are of utmost importance to the public.

### Housing Justice and Illegal Construction

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
117	1,277	0 (0.00%)	1,453	130,856	10,974 (8.39%)

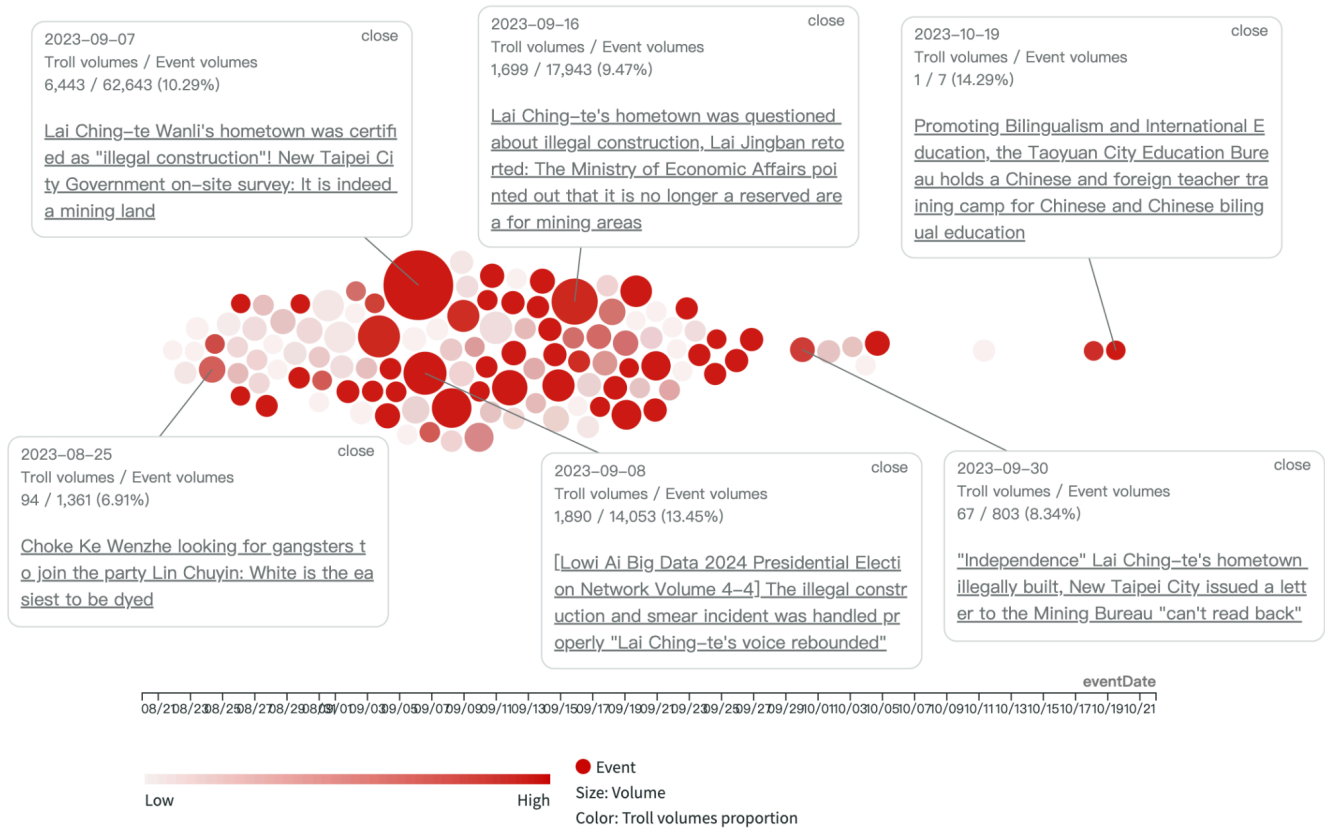
Table 12: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/sd17a3d11a57>)

The residence of the DPP's presidential candidate, Lai Ching-te, located in Wanli District, New Taipei City, was exposed as an illegal construction. Following an on-site inspection on the 6th, the New Taipei City Government issued a press release stating: "Upon examination, the land in question indeed falls under mining territory... and appears to be an illegal construction dating back before June 25, 2009."

Lai Ching-te clarified that the enforcement of the regional plan for building control in the northern region began in February 1981. In other words, the existence of that house does not violate the requirements of the regional planning control, and "there is no so-called issue of legality or illegality in construction."

According to the investigation, the land registration for Lai's family home in the Jiatou section, Zhongwan Village, Wanli District, New Taipei City, shows land plot number 63-13. The complainant pointed out that the building is unregistered and that the land, being "mining land in a hillside and soil conservation area," could not be approved

for residential use. Moreover, the site is outside the urban plan, thus violating the "Regional Planning Act." The New Taipei City Construction Bureau should legally issue fines as per regulations.



\* Each circle represents an event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

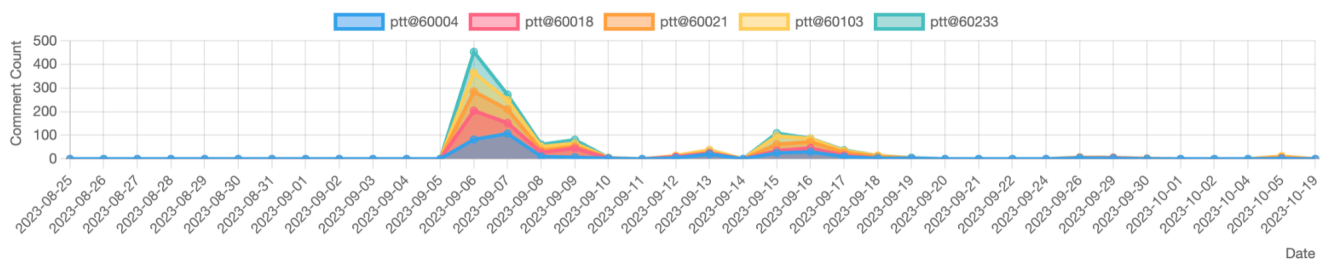
Graph 12: Events overview by timeline (from <https://infodemic.cc/en/story/sd17a3d11a57>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-09-07 00:06 2023-09-09 02:43	Lai Ching-te Wanli hometown was certified as "illegal construction"! New Taipei City Government on-site survey: It is indeed a mining land	62,643	6,443 (36.92%)
2023-09-08 09:50 2023-09-08 09:50	The illegal construction and smear incident was handled properly "Lai Ching-te's voice rebounded"	14,053	1,890 (10.83%)
2023-09-16 04:00 2023-09-18 01:51	Lai Ching-te's hometown was questioned about illegal construction, Lai Jingban retorted: The Ministry of Economic Affairs pointed out that it is no longer a reserved area for mining areas	17,943	1,699 (9.74%)
2023-09-07 20:10	The Bureau of Mines determined the current	10,320	1,397 (8.01%)

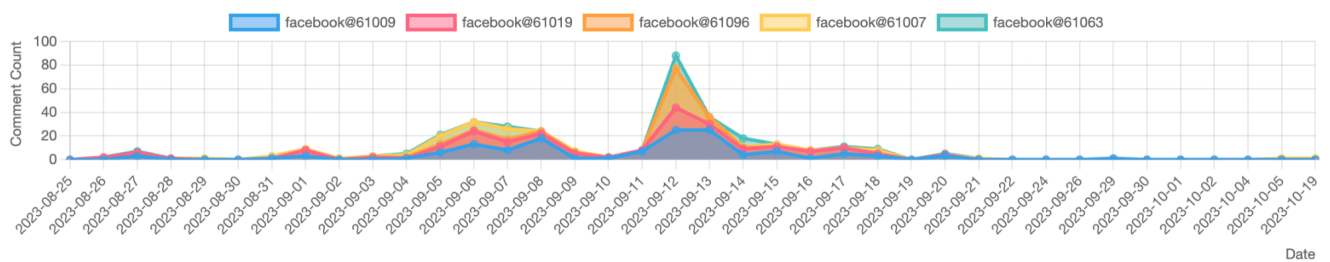
2023-09-07 20:10	situation, saying that there is no mining fact in Wanli		
2023-09-09 03:33 2023-09-10 12:28	Lai Ching-te's hometown illegally builds and ferments Tong Ziwei: It is not good to discuss it during the election	12,875	1,213 (6.95%)

Table 13: Top 5 operated stories (from <https://infodemic.cc/en/story/sd17a3d11a57>)

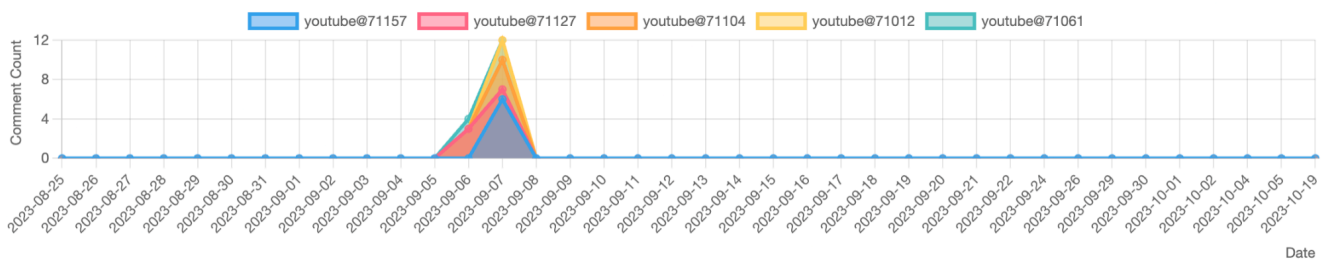
## PTT



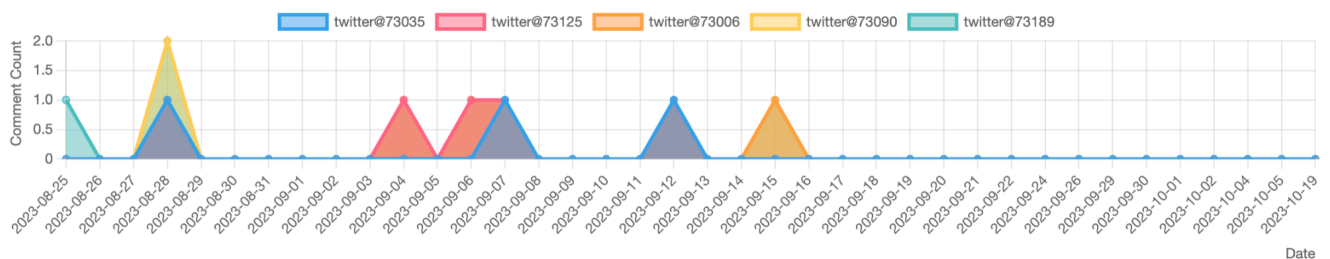
## Facebook



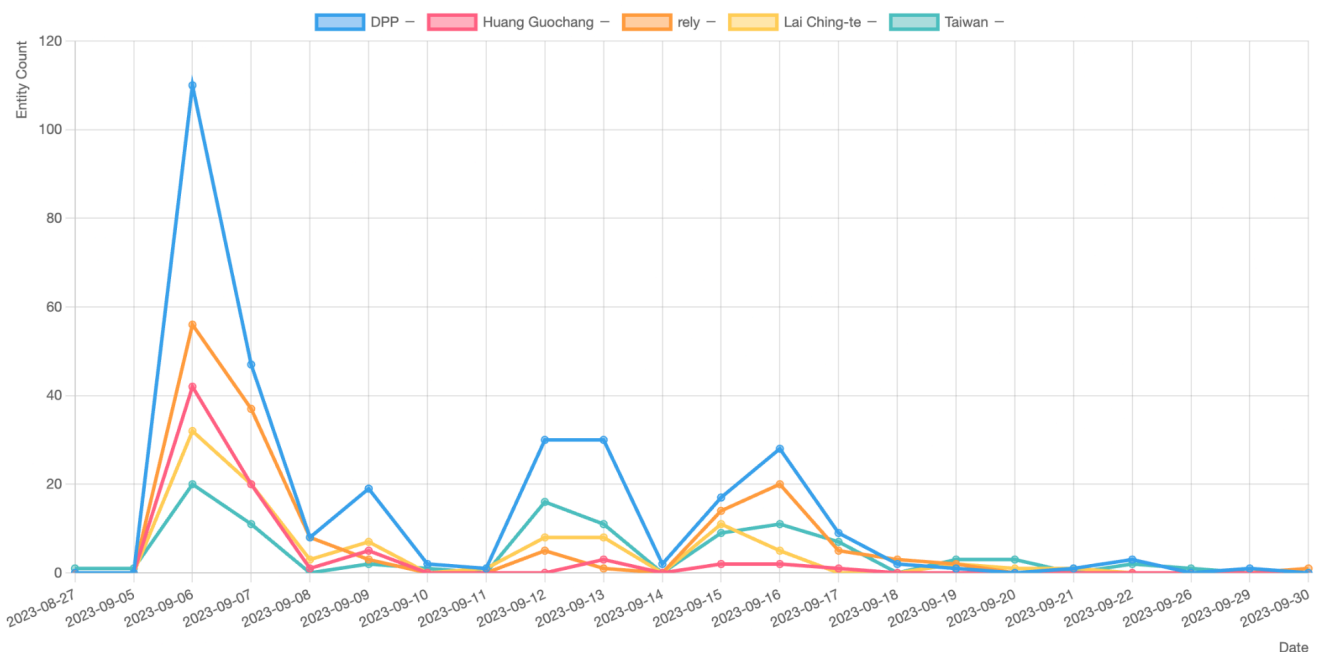
## YouTube



## Twitter

Graph 13: Troll Group Activities (from <https://infodemic.cc/en/story/sd17a3d11a57>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
PTT #60004	4.53%	4.53%
PTT #60018	3.89%	8.42%
PTT #60021	3.54%	11.96%
PTT #60103	3.41%	15.37%
PTT #60233	2.22%	17.60%

Table 14: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/sd17a3d11a57>)Graph 14: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/sd17a3d11a57>)

## September and October 2023: Egg Shortage

The egg shortage and food safety issue became a successful campaign for troll groups. Three weeks of intense focus and attacks led to the resignation of the then-Minister of Agriculture, Chi-Chung Chen.

### Food Security and Egg Shortage

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
141	2,131	4 (0.19%)	1,792	186,720	13,800 (7.39%)



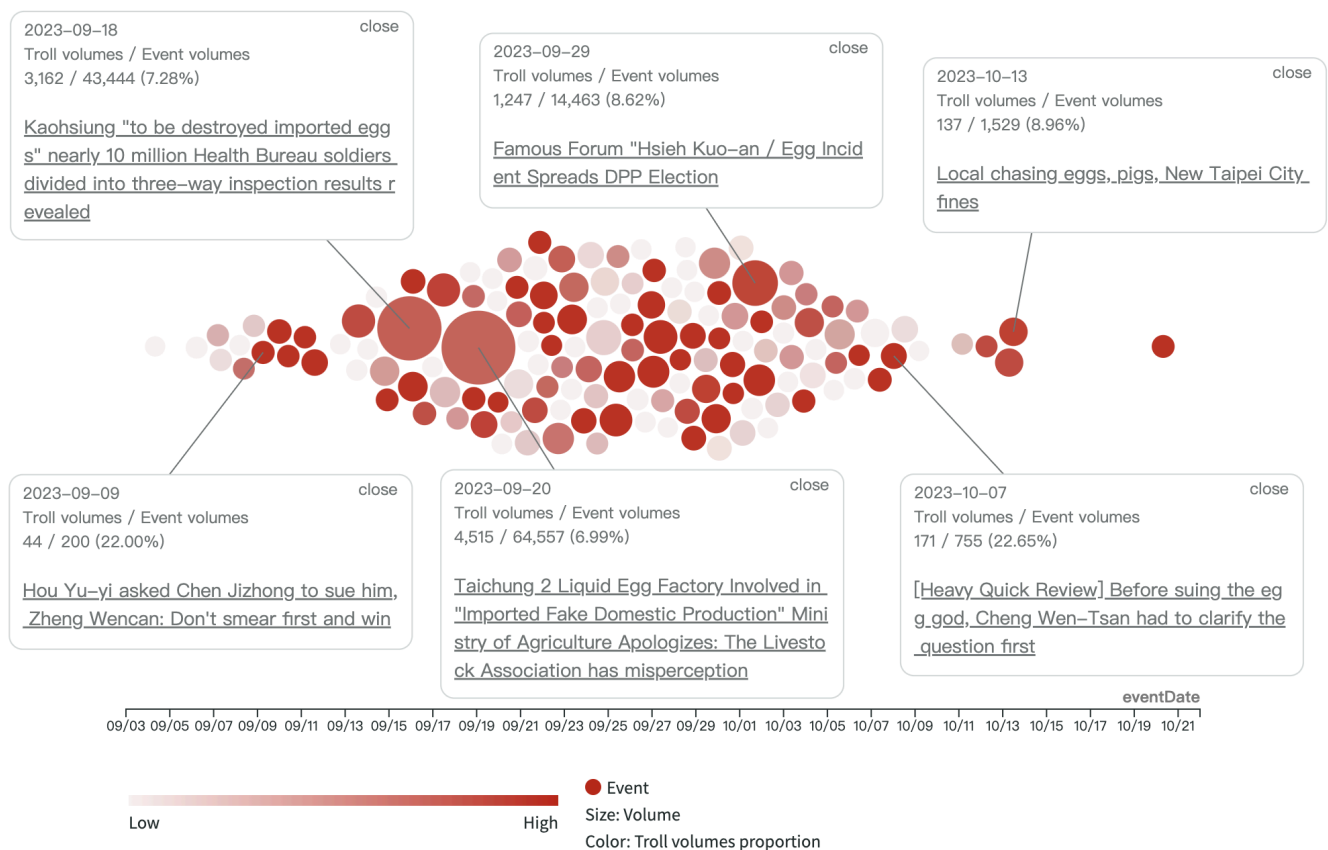
Table 15: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/s5e9a003956b>)

Taiwanese media reported that in January to July of this year, the egg importer 'Chao Si', established only on September 5 last year with a capital of just NT\$500,000, imported 88.14 million eggs from Brazil. Despite being the smallest in capital, their import volume accounted for over 60% of the 140 million eggs imported under the government project, receiving government subsidies worth over a hundred million. This raised suspicions from the opposition; Taipei City Council members from the KMT and the Legislative Yuan's party group filed complaints against Chi-Chung Chen for alleged favoritism towards specific manufacturers.

Deputy Minister of Agriculture, Chen Junji, responded that the special egg import project was executed by the Department of Agriculture through the Central Livestock Association, appointing importers to buy eggs at the 'Cost, Insurance, and Freight' (CIF) price, and then selling them at the average domestic price in Taiwan. The government absorbed the difference between CIF and local prices, including tariffs, business taxes, and customs fees, which was not a subsidy to the manufacturers.

Chen Junji emphasized that Chao Si had channels to import eggs from Brazil and a track record of exporting eggs from Japan to Taiwan. They could provide Brazilian official health and quarantine certificates, reasonable CIF prices, and complete orders by the end of March, meeting the Department of Agriculture's four major criteria for egg importers.

