

Article

Internet Public Opinion on Media Report Semantics of U.S. House Speaker Nancy Pelosi's Visit to Taiwan

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Abstract: On August 2, 2022, the U.S. House Speaker, Nancy Pelosi visited Taiwan. China expressed strong dissatisfaction, triggering the 4th Taiwan Strait Crisis. We investigated the differences in the frameworks constructed by the news media and the public opinion about the “event of Nancy Pelosi’s visit to Taiwan”. Semantics and “public opinions” associated with the report contents of Nancy Pelosi’s visit to Taiwan were analyzed using the online news media of major newspapers in Taiwan, as well as the social media PTT Gossiping. The Python programming language was used for web crawling, and the word frequency database snowNLP in Python was adopted as a sentiment analysis tool. The research results showed that the emphasis of different media in different periods was slightly different. The topics of netizens in PTT Gossiping were often affected by the topic framework of the news media. However, the public developed their discussion topics. News media reports did not have a framing effect on the emotional changes of common words used by the public about the issues.

Keywords: Nancy Pelosi, Taiwan strait crisis, News media, Public talking, Python programming language

1. Introduction

On August 2, 2022, the U.S. House Speaker, Nancy Pelosi visited Taiwan. In compliance with the *Constitution of the United States of America*, the speaker of the U.S. House of Representatives ranks second in the presidential succession order. Therefore, Nancy Pelosi’s political status in American politics is extraordinary. Nancy Pelosi’s visit to Taiwan aroused strong dissatisfaction in China. Xinhua News Agency announced that it would conduct sea and air live ammunition exercises at 6 places in the waters around Taiwan for 4 consecutive days from August 4 (Tung & Lee, 2022). Nancy Pelosi’s visit lasted less than 20 hours, triggering the 4th Taiwan Strait Crisis. During this period following the Chinese Communist Party (CCP) military exercise, media coverage of her visit was important. The media reports on the visit to Taiwan during this period shaped the public’s perception of the event and responses. We selected the time frame of one month before and after Nancy Pelosi’s visit (July 16 to August 15) as the study period to collect the report contents about the event of the visit to Taiwan from online news media of four major newspapers in Taiwan—*Liberty Times E-newsletter*, *udn.com*, *Chinatimes.com*, *Apple Online*, as well as *PTT Gossiping*.

After identifying the distribution of the number of relevant articles of the analysis on different dates during the study period, we found the following. Since the media exposure of Nancy Pelosi on August 1, the related articles in various media and PTT started to increase, and the peak period lasted until the end of the CCP military exercise on August 7 (Fig. 1). Therefore, we divided all samples in three periods: “Period 1: the period before confirmation of Nancy Pelosi’s visit to Taiwan” (Central News Agency, 2022) – July 16 to July 31; “Period 2: Nancy Pelosi’s visit to Taiwan to CCP’s military exercise – August 1 to August 7; “Period 3: after the end of CCP’s military exercise” –August 8 to August 15. Then, we analyzed the emotional changes in common words used by news media and the public talking about this event. Python was used to perform web crawling and adopted the method of text sentiment analysis to analyze the online news of four major newspapers in Taiwan because past studies showed that the generational differences in time spent on mobile and new media such as computer networks, are narrowing, or even disappearing (Lee, 2019). We also analyzed the social media *PTT Gossiping* articles because PTT still has nearly 100,000 daily online traffic since its establishment. Even with social media, such as Facebook, Instagram, and Plurk, PTT still has created a “townsman culture” that has been spread to social platforms and has spawned or influenced important student or citizen movements (Tsao, 2022).

