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Tracking Trends in Public Opinion on Cannabis Before and After Legalization in Thailand: A Social Media Content Analysis

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Abstract

Once cannabis was removed from the class-5 list, Thailand became the first Asian country to legalize its recreational use. However, the lack of regulation has raised public health concerns, and research specific to the Thai context is limited. This study analyzed public opinion on cannabis before and after its legalization using content from social media platforms, including Facebook, X, and YouTube. A total of 321 posts before and 625 posts after the policy announcement were selected via purposive sampling for content analysis. The findings show that public opinion shifted more negatively after legalization, with concerns such as cannabis misuse, overly liberal policies, the need for cannabis-free educational zones, and its association with crime. However, some positive opinions were also expressed, highlighting cannabis as alternative medicine and challenging biases against its use. This analysis provides insights that can inform policy development and raise public awareness about the risks associated with the recreational usage of cannabis.

Keywords

Public opinion, Cannabis, Legalization, Social media, Substance abuse

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Introduction

In the past, Thailand classified cannabis as a category 5 narcotic, where its consumption, possession, distribution, or use was prohibited, including for medical purposes, under the Narcotics Act B.E. 2522 (Office of the Council of State, 2014). However, in 2019, the Narcotics Act (No. 7) B.E. 2562 was enacted, allowing cannabis cultivation for medical purposes and research (Thai Government Gazette, 2019). Then, in 2021, cannabis was officially removed from the list of category 5 narcotic drugs under the same act. As a result, cannabis was legally available for medical use when necessary. Therefore, the association between cannabis and narcotics diminished and it was replaced by the term "medical cannabis" (Roonkaseam, 2021a).

Although the policy of cannabis as a medicinal plant has gained widespread support, there are concerns about the appropriateness of its legalization in Thai society. The legislation allows the retail and cultivation of cannabis for recreational and medical use but prohibits sales to individuals under 20 and pregnant women. Cannabis concentrates, tinctures, and oils are permitted as long as their THC content is below 0.2%, (Ministry of Public Health of Thailand [MOPH], 2021) as many people still mistakenly believe that cannabis can be used freely for recreational purposes. Limited academic knowledge about cannabis in Thailand may be a reason for this misunderstanding. Most of the existing knowledge consists of articles reviewing foreign research, rather than scientific studies. The lack of academic engagement on the cannabis issue has led to widespread information sharing on social media which is mainly based on opinions or viewpoints rather than peer-reviewed academic research. As a result, misinformation has spread. Furthermore, nowadays, interpersonal communication has expanded through popular social media platforms such as Facebook, X (formerly Twitter), Instagram, YouTube, and Google, allowing individuals to easily post pictures, express their feelings, and share opinions (Dong & Lian, 2021; Lamy et al., 2024; Madila et al., 2021)

As the issue of medical cannabis legalization is new and a subject of interest among Thai people, it is crucial to seek empirical evidence. Also, it is important to understand public opinions and attitudes toward cannabis on social media in order to build foundational knowledge that can support policy decisions. Several international research papers on public opinion surveys about cannabis on social media reveal that many scholars have studied public sentiment through these platforms. For instance, several studies tracked messages on Twitter (Allem et al., 2022; Cavazos-Rehg et al., 2014; Cavazos-Rehg et al., 2016; Cresswell et al., 2022; Daniulaityte et al., 2016; Thompson et al., 2015); analyzed cannabis smoking content on YouTube (Krauss et al., 2015; Krauss et al., 2017; Lim et al., 2021; Yang et al., 2018); explored cannabis-related posts on Instagram (Spillane et al., 2021); and analyzed forum posts about cannabis smoking (Meacham et al.,

2022). However, research on public opinion about cannabis on social media in Thailand remains relatively limited. For example, Thaikla et al. (2018) analyzed trends in information about cannabis and *kratom* on Facebook in Thailand between April and November 2015. Similarly, Roonkaseam (2021b) examined the reporting of medical cannabis in the media prior to the enactment of the Narcotics Act (No.7) B.E. 2562, collecting data from 27 newspapers archived in the Matichon News Library (a comprehensive news database operated by the Matichon public company in Thailand). Additionally, Sirita (2022) studied linguistic construction in both print media and social media, using textual analysis techniques on English-language articles from the Bangkok Post (a leading English newspaper) and social media posts from the Highland Network page.

The contrasting findings between Thailand and Western countries highlight important cultural and policy contexts. Unlike Canada's experience, where Najafizada (2022) found increased positive sentiment post-legalization, Thailand's public showed growing concern and skepticism. This divergence may stem from several factors: (1) Cultural attitudes-Thai society's conservative stance toward substance use contrasts with Western liberal approaches; (2) Policy implementation-Thailand's rapid legalization without a comprehensive regulatory framework differed from Canada's gradual, well-regulated approach; (3) Information sources-Thailand's reliance on traditional media and authority figures versus Western emphasis on individual experience sharing; and (4) Historical context- Thailand's strict drug laws and the association of cannabis with criminality created different baseline attitudes compared to countries with more permissive drug policies.

Although public opinion on cannabis has been explored in some studies on social media, there are still gaps that can be identified, addressed, and expanded upon. Firstly, previous studies did not cover the periods before and after the announcement of cannabis policy. Therefore, in this study, the time frame for surveying opinions on cannabis is divided into two phases: before the announcement of cannabis policy (January 1, 2021, to June 8, 2022) and after the announcement (June 9, 2022, to December 31, 2023). Secondly, most previous research collected data from only one social media platform; however, this study analyzes multiple platforms, including Facebook, Twitter, and YouTube. It aligns with prior research that has suggested studying public attitudes toward medical cannabis across social media platforms such as Facebook, Twitter, and YouTube in order to assess how the issue gains public awareness through new media (Roonkaseam, 2021a). Thirdly, the content in this study covers a variety of topics, such as attitudes and behaviors toward cannabis use, its effects, and crimes that relate to cannabis.