However, the imported egg incident still sparked controversies, particularly around food safety. Ultimately, on September 19, Minister of Agriculture Chi-Chung Chen resigned.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

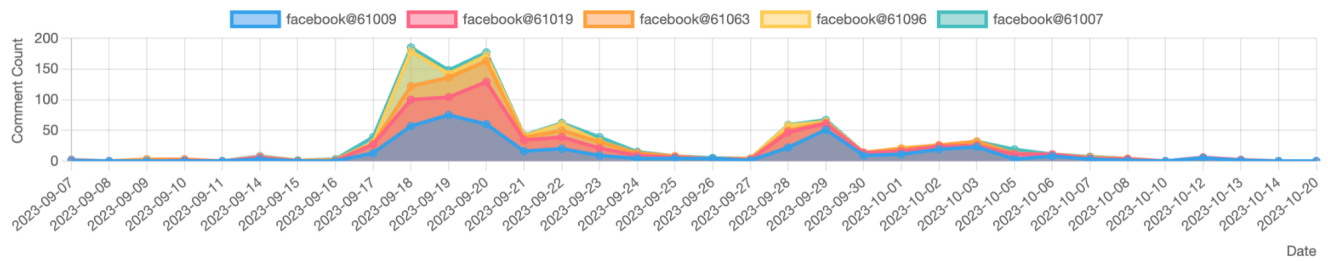
\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

Graph 15: Events overview by timeline (from <https://infodemic.cc/en/story/s5e9a003956b>)

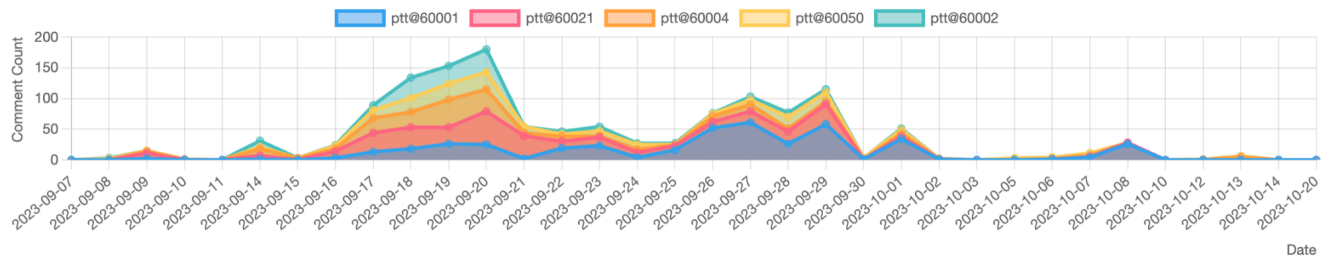
Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-09-20 07:47 2023-09-22 05:49	Taichung 2 Liquid Egg Factory Involved in "Imported Fake Domestic Production" Ministry of Agriculture Apologizes: The Livestock Association has misperception	64,557	4,515 (27.91%)
2023-09-18 09:58 2023-09-20 08:13	Kaohsiung "to be destroyed imported eggs" nearly 10 million Health Bureau soldiers divided into three-way inspection results revealed	43,444	3,162 (19.55%)
2023-09-29 09:29 2023-10-01 06:37	Famous Forum "Hsieh Kuo-an / Egg Incident Spreads DPP Election	14,463	1,247 (7.71%)
2023-09-27 01:52 2023-09-28 07:17	Chen Chien-jen: The photo of the stinky egg is false news and has been asked to investigate by the Criminal Police Department	3,099	512 (3.17%)
2023-09-30 10:25 2023-09-30 10:25	People who opened black eggs were checked for water meters? Legislator 1 reason to shout "not green terror" online scolding	4,145	495 (3.06%)

Table 16: Top 5 operated stories (from <https://infodemic.cc/en/story/s5e9a003956b>)

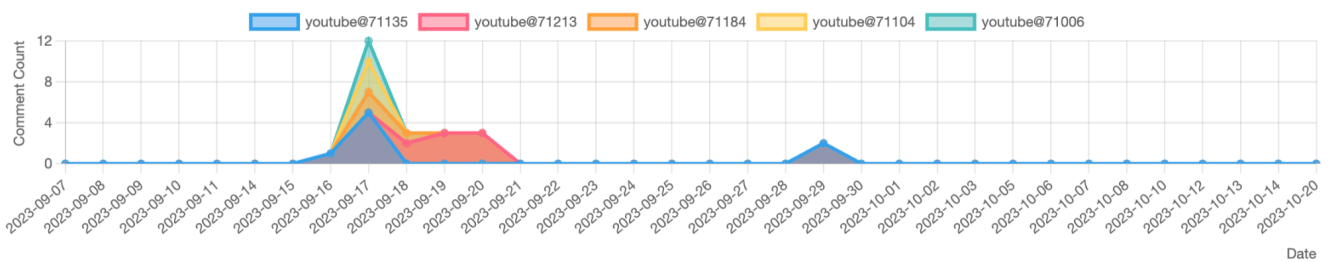
## Facebook



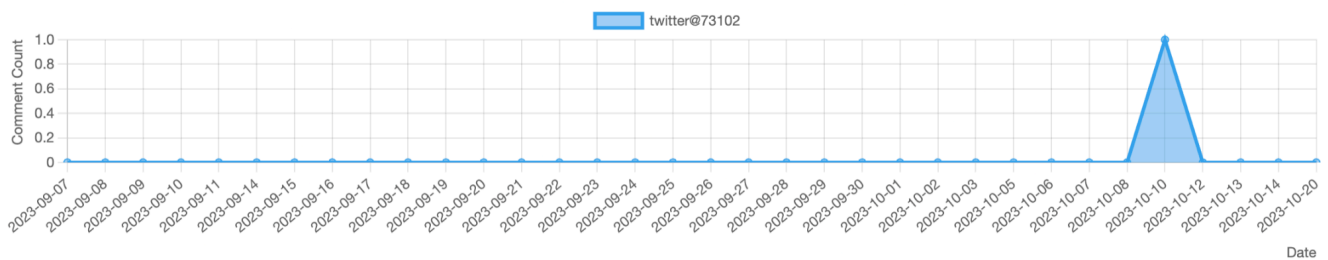
## PTT



## YouTube

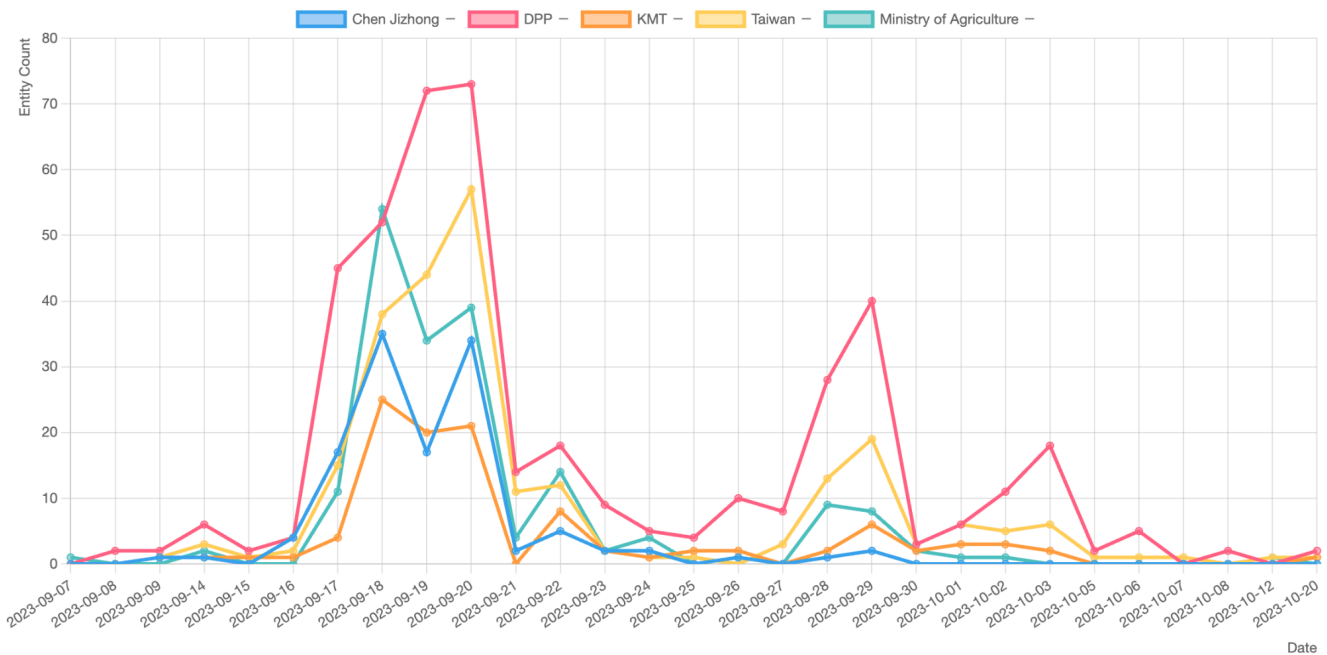


## Twitter

Graph 16: Troll Group Activities (from <https://infodemic.cc/en/story/s5e9a003956b>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61009	4.90%	4.90%
PTT #60001	4.83%	9.74%
PTT #60021	3.93%	13.66%
Facebook #61019	3.30%	16.96%

PTT #60004	2.51%	19.47%
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Table 17: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/s5e9a003956b>)Graph 17: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/s5e9a003956b>)

## November and December 2023: The KMT-TPP Collaboration

The pre-election battlefield focused on the KMT and TPP collaboration. Troll groups attempted to facilitate this alliance through attacks, but it turned out to be a failed operation as the collaboration did not materialize. Subsequently, these groups shifted their stance, attacking other candidates. This tactic did not resemble the operations of local Taiwanese PR firms, suggesting possible intervention by foreign entities, unclear to both the KMT and TPP.

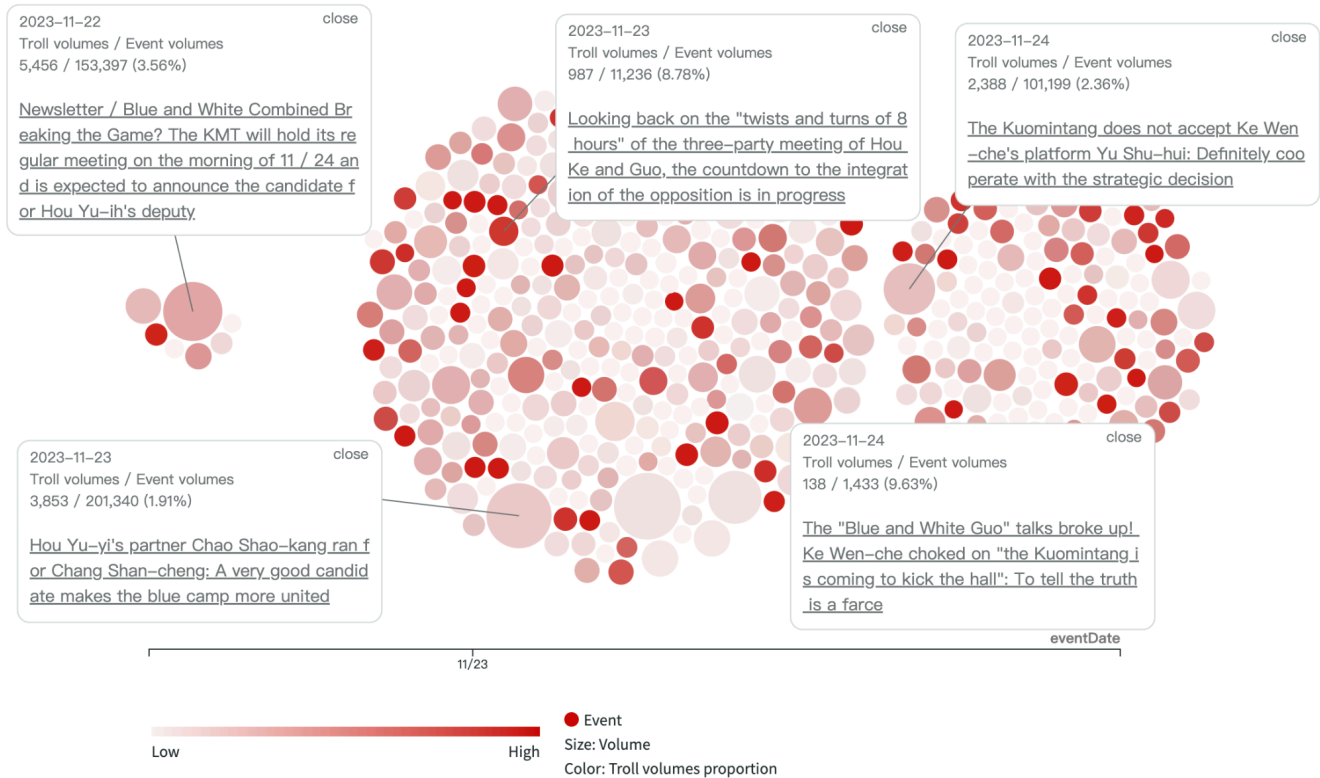
## The KMT-TPP Collaboration and Breaking up

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
141	2,131	4 (0.19%)	1,792	186,720	13,800 (7.39%)

Table 18: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/s54130176485>)

On the 15th, the KMT and TPP held a joint political consultation meeting to discuss a partnership for the presidential election. Although they reached a six-point consensus, there was internal dissent within the TPP, including accusations of betrayal against their presidential candidate, Ko Wen-je, who reportedly broke down in tears during an internal meeting on the 16th. Disputes continued, particularly over concessions in poll percentages.

Eventually, on the 23rd, former President Ma Ying-jeou, KMT presidential candidate Hou Yu-ih, TPP candidate Ko Wen-je, and independent candidate Terry Gou, founder of Foxconn, met at the Grand Hyatt Hotel. The meeting was tense and confrontational, ending in a disagreement, leading to the collapse of the KMT-TPP collaboration.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

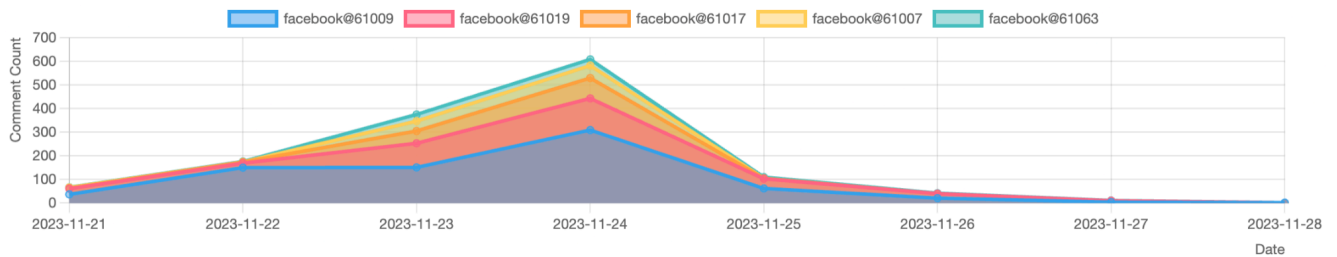
Graph 18: Events overview by timeline (from <https://infodemic.cc/en/story/s54130176485>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-11-22 04:10 2023-11-24 07:15	Newsletter / Blue and White Combined Breaking the Game? The KMT will hold its regular meeting on the morning of 11 / 24 and is expected to announce the candidate for Hou Yu-ih's deputy	153,397	5,456 (9.69%)
2023-11-23 19:41 2023-11-25 17:37	Hou Yu-yi's partner Chao Shao-kang ran for Chang Shan-cheng: A very good candidate makes the blue camp more united	201,340	3,853 (6.84%)
2023-11-24 12:39 2023-11-24 16:10	The KMT does not accept Ke Wen-che's platform Yu Shu-hui: Definitely cooperate with the strategic decision	101,199	2,388 (4.24%)

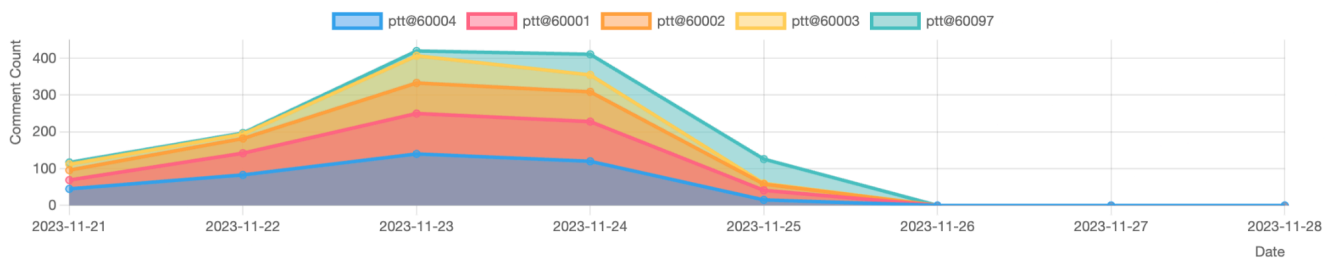
2023-11-23 09:53 2023-11-23 19:49	Before the blue and white "key meeting," Ke Guo's "Jun Yue camped" was the design of the time tool Hou was present	30,066	1,604 (2.85%)
2023-11-23 20:05 2023-11-24 23:41	Why did Hou Yu-yi disclose Ke Wen-che's text message? She revealed that she confirmed 2 things: One shot to death	216,318	1,573 (2.79%)

Table 19 : Top 5 operated stories (from <https://infodemic.cc/en/story/s54130176485>)

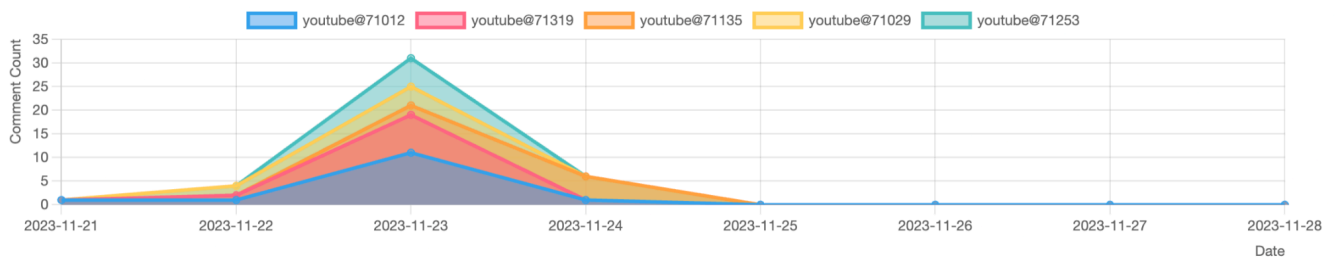
## Facebook



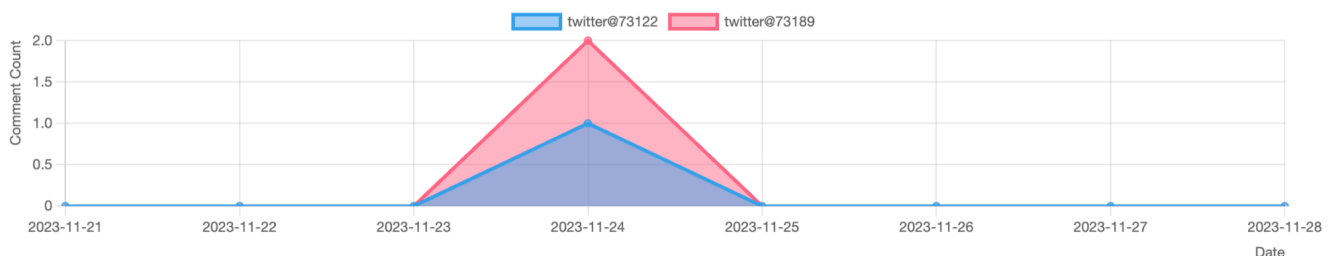
## PTT



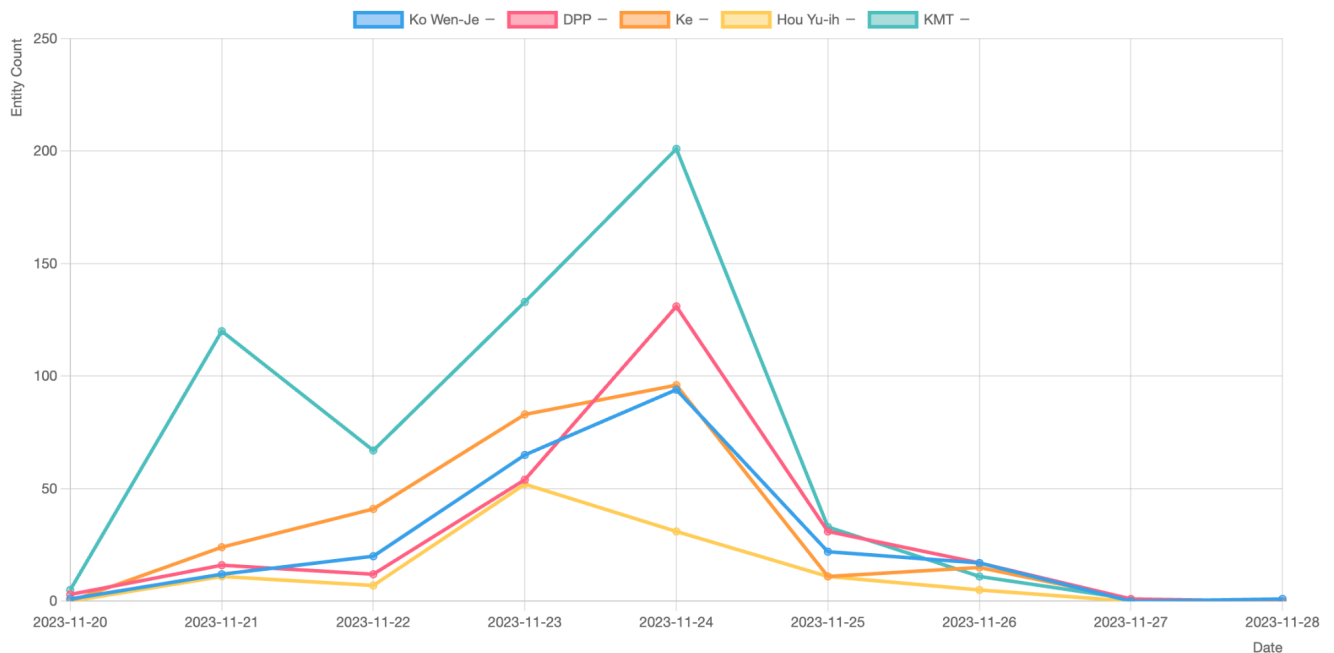
## YouTube



## Twitter

Graph 19: Troll Group Activities (from <https://infodemic.cc/en/story/s54130176485>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61009	7.25%	7.25%
PTT #60004	3.97%	11.22%
Facebook #61019	3.40%	14.61%
PTT #60001	3.22%	17.83%
PTT #60002	2.44%	20.28%