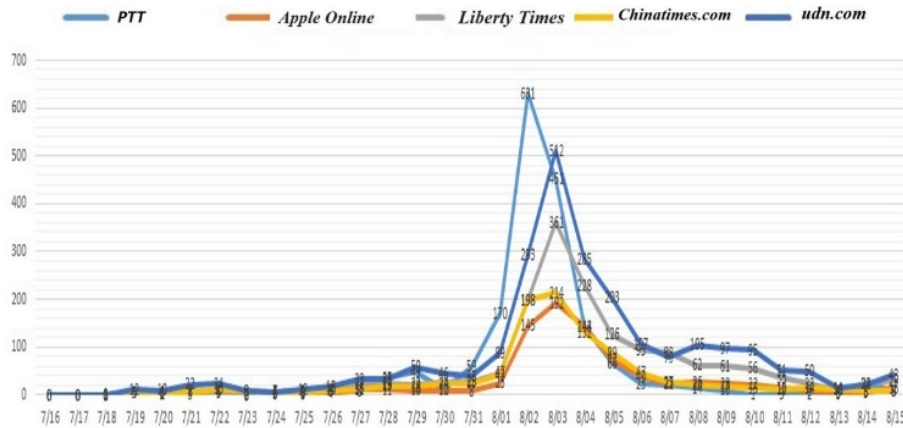


Fig. 1. Media attention trend chart of Nancy Pelosi' visit to Taiwan in 2022.

2. Literature Review

2.1. Review of U.S.-China-Taiwan Relations

The long-standing cross-strait relations are not just for the two sides of the Taiwan Strait. Since cross-strait relations are an important variable in the U.S. strategic security deployment in the Asia-Pacific region, the role of the U.S. must always be taken into account in cross-strait relations. The attitude of the U.S. not only directly affects the stability of the Taiwan Strait but also the cross-strait relations as the status quo can be changed due to the active intervention of the U.S. The attitude of the U.S. directly affects the stability of the Taiwan Strait. Moreover, cross-strait relations may change the status quo due to the active intervention of the U.S. under globalization. Cross-strait relations have attracted much attention in the international systems (Shen, 2006). The rapid development of China has changed global geopolitics. China already has entered the power and political structure of the two superpowers, the U.S. and China, and the forefront of the Sino-American competition is directly related to the Taiwan issue. Since Donald John Trump was elected as the President of the U.S., the competition and cooperation between China and the U.S. have become more intense. When Trump was the president, there were many changes in U.S. policies toward Taiwan. The U.S. Congress' support for Taiwan and the Trump administration's confrontation with China created a new Taiwan- U.S. relation (Tsai, 2020), which also affected the maintenance of cross-strait relations. The Biden administration has inherited the anti-China policies of former President Trump to ensure the interests of the country, so the U.S.-Taiwan relationship is still friendly (Wei, 2021). Taiwan has been regarded as the core interest of the mainland China. The visit of the Speaker of the U.S. House of Representatives, who ranks second in the U.S. further accentuated the political sensitivity.

2.2. Political Inclinations and Reports of the Media

In general, the media convey relevant information about social issues to the audiences from an objective perspective. However, the media does not assign the same value to all issues but different meanings according to the situation (Entman, 2010). Scheufele (1999) argued that the media's reporting tendency is affected by three aspects, namely, the individual aspect, the media organization aspect, and the social aspect outside the media organization. In news production, journalists are exposed to an event and determine whether the event is important news to the audience. While journalists are exposed to an event and need to make choices, it is the political inclinations of the media's internal organization that ultimately determine which events will be reported in the news (Shoemaker & Reese, 1996). Moreover, when journalists decide on important news, they consider the political inclinations of the media organization. Therefore, among the above-mentioned three aspects affecting media reporting inclinations, the one that most attracts attention is the media organization aspect (Entman, 2010).

When dealing with political news, the position of the media affects the amount of coverage and perspective of reports. In general, the media tends to report more news about positive themes for political parties that align with their political stances. Conversely, the media tends to report more news about negative themes for political parties that contradict their political stance. Moreover, the media's positive or negative coverage of the ruling party's policies varies depending on the degree of consistency between the media and the ruling party's political inclinations (Levendusky, 2013). Past studies have also indicated that in addition to media stances being determined by organizational decision-makers, journalists' political inclinations also affect the content and format of reports (Patterson & Donsbogh, 1996). Nevertheless, in general, the political inclination of the media more influences the content of the report than the political inclination of the journalists, because the journalists proactively cater to the boss's intention

and write the news content that is in line with the CEO's position (Shultziner & Stukalin, 2021). Numerous studies have shown that the same topic is reported differently due to different political inclinations of the media. As each media organization is established for a different purpose, it is affected by the political position of decision-makers to form the media position and framework (Lin, 2008).