As mentioned above, the main focus of this study is analyzing content to explore public opinion regarding cannabis on social media before and after the announcement of cannabis policy. The results of the study can serve as fundamental information to support policy decisions

and can also be used to design alternative measures for controlling cannabis use that are suited to the Thai population.

Literature Review

Social media

In recent years, the rise of internet use has led to the emergence of web polling. Social media platforms offer a new means of representing and measuring public opinion, expanding the size and diversity of data, reducing costs, and accelerating data collection. These methods provide a more scientific understanding of public perception and can also aid in forecasting political trends and shaping societal views (Salleh, 2017; Stieglitz et al., 2018). The adoption of social media has significantly increased across various sectors, including government, enterprises, and public figures (Khan et al., 2021).

The fast-paced and interactive nature of social media generates vast amounts of information every second, providing data that can be transformed into valuable insights for analysis (Chongthanavanit et al., 2020). Social Media Analytics focuses on the development and evaluation of tools and frameworks for collecting, monitoring, analyzing, and visualizing social media data. This field applies various techniques, such as web crawling, computational linguistics, machine learning, and statistical methods, to process both structured and unstructured big data. The goal is to gain insights into trends, sentiments, opinions, and geographical patterns relevant to specific applications (Zeng et al., 2010).

Public opinion on social media

Social media platforms commonly studied by scholars include Twitter (Allem et al., 2022; Cavazos-Rehg et al., 2014; Cavazos-Rehg et al., 2016; Cresswell et al., 2022; Daniulaityte et al., 2016; Thompson et al., 2015), where researchers tracked messages; YouTube (Krauss et al., 2015; Krauss et al., 2017; Lim et al., 2021; Yang et al., 2018), where cannabis-related content was analyzed; Instagram (Spillane et al., 2021), where posts related to cannabis were explored; and online forums (Meacham et al., 2022), where discussion about cannabis smoking were examined.

Key research topics related to cannabis on social media can be divided into four areas: (1) Content analysis related to cannabis. For example, Thaikla et al. (2018) analyzed information trends about cannabis and kratom on Facebook in Thailand. Thompson et al. (2015) analyzed cannabis-related content posted by teenagers on Twitter before and after the U.S. election. Li et al. (2020) examined cannabis-related messages from three types of Twitter users including verified, regular, and suspended accounts. (2) Analysis of emotional responses to cannabis-related content.

For example, Tran et al. (2018) analyzed and classified emotions using an emoji-based sentiment analysis to understand emotional reactions to cannabis-related content on Facebook pages. (3) Analysis of cannabis use experiences. For instance, Allem et al. (2022) studied public cannabis experiences from posts on Twitter. Cavazos-Rehg et al. (2016) analyzed Twitter content about heavy cannabis smoking. Kim et al. (2021) analyzed patterns of using Backwoods cannabis-infused cigars through posts on Instagram. Krauss et al. (2015) analyzed video content about cannabis extract smoking on YouTube. Lim et al. (2021) analyzed YouTube videos about using electric cannabis devices, and Spillane et al. (2021) examined Instagram posts from portable cannabis vaporizer brands. (4) Analysis of responses to cannabis policy. For example, Sirita (2022) examined how language was used in print and social media to convey support or opposition toward the legalization of cannabis in Thailand. The study used English text analysis techniques from the Bangkok Post newspaper and the social media page Highland Network. Additionally, the Center for Economic and Business Forecasting at the University of the Thai Chamber of Commerce (2022) conducted a survey on the public's response to cannabis legalization on social media. The data were collected using Google Trends and a social listening tool.

Upon examining the content of cannabis related-posts, it was found that the messages typically conveyed a positive or neutral tone, indicating an acceptance of cannabis use as normal (Thaikla et al., 2018; Thompson et al., 2015). The posts contained text and images that encouraged readers to use and purchase cannabis (Thaikla et al., 2018), including those promoting cannabis use, processed cannabis products, the use of cannabis for health and medical purposes, and discussion of cannabis use alongside other drugs (Allem et al., 2022). Moreover, there were posts teaching how to make cannabis-infused e-liquids (Lim et al., 2021), how to cook cannabis-infused food, and the effects of consuming cannabis-infused food (Krauss et al., 2017). Regarding emotional reactions to cannabis-related content, it was found that the number of positive reactions (LOVE, HAHA, and WOW) outnumbered negative reactions (ANGRY and SAD). However, negative sentiment words were used more often than positive ones (Tran et al., 2018). As for opinions on the response to cannabis policy, it was observed that the language used indicated support for legal reforms and highlighted cannabis as both an economic crop and a valuable medical plant (Sirita, 2022). However, there were negative views about cannabis, including references to cannabis intoxication, its harmful effects, and the lack of regulation (Center for Economic and Business Forecasting, University of the Thai Chamber of Commerce, 2023).

In summary, research on cannabis-related content across social media covers four main areas: content trends, emotional reactions, personal experiences, and responses to cannabis policy. Most posts show a positive or neutral view of cannabis, treating it as normal. However, there are both supportive and critical views on its legalization and regulation.

Theoretical framework for social media opinion analysis

This study draws upon interconnected theoretical perspectives to understand public opinion dynamics on cannabis policy through social media analysis.