Table 20: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/s54130176485>)Graph 20: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/s54130176485>)

## January 2024: National Alerts and U.S. Delegation Visits

Leading up to the January 2024 elections, the most significant events were an earthquake in Japan and the national alert issued by Taiwan's Ministry of National Defense. In the pre-election period, there was a clear focus on specific issues aimed at influencing the Taiwanese presidential election. Approximately half of the troll accounts disappeared after the election, resuming operations only after a U.S. delegation visited Taiwan.



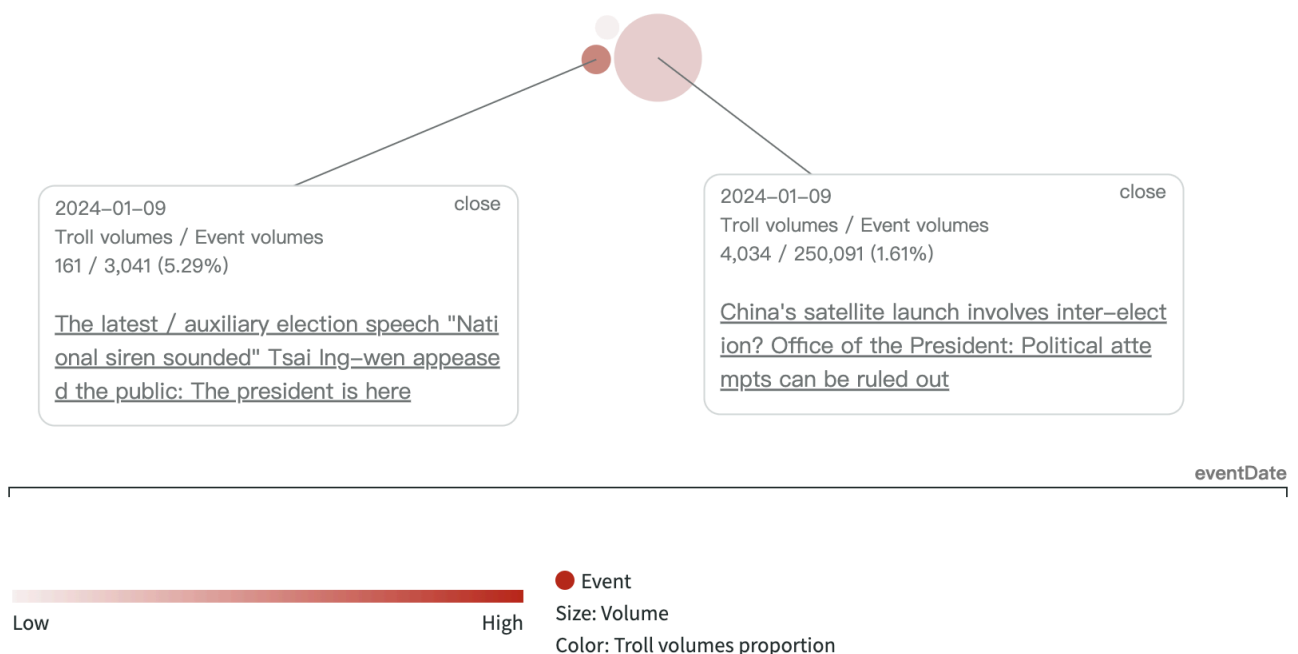
## National Alert & Japan Earthquake

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
3	787	7 (0.89%)	1,226	253,003	4,186 (1.65%)

Table 21: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/sb51fda96ea9>)

On January 9th, around 3:03 PM, China conducted a satellite launch mission at the Xichang Satellite Launch Center in Sichuan, using a Long March series carrier rocket. The rocket's trajectory passed over southern Taiwan, triggering continuous national alerts throughout the island.

The KMT questioned why the Ministry of National Defense issued alerts, arguing that the Chinese satellite launch posed no harm to Taiwan. The Ministry explained that the alerts were issued due to the detected rocket trajectory deviating from expectations, passing over southern Taiwan, thus necessitating the national alerts to inform and caution the public.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

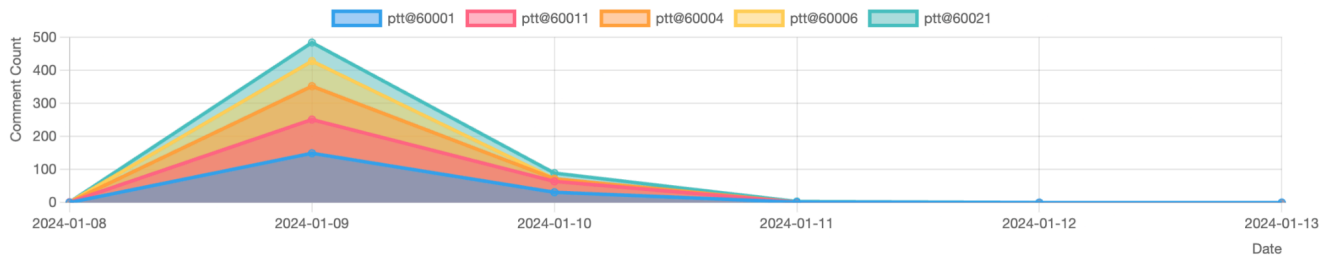
\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

Graph 21: Events overview by timeline (from <https://infodemic.cc/en/story/sb51fda96ea9>)

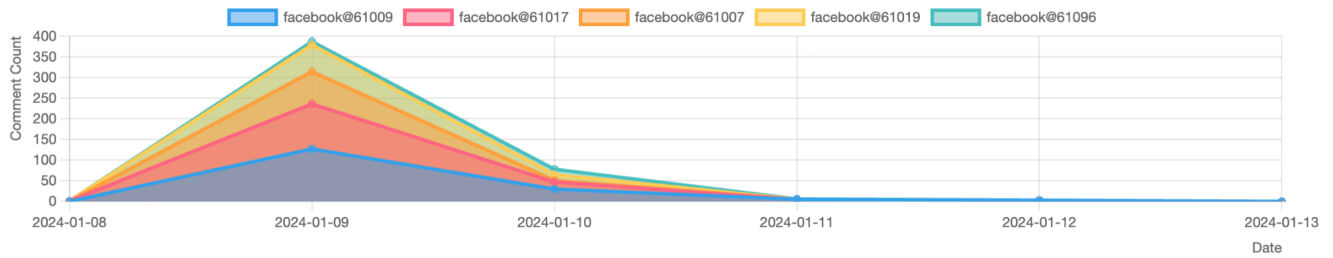
Event time (UTC+8)	Title	Community volume	Troll volume (%)
2024-01-09 00:00 2024-01-10 22:00	China's satellite launch involves inter-election? Office of the President: Political attempts can be ruled out 1,325	250,091	4,034 (96.16%)
2024-01-09 20:28 2024-01-09 21:13	The latest / auxiliary election speech "National siren sounded" Tsai Ing-wen appeased the public: The president is here	3,041	161 (3.84%)
2024-01-09 21:53 2024-01-09 21:53	Taiwan announces mainland rocket track map: Deviates from course and passes over Taitung in Tainan	199	0 (0.00%)

Table 22: Top 5 operated stories (from <https://infodemic.cc/en/story/sb51fda96ea9>)

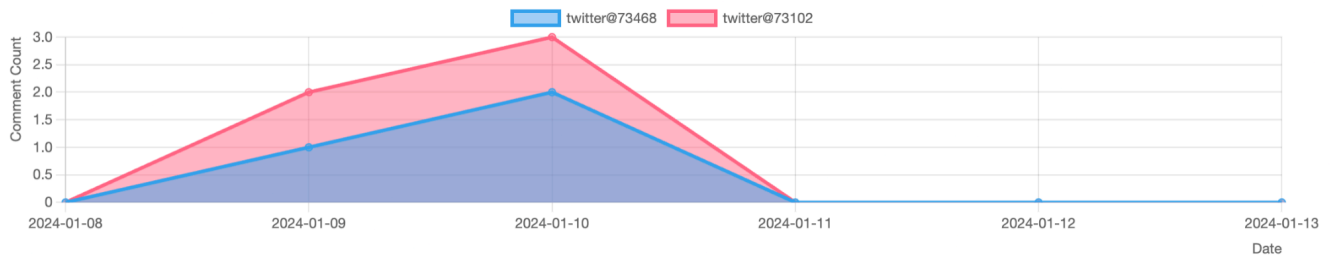
## PTT



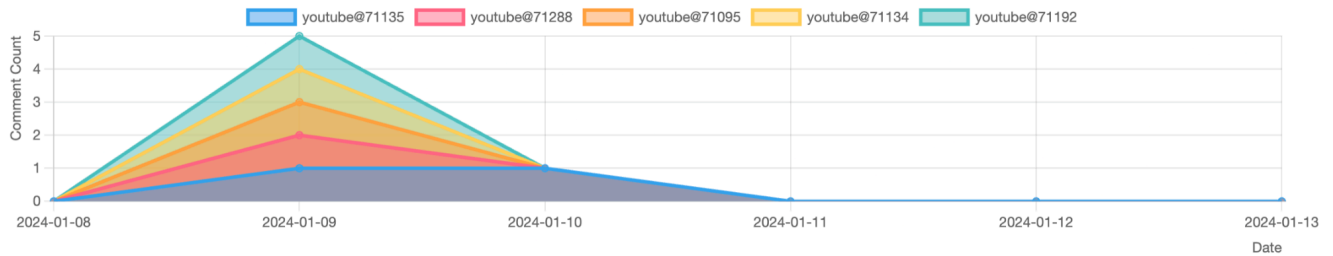
## Facebook



## Twitter

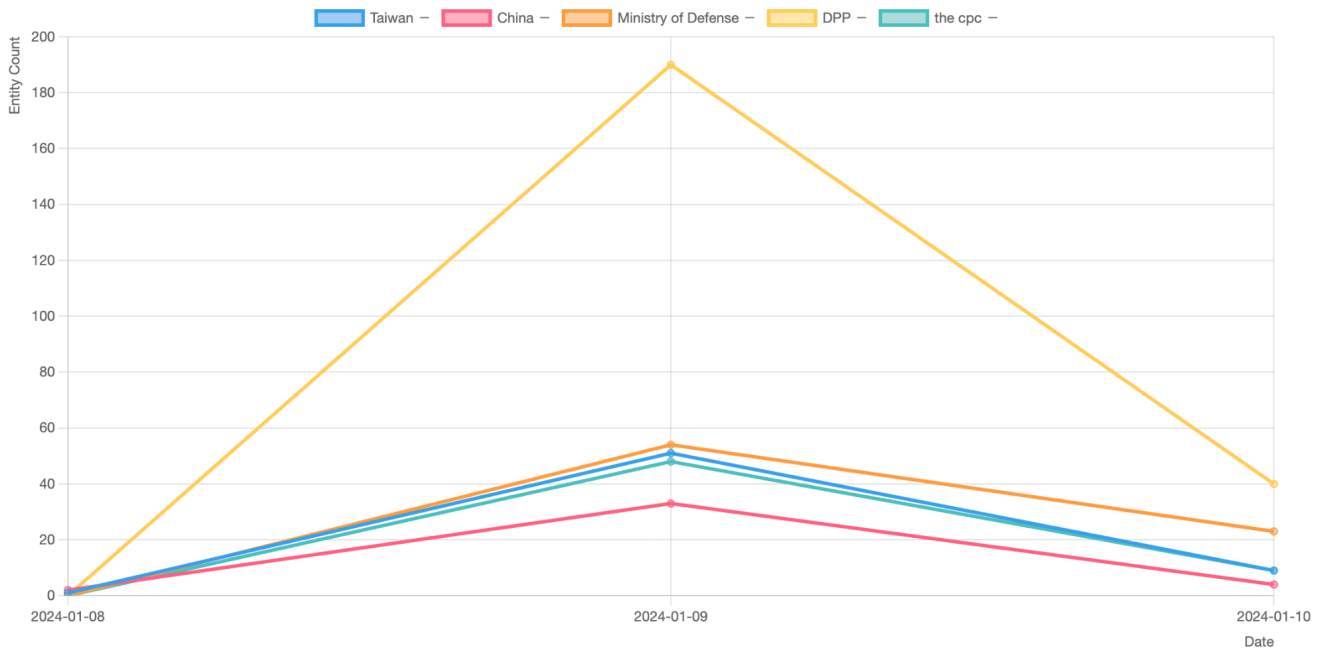


## YouTube

Graph 22: Troll Group Activities (from <https://infodemic.cc/en/story/sb51fda96ea9>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
PTT #60001	4.51%	4.51%
Facebook #61009	4.11%	8.62%
PTT #60011	3.39%	12.01%
Facebook #61017	3.16%	15.17%

PTT #60004	2.72%	17.89%
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Table 23: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/sb51fda96ea9>)Graph 23: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/sb51fda96ea9>)

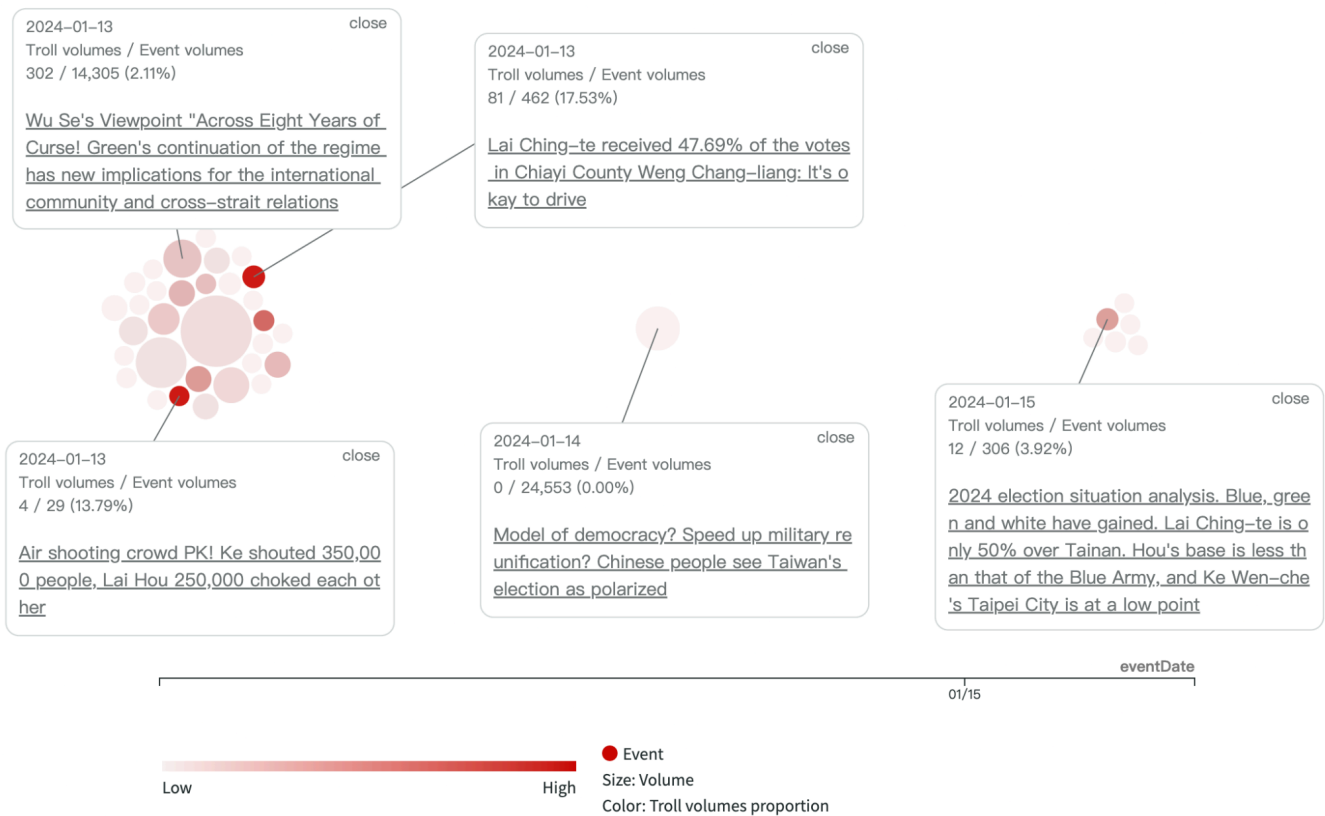
## U.S. Visits Taiwan Showing Support for Democracy

Events	Media Volume	(PRC) State-affiliated Media (%)	Troll Accounts	Community Volume	Troll Volume (%)
38	324	11 (3.40%)	911	196,308	1,744 (0.89%)

Table 24: Analyzed data quantity for these events (from <https://infodemic.cc/en/story/sf2a16283e36>)

Following the conclusion of the presidential election, a bipartisan delegation from the United States arrived in Taiwan on January 14th. On the 15th, they visited the Presidential Office to meet with President Tsai Ing-wen. In addition to congratulating Taiwan on the successful completion of the election, they reaffirmed the unwavering support of the United States for Taiwan.

Former U.S. National Security Advisor H.R. McMaster expressed gratitude for President Tsai's warm welcome and conveyed congratulations on behalf of the American people to President Tsai and the people of Taiwan. He applauded Taiwan for smoothly conducting the presidential and legislative elections on January 13th. Vice President Lai Ching-te emphasized that in the face of rapidly changing global dynamics, Taiwan remains steadfast in defending democracy and peace. Through a stable and pragmatic approach, Taiwan has deepened cooperation with democratic partners, including the United States, earning widespread international support and trust.