2.3. News Construction and Framing

Most people receive news reports through the news media. In the process of news construction, "framing" is important to explain the structure of news. The most commonly used definition of "framing" is the selection of aspects from perceived facts to highlight their visibility, thereby enhancing problem-specific definitions, cause-and-effect explanations, moral evaluations, and policy recommendations (Entman, 1993). Goffman argued that when a specific event occurs, the "framing" can be used as a psychological schema for individual positioning, perception, identification, and labeling, which convert social reality into people's subjective perception and affect people's interpretation or judgment of a certain issue (Goffman, 1974). Psychologists suggest that framing is the psychological schema for each person to interpret the external real world. People naturally use framing as an explanation to the outside world and interpret and evaluate things in a familiar cognitive way. Therefore, it is easy for people to ignore things outside the framing. Framing has a positive effect on helping people think about and identify information but may also easily lead to prejudice, making people use the existing framing to mask the true meaning (Tsang, 1999). During the reporting of news, the media not only report facts but also add their standpoints and perspectives. They use different frameworks to construct the messages hoping the public to receive them. Moreover, they rearrange the facts so that the public can pay attention to a certain aspect of the truth, not to the whole picture. Journalists use framing to construct meaning. Therefore, news reporting is the product of journalists collecting information from various sources, selecting, emphasizing, and excluding (Gitlin, 1980).

In framing theory, it has been pointed out that the media cannot fully reproduce the truth, and the news reports presented in front of the audiences are the results obtained by journalists' selection and reorganization, as well as the presentation of the framing. Various word choices and thematic constructions in news reproduce the cognitive frameworks of different political positions (Cohen, 2005; Jackson, 1990; Stohl, 1988; cited in Papacharissi & de Fatima Oliveira, 2008).

Based on the above, we proposed the following research questions and hypotheses.

- Research question 1: What is the political stance of *Liberty Times*, *udn.com*, *Chinatimes.com*, and *Apple Online* for the event of Nancy Pelosi's visit to Taiwan? Is there any difference?
- Research question 2: In these three periods, did the sentiment of common words change when the news media reported the event of Nancy Pelosi's visit to Taiwan?
- Research question 3: In these three periods, did the sentiment of common words change when people talked about the event of Nancy Pelosi's visit to Taiwan?
- Research hypothesis 1: News media reports have a framing effect on the direction in which people talk about issues.
- Research hypothesis 2: News media reports have a framing effect on the change in sentiment of common words used by people talking about issues.

3. Research Method

We used Python to perform web crawling and collected all article contents mentioning the Keywords "Nancy Pelosi" on the web pages of 4 news media from July 16 to August 15, 2022, as well as on the *PTT Gossiping*. We collected a total of 1621 articles from *Liberty Times*, 839 articles from *Apple Online*, 2368 articles from *udn.com*, 1015 articles from *Chinatimes.com*, and 1775 articles from *PTT Gossiping* to perform the analyses. There were a total of 5843 media samples and 1775 public samples, with 7618 article samples in total. The word frequency database snowNLP in Python was employed as a sentiment analysis tool, and the "hotel review sentiment analysis" dataset in Python was used to train for positive and negative sentiment interpretation. In this study, we interpreted the sentiment of the text with an accuracy of higher than 0.845 to compare the positive and negative sentiment and sentiment ratio (P/N) of words in news and community.

4. Research Result

4.1. Analyses of News Frameworks and Their Effects

We analyzed the words commonly used in the reports or discussions of the "event of Nancy Pelosi's visit to Taiwan Incident" by *Liberty Times*, *Apple Online*, *udn.com*, *Chinatimes.com*, and *PTT Gossiping*, and then grouped all texts by the aforementioned three time periods.

4.1.1. Liberty Times

The most frequently used words by *Liberty Times* were “Chinese Communist Party” (1268 times), “country” (1173 times), “Taiwan Strait” (1012 times), “democracy” (887 times), and “President” (824 times). The most frequently used words in news in each period of *Liberty Times* are presented in Table 1.

Table 1. Most frequent words in Liberty Time.

