



Intelligence Report

A Tik-Tok-ing Timebomb: How TikTok's Global Platform Anomalies Align with the Chinese Communist Party's Geostrategic Objectives

BLUF

- The Network Contagion Research Institute analyzed hashtag ratios between Instagram and TikTok across topics sensitive to the Chinese Government.
- While ratios for non-sensitive topics (e.g., general political and pop-culture) generally followed user ratios (~2:1), ratios for topics sensitive to the Chinese Government were much higher (>10:1).
- We found these anomalies consistently between hashtag ratios on China sensitive topics for both national/regional and international issues.
- Though more research is needed, NCRI assesses, given this data, a strong possibility that TikTok systematically promotes or demotes content on the basis of whether it is aligned with or opposed to the interests of the Chinese Government.

About NCRI

The [Network Contagion Research Institute](https://networkcontagion.us/)¹, in partnership with Rutgers University Miller Center, leads data-driven research investigating social cyber threats. Its work on [antisemitism](#)², [anti-black hate](#)³, [anti-Asian hate](#)⁴, [Islamophobia](#)⁵, and extremism has appeared in the

¹networkcontagion.us/

²www.forbes.com/sites/petersuciu/2023/07/14/antisemitism-remains-all-too-rampant-on-social-media/

³www.cnn.com/2022/11/03/heres-how-elon-musk-can-prevent-racist-raids-on-twitter.html

⁴www.nytimes.com/2021/03/19/technology/how-anti-asian-activity-online-set-the-stage-for-real-world-violence.html

⁵apnews.com/article/trump-spain-vox-twitter-islam-immigration-0d11c0ff062fb82a047cac501b21ea95c

[Washington Post](#)⁶, [60 minutes](#)⁷, [CNN](#)⁸, [CNBC](#)⁹, the [New York Times](#)¹⁰. Representatives of NCRI have testified to Congress and other legislative and legal bodies on these issues. NCRI has partnered with the United Nations, the British Government, Walmart, and Reddit, amongst others.

TikTok's Emergence - Key Challenges and Concerns of Platform Manipulation

In 2019, TikTok's downloads [exceeded](#)¹¹ those of Facebook, Instagram, and Snapchat, establishing it as a significant player in the digital arena. As of 2023, TikTok [boasts](#)¹² approximately 1.5 billion users compared to Instagram's [approximately](#)¹³ 2 billion users.

As TikTok's reach surged, research emerged which has compelled lawmakers and non-governmental groups to confront the company on issues including [child-self harm](#)¹⁴, [mental health](#)¹⁵, and [extremism](#)¹⁶.

TikTok is owned by Chinese company ByteDance, and that relationship has catalyzed [discussions](#)¹⁷ at the highest level of the US Government regarding the possible national security threat TikTok poses.

Numerous instances of TikTok seemingly working in the Chinese Government's interests have been uncovered, including:

- In 2019, the [Guardian](#)¹⁸ reported that TikTok instructed its moderators to censor videos that mention Tiananmen Square and other topics sensitive to the Chinese Government.
- In 2019, TikTok [blocked](#)¹⁹ an American teenager for highlighting the repression of China's Uyghur minority (the account was later [reinstated](#)²⁰).

⁶<https://www.washingtonpost.com/technology/2022/12/03/twitter-antisemitism-violence-jan-6/>

⁷<https://twitter.com/60Minutes/status/1363651814609088512>

⁸<https://www.cnn.com/2020/09/16/us/far-left-social-media-violent-messages-trnd/index.html>

⁹<https://www.cnn.com/2022/11/03/heres-how-elon-musk-can-prevent-racist-raids-on-twitter.html>

¹⁰<https://www.nytimes.com/2021/03/19/technology/how-anti-asian-activity-online-set-the-stage-for-real-world-violence.html>

¹¹<https://www.digitalinformationworld.com/2019/10/tiktok-surpassed-facebook-instagram-snapchat-twitter-in-downloads.html>

¹²<https://www.businessofapps.com/data/tik-tok-statistics/#:~:text=TikTok%20reached%201.5%20billion%20users,increased%20on%20the%20previous%20year>

¹³<https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>

¹⁴<https://counterhate.com/research/deadly-by-design/>

¹⁵<https://www.childrenssociety.org.uk/what-we-do/blogs/how-tiktok-affects-childrens-mental-health>

¹⁶https://www.isdglobal.org/wp-content/uploads/2021/08/HateScape_v5.pdf

¹⁷<https://www.nytimes.com/2023/03/23/technology/tiktok-hearing-congress-china.html>

¹⁸<https://www.theguardian.com/technology/2019/sep/25/revealed-how-TikTok-censors-videos-that-do-not-please-beijing>

¹⁹<https://www.theverge.com/2019/11/28/20986867/tiktok-unblock-us-teen-china-criticism-muslim-minority-terrorist-imagery-moderation-guidelines>

²⁰<https://www.cnn.com/2019/11/28/tiktok-lifts-ban-on-us-teen-who-criticized-china-treatment-of-muslims.html>

- In 2022, ex-employees of ByteDance's TopBuzz app [reported](#)²¹ that the company promoted pro-China content focusing on 'soft' news and topics, while actively suppressing any material critical of the Chinese Government.

In the United States, TikTok's influence has been enormously magnified as it has become a critical news source for its audience. An October 2023 Pew Research Center [study](#)²² shows that one-third of U.S. adults under 30-years-old regularly turn to TikTok for news. Accordingly, it is imperative that US policymakers thoroughly understand how news is disseminated and consumed on the platform.

As recently as March 2023, TikTok's CEO was questioned before Congress, and bipartisan efforts, with wide support, formed around an outright ban or a forced sale of TikTok to an American entity. Our study demonstrates that TikTok requires further scrutiny.

Research & Findings

On November 13, 2023, TikTok issued a [letter](#)²³ defending itself against accusations of anti-Israel and anti-Jewish bias. In that letter, TikTok prolifically compares relative hashtags between its platform and Instagram to buttress its argument. We have replicated TikTok's methodology to assess whether anomalies exist regarding the relative representation of issues on TikTok vs. Instagram.

To investigate, NCRI analyzed hashtag data related to six topics directly sensitive to the Chinese Government: 1) Uyghurs; 2) Tiananmen Square; 3) Tibet; 4) Hong Kong; 5) Taiwan; 6) South China Sea. Our presentation of data starts with Uyghurs and Tiananmen Square because those were two topics specifically called out at the March 2023 Congressional hearings, and TikTok's CEO explicitly denied that in either case were posts on those topics suppressed or in any way demoted on the platform.