First, Media Framing Theory provides a crucial lens for understanding how cannabis-related content is presented and interpreted on social media platforms. According to Entman (1993), framing involves selecting and highlighting certain aspects of events or issues to promote particular interpretations. In the context of cannabis policy, social media frames can influence public perception by emphasizing either medical benefits or potential risks. In cannabis policy discussions, social media platforms facilitate multiple competing frames that shape public understanding. The medical frame emphasizes therapeutic benefits, patient testimonials, and scientific research, often featuring content about pain management, epilepsy treatment, and quality of life improvements. Visual elements such as medical cannabis products, laboratory settings, and patient stories create powerful associations with healthcare legitimacy (Khademi et al., 2023). Conversely, the criminalization frame focuses on enforcement perspectives, highlighting drug-related arrests, trafficking concerns, and public safety issues. This frame often employs imagery of law enforcement activities, court proceedings, and crime statistics to reinforce associations between cannabis and criminal behavior (McCarthy et al., 2025). The economic frame presents cannabis through commercial and regulatory lenses, featuring dispensary operations, tax revenue data, and business development stories. This framing strategy legitimizes cannabis through capitalist discourse, emphasizing job creation, regulatory compliance, and economic benefits (Farrelly et al., 2023).

Second, Public Opinion Formation Theory helps explain how citizens form attitudes toward policy changes. Zaller's (1992) Receive-Accept-Sample (RAS) model offers a particularly relevant framework for understanding cannabis opinion formation, where individuals receive policy-related information, accept or reject it based on existing predispositions, and sample from accumulated considerations when expressing opinions about legalization, decriminalization, or medical access. The theory also suggests that public opinion shifts occur through exposure to elite discourse and media messages, which aligns with this study's focus on influential "Top Users" on social media platforms.

Third, the Spiral of Silence Theory, developed by Elisabeth Noelle-Neumann in 1974, explains how individuals suppress opinion expression when perceiving themselves as minorities due to fear of social isolation (Noelle-Neumann, 1974). The theory operates through three key mechanisms: fear of social exclusion leading to self-censorship, continuous monitoring of prevailing opinions, and the distinction between strong and weak convictions that affects expression likelihood. Digital platforms have transformed traditional spiral effects by simultaneously intensifying silencing

through algorithmic content filtering while enabling anonymous expression and diverse opinion networks. This transformation has fundamentally altered the boundaries between public and private opinion expression (Donsbach, 2022).

These theoretical perspectives suggest that major policy changes, especially those involving controversial issues like cannabis legalization, will likely create noticeable shifts in public discourse patterns on social media platforms. The scale and nature of these changes depend on how policy design, implementation context, and existing public attitudes interact with each other. Figure 1 shows a conceptual model that explains the relationship between what people think public opinion is and how willing they are to share their own views.

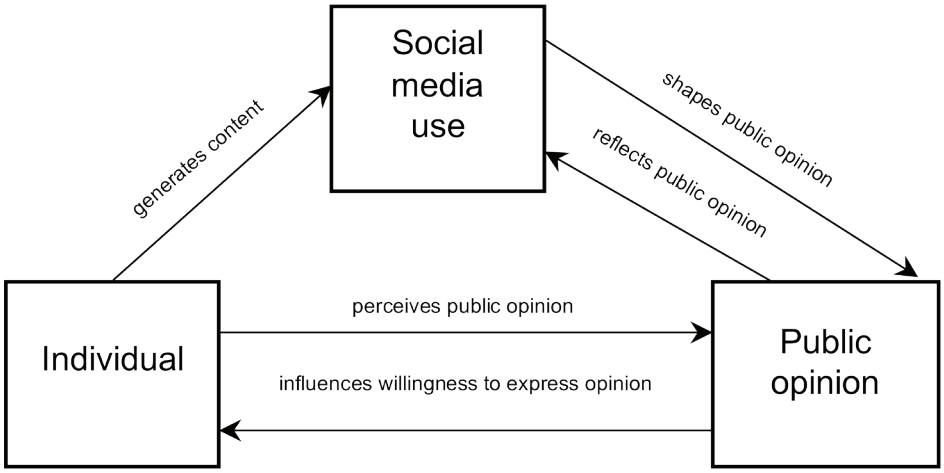

Figure 1 Conceptual framework

Methodology

This study applied the Social Media-based Public Opinion (SMPO) analysis framework by Dong and Lian (2021), which consists of two steps: data collection and data analysis. The study received an institutional review board exemption under project code SWUEC/X-342/256, as it used secondary data.

Data Collection

Secondary data from WISESIGHT was used in this study. WISESIGHT is a company that provides the ZOCIAL EYES tool which gathers data from various social media platforms. The research focused on Facebook, Twitter, and YouTube based on four systematic criteria ensuring comprehensive cannabis discourse analysis in Thailand. These platforms provide optimal

demographic coverage: Facebook offers the broadest reach (51 million users, 77% penetration) across diverse age groups, Twitter captures educated urban opinion leaders (10.9 million users), and YouTube represents the largest video platform (57 million users) for in-depth content (Kemp, 2023). Each platform's communication modality serves distinct analytical purposes: Facebook enables community discussions and advocacy activities, Twitter facilitates real-time policy debates and expert commentary, while YouTube provides educational content and detailed opinion expression (Blagus & Zitnik, 2018). Additionally, all platforms demonstrate established research precedent in public opinion studies, maintain compatibility with the WISESIGHT ZOCIAL EYES data collection system, and generate sufficient content volume for robust statistical analysis, making them the optimal combination for comprehensive Thai cannabis opinion research (Madila et al., 2021).

The population of the study consisted of posts on social media. Non-probability purposive sampling was used to select posts, based on systematic inclusion and exclusion criteria to ensure sample validity. Posts were included if they: (1) contained cannabis-related content within predefined search parameters, (2) were written in Thai, and (3) originated from influential users ("Top Users") determined by posting frequency, engagement metrics, and follower count. Posts were excluded if they fell outside the specified timeframes-pre-policy period (January 1, 2021, to June 8, 2022) and post-policy period (June 9, 2022, to December 31, 2023)-or contained incomplete/deleted content that could compromise analysis reliability.