ALL		T1		T2		T3	
Chinese Communist Party	1268	Joe Biden	302	Chinese Communist Party	900	Taiwan Strait	290
Country	1173	Xi Jinping	216	Country	724	Chinese Communist Party	255
Taiwan Strait	1912	Country	196	Democracy	686	Military exercise	255
Democracy	887	President	172	Taiwan Strait	618	Country	253
President	824	Beijing	146	Taipei	560	CCP’s Army	183
Taipei	743	Support	138	President	538	Beijing	182
Support	735	Schedule	132	Japan	495	Kuomintang	179
Japan	734	U.S. Government	131	Military exercise	467	Japan	175
Military exercise	724	China	128	Region	458	Support	156
Beijing	656	Official	124	Support	441	Government	149

In “Period 1” (T1), the reports about this event in *Liberty Time* mainly focused on China’s political and military intimidation against Nancy Pelosi’s visit to Taiwan, as well as the fact that all parties in the United States demanded that President Joe Biden must support Nancy Pelosi. Regarding the mention of Taiwan policy between Biden and Xi during the hotline, Xi Jinping asked the United States to abide by the “one-China policy,” while Joe Biden emphasized that the U.S. policy toward Taiwan remain unchanged. *Liberty Times* also interviewed some scholars, who pointed out that China should not react so strongly to Nancy Pelosi’s visit to Taiwan. After all, this is not the first time the speaker of the U.S. Congress has visited Taiwan. In “Period 2” (T2), the reports focused on the military exercises of the Chinese Communist Party. Multiple articles indicated that Nancy Pelosi’s visit made the Chinese Communist Party “lose its temper” or “become an irritable strong country.” Besides, Nancy Pelosi slapped the Chinese Communist Party in the face of the whole world. In “Period 3” (T3), the reports repeatedly mentioned Taiwan Strait and regional safety. When the news sources were from China, China often expressed a position of defending China’s sovereignty and peace and stability in the Taiwan Strait region. If the source of the news came from the United States and Taiwan, the news condemned China’s military exercises for escalating the situation in the Taiwan Strait and the region. During this period, “Kuomintang” also became a popular keyword, because Andrew Hsia, vice chairman of Kuomintang, visited China.

4.1.2. Apple Online

The most frequently used words in the news by *Apple Online* were “country” (670 times), “Taiwan Strait” (664 times), “President” (624 times), “Chinese Communist Party” (569 times), and “Beijing” (555 times). The most frequently used words in news in each period of *Apple Online* are presented in Table 2. In “T1”, the reports about this event in *Apple Online* focused on the hotline between Biden and Xi Jinping. Joe Biden reiterated that the U.S. policies toward Taiwan remain unchanged, while Xi Jinping did not accept foreign interference in Taiwan affairs and claimed that playing with fire will lead to self-immolation. In “T2”, *Apple Online* frequently used two words: “Country” and “Taiwan Strait,” representing multiple meanings, respectively. For example, according to the interview, a member of the Democratic Progressive Party (DPP) stated that “the United States or democratic countries will not succumb to China’s threatening pressure. The National Army raise its alerts in the face of the Chinese Communist Party’s military exercises and states the protection of national security. Therefore, Taiwanese do not have to worry.” Moreover, Nancy Pelosi also visited the National Human Rights Museum. Politicians expressed their displeasure with the rising tensions in the Taiwan Strait and called on the Chinese Communist Party to stop military exercises. Many commentators believed that the military exercises were more intense than those during the 2007 Taiwan Strait Crisis. In this period, “Influence” was also a popular keyword. *Apple Online* showed concern over Taiwan’s economic influence in this period and mentioned the economic influence caused by Nancy Pelosi’s visit and her mention of the influence of the wafer law on the semiconductor industry. In “T3”, *Apple Online* reported that U.S. Senator Markey led a delegation to visit Taiwan and mentioned that the proposed “Taiwan Fellowship

Act” may set a legislative basis for American Officials to live and work in Taiwan and cross-party legislation to strengthen stability across the Taiwan Strait and reduce the risk of conflict across the Taiwan Strait. *Apple Daily*, similar to *Liberty Times*, had news from the Chinese People’s Liberation Army, expressing its stance on safeguarding China’s sovereignty and peace and stability in the Taiwan Strait region, as well as condemnation from the United States and Taiwan about China’s military exercises escalating the situation in the Taiwan Strait and the region. In this period, the words “peripheral” and “continuous” became popular terms. The former was related to the deployment of the Chinese Communist Party’s military exercises around the Taiwan Strait, while the latter had less fixed meaning.