We then expanded our research into topics relevant to the Chinese Government's geopolitical interests: 1) Ukraine-Russia War; 2) Kashmir Independence; 3) Israel-Hamas War²⁴.

The conclusions of our research are clear: Whether content is promoted or muted on TikTok appears to depend on whether it is aligned or opposed to the interests of the Chinese Government. As the summary data graph below illustrates, the percentages of TikTok posts out of Instagram posts are consistently range-bound for general political and pop-culture topics, but completely out-of-bounds for topics sensitive to the Chinese Government.

²¹<https://www.businessinsider.com/bytedance-former-employees-say-top-buzz-pushed-pro-china-messages-2022-7>

²²<https://www.pewresearch.org/short-reads/2023/11/15/more-americans-are-getting-news-on-tiktok-bucking-the-trend-seen-on-most-other-social-media-sites/>

²³<https://newsroom.tiktok.com/en-us/the-truth-about-tiktok-hashtags-and-content-during-the-israel-hamas-war>

²⁴Note: NCRI analyzed Pro-Palestine hashtags as well, which showed a slight skew ~1.3 Instagram:TikTok ratio (See Appendix A for more details - the data is not graphed below.)

For clarity, we used the percentage of TikTok to Instagram Posts for this figure. The rest of the report uses the inverse, Instagram to TikTok, as ratios.

Figure 1: TikTok Posts as a Percentage of Instagram Posts Across Research Topics

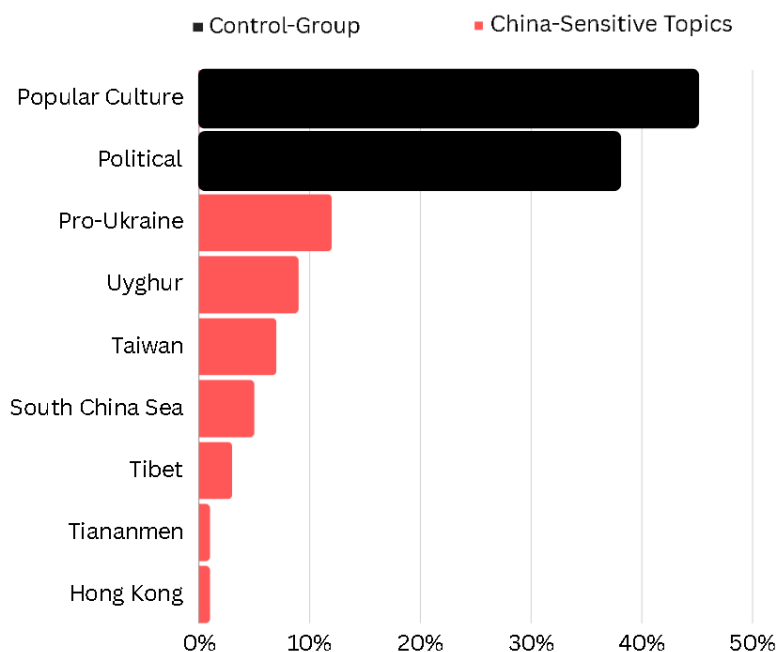


Figure 1: This overview of TikTok posts as a percentage of Instagram posts by hashtag topic reflects ratios of user bases between the platforms on issues of popular culture and politics (black), but shows wide discrepancies for TikTok on issues sensitive to China's national/regional and international interests (orange).

Methodology

As referenced, we replicated TikTok's own methodology used in its November 13, 2023 [letter](#)²⁵. NCRI analysts examined the volume of posts on TikTok by hashtag, using the platform's own [ads manager portal](#)²⁶. We performed the same analysis using Instagram's [explore](#)²⁷ feature.²⁸

Based on relative user base sizes, *ex ante* we'd expect an approximately 1.5x-2.0x ratio of popular hashtags on Instagram vs. TikTok.

We selected the specific hashtags for analysis based on an exhaustive review of hashtags on each platform to ensure that a slightly different hashtag capturing a similar idea was not used on one platform vs. the other. Our analysis incorporates 60 hashtags most prominent across both TikTok and Instagram for the relevant topics. A comprehensive list of hashtags we reviewed can be found in Appendix A.

The basic formula used across our research for any specific hashtag is:

$$\text{Ratio} = \frac{\# \text{ Posts on Instagram}}{\# \text{ Posts on Tiktok}}$$

Findings:

For pop-culture hashtags, the ratio between platforms is consistently range-bound:

Conversely, the ratios we found for topics sensitive to the Chinese Government were completely out-of-bounds.

The data below illustrates that across topics directly sensitive to the Chinese Government, relevant hashtags are *dramatically* underrepresented on TikTok vs. Instagram.

Given the unanimity of anomalies, we expanded our research to topics relevant to the Chinese Government's geopolitical interests: 1) Ukraine-Russia War; 2) Kashmir Secessionism; 3) Israel-Hamas War. There too, we found relevant hashtags are *dramatically* underrepresented on TikTok vs. Instagram.

To underscore that point, note that while pro-Ukraine and pro-Israel hashtags are underrepresented on TikTok vs. Instagram, pro-Kashmiri Independence hashtags are

²⁵<https://newsroom.tiktok.com/en-us/the-truth-about-tiktok-hashtags-and-content-during-the-israel-hamas-war>

²⁶<https://ads.tiktok.com/business/creativecenter/hashtag/biden/pc/en?rid=x5s2701u0s>

²⁷<https://www.instagram.com/explore/tags/biden>

²⁸Note: All data was collected from 12/8/2023 to 12/12/2023 - posts on the platform cannot be recovered for this period from TikTok or Instagram, but the substance of the analysis is replicable.

dramatically overrepresented, begging the question of whether such outlier activity could happen organically, and/or without the knowledge and implied consent of the platform?

Pop Culture Hashtag Ratios Align with User Size on Instagram and TikTok

NCRI began by analyzing differences between Instagram and TikTok hashtag use around popular culture icons and content. NCRI reasoned that the wide reach of platforms like Instagram and TikTok should ensure comparable use of popular culture hashtags. The data generally supported this reasoning and the ratio of platform posts pertaining to popular culture figures, movies and events aligned closely with the user ratios.

