# Driving Factors of Western Media Through Text Analysis

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**Introduction**

Understanding the determinants that shape news media attention is a complex and extensively studied topic within academia, carrying significant implications. This study aims to delve into two distinct questions regarding the driving factors behind Western news coverage by analyzing articles from the prominent media outlet, "The Guardian".

Firstly, the study explores the impact of new conflicts on the amount of media coverage allocated to ongoing conflicts. This investigation delves into the phenomenon known as overcrowding in news media, as well as the issue of viewer fatigue. Our research reveals a notable decline in news coverage concerning the Russia-Ukraine conflict following the eruption of the Gaza-Israel conflict.

Secondly, the study examines the notion that media outlets tend to prioritize negative news stories, with the hypothesis that issues with a more negative tone attract greater coverage. Our analysis compares the volume of articles about the Ukraine conflict and the Gaza conflict in the first month, along with evaluating the net sentiment expressed in each body of literature. Our findings indicate a significantly higher volume of coverage for the Ukraine conflict coupled with a more negative sentiment score, reinforcing the hypothesis that the media gravitates towards negative stories.

While our findings do not imply causation due to potential unaccounted covariates, they provide substantive evidence aligning with existing literature and theories. Future researchers can build upon these findings to further explore the issue. This article proceeds by briefly reviewing the existing literature on the subject, followed by a summary of the creation of the corpus. For each hypothesis, methods, results, and implications will be discussed followed by the study's limitations and implications for the existing body of knowledge. Finally, the paper concludes with a succinct discussion on the value of the findings.

**Literature Review, Theory, and Hypothesis**

A substantial body of literature addresses the question of what influences Western news media coverage. While this section does not aim to provide an exhaustive overview, it highlights specific studies relevant to this article. One of the most cited works in this field is a book authored by Chang et al. in 1987. Chapter 14 focuses on the determinants of

United States media coverage abroad, identifying geographic distance and relevance to the West as key factors. Similarly, a 2011 article by Hawkins and Virgil underscores the significance of relevance to the West and the number of civilian casualties as driving factors, with both studies indicating that negative news tends to receive more extensive coverage.

Within this established framework, this study aims to test two distinct hypotheses related to the determination of news coverage. Firstly, does the volume of articles addressing the invasion of Ukraine decline following the onset of the Israel-Gaza conflict? Two relevant theories shed light on this question. The theory known as the overcrowding effect claims that there is a finite amount of articles to be written, leading to a decrease in the share of articles as new issues arise. While some literature supports this theory, such as a study noting a decline in coverage of African conflicts during the Kosovo conflict (Hawkins, 2004), it is not extensively discussed in the broader literature on news coverage determinants and is not mentioned in the Chang (1987) or Hawkins (2011) studies. A second theory pertains to audience fatigue, suggesting that prolonged coverage of a topic leads to viewer avoidance when selecting news stories. A principal case of this theory is the civil war in Syria, which initially received massive coverage and has now fallen out of the spotlight.

The second hypothesis examines the correlation between the number of articles published in the first month of each conflict and their respective sentiments. Existing theories claim that media firms have a preference for negative news, particularly if they are relevant to or have close geographical proximity to the West. I hypothesized that conflicts with lower sentiment scores will receive greater coverage, reflecting the media's inclination towards negative stories. It is predicted that the conflict in Ukraine, with its potentially grave implications for Europe, will be covered more extensively and have lower sentiment scores, although this could be mitigated by the significantly higher civilian casualties in the Isreal Gaza conflict (Ardi Associates Ltd. 2023).

## Description of the Corpus

Two corpora were used for this research project. One corpus was compiled containing articles relevant to the invasion of Ukraine, which was used for testing hypotheses one and two. A second corpus was gathered, comprised of articles related to the conflict in Israel and Gaza, which was used to test the second hypothesis. All articles were sourced from "The Guardian," which has a free API allowing filtering based on date and topic. Specifically, articles from the "world" and "politics" sections were chosen to ensure relevance to the conflicts under consideration.

It is important to acknowledge certain inherent limitations of these corpora. Firstly, all articles are published from one media source, confined to the United Kingdome, thus failing to capture the entirety of Western perspectives. Additionally, "The Guardian" is considered a liberal-leaning media outlet, further separating it from the general population of media firms. Therefore, the results of this study do not apply to the entire population of Western news outlets but rather serve as a foundational reference point for further research. Nonetheless, given its large audience within the United Kingdome and abroad, it is a significant media outlet and a useful source for analysis.