Table 2. Most frequent words in Apple Online.

ALL		T1		T2		T3	
Country	670	Joe Biden	217	Country	451	Taiwan Strait	167
Taiwan Strait	664	Xi Jinping	160	Taiwan Strait	448	Japan	162
President	624	President	103	Chinese Communist Party	435	Country	150
Chinese Communist Party	569	Communication	94	Taipei	430	CCP’s Army	147
Beijing	555	U.S. government	85	President	422	Beijing	140
Taipei	529	Beijing	84	democracy	393	Military exercise	132
Japan	493	White House	81	Influence	352	Support	107
democracy	493	Schedule	78	Beijing	331	President	99
Support	459	Official	77	Region	322	Periphery	92
Military exercise	454	Country	69	Military exercise	319	Continuation	88

4.1.3. United Daily News (udn.com)

The most frequently used words by *udn.com* were “Taiwan Strait” (2126 times), “Country” (1764 times), “Chinese Communist Party” (1737 times), “Beijing” (1701 times), and “President” (1511 times). The most frequently used words in the news in each period of *udn.com* are presented in Table 3. In “T1”, the reports about this event on *udn.com* focused on the hotline between Biden and Xi Jinping. The reports contents were the same as those in the two newspapers mentioned above. In “T2”, *udn.com* frequently used the term “Taiwan Strait” to discuss the CCP military exercise or the influence of military exercise on the stock market. In “T3”, the Chinese Ministry of National Defense and the Taiwan Affairs Office of the State Council stated that the visit of U.S. Senator Markey and others to Taiwan was “a surreptitious visit to Taiwan region of China,” revealing that the United States is “a disruptor and destroyer of peace and stability in Taiwan Strait.” Similar to *Liberty Time* and *Apple Online*, *udn.com* also reported different messages from the United States, China, and Taiwan, who expressed its own position. During this period, the word “economy” was a popular term, presenting the economic impact caused by China’s military exercises around Taiwan and the implementation of multiple trade bans on Taiwan. *udn.com* quoted a comprehensive expert analysis in *The New York Times*, which concluded that the economic retaliation measures would have limited effect. Future Chinese bans may more specifically affect industries in countries where the DPP holds power. *udn.com* also reported that members of the Kuomintang and Democratic Progressive Party in Taichung asked the city government how to help solve the problem in response to mainland economic sanctions.

Table 3. Most frequent words in *udn.com*.

ALL		T1		T2		T3	
Taiwan Strait	2126	Joe Biden	768	Taiwan Strait	1213	Taiwan Strait	685
Country	1764	Xi Jinping	457	Chinese Communist Party	1109	Country	530
Chinese Communist Party	1737	Beijing	347	Country	976	Military exercise	496
Beijing	1701	U.S. government	332	Beijing	910	Chinese Communist Party	471
President	1511	President	331	President	842	Beijing	444
Joe Biden	1275	Communication	308	Influence	833	CCP's Army	404
Government	1229	Chinese government	300	CCP's Army	745	President	338
Military exercise	1228	Official	279	Japan	741	Military	329
CCP's Army	1221	Country	258	Government	733	Economy	320
Military	1194	Taiwan Strait	228	Military exercise	714	Government	305