Figure 2: Instagram and TikTok Posts with Pop Culture Hashtags

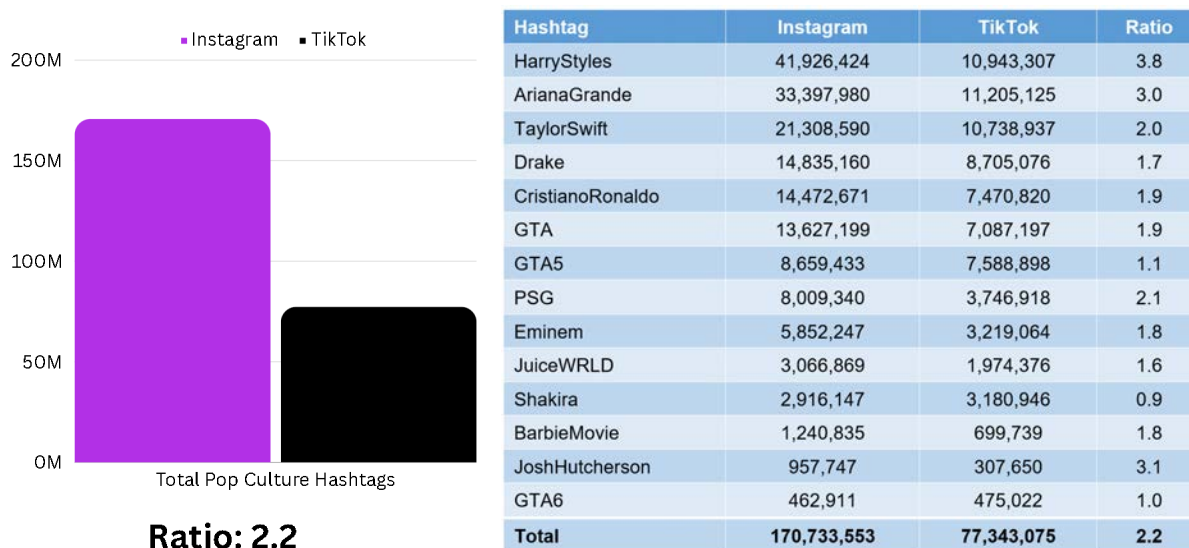


Fig 2. The number of posts with pop culture hashtags on TikTok is approximately half that of Instagram.

U.S. Politics

NCRI next analyzed whether or not political hashtags would evidence distinction between these platforms, as notable differences in political orientation between large social media platforms have been [observed](#)²⁹ by other researchers. While there may be fluctuations in the ratio of political hashtags, distribution and interaction across these platforms tend to reflect their user ratios, even in the context of controversial political discussions.

Figure 3: Instagram and TikTok Posts with Politics Hashtags

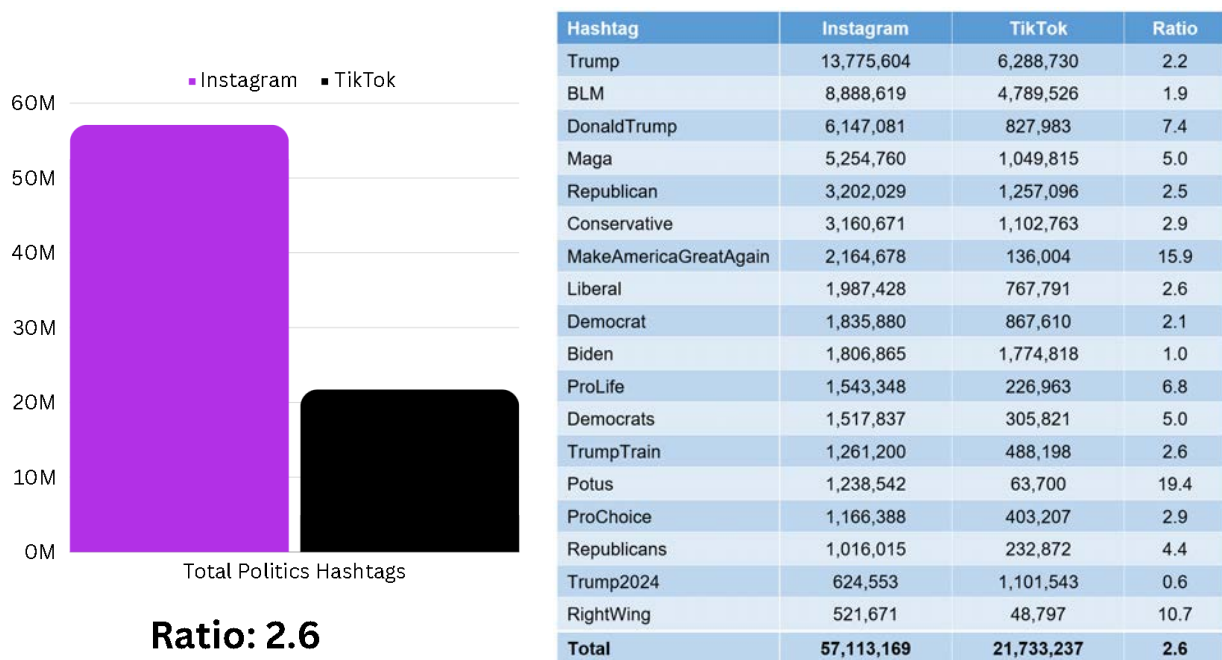


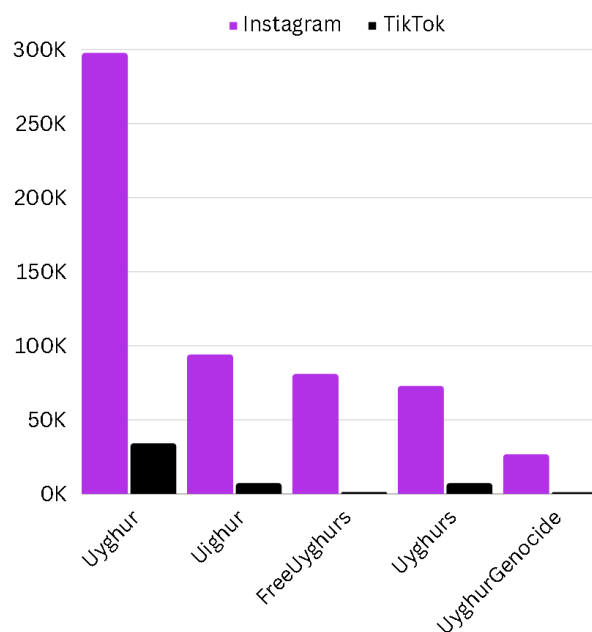
Fig 3. The number of posts with political hashtags on Instagram is more than twice that on TikTok. The hashtags Trump and BLM are the most prominent on both platforms.

²⁹<https://www.pewresearch.org/short-reads/2021/04/07/partisan-differences-in-social-media-use-show-up-for-some-platforms-but-not-facebook/>

Subjects Sensitive to China's National/Regional Interest

Next, NCRI analyzed whether or not hashtags pertaining to subjects which are more sensitive to China's national/regional interest would evidence differences in popularity or use between TikTok and Instagram. Across each of the domains we analyzed, hashtag popularity, in fact, showed wide discrepancies, with far fewer posts appearing on TikTok when the hashtags pertained to issues sensitive to China's national/regional interests.

