

Sentiment Reason Mining Framework for Analyzing Twitter Discourse on Critical Issues in US Healthcare Industry

Rasika Edirisinghe^{1*}, Dinesh Asanka²

¹ *School of Creative and Cultural Business, Robert Gordon University, Aberdeen, Scotland,
r.edirisinghe-mudiyanselage@rgu.ac*

² *Department of Industrial Management, University of Kelaniya, Dalugama, Sri Lanka,
dasanka@kln.ac*

This research study employs machine learning and textual analysis techniques to examine the US healthcare system through the analysis of Twitter data. By leveraging domain-specific keywords and hashtags, a customized data collection algorithm is utilized to gather a substantial dataset of tweets related to #medicaid and Medicaid. The collected tweets undergo a comprehensive analysis using sentiment analysis, sentiment spike detection, keyword extraction, k-means clustering, topic modeling, and textual association. The study aims to extract insights and identify critical issues hindering access to quality healthcare. The findings have implications for marketing strategies, enabling companies to better align their offerings with customer needs. Additionally, policymakers and healthcare organizations can benefit from the insights gathered, gaining valuable knowledge about the public's concerns, preferences, and satisfaction with US healthcare services and systems. By employing machine learning and textual analysis techniques, this research contributes to a deeper understanding of public sentiment and provides data-driven insights to address challenges in the healthcare domain.

Keywords: *US healthcare, Twitter, sentiment spike detection, sentiment reason mining, k-means clustering*