Following the application of the inclusion criteria and data cleaning, the numbers of posts referring to cannabis before and after the policy announcement were analyzed and are presented in Table 1. The number of posts mentioning cannabis before and after the cannabis policy announcement is summarized in Table 1. For the analysis, posts from Top Users were selected. The selection was based on the number of posts, the level of engagement or average engagement, and the number of followers. A summary of these posts is shown in Table 2.

Table 1 Number of cannabis-related posts before and after the implementation of cannabis policy

Platform	Before	After
FB	33,430	54,127
TW	20,482	96,670
YT	24,263	150,849
Total	**78,175**	**301,646**

Table 2 Number of sample posts in the study before and after the implementation of cannabis policy

No	Account	Before		No	Account	After	
		N	n			N	n
				Facebook			
1	Kancha chon	201	62	1	Sorayut Suthatsanachinda, news worker	312	30
2	I Roam Alone	5	2	2	Moring News	556	54
3	Ch7HD News	242	75	3	Chuwit Kamonwisit	76	7
4	Moring News	132	41	4	Voice TV	508	49
5	Thairath	176	54	5	Hone-Krasae	123	12
6	Sorayut Suthatsanachinda, news worker	28	9	6	EJan	105	10
7	One 31	45	14	7	Ch7HD News	956	93
8	Voice TV	74	23	8	Thairath	570	55
9	EJAN	34	10	9	Workpoint News 23	390	38
10	ThairathTV	35	11	10	Drama-addict	151	15
	Total	**972**	**300**		**Total**	**3,747**	**364**
				Twitter			
1	@bypwx	1	1	1	@tarotyouuuu	140	84
2	@nichadanmek	1	1	2	@offchainon	96	57
3	@yyouniverse	1	1	3	@manopsi	32	19
4	@fortunediaryy	3	3	4	@boongkeang	17	10
5	@floraspring	1	1	5	@unrulycat2511	88	53
6	@unrulycat2511	11	11	6	@nekosorso	2	1
7	@fhyfefy	2	2	7	@stitch_pololo	17	10
8	@natsuki_final	1	1	8	@yamyummy	18	11
9	@1996_shootout	1	1	9	@tanawatofficial	5	2
10	@suprasf	2	2	10	@jeleejunlee	3	3
	Total	**24**	**24**		**Total**	**418**	**250**

Table 2 Number of sample posts in the study before and after the implementation of cannabis policy (Cont.)

No	Account	Before		No	Account	After	
		N	n			N	n
				YouTube			
1	[NoY β'u m]	1	1	1	Punnapun	1	1
2	Chat Chat	1	1	2	Dontknowwhattodo	1	1
3	Banana Trat	1	1	3	Uthai Prasong	1	1
4	Tanaddak	1	1	4	phatharanan _CH	1	1
5	Suphat Suebchaisong	1	1	5	E	1	1
6	OA P	1	1	6	Chuchat veerakitit	2	2
7	Dick Kuan Ting	1	1	7	Sayhi mee	1	1
8	January2564	1	1	8	Thenot pri	1	1
9	Noy Noy Khem Khem	1	1	9	I Love you	1	1
10	The Fadd	1	1	10	Healthy	1	1
	Total	**10**	**10**		**Total**	**11**	**11**

The data collection process began by identifying six main research topics including cannabis use, cannabis policy, cannabis access, cannabis-related crime, the effects of cannabis use, and the benefits and harms of cannabis. For each main topic, sub-keywords derived from a review of previous studies were established (Thaikla et al., 2018). The Google Trends tool was used to identify specific areas for further exploration. Examples of primary and sub-keywords are presented in Table 3. After that, the ZOCIAL EYE tool's data collection system retrieved data based on the primary and sub-keywords from the selected platforms. The tool also exported data into Excel files to show the volume of posts on each social media platform that were related to the identified topics. This also highlighted interesting information with notable spikes on certain days.

Table 3 Searching keywords

Main keyword	Sub-Keywords
Cannabis use	cultivate, sow, distribute, sell, take, smoke, consume, get high
Cannabis access	advertise, promote, goods, products
Cannabis effect	side effects, irritability, aggression, frenzy, hallucination, violence, good mood, happiness, relaxation
Cannabis related-crime	case, arrest, accident, crime, possession
Cannabis policy	policy, cannabis legalization, deregulation, control
Benefit and harm of cannabis	benefit, harm

Data Analysis

The content analysis was carried out according to the framework of Miles and Huberman (1994) and involved three steps: (1) Data management: This step involved organizing the data into a format that was ready and convenient for analysis. (2) Coding and finding relations: To gain understanding, the raw data were thoroughly read and then coded or labeled. The coding process utilized a mixed approach, combining deductive coding based on previous findings with inductive coding (Aieorattanawadee, 2019; Thaikla et al., 2018; Roonkaseam, 2021a). After that, similar codes were grouped together to link the organized data according to the conceptual framework used for analysis. (3) Conclusion, interpretation, and verification: This step involved drawing conclusions and interpreting the findings shown in the data, along with validating the accuracy and credibility of the conclusions or meanings derived from the analysis.

In the analysis of the sentiment or attitudes expressed in the messages, the ZOCIAL EYE system utilized artificial intelligence to assist in the operations. After defining keywords, phrases, and sentences containing various key terms, the system analyzed the initial sentiment, which could be categorized into three levels: positive, neutral, and negative. The system was set up with vocabulary that assigned meanings based on established criteria; when terms were identified, they were assessed accordingly. The sentiment interpretation took place as the system processed each word in the text and then assigned a score to each one. If the text contains words that are more neutral than positive or negative, the overall result is interpreted as neutral. The system sentiment analysis accuracy was approximately 70%. To enhance reliability, a systematic manual verification process was implemented involving three trained researchers. The verification protocol included: (1) Random sampling of 20% of posts from each sentiment category for independent coding by two researchers; (2) Inter-coder reliability assessment using Cohen's Kappa coefficient ($\kappa = 0.85$, indicating substantial agreement); (3) Consensus meetings to resolve coding discrepancies; and (4) Final validation by the third researcher for disputed cases (O'Connor & Joffe, 2020). This dual-layered approach (AI-assisted and human verification) strengthened the reliability of sentiment classification while maintaining efficiency for the large dataset.