Figure 4: Instagram and TikTok Posts with Uyghur-Related Hashtags

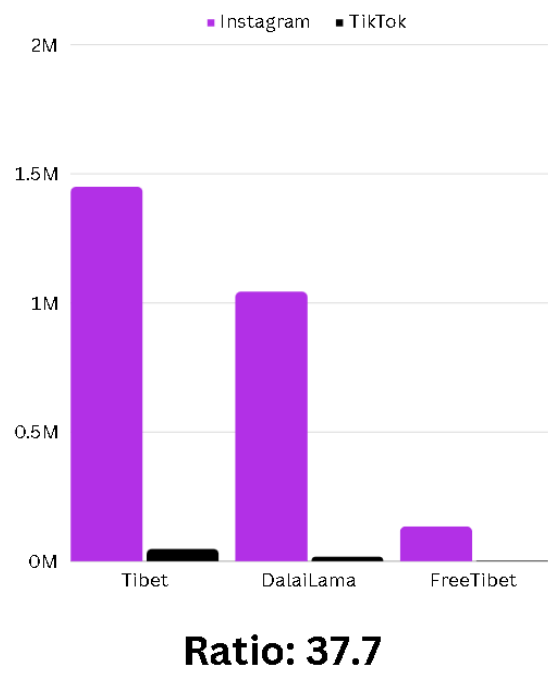


Ratio: 11.1

Hashtag	Instagram	TikTok	Ratio
Uyghur	297,729	34,186	8.7
Uighur	94,234	7,384	12.8
FreeUyghurs	81,040	1,385	58.5
Uyghurs	72,995	7,375	9.9
UyghurGenocide	26,825	1,296	20.7
Total	572,823	51,626	11.1

Fig 4. Total ratio of posts with Uyghur-related hashtags between the two platforms is 11.1. The hashtag with the highest ratio is freeuyghurs.

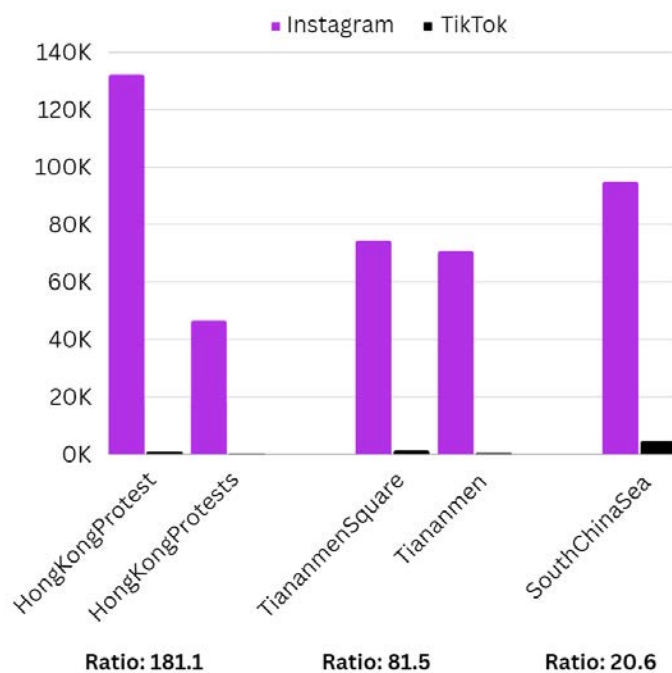
Figure 5: Instagram and TikTok Posts with Tibet-Related Hashtags



Hashtag	Instagram	TikTok	Ratio
Tibet	1,450,041	48,413	30.0
DalaiLama	1,043,867	18,575	56.2
FreeTibet	135,154	2,771	48.8
Total	2,629,062	69,759	37.7

Fig 5. Total ratio of the posts with the three most common Tibet-related hashtags between the two platforms is 37.7, showing a significant discrepancy between Tibet-related content on Instagram and TikTok.

Figure 6: Instagram and TikTok Posts with Hong Kong, Tiananmen Square and South China Sea Related Hashtags



Hong Kong			
Hashtag	Instagram	TikTok	Ratio
HongKongProtest	132,359	762	173.7
HongKongProtests	46,594	226	206.2
Total	178,953	988	181.1
Tiananmen			
Hashtag	Instagram	TikTok	Ratio
TiananmenSquare	74,424	1,316	56.6
Tiananmen	70,727	466	151.8
Total	145,151	1,782	81.5
South China Sea			
Hashtag	Instagram	TikTok	Ratio
SouthChinaSea	94,926	4,600	20.6
Total	94,926	4,600	20.6

Fig 6. Total ratios of posts with Hong Kong, Tiananmen Square and South China Sea related hashtags show a substantial discrepancy between these subjects on Instagram and TikTok.

Figure 7: Instagram and TikTok Posts with Taiwan-Related Hashtags

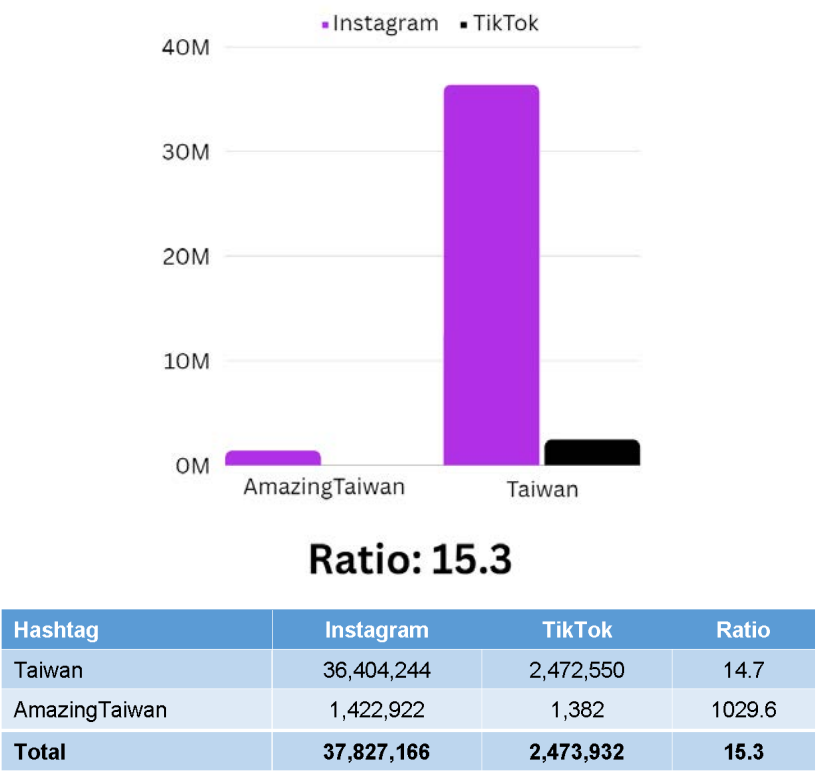
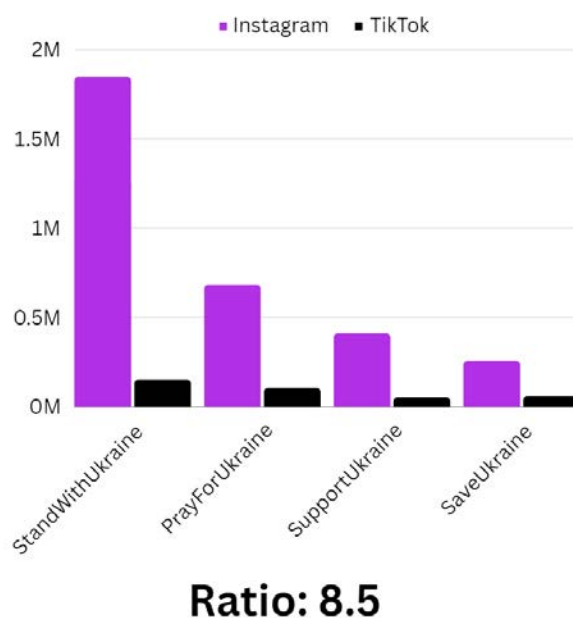