4.1.4. Chinatimes.com

The most frequently used words by *Chinatimes.com* were “Politics” (1117 times), “Taiwan Strait” (1078 times), “President” (898 times), “Joe Biden” (883 times), and “Cross-Strait” (793 times). The most frequently used words in the news in each period of *Chinatimes.com* are presented in Table 4. In “T1”, the reports about this event in *Chinatimes.com* focused on the hotline between Biden and Xi Jinping. Multiple reports published in *Chinatimes.com* indicated that Nancy Pelosi’s visit was a trouble to Joe Biden, as well as a humiliation to Xi Jinping. It also pointed out that the most important words in the hotline between Xi Jinping and Biden were that Xi Jinping wanted Joe Biden to “manage differences,” which was something Joe Biden could not do. He could not manage Nancy Pelosi. In “T2”, *Chinatimes.com* frequently used the word “Politics.” In most cases, politics refers to the competition between the U.S. and China in the Asia-Pacific “Geo-Politics” as well as the “International Politics of the Indo-Pacific Region.” In this period, “Tsai Ing-wen” was also a popular term on *Chinatimes.com*. In addition to news related to Tsai Ing-wen’s reception of Nancy Pelosi and others, *China Times* quoted the British *The Guardian*’s interview with Kuomintang legislator Chen Yu-Jen, who pointed out that Kinmen voters were dissatisfied with Tsai Ing-wen’s cross-strait policies. She pointed out that the lack of communication between the two sides was the main cause of the current crisis. *China Times* interviewed Tzu-Chia Wu, chairman of *Formosa Electronic News*. He said that Taiwan’s ability to survive internationally did not rely on DPP or Tsai Ing-wen, but on “semiconductors,” which is important for Taiwan. *Chinatimes.com* also reported that the Taiwan Affairs Office of the Mainland criticized Tsai Ing-wen and the DPP administration for pushing Taiwan into the abyss of disaster by depending on the U.S. In “T3”, *Chinatimes.com* published many readers’ submissions to express their opinions on the Cross-Strait issue and reported the news of U.S. congressmen planning to visit Taiwan.

Table 4. Most frequent words in *Chinatimes.com*.

ALL		T1		T2		T3	
Politics	1117	Joe Biden	520	Politics	775	Cross-Strait	171
Taiwan Strait	1078	President	262	Taiwan Strait	721	Politics	163
President	898	Beijing	218	President	551	Taiwan Strait	144
Joe Biden	883	Xi Jinping	213	Cross-Strait	543	Government	122
Cross-Strait.	793	Taiwan Strait	213	Chinese Communist Party	537	Military exercise	108
Country	779	Communication	194	Country	517	Chinese Communist Party	96
Chinese Communist Party	778	U.S. government	184	Government	442	Military	89
Government	721	Politics	179	Military	430	Beijing	89
Beijing	690	Country	175	Beijing	383	Country	87
Military	692	Government	157	Tsai Ing-wen	373	President	85

4.1.5. PTT Gossiping

The most frequently used words in the *PTT Gossiping* were: “Chinese Communist Party” (631 times), “President” (498 times), “Joe Biden” (378 times), “Country” (375 times), and “Government” (346 times). The most frequently used words in news in each period of *PTT Gossiping* are presented in Table 5.

In “T1”, the netizens in *PTT Gossiping* analyzed the tripartite relationship between the United States, China, and Taiwan based on the news information obtained. Netizens believed that in the United States, Joe Biden did not intend to over-stimulate China, which has resulted in the subsequent economic confrontation. However, Nancy Pelosi planned to retire and intended to continue to gain popularity while hyping up the threat from China. As for China, Xi Jinping intended to continue to be re-elected, maintain domestic stability, and transfer domestic conflicts, so Xi needed to be tougher to force the United States to pressure Pelosi to come to Taiwan (To put it simply, the United States needs cheap Chinese goods to curb excessive inflation, while China needs to expand exports to avert the domestic financial crisis, so Xi Jinping and Biden talked on the hotline). In Taiwan, the President of Tsai Ing-wen needed the news of Pelosi’s plan to visit Taiwan to consolidate the pro-Taiwan faction in the U.S. House of Representatives and exaggerated the theory of China’s invasion of Taiwan to create an issue for the midterm elections. In this period, the popular term “People’s Liberation Army” appeared in *PTT Gossiping* and did not appear in other news media because news content reposted by netizens often appeared in *PTT Gossiping*. An *EToday News* article titled “Xi Jinping ordered the People’s Liberation Army to ‘dare to sacrifice’ before Nancy Pelosi’s Asia trip”, caused widespread discussion on *PTT Gossiping*.