\* Each circle represents a event related to this manipulated story

\*\* The size of each circle defined by the sum of the social discussion of that event

\*\*\* The darker the circle is, the higher the proportion of troll comments in the event

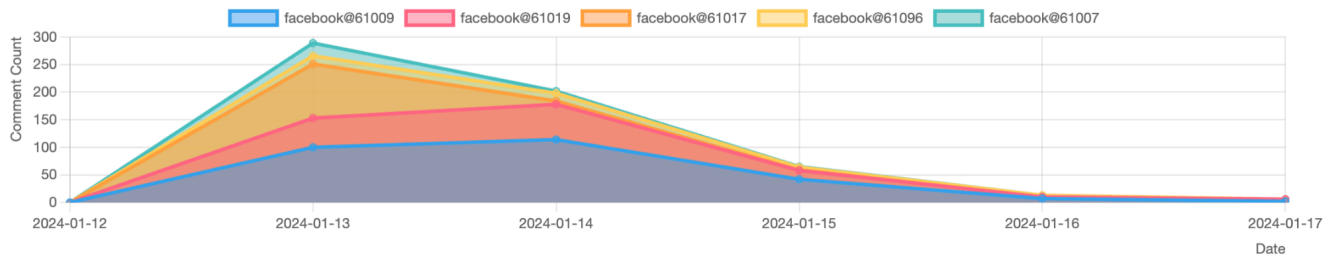
Graph 24: Events overview by timeline (from <https://infodemic.cc/en/story/sf2a16283e36>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2024-01-13 20:41 2024-01-15 18:27	Meeting with the US delegation Lai Ching-te: On the basis of Tsai Ing-wen Ying-wen, we will continue to defend the peace and stability of the Taiwan Strait	110,008	1,055 (47.33%)
2024-01-13 20:58 2024-01-13 20:58	Ke Wen-chen: Next time we will definitely be able to govern and win back the country	40,208	302 (13.55%)
2024-01-13 21:48 2024-01-13 21:48	Wu Se's Viewpoint "Across Eight Years of Curse! Green's continuation of the regime has new implications for the international community and cross-strait relations"	14,305	302 (13.55%)
2024-01-13 21:53 2024-01-14 01:48	The DPP's Yilan County Presidential Legislator is a win-win situation, only 2.75 percentage points away "vote without division"	11,022	130 (5.83%)
2024-01-13 21:25	2024 Presidential Election Voting Results / The	6,081	113 (5.07%)

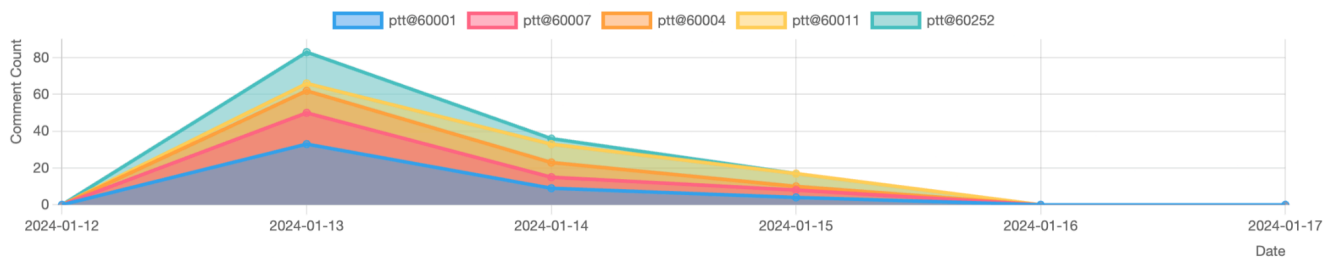
2024-01-13 21:25	DPP's new trend legislator seats lost sharply Hsu Chiao-hsin: The goal is to pull down Lai Ching-te in four years		
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Table 25: Top 5 operated stories (from <https://infodemic.cc/en/story/sf2a16283e36>)

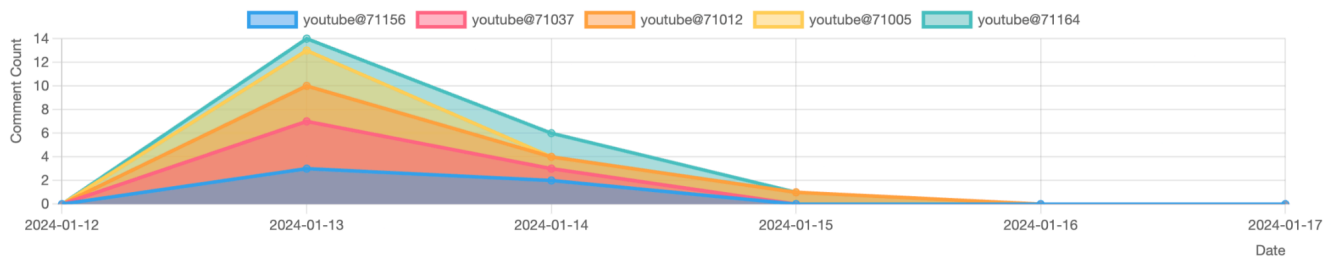
## Facebook



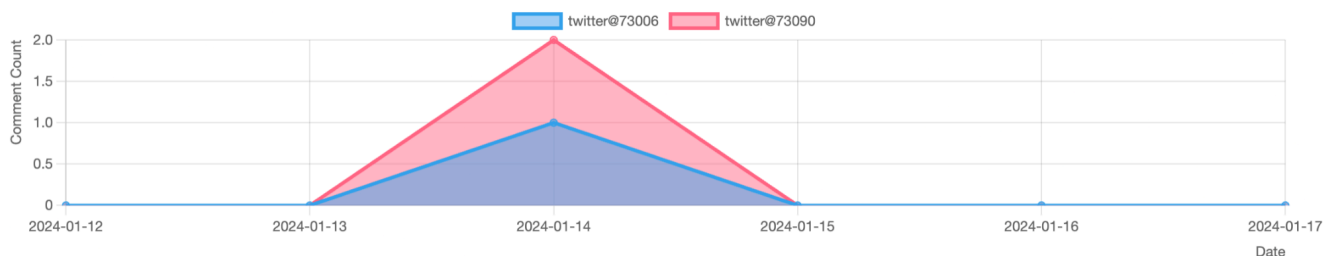
## PTT



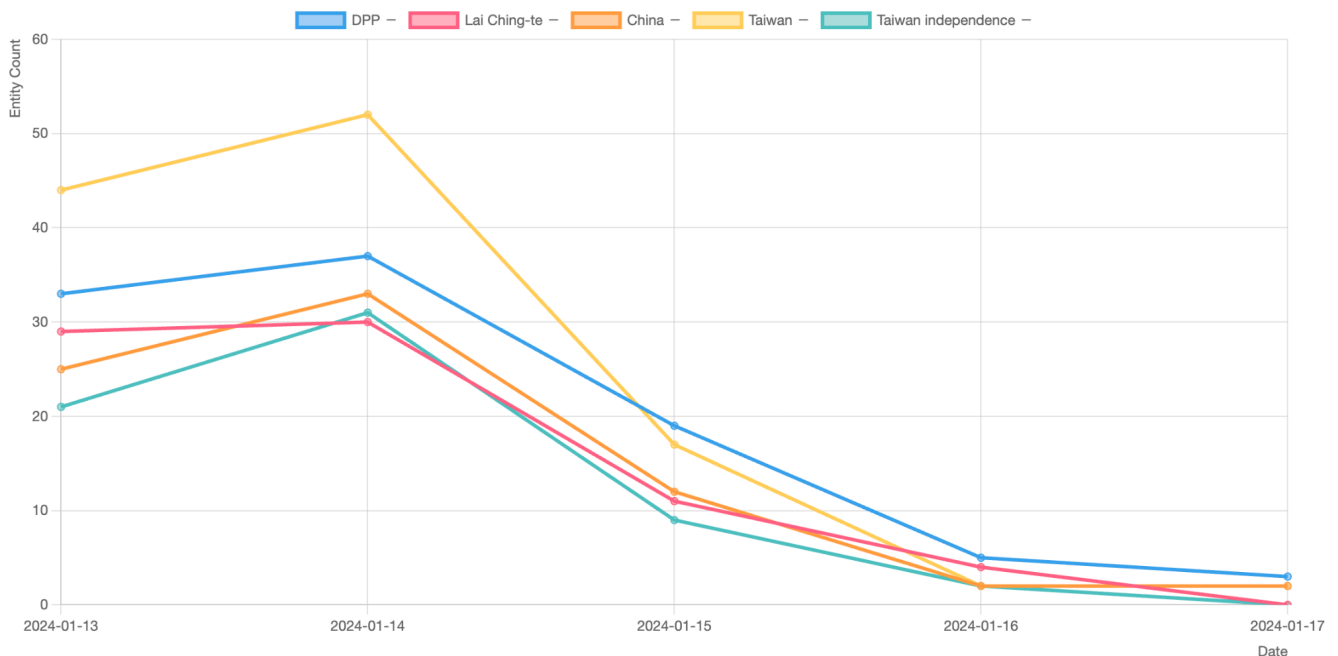
## YouTube



## Twitter

Graph 25: Troll Group Activities (from <https://infodemic.cc/en/story/sf2a16283e36>)

Troll Group	Volume Proportion	Volume Cumulative Proportion
Facebook #61009	15.87%	15.87%
Facebook #61019	8.41%	24.28%
Facebook #61017	6.31%	30.59%
PTT #60001	2.76%	33.35%
Facebook #61096	2.22%	35.58%

Table 26: Top 5 Active Troll Groups (from <https://infodemic.cc/en/story/sf2a16283e36>)Graph 26: Target Entities of Troll Group Operations (from <https://infodemic.cc/en/story/sf2a16283e36>)

## Main Troll Groups

During the 2024 Taiwan Presidential Election, Taiwan AI Labs observed unusual activity from four troll groups. These groups generated significant noise and manipulation on both Facebook and PTT platforms, echoing narratives from Chinese state media. We believe the behavior of these four troll groups is not typical and warrants further investigation. Below is a summary of information related to these troll groups.

### Troll Group: Facebook #61009

Facebook #61009, observed by AI Labs, is the most active troll group on Facebook, with 439 accounts participating in 4,840 stories.

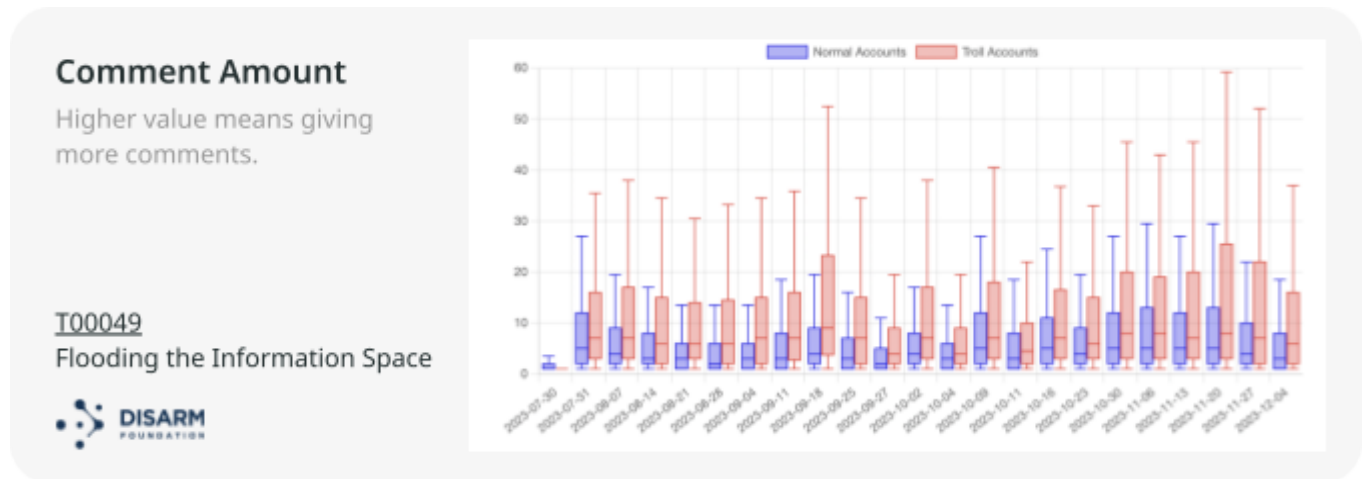


Troll Accounts	Operated stories	Target entities
439	5,370	2,236

Table 27: Summary of Facebook #61009 (from <https://infodemic.cc/collab/61009>)

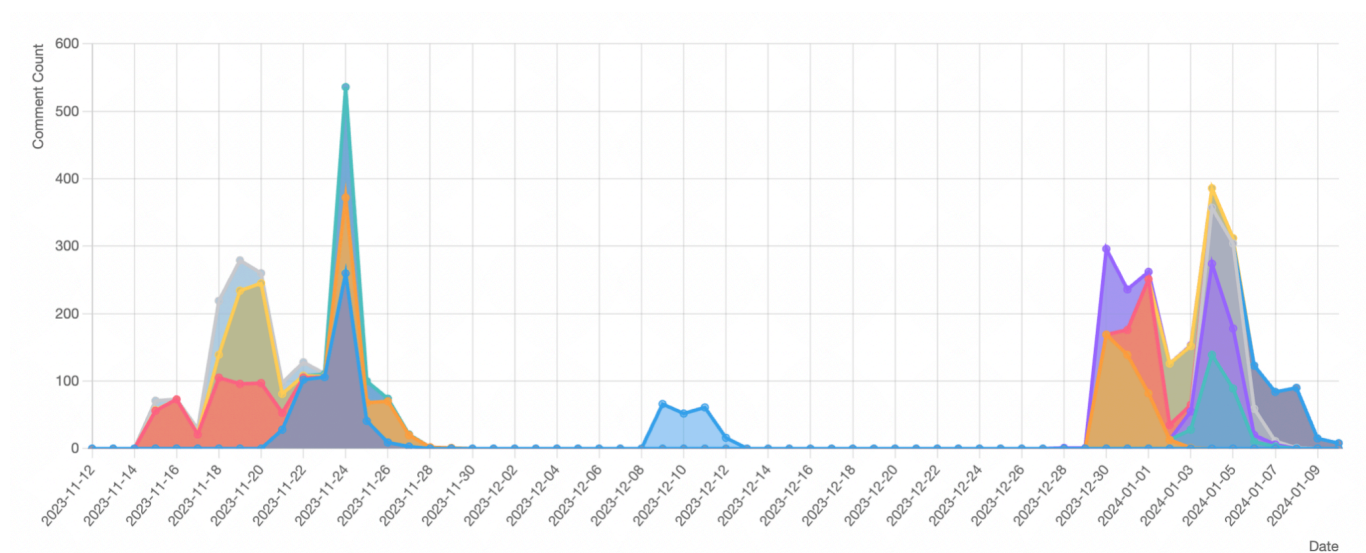
## Abnormal Behaviors

Facebook troll group #61009 began its activity in the week of July 31, 2023, exhibiting a significantly higher volume of comments compared to average users.



## Operated Stories

Facebook troll group #61009 is actively involved in topics related to the Taiwan presidential election, with the five most recent events they engaged in also relating to the KMT-TPP collaboration issue. Politically, this group primarily focuses on attacking Ko Wen-je, the KMT, and the DPP.

Graph 27: Operated stories of Facebook #61009 by timeline (from <https://infodemic.cc/collab/61009>)



Troll Accounts	Operated stories	Target entities
170	5,763	2,834

Table 29: Summary of Facebook #61019 (from <https://infodemic.cc/collab/61019>)

## Abnormal Behaviors

Facebook troll group #61019 began its activity in the week of July 31, 2023, showing a significantly higher volume of comments compared to average users, and it repeatedly posts a large number of comments under the same article.

### Comment Amount

Higher value means giving more comments.

T00049

Flooding the Information Space



### Repeat Commenting

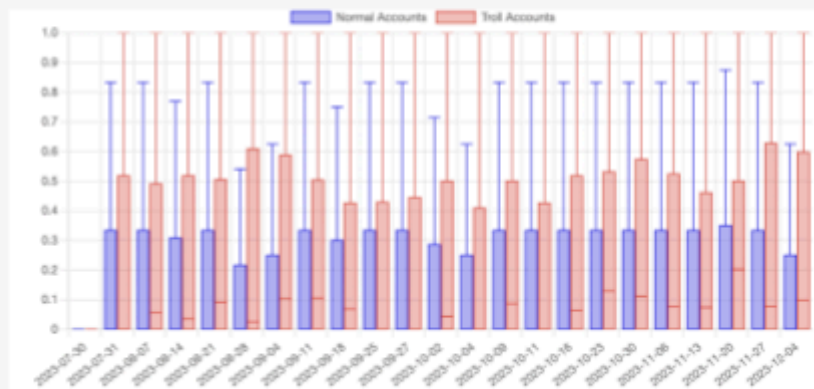
Giving similar comments on different posts, higher value means higher similarity.

T0049

Flooding the Information Space

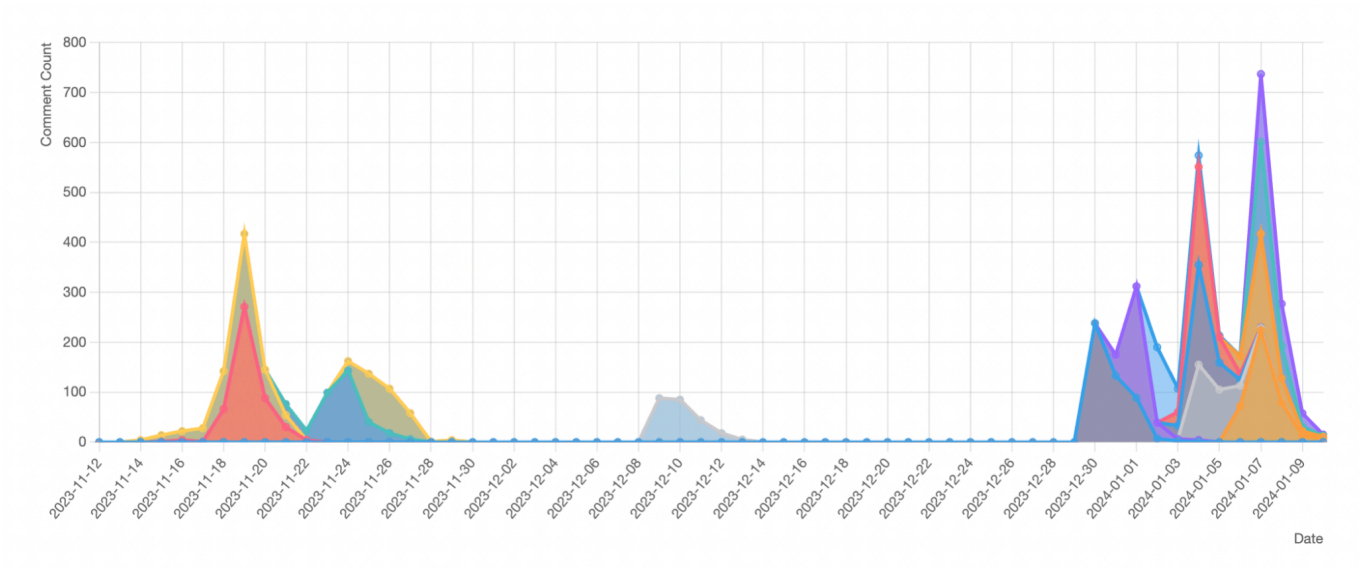
T0121

Manipulate Platform Algorithm



## Operated Stories

Facebook troll group #61019 actively engages in topics related to the Taiwan presidential election. Among the five most recent events they participated in, four are related to the KMT-TPP collaboration issue. Politically, this group primarily targets the KMT, Ko Wen-je, and Tsai Ing-wen.