Fig 7. Total ratio of posts with Taiwan-related hashtags between the two platforms is 15.3, showing a significant discrepancy between Taiwan-related content on Instagram and TikTok.

Topics of Foreign Military Tensions in Sensitive to China's International Interests

Given that the hashtags in our sample which were sensitive to China's national/regional interest were anomalously underrepresented on the platform, we next sought to examine whether this pattern of underrepresentation might extend to the international arena as well. We chose 3 conflict arenas that comprise areas of strategic interest to China: [Ukraine](#), [Israel](#), and [Kashmir](#)³⁰.

Figure 8: Instagram and TikTok Posts with Ukraine-Related Hashtags

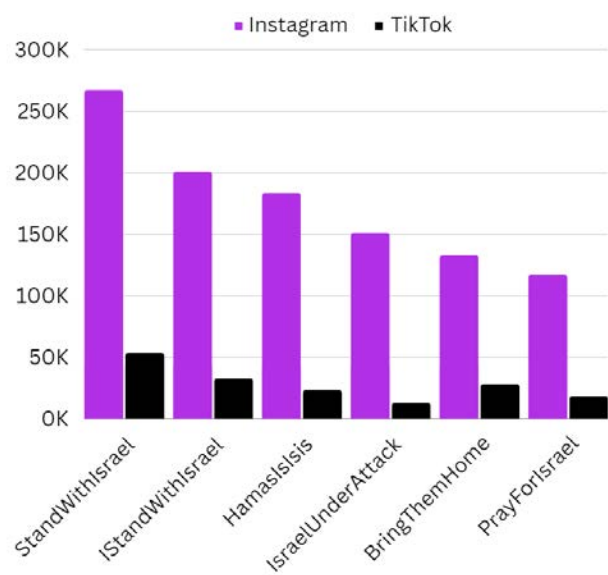


Hashtag	Instagram	TikTok	Ratio
StandWithUkraine	1,847,823	153,599	12.0
PrayForUkraine	684,124	106,482	6.4
SupportUkraine	411,997	53,996	7.6
SaveUkraine	257,954	61,063	4.2
Total	3,201,898	375,140	8.5

Fig 8. Total ratio of posts with Ukraine-related hashtags between the two platforms is 8.5. The hashtag standwithukraine has the greatest numerical difference between the two platforms.

³⁰<https://www.state.gov/disarming-disinformation/prc-efforts-to-amplify-the-kremlins-voice-on-ukraine/>

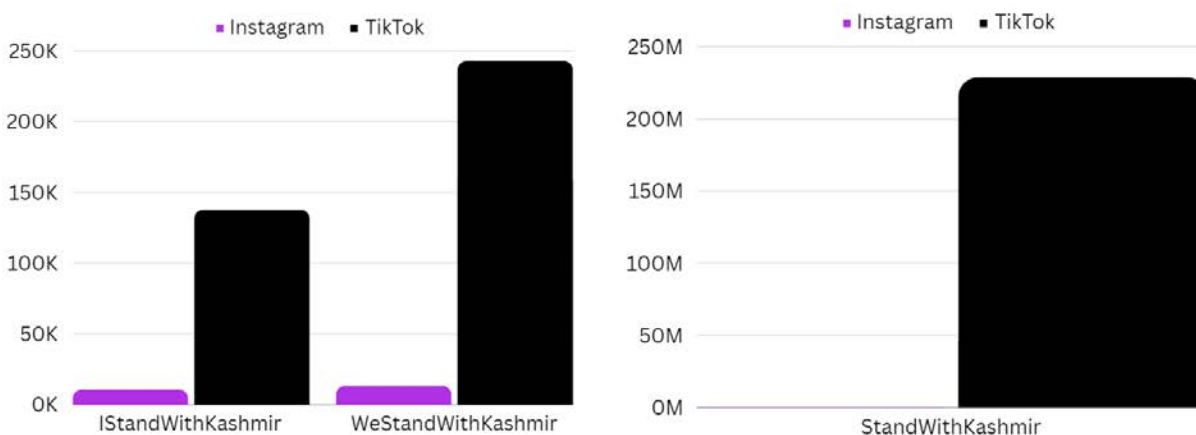
Figure 9: Instagram and TikTok Posts with Israel-Related Hashtags



Ratio: 6.2

Hashtag	Instagram	TikTok	Ratio
StandWithIsrael	267,235	53,488	5.0
IStandWithIsrael	201,094	32,780	6.1
HamasIsIstis	183,552	23,591	7.8
IsraelUnderAttack	151,360	12,994	11.6
BringThemHome	133,036	28,268	4.7
PrayForIsrael	117,222	18,489	6.3
Total	1,053,499	169,610	6.2

Fig. 9. Total ratio of posts with Pro-Israel-related hashtags between the two platforms is 6.2.

Figure 10: Instagram and TikTok Posts with Kashmir-Related Hashtags

Ratio: >.001

Hashtag	Instagram	TikTok	Ratio
StandWithKashmir	346,395	228,851,003	0.0
WeStandWithKashmir	13,304	243,032	0.1
IStandWithKashmir	10,708	137,831	0.1
Total	370,407	229,231,866	>.001

Fig. 10. The number of posts with Kashmir-related hashtags is considerably higher on TikTok with the number on TikTok being over 600 times larger than the number on Instagram.