Results

Public opinion toward cannabis on social media over different periods of time is summarized in Figure 2. Prior to the cannabis policy announcement, opinions about cannabis showed positive, neutral, and negative directions. Five key points of positive opinions on cannabis include: (1) Cannabis arrests should be based on discretion and political principles. (2) Cannabis serves

as an alternative medicine for treatment. (3) Cannabis is a comprehensive economic crop that generates income. (4) Cannabis is not a narcotic plant, and efforts to hinder its use should be reconsidered. (5) The bias against cannabis should be addressed.

Ten key points of neutral opinions on cannabis included: (1) Misconceptions about cannabis. (2) Clarification of what is permitted and what is prohibited after the removal of cannabis from the narcotics list. (3) Guidelines for acquiring permission to cultivate cannabis. (4) Transitioning cannabis from illegal to legal. (5) Cannabis legalization equates to a reduction in criminal penalties. (6) The legality of cannabis cultivation is open to interpretation. (7) The status of cannabis remains unclear. (8) Cannabis remains illegal in other countries. (9) Cannabis is a cause of crime. (10) Promoting the use of cannabis.

Four key points of negative opinions on cannabis included: (1) Cannabis is a political game that benefits certain groups. (2) Cannabis is more freely available than alcohol and cigarettes. (3) Cannabis is everywhere and easily accessible. (4) Dangers of cannabis use.

After the implementation of cannabis policy, public opinions on social media reflected a range of sentiments, including positive, neutral, and negative, as follows. Positive opinions about cannabis focused on three key points. (1) Cannabis is an alternative medicine for treatment. (2) Cannabis is not a narcotic plant; efforts to hinder its use should be reconsidered. (3) Break the bias against cannabis. Neutral opinions on cannabis covered nine points. (1) Clarification of what is permitted and what is prohibited after the removal of cannabis from the narcotics list. (2) Guidelines for acquiring permission to cultivate cannabis. (3) Cannabis is misused. (4) Cannabis legalization equates to a reduction in criminal penalties. (5) Misunderstandings regarding the cannabis policy. (6) Cannabis remains illegal in other countries. (7) The future of cannabis depends on the new government. (8) Cannabis is a cause of crime. (9) Dangers of cannabis use.

Negative opinions on cannabis were reflected in nine points. (1) Cannabis is misused. (2) There is opposition to cannabis legalization. (3) Thailand's cannabis policy is overly liberal and lacks direction. (4) Cannabis is a political game that benefits certain groups. (5) Cannabis is more freely available than alcohol and cigarettes. (6) Cannabis is everywhere and easily accessible. (7) Educational institutions should be cannabis-free zones. (8) Cannabis is a cause of crime. (9) Dangers of cannabis use.

