

Title on added title page: Impact of social media posts on information consumers during an epidemic / Tom Potash

Abstract

Research Objective

The primary objective of this research is to examine patterns of information consumption regarding pandemics and the influence of such information on user behaviors in the virtual space. The study analyzed different sub-periods within an extended time frame of life under a pandemic, characterizing the types of news reports and the types of reactions they generated on social networks.

To assess the impact of various news reports on COVID-19 during different phases of the pandemic, we measured and analyzed activity on Israel's primary social media platform (Facebook) concerning these reports. This analysis considered different attributes, such as textual characteristics and sharing patterns of the articles.

In this research, we tracked people's reactions to leading Facebook pages in Israel, analyzed every COVID-19-related news item, classified its type, and examined how it influenced online users.

The findings of this research may assist decision-makers and opinion leaders in handling future pandemics by providing insights into the type of information that impacts public opinion during different phases of a pandemic. This knowledge can

help tailor information to consumers in a way that is most effective for each stage of the crisis.

Key Research Questions

1. In what way did the pandemic dominate discussions on social media, and was there variation across different phases of the pandemic?
2. Did people's attitudes toward COVID-19 information differ from their attitudes toward other types of information?
3. Did information providers and content creators address the pandemic in a uniform manner, or was the topic reported differently according to the content provider?

Methodology

We compiled a diverse set of news reports and created a comprehensive database from Israel's leading content providers. We then analyzed the characteristics of these reports and their sharing patterns on Facebook.

We conducted statistical analysis and data visualization to examine the relationships between independent variables—such as article characteristics, information providers, and the pandemic period—and dependent variables, such as engagement and sharing behavior on social media.

Key Findings

The main findings related to the first key research question, which concerns the way in which the pandemic dominated social media discourse and the variation across different phases, indicate that discussions about COVID-19 were central during the examined period, January 2020 - March 2021. Throughout the sample period,

552,733 posts were published, with approximately one-third (179,973) focusing on COVID-19. At its peak (March 2020), COVID-19-related posts accounted for 50% of all posts.

Posts discussing COVID-19 received higher engagement than those that did not, particularly in terms of shares, as well as reactions such as "Sad," "Care," "Angry," and "Love." Statistical analysis revealed a significant difference between COVID-19-related posts and non-COVID-19 posts. There were 7% more interactions per post in favor of the COVID-19 group—1,073 compared to 1,000. On average, there were 30% more shares per post in favor of the COVID-19 group—80 compared to 63, approximately 50% more "Sad" reactions per post—48 compared to 27, approximately 50% more "Care" reactions per post—13 compared to 6, approximately 30% more "Angry" reactions per post—25 compared to 19, and approximately 30% more "Love" reactions per post—58 compared to 45. It is evident that the largest changes were in "Sad" and "Care" reactions (compared to "Love" and "Angry"), indicating that the pandemic fostered social solidarity. Although anger increased by 30%, it may be attributed to frustration. The dominant emotion appears not to be the search for blame but rather concern and sadness regarding the situation.

The primary findings related to the second research question, which examines people's attitudes toward COVID-19 information compared to other types of information, indicate that both negative and positive posts about COVID-19 received more interactions than posts that did not discuss COVID-19. The total number of interactions for a negative post discussing COVID-19 compared to a non-COVID-19-related post was 1,282 compared to 1,072, and for a positive post

discussing COVID-19 compared to a non-COVID-19-related post, it was 1,476 compared to 1,372.

The gap is particularly significant in posts with negative sentiment (approximately 20%) and is reflected both in comments and shares. The average number of shares for a negative COVID-19-related post compared to a non-COVID-19-related post was 107 compared to 79 (a 35% increase), and the average number of comments for a negative COVID-19-related post compared to a non-COVID-19-related post was 205 compared to 182 (a 13% increase).

The research also found that the level of engagement fluctuated throughout the pandemic, with three major peaks that aligned with current events. In March and April 2020, there were approximately 1,150 interactions per post, a period that marked the outbreak of the pandemic in Israel. In October 2020, there were approximately 1,275 interactions per post, a period characterized by the second lockdown and a political crisis. In February 2021, there were approximately 1,250 interactions per post, a period in which decisions were made regarding lifting pandemic restrictions and implementing the Green Pass policy.

The primary findings related to the third research question, concerning how information providers and content creators addressed the pandemic, are evident in several aspects. A key finding was the variation among different content providers regarding the proportion of COVID-19-related posts within their overall content. Health pages (85%), government pages (53%), and nonprofit organization pages (45%) had extensive coverage of COVID-19. News pages (37%) and political pages (36%) had an average level of coverage. Religious pages (26%), entertainment pages (23%), music pages (21%), and sports pages (15%) had relatively low coverage

compared to the average. It is evident that COVID-19 did not dominate all content providers equally. Naturally, the most significant impact was observed among sources dealing with health, government, news, and politics, as these sectors played a crucial role in pandemic management.

Additionally, content providers differed in the sentiment of the posts they chose to publish. Among news pages, 31% of COVID-19-related posts were categorized as neutral compared to 20% of non-COVID-19-related posts. Among government pages, 29% of COVID-19-related posts were categorized as negative compared to 22% of non-COVID-19-related posts. Among nonprofit organization pages, 11% of COVID-19-related posts were categorized as positive compared to 22% of non-COVID-19-related posts. Among health pages, 24% of COVID-19-related posts were categorized as negative compared to 37% of non-COVID-19-related posts.

We found that 64% of COVID-19-related posts addressed politics (28%), economics (20%), and education (16%). Interest in politics significantly increased between the second and third quarters and then gradually declined. Interest in economics rose until the third quarter and then slightly declined, while interest in education steadily increased throughout the period. These findings suggest a strong impact on content related to health, politics, economics, and education, as the pandemic affected fundamental aspects of daily life.

Conclusions

Analysis of the results indicates that the COVID-19 pandemic dominated social media discourse and was the central topic in Israeli public discourse during the examined period.

Based on the data analysis, it emerged that news related to the COVID-19 pandemic generated more interactions and reactions. There were more comments on COVID-19 news, and they were more emotionally charged. The level of discussion on the topic intensified during periods of significant pandemic-related events and declined during times of relative normalcy.

Furthermore, interest in the pandemic was focused on aspects affecting daily life, particularly in health, politics, economics, education, and social community needs (such as volunteering and donations), aligning with real-world events.

Another key finding from the research is that different content providers published news about COVID-19 in varying quantities and with different sentiments, depending on the provider's area of expertise and the reactions they sought to elicit from users.

Therefore, it appears that with proper management, leaders and decision-makers can influence public sentiment and more effectively navigate crises using social media, especially in times of extreme events, even more than during routine periods.

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