Overall, in our sample of hashtags pertaining to foreign military tensions which are sensitive to China's international interest, we noted that pro-Ukraine and pro-Israel hashtags were underrepresented, while pro-Kashmiri Independence hashtags were overrepresented. The significance of the overrepresentation of #standwithkashmir specifically, with over 225 million posts, should not be understated. To contextualize the magnitude of this activity, consider that the total sum of #standwithkashmir posts outweighs the sum of all other political hashtags in our sample put together (23,176,698) by an order of magnitude. The BLM hashtag, one of the most widely used hashtags in politics, reached its peak on Twitter at merely [~50 million posts](https://www.pewresearch.org/internet/2023/06/29/ten-years-of-blacklivesmatter-on-twitter/)³¹ by comparison. It is challenging to imagine that activity of such magnitude could occur on a platform organically, and without the knowledge and consent of the platform itself.

³¹<https://www.pewresearch.org/internet/2023/06/29/ten-years-of-blacklivesmatter-on-twitter/>

Conclusion: Substantial Differences in Hashtag Ratios Raise Concerns about TikTok's Impartiality

Given the research above, we assess a strong possibility that content on TikTok is either amplified or suppressed based on its alignment with the interests of the Chinese Government. Future research should aim towards a more comprehensive analysis to determine the potential influence of TikTok on popular public narratives. This research should determine if and how TikTok might be utilized for furthering national/regional or international objectives of the Chinese Government.

Should such research determine that TikTok users exhibit attitudes and assessments of world events aligned with the information distortions that we have discovered, democracies will need to consider appropriate counter-measures to better protect information integrity and mitigate potential real-world impacts.

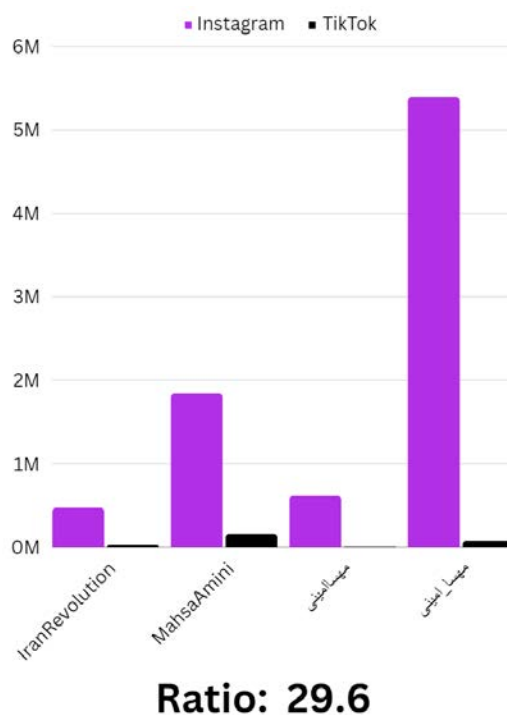
Addendum - 1/5/2023

[Instagram](#) and [TikTok](#) both have significant user engagement within the 18-24 age group, indicative of their popularity among young adults. While each platform has distinct gender distributions, Instagram has a more even spread across genders compared to TikTok. The similar user bases across both Instagram and TikTok underscores their potential for parallel levels of engagement among youth. It is important to note that TikTok's absence in India, a significant demographic, presents a notable limitation in comparing its global reach to that of Instagram.

Although demographic and the relative age of each platform differ slightly between Instagram and TikTok, the pronounced disparities observed across certain issues – Israel and Ukraine, [where](#) China benefits from Western entanglements, and notably Kashmir, which has experienced unprecedented inorganic political hashtag amplification—cannot be solely attributed to user demographics. Nor can it be attributed to Instagram's status as an older platform and differences in age between the platforms - These campaigns and events are happening in the present. Instead, these discrepancies align consistently with the strategic interests of the Chinese government.

Our subsequent research showed this to be true with Iran as well, where China's substantial \$400 billion [oil investment](#) would create rational ground for China's interest in the regime's stability. As evident in addendum figure 1, hashtags supporting protests in Iran for Mahsa Amini, a young activist whose murder by Iranian officials sparked historic protests across Iran, were 30 times more prevalent on Instagram than on TikTok. The Mahsa Amini campaign was one of the most popular political hashtag campaigns in the history of protest movements - with nearly 80 million posts on Twitter alone. Its virtual-absence on TikTok by comparison, is therefore highly notable.

Addendum Figure 1: Instagram and TikTok Posts with MahsaAmini-Related Hashtags



Hashtag	Instagram	TikTok	Ratio
IranRevolution	473,955	32,000	14.8
MahsaAmini	1,847,121	160,000	11.5
مهسا امینی (Mahsa Amini)	617,099	9,000	68.6
مهسا امینی (Mahsa_Amini)	5,397,687	81,000	66.6
Total	8,335,862	282,000	29.6

Addendum Fig. 1. The number of posts with MahsaAmini-related hashtags is considerably higher on Instagram than TikTok.

The findings suggest a potential alignment between Chinese social media platforms like TikTok and illiberal regimes, such as the relationship between China and Iran. This association may lead to a downplaying of sensitive topics, such as the case of Mahsa Amini, reflecting China's broader strategy to maintain favorable narratives, possibly in coordination with other authoritarian governments.