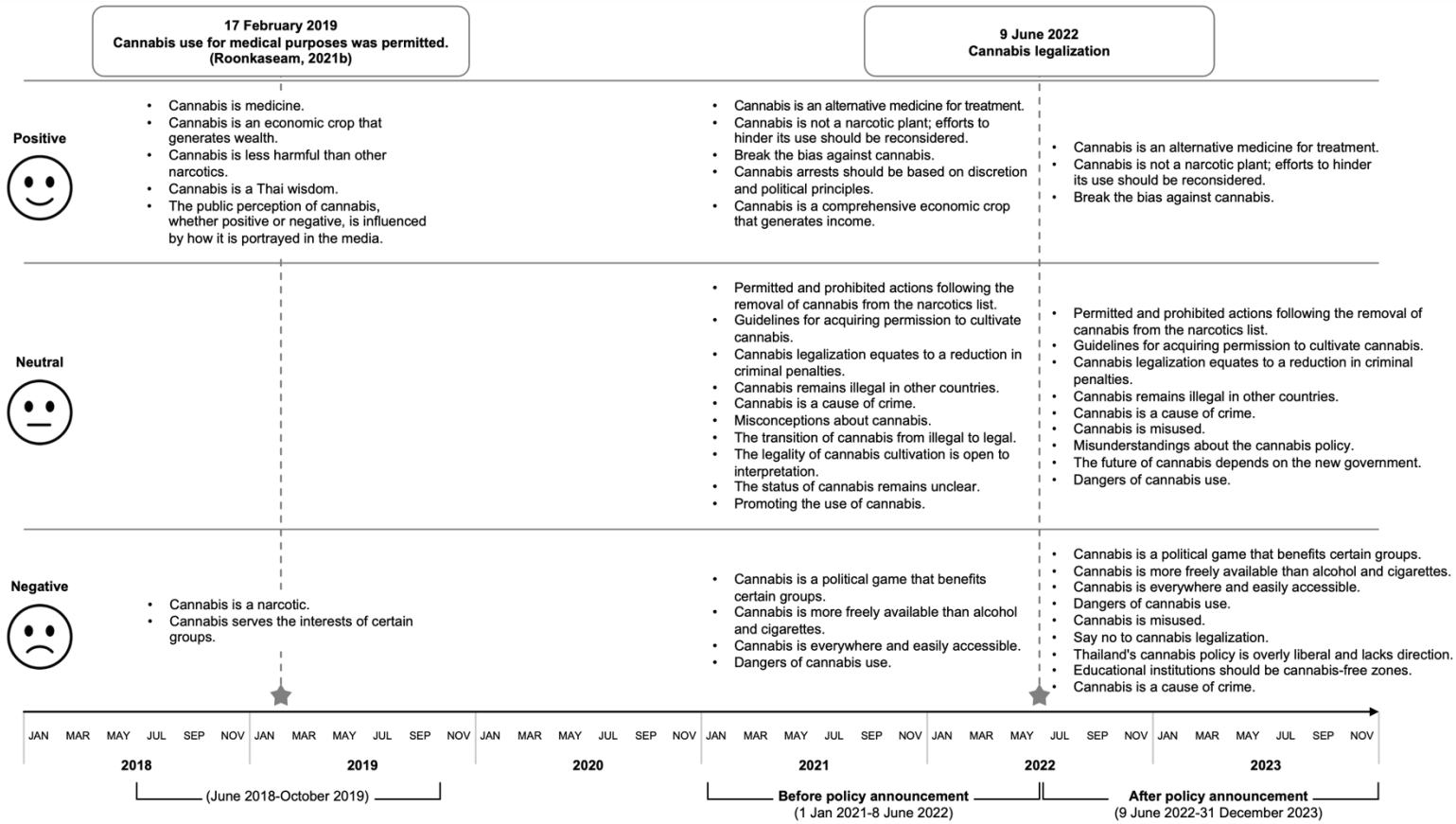

Figure 2 Public opinion on cannabis on social media over different periods

When comparing opinions on cannabis before and after the implementation of cannabis policy, it was found that negative views increased following the policy's introduction. There were several public opinions on social media including, "Cannabis is misused," "Say no to cannabis legalization," "Thailand's cannabis policy is overly liberal and lacks direction," "Educational institutions should be cannabis-free zones," and "Cannabis is a cause of crime." However, cannabis was viewed positively to some people. For example, some stated that "Cannabis is an alternative medicine for treatment," "Cannabis is not a narcotic plant; efforts to hinder its use should be reconsidered," and "Break the bias against cannabis."

Discussion

From the research findings, there are seven interesting key points for discussion. The first key point concerns the public opinion on cannabis on social media after the announcement of the cannabis policy. It was found that public opinion has become increasingly negative. It is evident that Thai society's view of cannabis has changed significantly when comparing the following findings with past perspectives, as reflected in media reports on medical cannabis in Thailand (Roonkaseam, 2021a) and in English-language newspapers and social media (Sirita, 2022) during 2018 to 2020, before and after the announcement of the Narcotics Act (Amendment No. 7), B.E. 2562. During that period, the public tended to view cannabis more positively, seeing it as a form of medicine, a traditional remedy, and a patient's right. Cannabis was perceived as less harmful than alcohol, cigarettes, and other narcotics. Moreover, cannabis was viewed as part of ancient Thai wisdom, a national heritage to be preserved for the Thai people, and as an economic crop that could generate wealth. During that time, cannabis was viewed as a narcotic that served the interests of certain groups. Similarly, a study by Thaikla et al. (2018) found that Facebook pages on cannabis had a large number of followers, and they were more active and popular than kratom pages. The content and images posted on both cannabis and kratom pages tended to show support toward cannabis. The posts were typically positive, such as encouraging the public to use and purchase cannabis online, highlighting its medical benefits, emphasizing its lower harms compared to other narcotics, and advocating for cannabis legalization. However, it is important to approach users' opinions and recommendations about cannabis use shared on social media with caution, since they are not always supported by scientific evidence.

Some international studies have found that sentiments and content regarding cannabis on social media tend to become more positive following cannabis legalization. For instance, Tran et al. (2018) discovered that many users supported cannabis consumption and legalization. Additionally, the "LIKE" and "LOVE" reactions were the most frequently used and strongly correlated,

indicating a broad audience and strong engagement with cannabis-related content on Facebook. Similarly, Najafizada (2022) analyzed the sentiments and content about cannabis on Twitter in Canada. It was found that both licensed and unlicensed cannabis retailers mostly discussed access to cannabis products, policy, usage, information sharing on cannabis use, harvesting, product quality, and advertising. The majority of common tweets that were collected through key terms focused on cannabis-related information, access, and its use for both medical and non-medical purposes. These findings suggest that after cannabis legalization in Canada, people felt more comfortable sharing their opinions and emotions on social media. In addition, consumers explored alternative ways to access cannabis, resulting in widespread discussions about the topic throughout the country.

The second key point focuses on public opinion on cannabis. Supportive views toward cannabis largely focused on its benefits as an "alternative medicine for treatment." This highlights the public's awareness of its medical benefits. These findings align with the study by Assanang-kornchai et al. (2021), which found that most respondents (65.9% to 89.9%) acknowledged that cannabis could be used to treat illness, as announced by the Ministry of Public Health. They were also aware that cannabis could enhance sleep quality and boost appetite. Certain groups believed that cannabis could treat substance addiction, brain tumors, and chronic cough, despite the lack of scientific evidence supporting these claims. However, less than half of respondents were aware that cannabis could cause adverse effects or undesirable conditions. Another study, which explored the views of cannabis users in Nakhon Si Thammarat province, revealed that most medicinal users considered cannabis as a remedy. They did not perceive it as dangerous, viewing it as a part of their lifestyle. Similarly, recreational users viewed cannabis as a harmless herb that did not harm anyone and as a daily medicine for conditions ranging from insomnia to cancer. Their beliefs about cannabis were shaped by personal experiences, the purposes of its use, social class, gender, trust in doctors and the healthcare system, and medical cannabis policy (Jeh-oh & Tachopisalwong, 2021). Although cannabis is recognized as an herbal medicine with significant benefits, it can also present serious dangers when misused. As a result, strict regulation is essential to ensure that its use is limited to doctor-prescribed treatments.