In “T2”, the term “Chinese Communist Party” frequently appeared in the *PTT Gossiping*. Netizens heard from a Chinese person saying that “Nancy Pelosi was deliberately put in Taiwan by us,” and found that this statement was rational. “Taiwan has been taking risks in the past few years. The CCP has long intended to afflict Taiwan. However, since it has not declared Taiwan independence, the CCP has no reason to take action. As long as Nancy Pelosi successfully landed, the CCP’s conspiracy was accomplished. “This is the Chinese Communist Party’s intentional attempt to trick Taiwan.” Under the threat of China’s civil and military menaces, “DPP obtained the support of the CCP, so it would win elections effortlessly. These are all personal opinions expressed in the context of media information. In this period in *PTT Gossiping*, “Ministry of Foreign Affairs” and “Interpretation” were also popular terms. The former originated from a public relations press release by the International Communications, Department of the Ministry of Foreign Affairs, referring to Joseph Wu, the Minister of Foreign Affairs, who accepted an exclusive interview with the “British Broadcasting Corporation” (BBC) and spoke about the importance of Nancy Pelosi’s visit to Taiwan and condemned China’s measures as highly provocative. He also warned democratic countries to pay close attention and prevent the expansion of authoritarianism. The press release also caused a lot of discussions on *PTT Gossiping*. In addition, when Nancy Pelosi visited the Legislative Yuan, the interpreter’s performance also aroused criticism and discussions from many netizens. Moreover, many netizens developed their discussion topics about issues such as what Nancy Pelosi ate during her stay in Taiwan or what Taiwanese snacks had to be served for her, etc.

In “T3”, there were a lot of discussions on the news about the U.S. Congressmen’s visit to Taiwan in the *PTT Gossiping*. In particular, *TVBS*’s article “Overlooking the Communist Military Exercise? U.S. Senators and Representatives Visited Again by Military Plane” was frequently discussed. In addition, the hot topic in stage 2, “The Chinese: Nancy Pelosi was deliberately put in by us,” continued to attract attention. Moreover, *ETTODAY*’s article “Yu Beichen said that flares can ‘burn out’ the camera function of drones, the Army Command responded”. In addition, there were also many reposts and discussions on *Chinatimes.com*’s news report “Worrying about the termination of ECFA concessions, the machinery industry seeks self-insurance.”

Based on the analyses above, for research question 1, the events of Nancy Pelosi’s visit to Taiwan were dealt with differently by the media at different times. In “Period 2”, *Liberty Time*’s discussions on the influence of China’s political and military intimidation and even Taiwan’s economy were significantly fewer than those of other newspapers. *Chinatimes.com* was less friendly to the reports about Tsai Ing-wen. In “T3”, *Liberty Time* expanded its criticism against Kuomintang vice-chairman Andrew Hsia’s visit to China, while *udn.com* highlighted the economic impact more than any other media. Such findings showed that even though the objective news issues reported by the newspapers in different periods did not differ significantly, there were considerable differences in their stances and opinions. The analysis result showed that the issues discussed by netizens in *PTT Gossiping* were often influenced by the topic framework of the news media, but the public also developed their discussion topics many times. Therefore, the H1: news media reports have a framing effect on the direction of public discussion of issues was partially supported.

Table 5. Most frequent words in *PTT Gossiping*.

ALL		T1		T2		T3	
Chinese Communist Party	631	Joe Biden	193	Chinese Communist Party	418	Chinese Communist Party	93
President	498	Asia	120	President	386	Government	54
Joe Biden	378	Chinese Communist Party	120	Country	283	Military exercise	39
Country	375	Beijing	107	democracy	235	Beijing	35
Government	346	Schedule	100	Ministry of Foreign Affairs	233	Taiwan Strait	33
Schedule	338	President	92	Interpretation	233	CCP's Army	30
Asia	317	Xi Jinping	89	Schedule	230	Flare	28
Beijing	316	People's Liberation Army	86	Government	229	Concern	26
Support	309	Official	76	Support	226	Message	25
democracy	305	U.S. Army	75	Eat	217	Joe Biden	25

4.2. Sentiment Analysis of Words

In terms of sentiment analysis, we classified all texts in three periods and then analyzed based on the word frequency database snowNLP (Table 6).