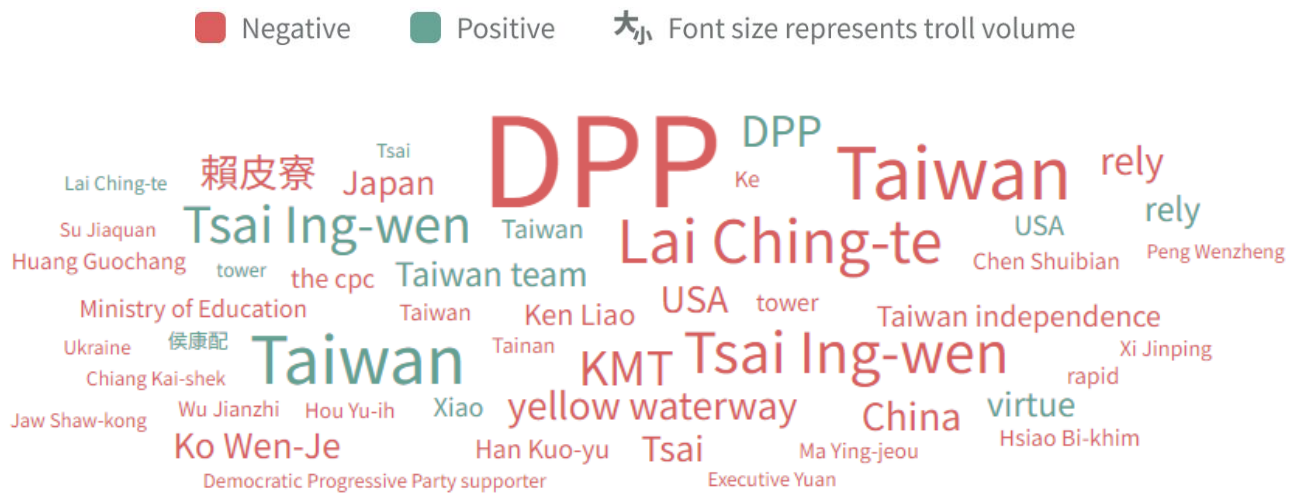


Graph 29: Operated stories of Facebook #61019 by timeline (from <https://infodemic.cc/collab/61019>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-12-30 16:27 2024-01-02 04:10	Emphasizing that the Constitution of the Republic of China is not a risk Tsai Ing-wen: Link with the 1992 Consensus is	101,224	3,515 (3.47%)
2023-11-16 02:39 2023-11-20 10:19	Presidential and Legislative Elections Registration From Today Chu Li-lun: Blue and White are only short of the door	445,169	8,669 (1.95%)
2024-01-06 20:25 2024-01-07 00:09	Observation / Super weekend Lai Ching-te's energy explosion rushed to 7 games in a row! Strong support for young people	80,795	2,360 (2.92%)
2023-11-15 10:18 2023-11-20 10:23	Blue and white are out of harmony? Ko Wen-che shouted: Continue to fight to the end as the TPP presidential candidate!	749,672	16,156 (2.16%)
2023-11-22 00:00 2023-11-24 15:28	Newsletter / Blue and White Combined Breaking the Game? The KMT will hold its regular meeting on the morning of 11 / 24 and is expected to announce the candidate for Hou Yu-ih's deputy	837,617	14,731 (1.76%)

Table 30: Top 5 operated stories of Facebook #61019 (from <https://infodemic.cc/collab/61019>)

## Targets of Troll Activities



Graph 30: Troll activity targets of Facebook #61019 (from <https://infodemic.cc/collab/61019>)

## Troll Group: PTT #60004

PTT #60004 is one of the most active troll groups on the PTT platform, comprising 156 accounts and participating in 7,876 stories.

Troll Accounts	Operated stories	Target entities
156	7,944	1,080

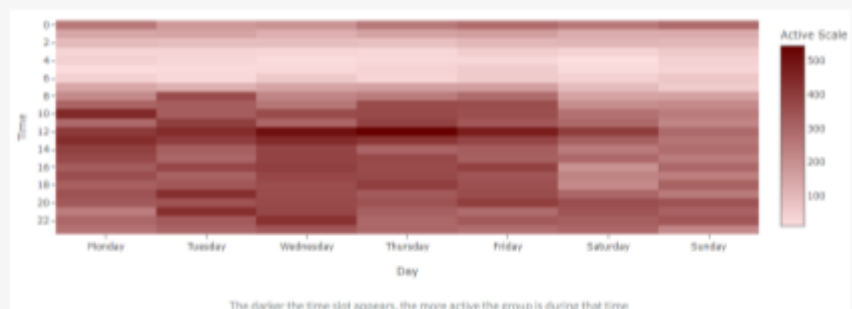
Table 31: Summary of PTT #60004 (from <https://infodemic.cc/collab/60004>)

## Abnormal Behaviors

During the observation period starting in November, the PTT troll group #60004 has consistently remained active. Their operational hours coincide with standard working hours, with activity observed from 9 AM to 5 PM, Monday to Friday, and additional activity on Saturdays around noon. In relation to the number of comments, this group consistently exceeds the engagement levels of regular users.

### Active Time

The darker the time slot appears, the more active the group is during that time

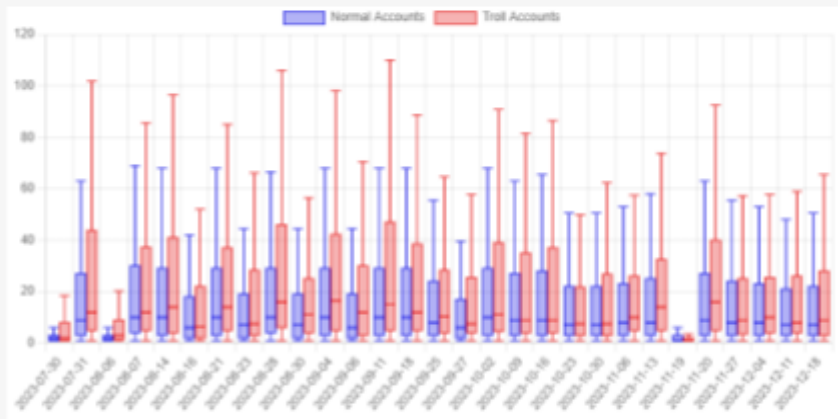


## Comment Amount

Higher value means giving more comments.

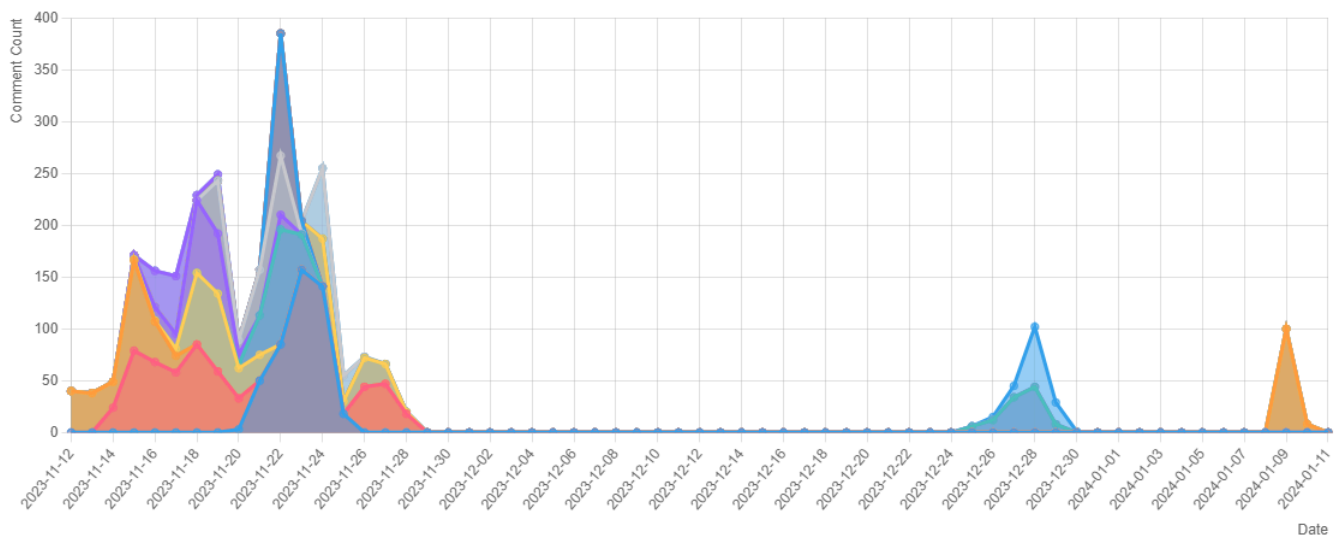
T00049

Flooding the Information Space



## Operated Stories

The primary focus of PTT troll group #60004 has been on the presidential election, with the five most actively manipulated recent events relating to the KMT-TPP collaboration issues involving the KMT and the TPP.



Graph 31: Operated stories of PTT #60004 by timeline (from <https://infodemic.cc/collab/60004>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-11-22 00:00 2023-11-24 15:28	Newsletter / Blue and White Combined Breaking the Game? The KMT will hold its regular meeting on the morning of 11 / 24 and is expected to announce the candidate for Hou Yu-ih's deputy	837,617	14,731 (1.76%)
2023-11-15 10:18	Blue and white are out of harmony? Ko Wen-je	749,672	16,156





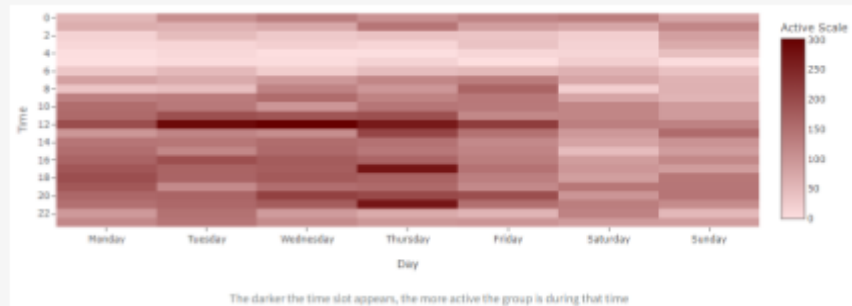


## Abnormal Behaviors

During the observation period commencing in November, PTT troll group #60021 has displayed consistent activity. Their active hours are concentrated around noon from Tuesday to Friday. In terms of the number of comments and repeated comments, this group far exceeds the activity of regular users. Additionally, they strategically enter threads early to promote posts, ensuring the narratives they want to manipulate are more visible.

### Active Time

The darker the time slot appears, the more active the group is during that time



### Comment Amount

Higher value means giving more comments.

T00049

Flooding the Information Space



### Repeat Commenting

Giving similar comments on different posts, higher value means higher similarity.

T0049

Flooding the Information Space

T0121

Manipulate Platform Algorithm

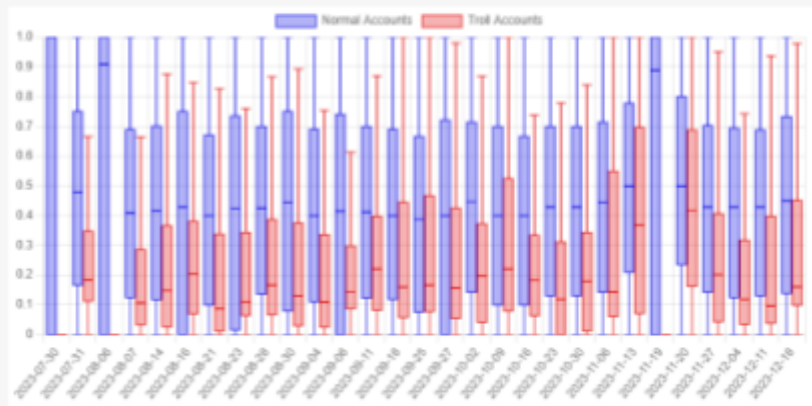


## First Commenting to Lead the Topic

Be the first commenter on different posts, to lead the discussion topics of the posts.

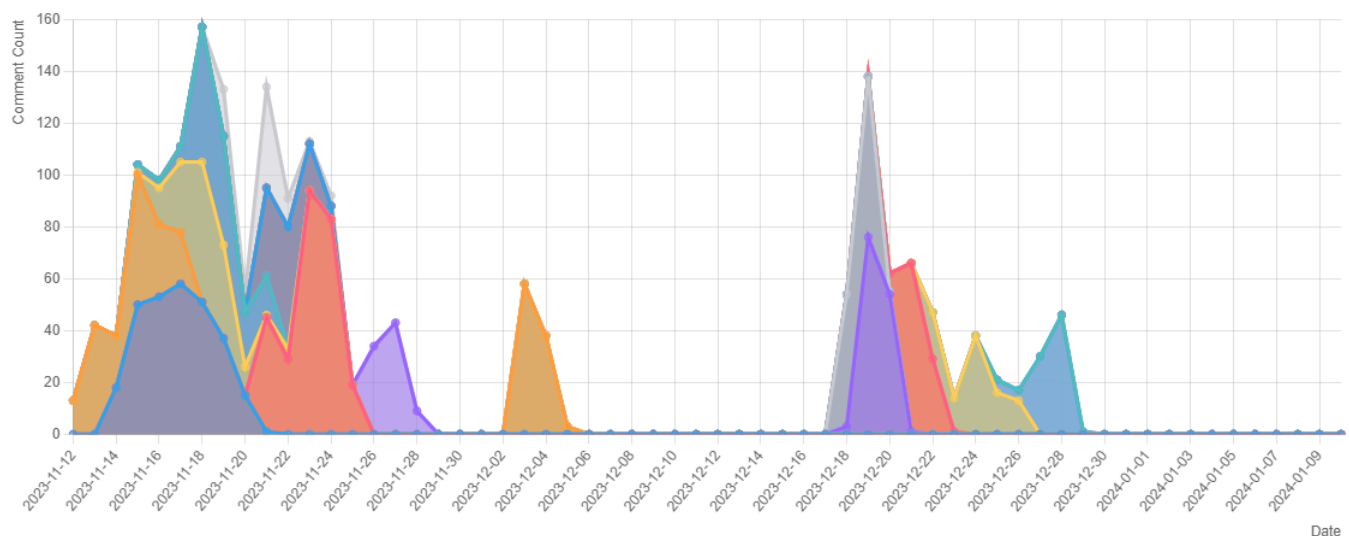
T0023.001

Reframe Context



## Operated Stories

The primary focus of PTT troll group #60021 has been on the presidential election, with the five most actively manipulated recent events relating to the KMT-TPP collaboration issues involving the KMT and the TPP.



Graph 33: Operated stories of PTT #60021 by timeline (from <https://infodemic.cc/collab/60021>)

Event time (UTC+8)	Title	Community volume	Troll volume (%)
2023-11-15 10:18 2023-11-20 10:23	Blue and white are out of harmony? Ko Wen-je shouted: Continue to fight to the end as the TPP presidential candidate!	749,672	16,156 (2.16%)
2023-11-22 00:00 2023-11-24 15:28	Newsletter / Blue and White Combined Breaking the Game? The KMT will hold its regular meeting on the morning of 11 / 24 and	837,617	14,731 (1.76%)

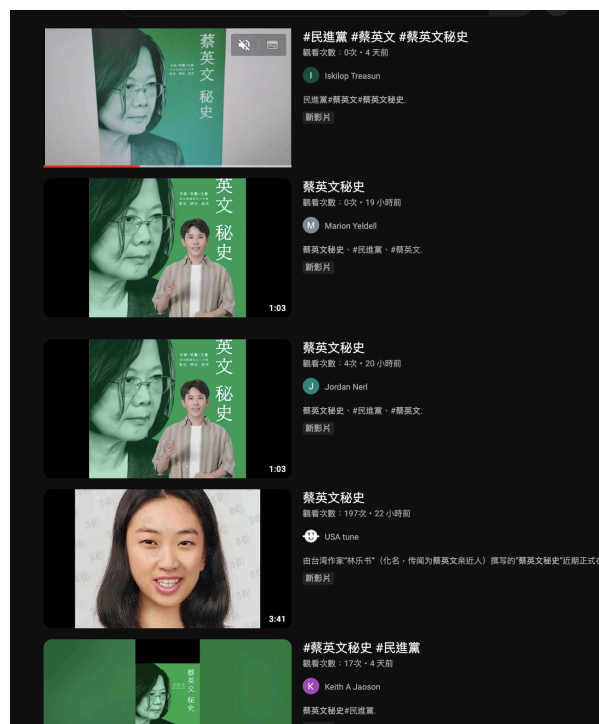


Information operations have evolved beyond merely spreading rumors; they now involve disseminating information that alters the narrative framework, thereby influencing the audience's perceptions and feelings about facts. The main challenge currently faced by fact-checking is not outright false information, but rather misleading messages that are a mix of truth and falsehood. Through a large volume of asymmetric propaganda, these messages diminish the effectiveness of efforts to debunk them. Through the mass generation of audio, video, and text, these tactics can overwhelm fact-checking organizations, trapping them in a verification loop, allowing unverified information to influence more people.

Utilizing AI technology to generate text and short videos will likely see greater usage than producing deep fake videos or images. Although the text itself may not be falsified, asymmetric propaganda can significantly influence public sentiment.

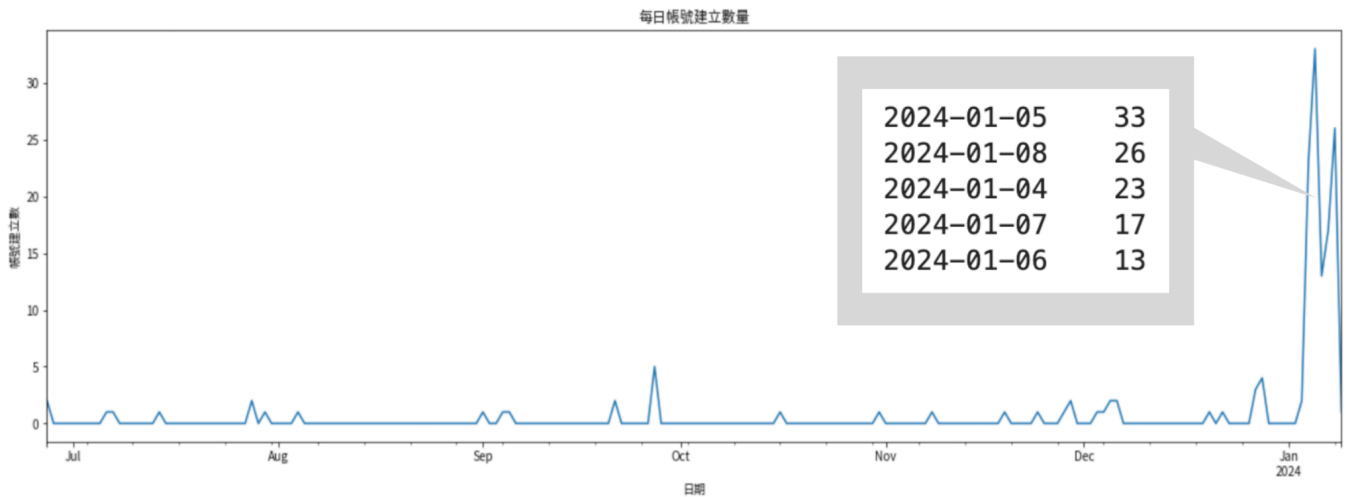
Take the egg shortage incident as an example; a small amount of misinformation about egg scarcity led people to hoard eggs unnecessarily. The rapid creation of new battlegrounds for fact-checking, known as 'Debunking Hell', renders official attempts at debunking effectively futile. Such a scenario overwhelms the capacity to correct misinformation, diminishing the impact of official clarifications.