Both corpora were constructed by selecting relevant dates and querying the respective topics. For the Ukraine corpus, the query was simply "Ukraine," while for the Gaza-Israel corpus, articles were gathered using the queries "Israel" and "Gaza" with duplicate articles being removed. Both corpora underwent the same preprocessing steps to maintain consistency. Initially, relevant timeframes were subset, followed by tokenization, conversion to lowercase letters, and removal of insignificant stopwords sourced from an English stopword dictionary (Lewis et al., 2004). Additional stopwords were incorporated into the list to eliminate irrelevant terms such as "said". Following removal of stopwords, collocations were detected to preserve meaningful word combinations. To maintain consistency across both corpora, only collocations with a z-score of 35 or higher were retained. Finally, the document-feature matrix was constructed and was not trimmed to ensure that no words were left out of sentiment analysis.

## Hypothesis One Methods Results and Implications

A count was made of the number of articles published each day relating to the war in Ukraine for the first five months before the conflict between Gaza and Israel broke out on October 7th, 2023, and five months after that date. For further consideration, a two-month window before and after the initial violence in Israel occurred was observed.

### Methods and Results

A two-sided t-test for the difference in means was conducted to determine if there was a statistically significant decline in the number of articles per day between the two time periods. For both the five-month and two-month window before and after the conflict in Gaza, there was a statistically significant drop in the amount of articles published about the Ukraine War per day. The average number of articles per day declined by 1.3 with a highly statistically significant p-value of 4.167e-06. Observations of the two months before and after the Gaza crisis showed similar results with an average decline of about 0.694949 articles per day with a p-value of 0.05.

*Hypothesis One: Implications*
While the statistically significant difference between the number of articles related to the Ukraine War in the five months preceding and the five months following the conflict between Hamas and Israel erupted could be attributed to a natural decline in relation to issue fatigue, this is less likely to be the case with the two-month window of observations. However, further research must be done to confirm that the cause of the decline in news coverage was a direct result of the conflict in Gaza rather than being attributed to other factors. Important aspects for consideration would be the rate of decline in coverage before the conflict in Gaza as well as other variables such as the amount of newsworthy developments in the Ukraine War during that time.


## Hypothesis Two Methods Results and Implications

The second hypothesis predicts that the conflict in Ukraine would have both more articles published in the first month and a more negative sentiment value than the conflict in Gaza and Israel. Considering that during the early days of the war, many expected Ukraine to fall in a matter of weeks, it would make sense that the sentiment would be quite low.

*Methods and Results*
Firstly, the number of articles for each issue in the given timeframe was counted. The war in Ukraine had 2211 articles written about it in the first month, while the Israel-Gaza conflict had 1393 articles. Each token was passed through the Lexicoder Sentiment Dictionary (Young, L. & Soroka, S., 2012); a dictionary containing a list of words with each given a positive or negative score. For example, "happy" would register as positive, and the dictionary is also sensitive to negations. Each article was given an average sentiment score calculated by the proportion of negative tokens. A t-test for difference in means was run to determine if the difference in sentiments was statistically significant. The overall proportion of negative sentiment tokens in the articles about Ukraine was 0.601 compared to Gaza-Israel having a proportion of negative sentiments as 0.541. The results yielded a highly significant p-value of 3.321e-11.

*Hypothesis Two: Implications*
The results of this experiment fall in line with the previously mentioned theory that the media favors reporting on negative news, as well as the idea that conflicts that are geographically closer and have broader implications for The West take precedence. However, it is difficult to determine which played a larger role in determining the number of articles published. While many scholars distinguish between the geographical

distance and relevance of a conflict from the negative tone of a conflict when considering media attention, it is not necessarily true that these two concepts are entirely separate. If a conflict has broader implications for the country in which the press firms exist, the potential negative implications would be larger, leading to a more negative sentiment being portrayed in articles. While this research supports the existing theories, results cannot be taken at face value. Firstly, the Lexicoder Sentiment Dictionary is imperfect in that it does not consider the nuances of the English language such as sarcasm or exaggerations. Furthermore, this study only views the sentiments in the first month of each conflict, and it is not known if this trend persists through extended time periods.

*Overall Implications*
The results of this research project lend credence to existing theories of overcrowding and the influence of negativity, relevance, and geographical proximity on news coverage. However, given the imperfections of the dataset and the lack of consideration for potential covariates, this study should not be regarded as conclusive. Nevertheless, the findings are not useless and should not be disregarded entirely. Instead, results should be viewed within the context of the larger body of existing works, as they provide evidence in support of several theories regarding what drives Western media attention. Moreover, this study serves as a baseline for those who wish to delve further into the question of media attention by comparing the coverage of the war in Ukraine to the Israel-Gaza conflict.

## Final Considerations and Relivance
Exposure to media coverage can significantly shape perceptions and evoke emotions among viewers regarding a particular issue. In the Western world, governments have been known to be sensitive to citizen sentiments and may take them into consideration when determining responses to international events, a phenomenon referred to as the CNN effect. While there is debate over the extent to which the CNN effect influences policymakers, even skeptics generally acknowledge its influence to some degree (Hawkins, 2011). Therefore, comprehending the reasons behind and mechanisms of media coverage of international topics has indirect yet potentially significant implications.

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