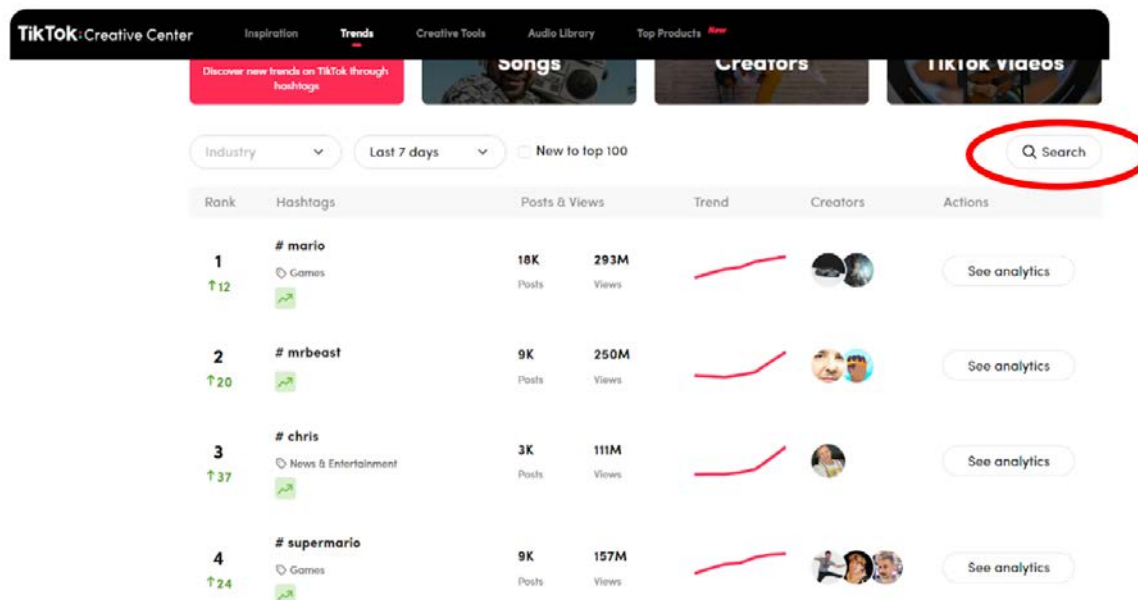
Post-Report

Shortly after the release of this report TikTok's ad manager portal underwent seismic changes that appear to deliberately obscure public access and transparency.

TikTok removed the public hashtag search feature for analyzing trends on its platform.

TikTok's creative center, during the entire course of NCRI's research, had a search field (circled in red below, Addendum Fig. 2) that permitted trend analysis of hashtags

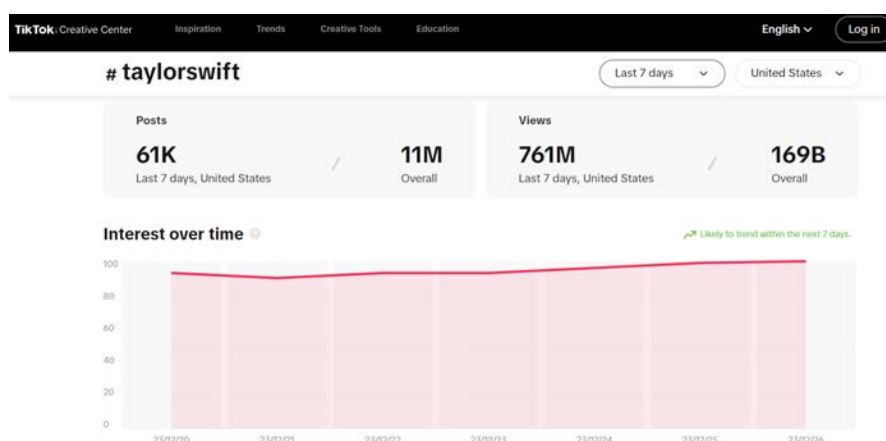
Addendum Figure 2: TikTok's Previous Creative Center Interface with Search Capability Intact:



Addendum Fig. 2. Before the release of NCRI's report, TikTok's creative center allowed specific searches of hashtags so users could transparently obtain quantitative data on hashtag numbers, trends, and views on any hashtag on the platform.

Searches would bring up trend information (Addendum Fig. 4) which provide recent use, overall use, views and daily trends:

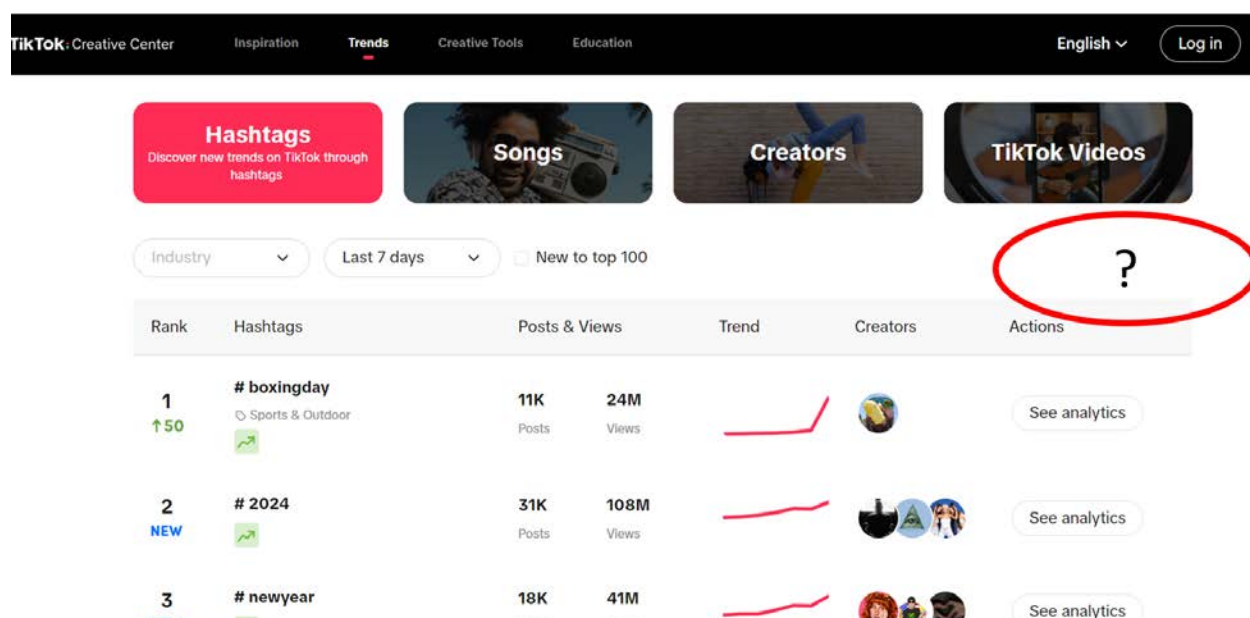
Addendum Figure 3: Data and Trends Previously Yielded from Search Bar:



Addendum Fig. 3. Example of the format of TikTok's creative center's hashtag reports (for #taylorswift) which were returned previously from search.

Search capacity for Hashtags has itself now been removed from the user interface entirely (Addendum Fig. 4), which NCRI discovered to have occurred on Christmas day, days after this report's initial release. While data and trends on hashtags are still accessible by clicking on top ranking hashtags, the hashtags are unable to be accessed in this way through search anymore. This lack of transparency is of deep concern to researchers.

Addendum Figure 4: TikTok's New Creative Center Interface with Search Capability Removed:



Addendum Fig. 4. After the release of NCRI's report, TikTok's creative center removed the search bar for specific searches of hashtags. Users can no longer transparently obtain quantitative data on hashtag numbers, trends, and views for the vast majority of hashtags on the platform.

TikTok made trend data on all China-sensitive hashtags inaccessible days after NCRI's report was released.