We have observed instances like the so-called "Secret History of Tsai Ing-wen," where scandalous videos are AI-generated and uploaded through troll accounts to influence elections. Although this tactic exists, its effectiveness has been limited.



Graph 35: A large number of videos related to "The Secret History of Tsai Ing-wen"

After data verification and analysis, it was found that most YouTube accounts were created between January 5th and January 8th, and they uploaded only videos related to the "The Secret History of Tsai Ing-wen." These videos and accounts have since been taken down.



Graph 36: Concentration in the creation of YouTube accounts

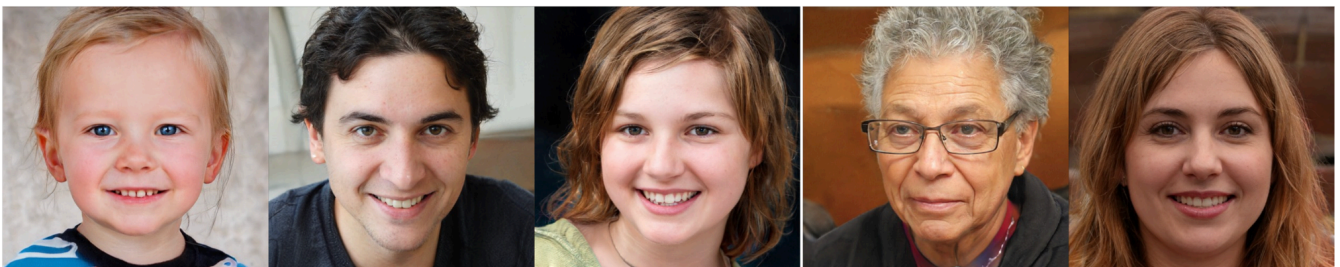
We have also noticed videos using text scripts as material, combined with generated voices and backgrounds, particularly during diplomatic issues like the "Hamas-Israel Conflict."



Graph 37: Videos generated by AI from the same script, each with unique variations.

Beyond the creation of audio and video content, AI is also employed to generate avatars for fake accounts, as demonstrated in the examples below. These avatars, produced by AI, share common features such as identical positioning of eyes and mouth, along with blurred backgrounds. Additionally, studies have revealed instances on Twitter where accounts use content generated by ChatGPT for manipulation purposes.





Graph 38: AI-generated avatars featuring consistent eye and mouth positions, and characteristically blurred backgrounds

The advantage of AI generation lies in its convenience for mass production and dissemination. Without fabricating fake news, merely altering the narrative framework can rapidly generate a vast amount of content, plunging fact-checking organizations into a verification quagmire and impacting the audience's stance and perspective on the facts.

## Learning 2: A Few Dominant Troll Groups were Leading Media Framing

AI Labs conducted an analysis of troll group comments on presidential candidates' Facebook pages from September 1, 2023, to January 10, 2024. The analysis revealed that Tsai Ing-wen's Facebook page experienced the highest volume of troll group comments, accounting for 30.62% of the total. Lai Ching-te followed with 9.50%, Ko Wen-je at 2.90%, and Hou Yu-ih at 2.33%.

Facebook Fanpage	Proportion of Troll Volume
Tsai Ing-wen	29.51%
Lai Ching-te	8.22%
Ko Wen-je	2.85%
Hou Yu-ih	2.22%

Table 35: Proportion of Troll Volume under Current President and Presidential Candidate Facebook Fan Pages

Further examination of the primary operating troll groups on these pages showed that Facebook #61019 and Facebook #61009 were the leading groups in activity on the pages of Tsai Ing-wen, Lai Ching-te, and Hou Yu-ih. The activity on Tsai Ing-wen's page accounted for the highest proportion at 83.02%, followed by Lai Ching-te with 70.98%, and Hou Yu-ih at 50.92%. On Ko Wen-je's page, Facebook #61019 was ranked fourth, yet the combined activity of #61019 and #61009 still represented 41.47%.

<i><b>Tsai Ing-wen</b></i>		
<i><b>Troll Group</b></i>	<i><b>Proportion of Troll Volume</b></i>	<i><b>Cumulative Proportion of Troll Volume</b></i>
<b>#61019</b>	48.44%	48.44%
<b>#61009</b>	34.58%	<b>83.02%</b>
#61096	5.86%	88.88%
#61053	4.5%	93.38%
#61145	1.23%	94.61%
<i><b>Lai Ching-te</b></i>		
<i><b>Troll Group</b></i>	<i><b>Proportion of Troll Volume</b></i>	<i><b>Cumulative Proportion of Troll Volume</b></i>
<b>#61009</b>	40.39%	40.39%
<b>#61019</b>	30.59%	<b>70.98%</b>
#61096	9.55%	80.53%
#61053	4.03%	84.56%
#66907	2.36%	86.92%
<i><b>Ko Wen-je</b></i>		
<i><b>Troll Group</b></i>	<i><b>Proportion of Troll Volume</b></i>	<i><b>Cumulative Proportion of Troll Volume</b></i>
<b>#61009</b>	32.15%	32.15%
#62443	13.34%	45.49%
#61063	9.77%	55.26%
<b>#61019</b>	9.32%	64.58%
#61981	7.56%	72.14%
<i><b>Hou Yu-ih</b></i>		
<i><b>Troll Group</b></i>	<i><b>Proportion of Troll Volume</b></i>	<i><b>Cumulative Proportion of Troll Volume</b></i>
<b>#61009</b>	28.02%	28.02%
<b>#61019</b>	22.9%	<b>50.92%</b>
#61063	7.02%	57.94%
#62068	6.17%	64.11%
#61981	4.07%	68.18%

Table 36: Proportion of Troll Groups' Activity Volume under Current President and Presidential Candidate Facebook Fan Pages



Overall, the collective activity from just 626 accounts belonging to the troll groups Facebook #61009 and Facebook #61019 constituted 45.71% of the total activity related to presidential election issues during this period.

Group	Troll Volume Proportion	Troll Volume Cumulative Proportion
<b>#61009</b>	<b>25.72%</b>	25.72%
<b>#61019</b>	<b>19.99%</b>	<b>45.71%</b>
#61063	4.58%	50.29%
#61096	4.37%	54.66%
#61017	4.16%	58.82%

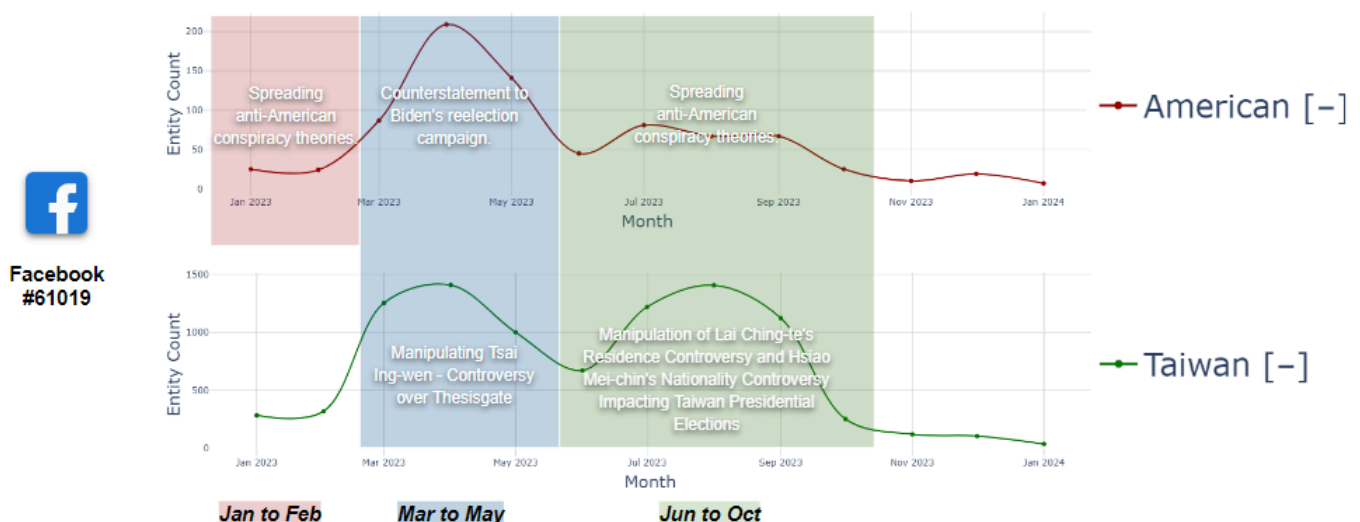
Table 37: Top 5 troll groups most actively participating in presidential election topics on Facebook

### Learning 3: Main Troll Groups are not Native to Taiwan

The troll groups have been observed engaging in bilingual attacks, targeting both Taiwan and the United States simultaneously. For instance, the focal operative group on Facebook, known as 61019, concurrently manipulates domestic events in Taiwan and incidents in the United States.

Following Biden's announcement on April 14, 2023, regarding his intention to seek re-election in 2024, this troll group intensified its influence operations. They criticized the U.S. government's diplomatic strategies in English, while simultaneously attacking President Tsai Ing-wen in Mandarin Chinese over the previous Thesis Gate controversy. This approach aimed to question her legitimate leadership position and foster distrust in her presidency.

From July 2023 onwards, the focus shifted to manipulating the Taiwan presidential election. The group targeted specific political party candidates for president and vice president, aiming to impact the credibility of that party.



Graph 39: The activity curve of Facebook #61009 in operations related to Taiwan and America.

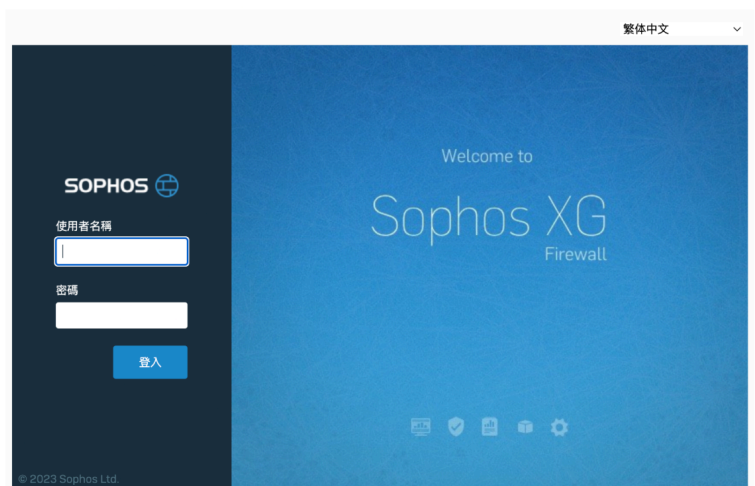
In addition to simultaneously addressing domestic and overseas issues, there is another behavioral pattern suggesting that these troll groups do not belong to Taiwan. These troll groups attack all political parties and candidates simultaneously. Such behavior leads to intensified discussions, preventing peaceful discourse and

causing confusion in discussions. Observations on the four main social platforms show that among the top 100 groups, 18% engage in coordinated attacks on candidates from all three major parties on PTT, and 9% on Facebook. This behavior aims to create opposition and polarize society by attacking all sides.

Platform	Percentage of Troll Groups Engaging in Polarizing Operations
PTT	18%
Facebook	9%
Youtube	3%
TikTok	1%

Table 38: Proportion of troll groups in the top 100 on various platforms that criticize all positions, employing polarizing tactics

Taking the example of the false news about a naval officer's body found at sea circulating on social media, Taiwan AI Labs noticed a significant number of account thefts on Taiwanese social media platforms. By encouraging the affected users to report these incidents, it was evident that there was systematic account theft happening on social media. Further investigations revealed that this was achieved through exploiting backdoor vulnerabilities in Chinese networking equipment, using implanted VPNs as a springboard to post articles on social media. Considering the scale and sophistication of these operations, it appears unlikely to be the work of domestic PR firms in Taiwan; the complexity and reach of these activities exceed the capabilities typically associated with local PR organizations.



Graph 40: Case study of hacking into networking devices to post on PTT

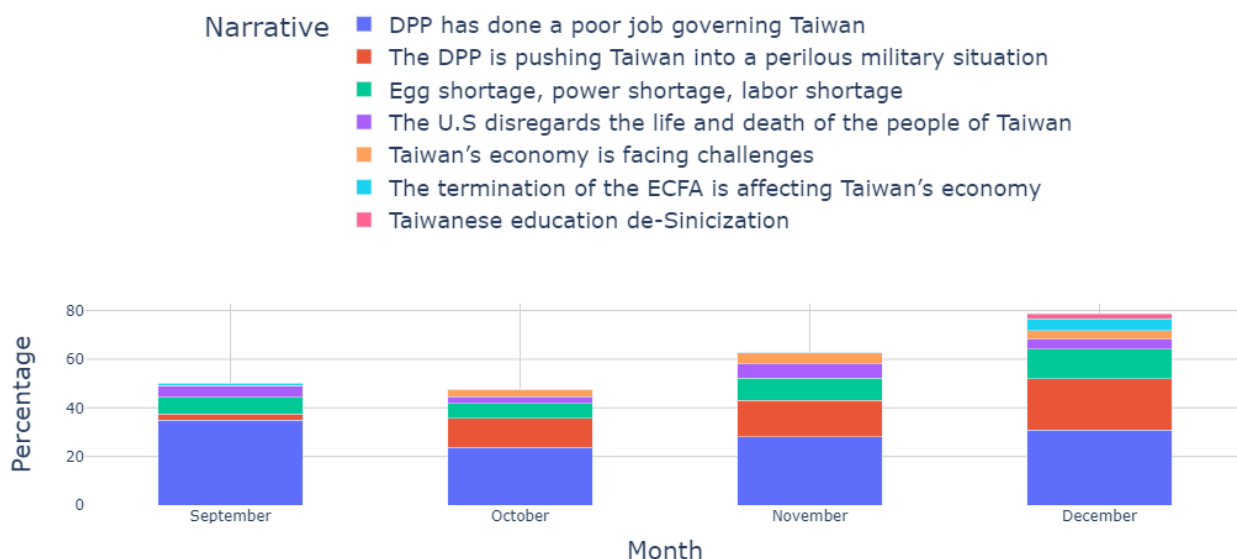
## Learning 4: Trolls Echo PRC State-affiliated Media

We have observed that some major troll groups echo the discourse of PRC state-affiliated media. From September to December, the echoed narratives are as follows: China Military Threat (25%), US Is Bringing Taiwan to War (14.3%), Stopping ECFA Impacts Taiwan (10.7%), Taiwan Belongs to China (12.5%), Taiwan's Economic Situation Worsens (5%), Taiwan's Curriculum Is Removing China (3.5%), Taiwan Has Inadequate Weapons (2.8%), No Egg, No Electricity, and No Workers (2.3%), Universities Are Going Out of Business (0.7%), and DPP Is a Bad Ruling Party (0.6%). In the main troll group narratives, FB #61009 is 42.6% similar, FB #61019 is 37.2% similar, PTT #60021 is 51% similar, and PTT #60004 is 36.5% similar.

Group	Proportion of Narratives Consistent with PRC State-affiliated Media
Facebook #61009	42.6%
Facebook #61019	37.2%
PTT #60021	51%
PTT #60004	36.5%

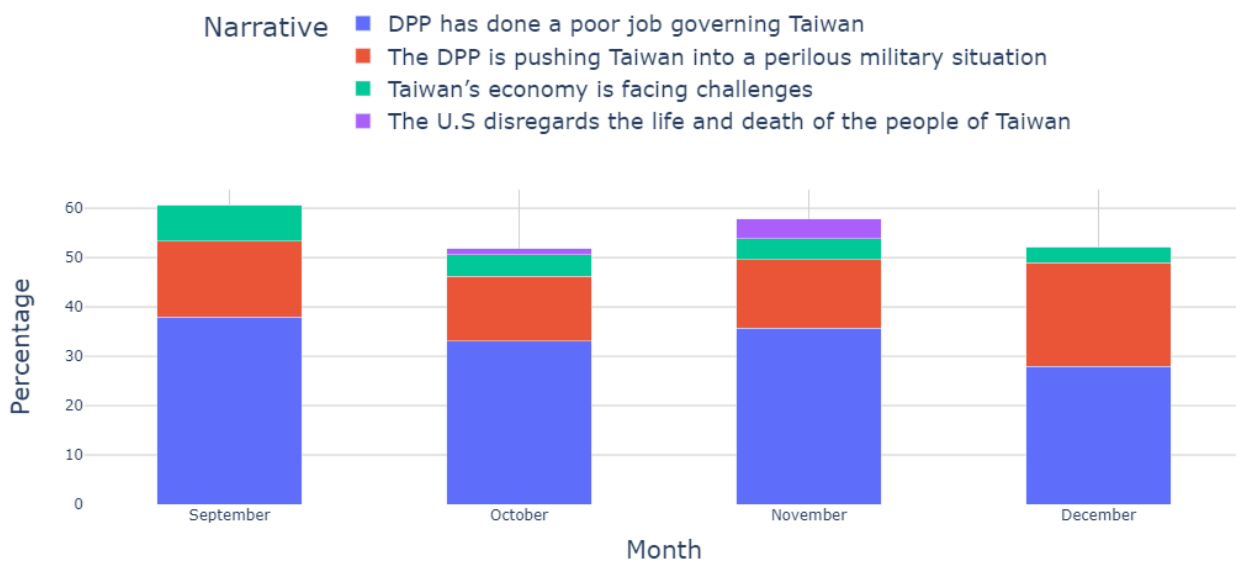
Table 39: Troll groups echoing the stance of PRC state-affiliated media.

From September to December 2023, Facebook #61009 had the highest similarity with PRC state-affiliated media narratives among Facebook troll groups (42.6%), accounting for 26.5% of the group's coordinated comments. During this period, the group consistently echoed PRC state-affiliated media in discussions on topics such as "Taiwan being pushed towards military danger," "US indifference to the lives of Taiwanese people," "The termination of ECFA affecting Taiwan's economy," "Shortages in eggs, electricity, and labor," and "Poor governance under the DPP." As the elections approached, the similarity of Facebook #61009's narratives with PRC state-affiliated media increased, mainly focusing on intimidating Taiwan with war rhetoric and attacking education and economic issues.



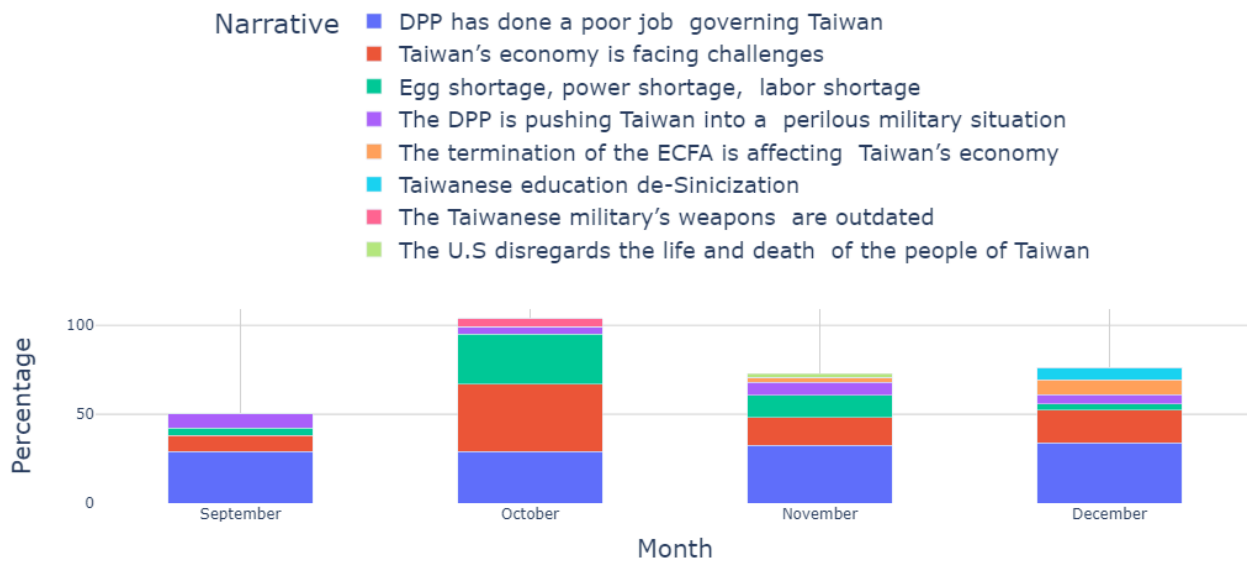
Graph 41: Narratives of Facebook #61009 closely aligned with PRC state-affiliated media

Facebook #61019, from September to December 2023, was the second most similar to PRC state-affiliated media narratives among Facebook troll groups (37.2%), contributing to 19.2% of the group's coordinated comments. In this period, it continued to echo PRC state-affiliated media in three main themes: "Taiwan being pushed towards military danger," "Pessimistic outlook on Taiwan's economy," and "Poor governance under the DPP." By December, the group began to additionally attack livelihood and economic issues.



