

Unraveling Sentiment and Emotion Dynamics of the Russian-Ukrainian War

Sofia Lazareva
University of Aarhus

Keywords: corpus linguistics, social media analysis, Russian-Ukrainian war, sentiment analysis, emotion analysis

This paper explores the sentiment and emotion categories of tweets regarding the current Russian-Ukrainian war. By applying sentiment and emotion analysis techniques to a corpus of tweets related to the war in Ukraine, this study aims to uncover the prevailing sentiment and its changes in online discussions surrounding this conflict. The dataset includes 530,479 tweets in Russian collected from February 2022 to April 2023. Regarding sentiment analysis, it is hypothesized that sentiment oscillations correlate with major war-related events and that most tweets are going to have a negative sentiment. It has been found out that the majority of tweets had a neutral sentiment, most probably due to an extensive presence of news reports in the dataset. Daily sentiment probabilities fluctuate due to various events such as the beginning of the war, negotiations, and military tactics. Positive sentiment peaks seem to correlate with events that could be viewed as advantageous for Ukraine (e.g., the explosion of the Crimean bridge), and negative sentiment peaks correlate with tragic events happening in Ukraine, especially attacks directly involving civilians (e.g. missile strikes on major Ukrainian cities). No significant changes or peaks of positive or negative sentiment that correlate with events that happened in Russia have been identified. Emotion classification has also been performed. It is hypothesized that emotion oscillations will also correlate with change points in data, and these change points will be more detailed than the ones obtained during sentiment analysis and that most tweets will be classified as reflecting 'anger' or 'fear'. The results of emotion analysis confirm that the prevailing emotional category, apart from neutral, is anger. Mean daily probabilities of emotions also provide valuable insights into public opinion during the war. More specifically, the mean probability of anger remains consistently high throughout the invasion, while happiness levels are comparably low in the beginning but start rising as the Ukrainian army begins successfully resisting the invasion. Examination of emotion peaks shows that they coincide with the most unpredictable events during the war, such as deadly attacks on civilians or civilian infrastructure, military victories, or newsworthy events on social media. This research can provide useful insights about the true state of affairs relating to the war in Russia and serve as a valuable instrument for studying public opinion in the circumstances when reliable insights cannot be obtained due to censorship and unavailability of external monitoring.

References

BwandoWando. (2022).  Ukraine conflict twitter dataset. Kaggle.
<https://www.kaggle.com/datasets/bwandowando/ukraine-russian-crisis-twitter-dataset-1-2-m-rows>