

8-10-2022

Emotion Analysis of English and Spanish COVID Tweets

Gabrielle Taylor

Auburn University, grt0007@auburn.edu

Clifford L. Short

Auburn University, cls0095@auburn.edu

Ashish Gupta

Auburn University, azg0074@auburn.edu

Xiao Qin

Auburn University, xqin@auburn.edu

Wenting Jiang

Auburn University

Follow this and additional works at: https://aisel.aisnet.org/treos_amcis2022

Recommended Citation

Taylor, Gabrielle; Short, Clifford L.; Gupta, Ashish; Qin, Xiao; and Jiang, Wenting, "Emotion Analysis of English and Spanish COVID Tweets" (2022). *AMCIS 2022 TREOs*. 60.

https://aisel.aisnet.org/treos_amcis2022/60

This material is brought to you by the TREO Papers at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2022 TREOs by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

AMCIS: Emotion Analysis of English and Spanish Covid Tweets

TREO Talk Paper

Gabrielle Taylor
Auburn University
grt0007@auburn.edu

Clifford Short
Auburn University
cls0095@auburn.edu

Ashish Gupta
Auburn University
Azg0007@auburn.edu

Xiao Qin
Auburn University
xzq0001@auburn.edu

Wenting Jiang
Auburn University
wzj0027@auburn.edu

Abstract

COVID-19 has had a devastating impact not only on various health outcomes and quality of life of individuals but also on their social well-being. Understanding the emotions of people is an essential component for effective crisis management during health crises such as COVID-19. In this study, we perform an emotion analysis of English and Spanish tweets pertaining to COVID-19. The aim of this study is to discover the emotions by using transfer learning-based text analytic approaches (including BERT and BETO). We verify the emotions by uncovering major themes from the English and Spanish tweets using topic modeling. The text analytic pipeline includes various phases. There is a data processing phase, an LDA-based topic modeling phase, followed by an emotion analysis phase. Per Figures 1 and 2, we found that the English and Spanish speakers had drastically differing emotions towards COVID-19. We show the development of emotions amongst English-speakers and Spanish-speakers in the early stages of the pandemic. We surmise that the differences between the speakers show that there are differences in conversation that lead to the emotion reactions. Moreover, we gather that the English speakers have more of a negative emotion reaction than Spanish speakers. Our analysis provides deeper insights into various issues related to psychology, public health, and economics through social media interaction during COVID-19. The knowledge discovery from our analysis can benefit health and government organizations by giving them the insight into people's feelings, reactions, and opinions in crises. This analysis can help officials grasp the effects of public health communication and the ways communication can be improved.

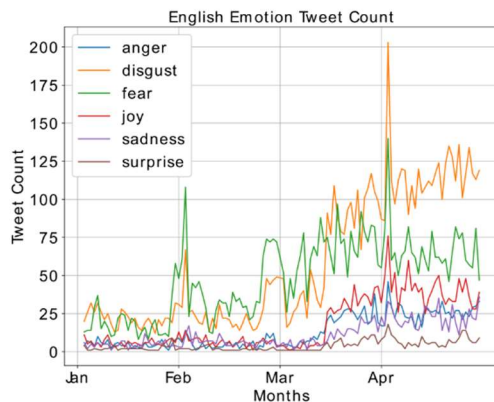


Figure 1: English Emotions

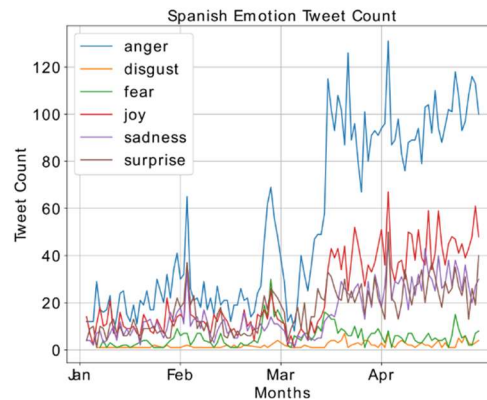


Figure 2: Spanish Emotions

References

- A. Amara, M. A. H. Taieb, and M. B. Aouicha, "Multilingual topic modeling for tracking covid-19 trends based on facebook data analysis," *Applied Intelligence*, pp. 1–22, 2021.
- A. Das, O. Sharif, M. M. Hoque, and I. H. Sarker, "Emotion classification in a resource constrained language using transformer-based approach," *arXiv preprint arXiv:2104.08613*, 2021.
- A. Kruspe, M. H. ¨aberle, I. Kuhn, and X. X. Zhu, "Cross-language sentiment analysis of european twitter messages during the covid-19 pandemic," *arXiv preprint arXiv:2008.12172*, 2020.
- J. Canete, G. Chaperon, R. Fuentes, J.-H. Ho, H. Kang, and J. Perez, "Spanish pre-trained bert model and evaluation data," in *PML4DC at ICLR 2020*, 2020.
- J. M. Perez, J. C. Giudici, and F. Luque, "pysentimiento: A python toolkit for sentiment analysis and socialnlp tasks," 2021.
- K. H. Manguri, R. N. Ramadhan, and P. R. M. Amin, "Twitter sentiment analysis on worldwide covid-19 outbreaks," *Kurdistan Journal of Applied Research*, pp. 54–65, 2020.
- N. M. Hakak, M. Mohd, M. Kirmani, and M. Mohd, "Emotion analysis: A survey," in *2017 international conference on computer, communications and electronics (COMPTELIX)*. IEEE, 2017, pp. 397–402.
- R. J. Medford, S. N. Saleh, A. Sumarsono, T. M. Perl, and C. U. Lehmann, "An "infodemic": leveraging high-volume twitter data to understand early public sentiment for the coronavirus disease 2019 outbreak," in *Open forum infectious diseases*, vol. 7, no. 7. Oxford University Press US, 2020, p. ofaa258.
- V. Tripathi, A. Joshi, and P. Bhattacharyya, "Emotion analysis from text: A survey," *Center for Indian Language Technology Surveys*, 2016.
- X. Zhou, X. Tao, J. Yong, and Z. Yang, "Sentiment analysis on tweets for social events," in *Proceedings of the 2013 IEEE 17th international conference on computer supported cooperative work in design (CSCWD)*. IEEE, 2013, pp. 557–562.