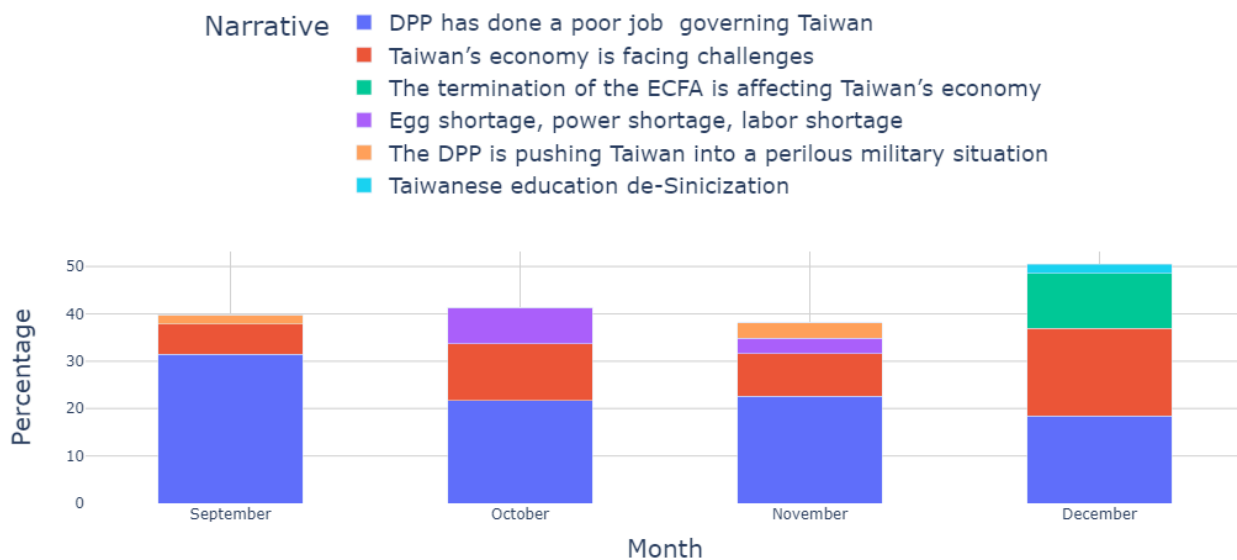
Graph 42: Narratives of Facebook #61019 closely aligned with PRC state-affiliated media

As the elections drew closer, PTT #60021 increased its alignment with PRC state-affiliated media narratives (3.8% of the group's coordinated comments), consistently echoing PRC state-affiliated media from September to December on "Taiwan being pushed towards military danger," "Pessimistic outlook on Taiwan's economy," and "Poor governance under the DPP." The main narrative in November was focused on intimidating Taiwan with war rhetoric, but shifted towards attacking education and economic issues around December.



Graph 43: Narratives of PTT #60021 closely aligned with PRC state-affiliated media

PTT #60004 also showed an increase in narratives aligned with PRC state-affiliated media as the election approached (3.1% of the group's coordinated comments), consistently reflecting PRC state-affiliated media's focus on "Taiwan being pushed towards military danger," "Pessimistic outlook on Taiwan's economy," and "Poor governance under the DPP." The group's narratives primarily targeted Taiwan's economy, education, and attacked the DPP.

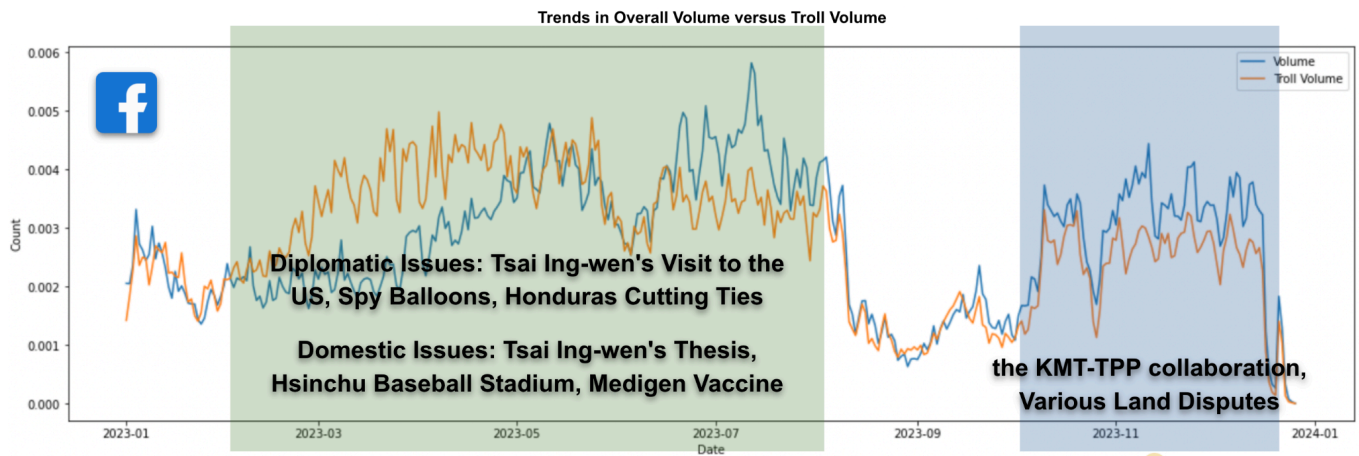


Graph 44: Narratives of PTT #60004 closely aligned with PRC state-affiliated media

## Learning 5: Trolls Influenced Users in Scale

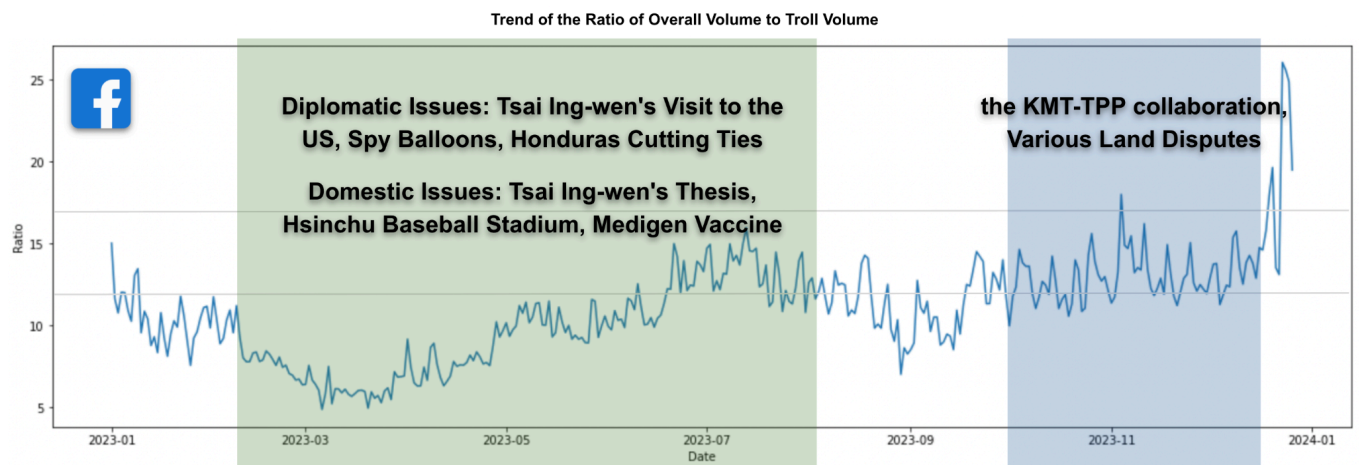
During the period from March to June, the main troll groups focused primarily on domestic politics and Taiwan-related international events (such as the McCarthyist incident, spy balloon incident, and the diplomatic break with Honduras), gradually influencing regular users and sparking increased discussion. From June to August, discussion intensity further escalated due to issues like the KMT primary. Subsequently, during the

high-profile events of Terry Gou's petition in October and the KMT-TPP collaboration discussions in November, there was a further boost in discussion intensity.



Graph 45: Trend of normalized troll volume and general user volume on Facebook

From the chart below, it's observable that between March and May, troll groups were able to generate discussions at an average rate of 7.5 times that of regular users. However, as the date of the election approached, the influence of these groups increased, driving discussions at an average rate of 15 times that of ordinary users. Eventually, just before the election, this rate escalated to 25 times the discussion level compared to regular users.

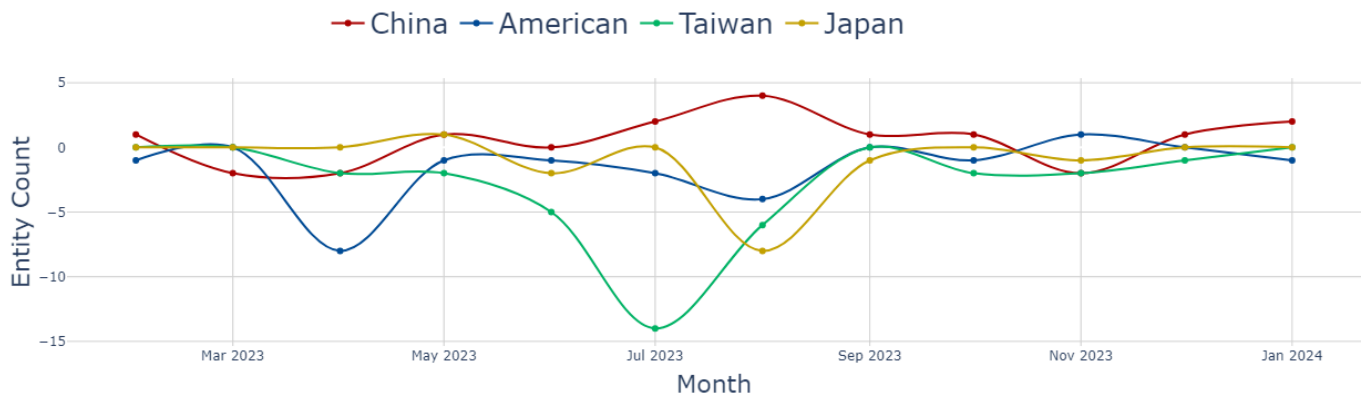


Graph 46: Trend of the ratio of general user volume to troll volume on Facebook.

## Learning 6: PRC State Platform Has National Interest

The Chinese-owned platform TikTok predominantly targets Taiwan (53%), the United States (25%), and Japan (17%) in its operations against countries. The attacks on the United States are primarily focused on President Biden's announcement on April 14, 2023, regarding his intention to seek re-election in 2024. The troll group intensifies its influence operations, spreading conspiracy theories and criticizing the U.S. government's diplomatic strategies. In July of the same year, the group actively involved itself in the Taiwan presidential election, propagating the narrative that Lai Ching-te is a pro-Taiwan independence figure. On another front, in August of the same year, the troll group attacked Japan, specifically highlighting the Fukushima nuclear wastewater issue.





\* Each point represents the total obtained by subtracting the negative quantity from the positive quantity for the respective entity in that month

\*\* This signifies the total obtained by 'Entity[+] - Entity[-]'

Graph 47: Trends in the manipulation of country-related content on TikTok

Manipulated Entity	Percentage
Taiwan [-]	48%
American [-]	29%
Japan [-]	17%
China [-]	6%

Manipulated Entity	Percentage
China [+]	67%
Taiwan [+]	22%
Japan [+]	7%
American [+]	4%

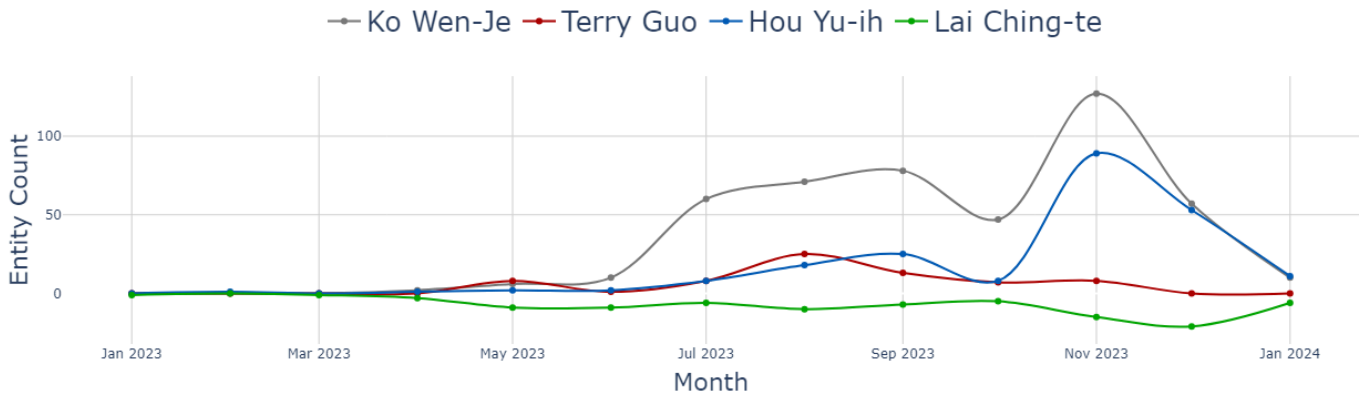
\* '[-]' signifies negative manipulation, while '[+]' indicates positive manipulation

Table 40: Country targets and their proportions in manipulated TikTok content

## Learning 7: PRC State Platform Chose President

Compared to other platforms, the Chinese-owned platform TikTok has shown concentrated support for Ko Wen-je (62%) and Hou Yu-ih (27%) in the context of Taiwan's presidential election. In terms of attacks, the focus has been on Lai Ching-te (61%), Ko Wen-je (28%), and Terry Guo (7%).





\* Each point represents the total obtained by subtracting the negative quantity from the positive quantity for the respective entity in that month

\*\* This signifies the total obtained by Entity[+] – Entity[–]

Graph 48: The trend changes in the operations of key figures in the presidential election on TikTok

Manipulated Entity	Percentage
Ko Wen-je [+]	62%
Hou Yu-ih [+]	27%
Terry Guo [+]	10%
Lai Ching-te [+]	1%

Manipulated Entity	Percentage
Lai Ching-te [–]	61%
Ko Wen-je [–]	28%
Terry Guo [–]	7%
Hou Yu-ih [–]	3%

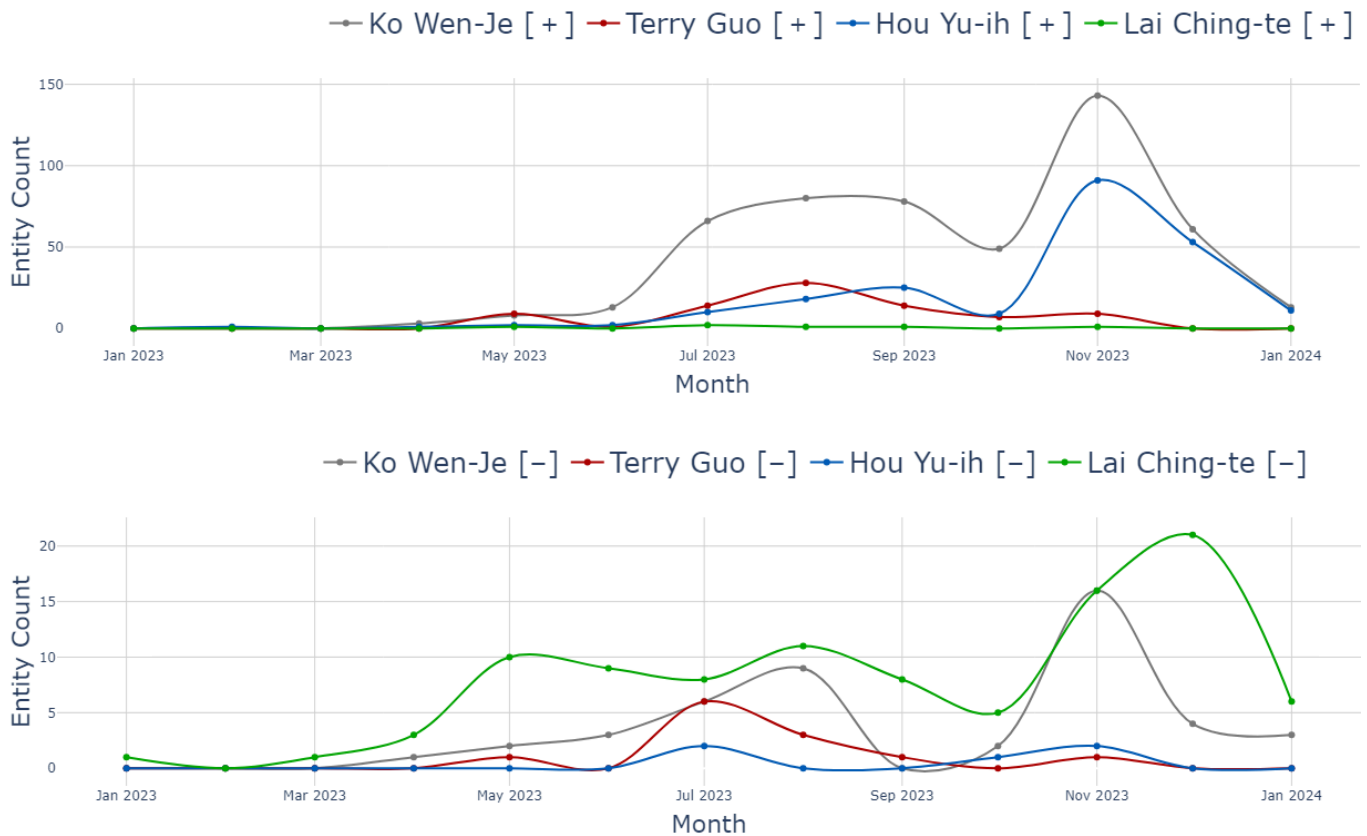
\* '[–]' signifies negative manipulation, while '[+]' indicates positive manipulation

Table 41: Party targets and their proportions in manipulated TikTok content

## Learning 8: Trolls Led the KMT-TPP Collaboration Opinions

Since the KMT officially announced the nomination of Hou Yu-ih to represent the party in the 2024 Republic of China presidential election on May 17, AI Labs has detected an upward trend in troll operational activities on TikTok. The troll group initially engaged in issues related to Taiwan-U.S. relations, national policies, and subsequently intervened in domestic presidential election affairs.

During the period of intense discussion on the KMT-TPP collaboration, the troll group worked to amplify Ko Wen-je's presence and undermine the credibility of specific political parties, prompting strategic shifts within the KMT-TPP collaboration. After the alliance's disruption, the group altered its strategy from boosting Ko Wen-je's influence to supporting the KMT's governance.