- (1) The sentiment ratio (T1_P/N) of *Liberty Times* in Period 1 was 0.683; the sentiment ratio (T2_P/N) in Period 2 was 0.628; the sentiment ratio (T3_P/N) in Period 3 was 0.671; the mean sentiment ratio was 0.661.
- (2) The sentiment ratio (T1_P/N) of *Apple Online* in Period 1 was 0.851; the sentiment ratio (T2_P/N) in Period 2 was 0.761; the sentiment ratio (T3_P/N) in Period 3 was 0.762; the mean sentiment ratio was 0.791.
- (3) The sentiment ratio (T1_P/N) of *udn.com* in Period 1 was 0.683; the sentiment ratio (T2_P/N) in Period 2 was 0.653; the sentiment ratio (T3_P/N) in Period 3 was 0.597; the mean sentiment ratio was 0.644.
- (4) The sentiment ratio (T1_P/N) of *Chinatimes.com* in Period 1 was 0.738; the sentiment ratio (T2_P/N) in Period 2 was 0.667; the sentiment ratio (T3_P/N) in Period 3 was 0.583; the mean sentiment ratio was 0.663.
- (5) The sentiment ratio (T1_P/N) of *iin* in Period 1 was 0.598; the sentiment ratio (T2_P/N) in Period 2 was 0.589; the sentiment ratio (T3_P/N) in Period 3 was 0.605; the mean sentiment ratio was 0.597.

Table 6. Sentiment analysis result of words in different media.

	T1	T2	T3	Mean
Liberty Times	0.683	0.628	0.671	0.6606667
Apple Online	0.851	0.761	0.762	0.7913333
udn.com	0.683	0.653	0.597	0.6443333
Chinatimes.com	0.738	0.667	0.583	0.6626667
PTT	0.598	0.589	0.605	0.5973333

The results showed that the positive sentiment of public opinions about Nancy Pelosi's visit to Taiwan in *PTT Gossiping* was less than that of the news media. Among the four media, *udn.com* showed the lowest positive sentiment in news coverage of Nancy Pelosi's visit to Taiwan, while *Apple Online* showed the highest. The comparison of the news or public opinions in the three periods presented that *Chinatimes.com* and *udn.com* showed a trend of increasing negative reports; *Apple Online* and *Liberty Time* used more negative words in T2 to describe the Chinese Communist Party's military exercise. The emotional gap of words in *PTT Gossiping* in the three periods was not significant.

Therefore, for research question 2, when the news media reported on the Nancy Pelosi event in the three periods, the sentiment of the common words did change. Both *Chinatimes.com* and *udn.com* showed a trend of increasing negative reports; *Apple Online* and *Liberty Time* used more negative words in T2 to describe the CCP's military exercise. For research question 3, there was no significant emotional gap in words used in *PTT Gossiping*. The news media reports did not have a framing effect on the emotional

changes of the common words used by people discussing the issues. Therefore, the H2: news media reports have a framing effect on the emotional changes in common words used by people talking about issues was not supported.

5. Conclusions

The results of the analysis of the semantics and public opinion of media reports on the event of Nancy Pelosi's visit to Taiwan showed that the focuses of different media in different periods differentiated. In T3, *Liberty Time* expanded its criticism against Kuomintang Vice Chairman Andrew Hsia's visit to China more than other newspapers to manipulate the argument of Kuomintang's pro-China stance. *udn.com* emphasized the economic impact more than other newspapers. These results showed that even though the objective news issues reported by the newspapers in different periods were not significantly different, newspapers had significantly different positions and opinions. The analysis result indicated that the issues discussed by netizens in *PTT Gossiping* were often influenced by the issue frame of the news media. However, the public developed and discussed issues by themselves many times. Therefore, the research hypothesis: that news media reports have a framing effect on the direction of public discussion of issues was only partially supported. The results of the sentiment analysis of common words showed that when the news media reported Nancy Pelosi's visit, the sentiment of common words changed. *Udn.com*'s news coverage about Nancy Pelosi's visit to Taiwan showed the lowest positive sentiment, while *Apple Online* showed the highest. This result corresponded to the general perception that *udn.com* has a relatively moderate partisan stance. In contrast, *Apple Online* is a newspaper published by Hong Kong Next Media in Taiwan, which naturally reported the news from the standpoint of a foreign bystander, and thus showed the highest positive emotions. The sentiment of the words/terms used by the public about Nancy Pelosi's visit changed in the three periods in *PTT Gossiping*. The emotional difference in used words in *PTT Gossiping* in the three periods was not significant. Thus news media reports did not have a framing effect on the emotional changes of common words used by the public talking about issues.

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