NCRI discovered that trend data on political topics and virtually all China-sensitive hashtags listed in the report had been made inaccessible. NCRI collected all URL's for searches performed in the Creative Center on TikTok hashtags in the report (for purposes of replication) and entered these URL's into a browser to see if information could be obtained on them (Addendum Fig. 5).

Addendum Figure 5: The Hashtags from NCRI's Report that were Removed - Retrieved on Jan. 1

Pop Culture	
Hashtag	TikTok
HarryStyles	NA
ArianaGrande	11M
TaylorSwift	11M
Drake	9M
CristianoRonaldo	8M
GTA	7M
GTA5	8M
PSG	4M
Eminem	3M
JuiceWRLD	2M
Shakira	NA
BarbieMovie	NA
JoshHutcherson	336K
GTA6	542K

Uyghur	
Hashtag	TikTok
Uyghur	NA
Uighur	NA
FreeUyghurs	NA
Uyghurs	NA
UyghurGenocide	NA

Tibet	
Hashtag	TikTok
Tibet	NA
DalaiLama	NA
FreeTibet	NA

Politics	
Hashtag	TikTok
Trump	NA
BLM	NA
DonaldTrump	NA
Maga	NA
Republican	NA
Conservative	NA
MakeAmericaGreatAgain	NA
Liberal	773K
Democrat	NA
Biden	NA
ProLife	NA
Democrats	NA
TrumpTrain	NA
Potus	NA
ProChoice	NA
Republicans	NA
Trump2024	NA
RightWing	NA

Hong Kong	
Hashtag	TikTok
HongKongProtest	NA
HongKongProtests	NA
Tiananmen	
Hashtag	TikTok
TiananmenSquare	NA
Tiananmen	NA
South China Sea	
Hashtag	TikTok
SouthChinaSea	NA

Taiwan	
Hashtag	TikTok
Taiwan	NA
AmazingTaiwan	NA

Ukraine	
Hashtag	TikTok
StandWithUkraine	NA
PrayForUkraine	NA
SupportUkraine	NA
SaveUkraine	NA
Pro-Israel	
Hashtag	TikTok
StandWithIsrael	NA
IStandWithIsrael	NA
HamasIsIsis	NA
IsraelUnderAttack	NA
BringThemHome	31K
PrayForIsrael	NA
Kashmir	
Hashtag	TikTok
StandWithKashmir	230M
WeStandWithKashmir	NA
IStandWithKashmir	NA
Pro-Palestine	
Hashtag	TikTok
FreePalestine	NA
SavePalestine	NA
GazaUnderAttack	NA
Palestinians	NA
FreePalestinians	NA
SaveGaza	NA
FreePalestinians ❤️	NA
Mahsa Amini	
Hashtag	TikTok
IranRevolution	NA
MahsaAmini	NA
مهسا امینی (Mahsa Amini)	NA
مهسا امینی (Mahsa_Amini)	NA

Addendum Fig. 5. These are the hashtags searched for on January 1. Those that were removed are marked in red.

Appendix

Table 1: Categories and Hashtags

Culturally Relevant	
Pop Culture	taylorswift, harrystyles, arianagrande, drake, cristianoronaldo, psg, shakira, barbiemovie, gta6, gta5, gta, applemusic, eminem, juicewrld, thehungergames, joshhutcherson, spotify
U.S. Politics	biden, democrat, liberal, prochoice, roewwade, blm, trump, trump2024, republican, conservative, prolife, impeachbiden, presidenttrump, donaldtrump, rondesantis, leftist, rightwing, leftwing, potus, maga, makeamericagreatagain, trumptrain, votetrump, votebiden, democrats, republicans, liberals, conservatives, 2ndamendment, uselection, uselections
China Specific	
Uyghur	uyghur, uyghurs, uighur, freeuyghurs, uyghurgenocide, uyghurlivesmatter
Tibet	tibet, dalailama, freetibet, freetibetnow,
Tiananmen	tiananmen, tiananmensquare, tiananmensquaremassacre, tianamensquare, tiananmenmassacre
Hong Kong	hongkongprotest, hongkongprotests, savehongkong
Kashmir	standwithkashmir, istandwithkashmir, westandwithkashmir
Taiwan	amazingtaiwan, taiwan, taiwan🇹🇼, taiwanlife
South China Sea	southchinasea
Russia/Ukraine	
Pro-Ukraine	standwithukraine, saveukraine, prayforukraine, peaceforukraine, ukrainewar, ukrainevsrussia, warinukraine, stopwarinukraine, supportukraine, mariupol
Israel/Palestine	
Pro-Palestine	🇵🇸, ceasefirenow, gazaunderattack, westandwithpalestine, westandwithgaza, supportpalestine, supportgaza, freepalestine, palestine🇵🇸, palastine🇵🇸, freefreepalestine, freepalestine🇵🇸, freepalestine🇵🇸❤️, fromtherivertothesea,

	fromtherivertotheseapalestinewillbefree, fromtherivertotheseapalastinewillbefree, gaza under attack, gaza_is_under_bombardment, gaza_under_attack, gazagenocide, gaza under fire, gazamassacre, gazaisunderattack, gaza under attackk, gaza under attacks, palestinianlivesmatter, falastini, freegaza, freegaza 🇵🇸, savegaza, propalestine, palestinesolidarity, boycottisrael, bycottisrael, palestinelifesmatter, free_palestine, prayforpalestine, savepalestine, prayforgaza, freepalestinefromisrael, israeliwarcrimes, gazagenocide, endtheapartheid, endtheoccupation, israelisis, standwithpalestine, istandwithpalestine, palestine will be free, israelterrorist
Pro-Israel	hamasterrorists, israelunderattack, hamasisis, hamasisis, bringthemhome, bringthemhomenow, freeisrael, standwithisrael, istandwithisrael, supportisrael, isupportisrael, prayforisrael, saveisrael, godblessisrael

Table 2: Instagram and TikTok Posts with Pro-Palestine Hashtags

Hashtag	Instagram	TikTok	Ratio
FreePalestine	7,108,636	4,038,232	1.8
SavePalestine	2,253,367	1,340,742	1.7
GazaUnderAttack	2,119,870	298,639	7.1
PalestinePS	1,395,533	1,238,751	1.1
FreePalestinePS	1,012,440	606,864	1.7
SaveGaza	872,489	277,065	3.1
FreePalestinePS ❤️	193,204	3,432,906	0.1
Total	14,955,539	11,233,199	1.3

The Network Contagion Research Institute (NCRI) aims to identify and forecast cyber-social threats targeting individuals, organizations, and vulnerable communities.

To learn more about this research, please contact Joel Finkelstein (joel@ncri.io) or Alex Goldenberg (alex@ncri.io).