The third key point focuses on cannabis use. When considering neutral public opinions on cannabis, both before and after the policy implementation, most comments fell under the category of cannabis use, such as "Clarification of what is permitted and what is prohibited after cannabis was removed from the narcotics list" and "Guidelines for acquiring permission to cultivate cannabis." In addition, opinions on cannabis policy provided information and facts about cannabis, including "The reduction of criminal penalties after cannabis deregulation" and "Cannabis remains

illegal in other countries." These views were largely shared by influential media outlets such as Channel 8, Morning News (Ruang Lao Chao Nee), Hone-Krasae, Ch7HD News, Bright TV, and Thairath Online, which played a significant role in shaping the news agenda. These media outlets influenced public perception of the importance of an issue, which mainly depended on their ability to accurately and clearly frame it (Euamornvanich, 2020). These findings are consistent with the study by Roonkaseam (2021a), which found that journalists and columnists were primary sources of medical cannabis news. Neutral news reports focused on providing information related to medical cannabis, addressing questions such as who, what, where, when, and how: for example, cannabis deregulation, cannabis patents, and medical cannabis research and development.

The fourth key point focuses on the shift of public opinion on cannabis policy from before to after its implementation. In online communities, there was a growing trend of opposition and disapproval of cannabis policy, with statements such as "Say no to cannabis legalization," "Thailand's cannabis policy is overly liberal and lacks direction," "Cannabis is a political game that benefits certain groups," and "Cannabis is more freely available than alcohol and cigarettes." These findings align with a survey conducted by the Center for Economic and Business Forecasting at the University of the Thai Chamber of Commerce (2023), revealing that more than half of the public viewed cannabis as a harmful narcotic (63%) and disagreed with cannabis legalization (58.3%). Those who supported it (41.7%), favored its use for medical and recreational purposes. Furthermore, the majority of the public believed that cannabis legalization negatively impacted society, especially children and youth. A related study conducted by Kalayasiri and Boonthae (2023) surveyed Thai citizens aged 18 to 65 at two different times. It was found that while more than half of the population supported the removal of cannabis from the narcotics list in 2019, their opinions had shifted toward uncertainty by 2021. There is academic evidence to support the opposition to cannabis legalization, even for medical purposes, as it may lead to the diversion of cannabis use in the black market. For example, a study by Salomonsen-Sautel et al. (2012) found that 74% of teenagers in the U.S. undergoing treatment for cannabis addiction had obtained cannabis from individuals who were legally allowed to possess it for medical use. Additionally, cannabis legalization presents potential risks to public health and society. A study by Kim and Monte (2016) found that after cannabis was legalized in Colorado in 2012, with the law coming into effect in 2014, there was a rise in the number of children and teenagers aged nine and above who were treated in hospital emergency rooms for acute cannabis poisoning.

The fifth key point focuses on a negative shift in public opinion regarding cannabis accessibility. There were statements such as "Cannabis is everywhere and easily accessible" and "Educational institutions should be cannabis-free zones." These observations suggest that,

following the implementation of the cannabis policy, the public found it easier to access cannabis, even in schools, where students could easily purchase and use it. The removal of cannabis from the Category 5 narcotics list has led to unrestricted use, resulting in the extensive sale of cannabis and its products in various forms, such as candies, foods, and beverages, which are available both online and around educational institutions, often without control measures (Kalayasiri & Boonthae, 2023). The public, including children and youth, can access cannabis easily and use it in ways that deviate from medical purposes. This has resulted in a rise in patients seeking care for cannabis overdose. Certain groups in society have started to voice their opposition to the cannabis policy, which allows unrestricted use without adequate regulatory controls (Maneechot et al., 2022).

The sixth point focuses on public opinion regarding cannabis-related crime. Public opinion on cannabis and crime has remained neutral both before and after the announcement of the cannabis policy. Most reports and presentations focused on the use of cannabis, which was perceived to lead to criminal behavior, particularly by news media outlets. However, negative opinions also emerged on Twitter and YouTube, particularly from personal account users, such as the belief that "Cannabis is the root cause of crime." Academic evidence suggests that cannabis use can be a contributing factor to violent behavior. For instance, Miller et al. (2020) examined 14 case studies of violence associated with cannabis use and identified common symptoms after extended consumption, including paranoid psychosis, aggressiveness, personality change, visual hallucinations, and schizophrenia. This suggests that cannabis users become victims of aggression in response to their own actions while under the influence of cannabis (Hasin et al., 2015). These symptoms were scientifically validated as consequences of cannabis use, as the plant is complex and it contains more than 400 chemicals, with THC and cannabidiol being the main compounds. Certain compounds in cannabis affect the central endocannabinoid receptors that regulate various behaviors, including aggression (Miller et al., 2020; Wannapaschaiyong et al., 2023). Although cannabis consumption can lead to euphoria and relaxation, it can trigger sudden side effects and negative outcomes. Even small doses can impair behavioral control, such as mood swings, impulsivity, and aggression. Prolonged use can heighten sensitivity to abnormal stimuli, increasing the risk of self-harm, jumping from heights, or suicide. For individuals with underlying mental health issues, cannabis can provoke episodes of psychosis or schizophrenia (Meier et al., 2012; Sánchez Artiles, 2019).