\* '[-]' signifies negative manipulation, while '[+]' indicates positive manipulation

Graph 49: Trends in the manipulation of party-related content on TikTok

## Learning 9: Trolls Deep Rooted in Communities

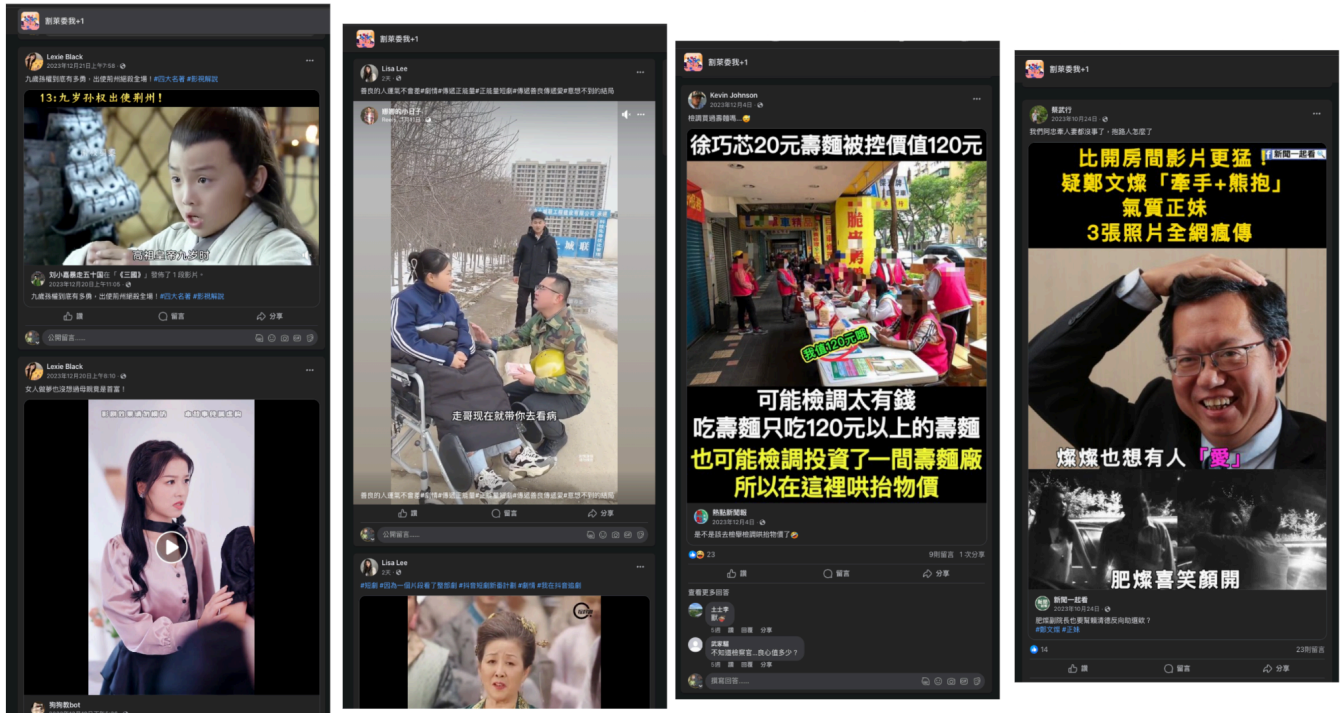
AI Labs' investigation has revealed that among the top 10 targeted groups where Facebook troll groups predominantly share links. AI Labs categorize the groups often sharing content from troll groups into four types: Echo Chamber Groups, which primarily consist of content with similar political viewpoints; Local Community Groups, operated by individuals from various regions in Taiwan and mainly focusing on local current affairs; Special Interest Groups, related to specific areas such as discussions on human resource agencies; and Audiovisual Entertainment Groups, primarily centered around audio-visual content, but where troll groups also share political topics.

AI Labs found the groups like "The Commoners are Boss ([庶民大頭家](#))," "I Support the Recall of the 'Legislator Who Supports Pork Imports with Ractopamine ([割萊委我+1](#))," "One Belt, One Road Countries' Chinese Forum ([一帶一路沿线国家华人论坛](#))," and "Learning from the great leader Mao Zedong ([一代伟人毛泽东 向毛泽东学习](#))" attract regular users by sharing entertaining short videos. These troll groups then share political content within these groups to influence users' political inclinations. This strategy is estimated to have impacted approximately 385,000 users.

Facebook Group	Number of Members	Categories
Supporting the CTI News Group, advocating for significant news and revelations ( <a href="#">力挺中天新聞社團, 支持大新聞大爆卦</a> )	11.5k	Echo Chamber Groups

The Friends of the Labor Intermediaries Association ( <a href="#">人力仲介之友會</a> )	14.7k	Specialized Interest Groups
Changhua People, Changhua Matters ( <a href="#">彰化人彰化事</a> )	37.6k	Local Community Groups
Penghu Takeoff Network ( <a href="#">澎湖起飛網</a> )	7.2k	Local Community Groups
Keelung Renewal ( <a href="#">基隆革新</a> )	7.5k	Local Community Groups
The Commoners are Boss ( <a href="#">庶民大頭家</a> )	5.5k	Echo Chamber Groups
I Support the Recall of the 'Legislator Who Supports Pork Imports with Ractopamine' ( <a href="#">割萊委我+1</a> )	3.4k	Audiovisual Entertainment Groups
One Belt, One Road Countries' Chinese Forum ( <a href="#">一帶一路沿线国家华人论坛</a> )	14.1k	Echo Chamber Groups
We, the Chinese, Should Have Patriotism! If You are Bright, the Motherland Won't be in the Dark! ( <a href="#">咱们中国人, 要有爱国心! 你若是光明, 祖国不黑暗!</a> )	4.3k	Echo Chamber Groups
Learning from the great leader Mao Zedong ( <a href="#">一代伟人毛泽东 向毛泽东学习</a> )	15.5k	Echo Chamber Groups

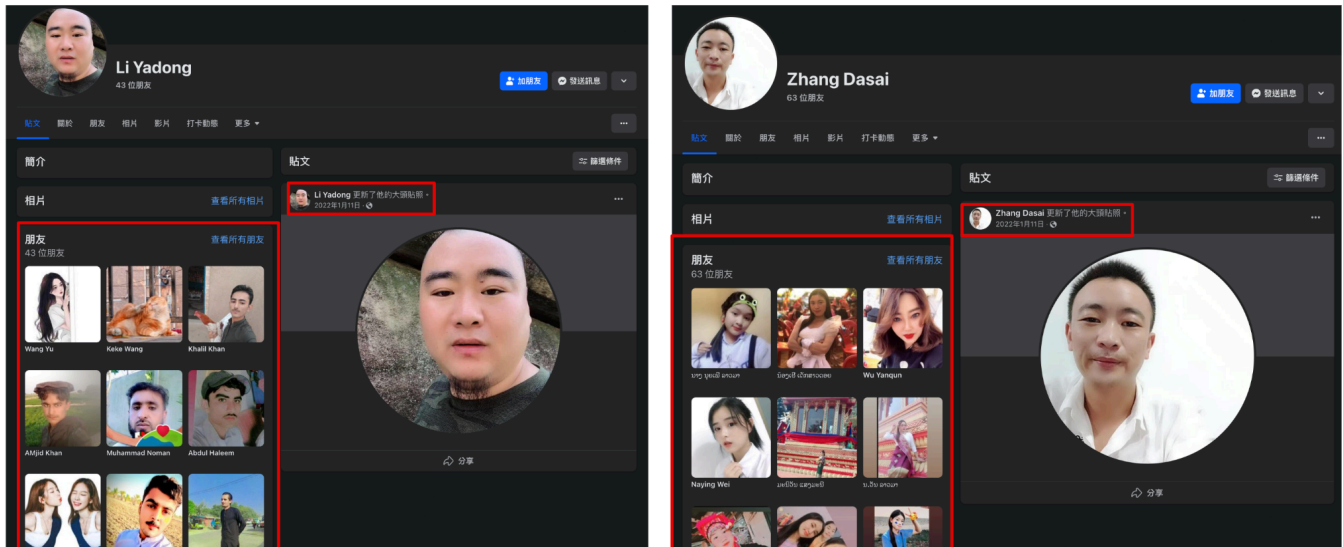
Table 42: Top 10 Facebook Groups with the Most Shared Links by Troll Groups



Graph 50: Cases on Facebook groups where short videos are initially used to attract general users, followed by political information to influence their political perceptions

Among these, there is a group with a name that appears Taiwanese, "I Support the Recall of the Legislator Who Supports Pork Imports with Ractopamine." The avatars of two of its administrators were changed on the same day, their activity feeds are empty, and they have many foreign individuals in their friends list. We believe this group was established using fake accounts.





Graph 51: Anomalies in the Profiles of Two Administrators of the “I Support the Recall of the ‘Legislator Who Supports Pork Imports with Ractopamine (割萊委我+1)’” Group – Identical Profile Picture Upload Times and Foreign Friends

## Learning 10: Flooding Short Videos is The Trending Mean

Previously, online cognitive operations involved troll groups repeatedly echoing narratives or attacking using the 5D’s propaganda strategy<sup>1</sup> of political propaganda. However, this year, with the rise of short-form videos, these groups have begun promoting and recommending such content, manipulating algorithms to make these videos more easily recommended.

Jung-Chin Shen, an Associate Professor at York University in Canada, noted in a [Facebook post](#) on June 6, 2023, that on the Douyin, Chinese version of the TikTok, multiple accounts systematically propagated fictional videos of warfare in Israel and the Middle East. These videos claimed that 'Israel had been steadily retreating for two months in an ongoing conflict with the Middle East.' Subsequently, on October 7, 2023, following a surprise attack by Hamas on Israel, the warfare between Israel and Hamas, which was manipulated on Douyin, became a reality.

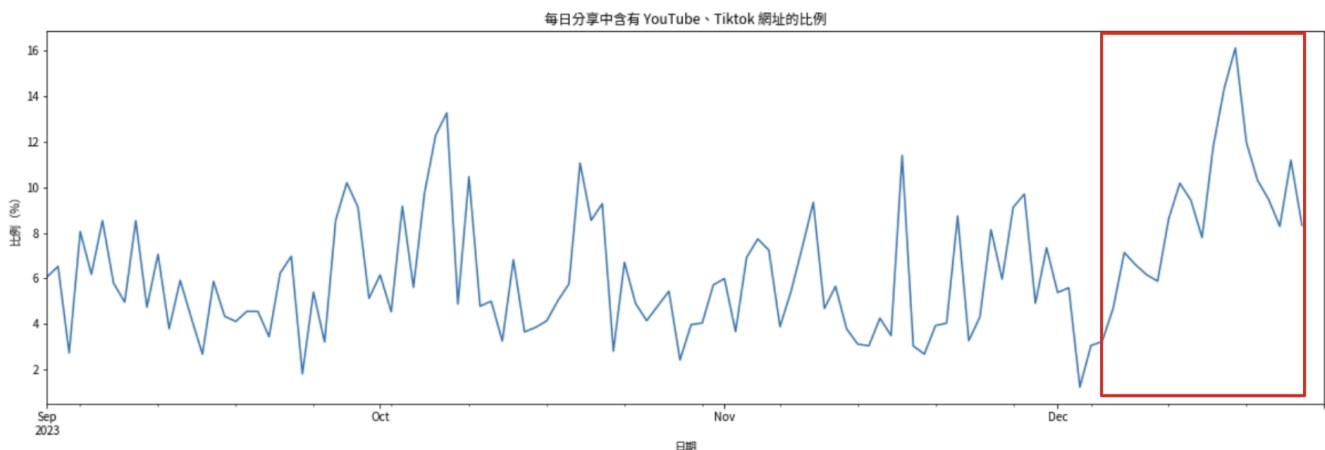
<sup>1</sup> 5D’s propaganda strategy (dismiss, distort, distract, dismay, divide):  
[https://inventory.adt.ac/wiki/The\\_5D%27s\\_\(dismiss,\\_distort,\\_distract,\\_dismay,\\_divide\)](https://inventory.adt.ac/wiki/The_5D%27s_(dismiss,_distort,_distract,_dismay,_divide))





Graph 52: In June 2023, Jung-Chin Shen discovered the presence of fictional depictions of war in Israel on the Douyin platform. Image source: [Jung-Chin Shen's Facebook](#).

Notably, the primary troll group, Facebook #61009, demonstrated an average sharing rate of 6.24% for videos from YouTube and TikTok platforms before the election, which surged to 16% closer to the election. This behavior resulted in a total of 1,833 videos achieving a cumulative view count of 376,945,178.



Graph 53: Proportion of YouTube and TikTok links shared by Facebook #61009

The brevity of short-form videos makes them suitable for widespread dissemination but lacks sufficient length for comprehensive discussion. This leads to the circulation of decontextualized narratives, easily misleading viewers and listeners.

## DISARM Techniques Used by Troll Groups

Regarding the DISARM framework<sup>2</sup> from NATO, the researcher found that troll group operations on Facebook, YouTube, PTT, and TikTok were divided into two phases: Prepare and Execute.

The execution phase of DISARM is more easily observable. AI Labs noted on the YouTube platform that troll groups extensively repeat comments under media videos to guide discussion trends (T0049 Flooding the information space, T0023.001 Reframe context) or comment early to enhance video interaction and influence the algorithm (T0121 Manipulate platform algorithm). As a result, we have added these tactics to our observations on YouTube. Similar strategies were observed from troll groups on Facebook and PTT also engagement in guiding discussion directions through comments (T0023.001 Reframe context), flooding discussion spaces with repetitive comments (T0049 Flooding the information space), and posting early to increase the likelihood of content being seen or algorithmically recommended (T0121 Manipulate platform algorithm). Therefore, we believe that on the four platforms of Facebook, YouTube, PTT, and TikTok, it is essential to study existing narratives (T003 Leverage existing Narratives) during the Prepare phase to facilitate subsequent comment operations (T0116 Comment or Reply on Content, T0116 Trolls amplify and manipulate)

Phase	Tactic	Facebook	Youtube	PTT	Tiktok
Prepare	T0003 Leverage Existing Narratives	○	○	○	○
Execute	T0023.001 Reframe Context	◎	◎	◎	
	T0049 Flooding the Information Space	◎	◎	◎	
	T0049.001 Trolls Amplify and Manipulate	◎	○	◎	○
	T0116 Comment or Reply on Content	◎	◎	◎	◎
	T0121 Manipulate Platform Algorithm	◎	○	○	

○ indicates observed manipulative behaviors that align with this Tactic.

◎ signifies observed manipulative behaviors that very closely match this Tactic.

Table 43: DISARM Tactics used on each platform

<sup>2</sup> DISARM Disinformation Analysis and Risk Management is an open-source framework designed to describe and understand the behavior parts of FIMI/disinformation. It sets out best practices for fighting disinformation through sharing data & analysis and can inform effective action. The Framework has been developed, drawing on global cybersecurity best practices. <https://www.disarm.foundation/>

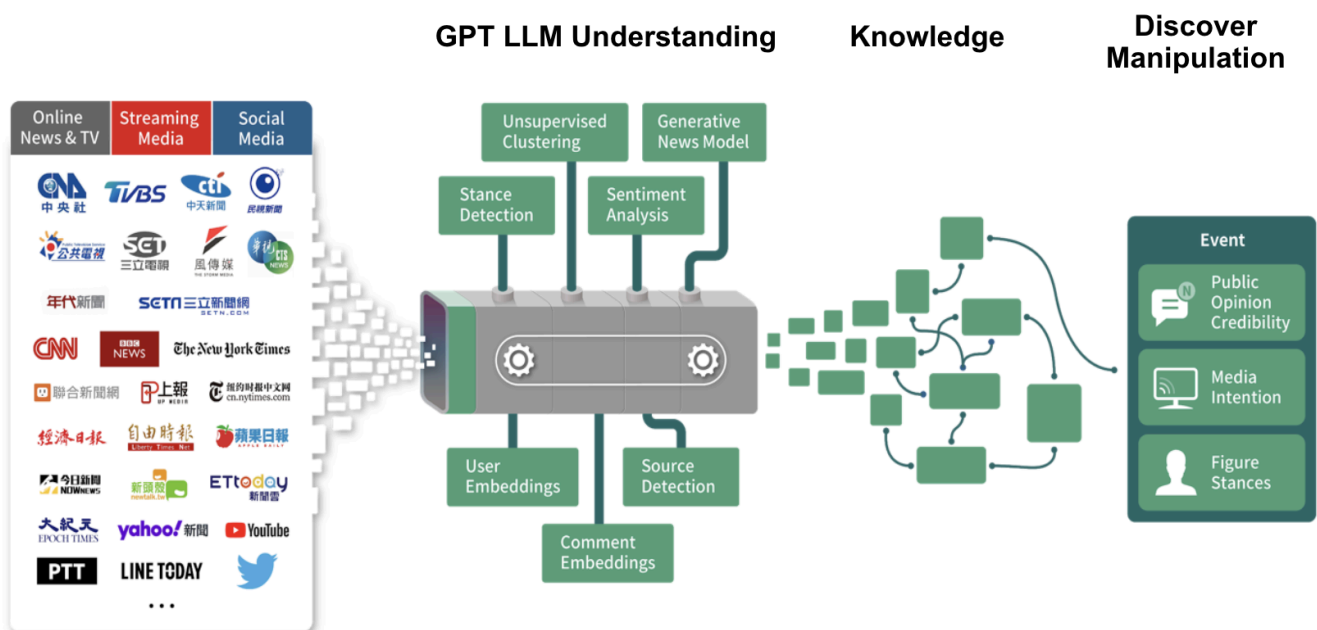


## The Infodemic Platform

During the pandemic, Taiwan AI Labs collaborated internationally to develop trustworthy and responsible AI in healthcare while addressing the global challenge of misinformation related to the pandemic. Working with global partners, we established mechanisms to detect such activities. Taiwan AI Labs initially used AI to observe and understand the behavior of various accounts, identifying coordinated activities to detect synchronized accounts.

Troll accounts are defined as a group of accounts not operated by genuine users. These could be accounts publishing specific content as per official directives, or those controlled programmatically or through PR firms, disseminating particular narratives in a non-organic, organized manner. By leveraging generative technologies and large language models (LLMs), Taiwan AI Labs analyzed billions of social media activities to unearth over 30,000 troll groups, understanding the content and patterns of their operations across more than two million topics. This helps to uncover the targets, methods, and possible motives behind these operations.

With the growing global demand for insights into information manipulation, international partners expressed interest in this service. Taiwan AI Labs further developed its capabilities into the Infodemic platform, providing real-time and comprehensive understanding of both domestic and international information manipulation for non-technical partners. This aids in developing digital literacy and response strategies. In recent years, Taiwan AI Labs has continued to use the Infodemic platform to observe coordinated behaviors on major Taiwanese social platforms such as Facebook, YouTube, X (Twitter), TikTok, and PTT. It employs LLMs to comprehend the targets and patterns of information manipulation attacks the responses of mainstream media. It timely records the battlefields of information warfare participated in by troll groups, along with their potential impacts.



Graph 54: Overview of the data analysis process flow on the Infodemic platform.

Approximately two months before the election, weekly closed-door meetings were held to reveal observed online information manipulation. These sessions facilitated exchanges with domestic and international scholars and experts. Post-election, the observations from the previous year were shared with international media, diplomatic personnel in Taiwan, NGOs, and academic institutions, aiming to enhance public media literacy and build cognitive resilience.



## References

- This report used data and tools in <https://infodemic.cc>
- How does the system work <https://infodemic.cc/en/faq>
- DISARM Disinformation Analysis and Risk Management is an open-source framework designed for describing and understanding the behavior parts of FIMI/disinformation. It sets out best practices for fighting disinformation through sharing data & analysis, and can inform effective action. The Framework has been developed, drawing on global cybersecurity best practices. <https://www.disarm.foundation/>