

Paper Title: Sentiment Analysis of Weather-Related Tweets from Cities within Hot Climates

Paper Link: <https://journals.ametsoc.org/view/journals/wcas/14/4/WCAS-D-21-0159.1.xml>

1. Summary

1.1 Motivation:

The threats to urban populations' health from heat exposure are increasing in hotter areas due to climate change. Social media sentiment analysis, especially in cities like Singapore and Phoenix, can yield real-time information that is essential for developing efficient heat mitigation plans.

1.2 Contribution:

This study makes a contribution by examining how social media attitudes in hot climate cities connect to the weather and providing insights into how the general population perceives discomfort from the heat. It illuminates how regional context affects weather-related Twitter usage and offers a foundation for real-time monitoring of urban heat stress by analyzing Twitter data from Singapore and Phoenix.

1.3 Methodology:

This study used official meteorological data and Twitter data from 2012 to 2019 to assess weather-related tweets from Phoenix and Singapore. Commercials, announcements, and duplicates were eliminated after being filtered for relevancy. The next steps involved applying tokenization and cleaning to remove weather descriptors and produce bigrams. The association between temperature and attitude was investigated using Spearman's rho correlation analysis. To find linguistic trends, word clouds and seasonal analysis were also performed. With RStudio, data processing and analysis were done.

1.4 Conclusion:

This study reveals the relationship between social media mood and weather in hot climate locations like Phoenix and Singapore. It highlights Twitter's ability to act as a quick gauge of public opinion regarding weather-related incidents and urban heat stress, providing information essential for efficient heat-reduction plans.

2. Limitations

Although Twitter data provides insightful information, its representativeness is nevertheless limited by demographic biases in user profiles that may distort perceptions. Furthermore, the various languages spoken in the examined areas—for example, Spanish in Phoenix and Singlish in Singapore—make text analysis and cross-city comparisons difficult, which emphasizes the necessity for careful interpretation and language choice in future research.

3. Synthesis

Through an analysis of weather-related tweets from Phoenix and Singapore, this study identified a pattern of higher pain during temperature rises. Singapore was always negative, although Phoenix's feelings changed with the seasons. These results show how regional opinions are reflected on social media: tweets from Phoenix mimic weather forecasts, and Singaporeans express dissatisfaction. Additionally, the data points to long-term heat repercussions and vulnerability to local climate events.