Lastly, opinions regarding the impact of cannabis use, such as "The dangers of cannabis use," reflect the public's awareness that misuse of cannabis can lead to harm. Academic evidence confirms that despite its medical benefits, misuse or improper use can have physical, mental, and neurological effects. For example, Volkow et al. (2014) found that 9% of regular cannabis users

developed an addiction, while those who used it daily faced about a 25% likelihood of addiction. Additionally, Meier et al. (2012) reported that consistent cannabis use during adolescence can result in a drop of IQ (approximately 6 points) in adulthood, while those who did not use it tended to either maintain or slightly improve their IQ levels. Additionally, blood THC levels (2-5 nanograms per milliliter) were associated with impaired driving ability which made cannabis users twice as likely to have car accidents compared to non-users (Hartman & Huestis et al., 2013). Ladegard et al. (2020) found that if cannabis is used with alcohol or other substances, it can lead to more severe and complicated health and bodily function issues. Research conducted on adolescents and young adults in New Zealand (aged 14-21) indicated that prolonged cannabis use over several years contributed to psychosocial disorders, such as inappropriate behavior or delinquency, depression, and suicidal thoughts. The study also indicated that cannabis use can serve as a gateway to involve with other illegal drugs (Fergusson et al., 2002). Monshouwer et al. (2006) conducted a survey of 5,551 adolescents in the Netherlands and found that cannabis use during adolescence led to poor self-control, resulting in reckless and aggressive behavior. However, it did not lead to social withdrawal or isolation. The study also noted that with more frequent cannabis use, the intensity of reckless and aggressive behavior increased.

Limitations and Future research

Although this study was designed to build on and extend previous research, there are certain limitations that should be acknowledged for those who are interested in improving and developing future studies. In this study on public opinions about cannabis on social media, posts were selected from influential users, known as “Top Users.” While these accounts (news agencies, influencers, high-follower accounts) are influential in shaping public discourse, they may not fully represent grassroots public opinion. The predominance of news-related accounts in our sample (as shown in Table 2) likely skewed results toward neutral, fact-based content rather than emotional or personal responses typical of ordinary users. This elite bias may have underrepresented authentic public sentiment, particularly from younger demographics or marginalized communities who might express different views on cannabis policy. Future research should incorporate stratified sampling across user types, including analysis of comments and replies from ordinary users to capture a more comprehensive picture of public opinion.

Public opinions toward cannabis on social media were categorized into six main topics: cannabis use, cannabis policy, cannabis accessibility, cannabis-related crime, the impact of cannabis use, and the benefits and risks of cannabis. However, linguistic strategies and content delivery methods on social media were overlooked. Therefore, future research can analyze

language use, including words, sentences, messages, or symbols used by individuals to express their thoughts, emotions, and feelings. This can include spoken language, slang, symbols, or made-up words. Additionally, future studies can explore content presentation strategies such as storytelling, referencing media or stories to support narratives, using humor, offering advice or reflection, and employing sarcasm or social satire.

Although a large dataset from a social listening tool was utilized in this study to analyze public opinion on cannabis, in practice, Top Users were specifically selected as representatives of all messages. In the future, knowledge from data science can be employed to handle large datasets and to conduct analyses through data modeling and data mining, for example. The goals are to classify public opinions based on social media user characteristics, examine the link between user engagement and opinions on cannabis, or analyze the emotions and sentiments of the messages.

Finally, the analysis of public opinions from text messages was exclusively focused on textual content. A key area of interest and challenge for future social media analysis could involve analyzing and classifying sentiments expressed through emojis. This approach would allow for a better understanding of Facebook users' emotional reactions to cannabis-related posts by applying data science methodologies.

Implications

Public feedback from social media should be incorporated to guide evidence-based cannabis policy while enforcing age-specific restrictions and controls that prioritize adolescent protection. Policies must carefully balance cannabis benefits with harm reduction, particularly focusing on preventing youth access and minimizing developmental risks. Medical and public health perspectives should be integrated into policy planning to ensure therapeutic benefits for patients while implementing robust safeguards against youth exposure and misuse.

Based on the findings of this study, we recommend a coordinated multi-agency approach with clearly defined roles and responsibilities for each stakeholder. The Ministry of Public Health should serve as the primary coordinating authority, establishing inter-agency committees and conducting quarterly policy reviews, while explicitly avoiding direct service delivery or enforcement. The Food and Drug Administration must focus exclusively on medical information dissemination through real-time social media monitoring, official communication channels, and evidence-based public education campaigns, excluding law enforcement and educational curriculum development. The Ministry of Education should implement mandatory cannabis education in secondary schools, establish cannabis-free zones around educational institutions, and train educational personnel

on early detection of cannabis misuse, while avoiding law enforcement and medical treatment roles. Law enforcement responsibilities must be delineated between the Office of the Narcotics Control Board and Royal Thai Police, focusing strictly on age verification systems, compliance monitoring, surveillance around schools, and violation reporting mechanisms, excluding educational and medical advisory functions. The Ministry of Health should concentrate solely on healthcare service delivery through specialized counseling services, healthcare worker training, and health outcome surveillance systems, avoiding law enforcement and educational policy involvement.

Conclusion

This study conducted a social media analysis using social listening tools to track trends and shifts in public opinion on cannabis before and after policy implementation. The findings reveal a notable shift toward increasingly negative public sentiment following the policy introduction. Social media discourse analysis identified predominant concerns expressed by users, including perceptions of cannabis misuse, opposition to liberalization policies, criticism of policy direction and scope, concerns about educational environments, and associations with criminal activity. Conversely, a minority of users expressed positive sentiments, viewing cannabis as alternative medicine and challenging existing stigma. These findings contribute to the understanding of how policy implementation influences public opinion dynamics and the role of social media as a platform for public discourse on controversial health policies.

The insights from this social media sentiment analysis provide valuable guidance for evidence-based cannabis policy formulation, where policymakers should carefully balance the documented benefits and risks of cannabis in policy development while considering the public concerns identified in this study. Furthermore, these findings suggest the need for targeted public health interventions, including comprehensive prevention programs designed to increase awareness of cannabis-associated risks, particularly in response to the negative sentiment trends observed post-policy implementation. Social media monitoring should be integrated into ongoing policy evaluation frameworks to ensure responsive and adaptive policy approaches that are informed by both academic research and public discourse patterns.

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