

Analyzing Public Sentiment and Engagement Dynamics Across Global Protests

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This study explored the temporal dynamics, public engagement, and sentiment patterns on social media during three major global protests: The Black Lives Matter Movement (BLMM), the South African Unrest (SAU), and the Masha Amini Protest (MAP). By analysing tweet distributions, Google Trends data, and sentiment trends, it revealed how public interest evolved in response to these socio-political events. The findings indicated that tweet activity often peaked on the third day of key events, followed by varied post-peak engagement patterns. For instance, BLMM sustained prolonged interest and engagement, MAP exhibited intermittent resurgences in public attention, while SAU experienced a sharper decline after its initial peak. Sentiment analysis revealed unique emotional responses across these movements. BLMM maintained predominantly positive sentiment, with peaks during significant events and anniversaries. In contrast, SAU displayed a volatile sentiment landscape, with sharp drops into negativity followed by recovery phases. MAP demonstrated relative stability but also saw notable sentiment fluctuations, with critical moments evoking both positive and negative emotions. These insights underscored the diversity in public emotional engagement across different socio-political contexts. The study also examined the synchronization between social media activity and traditional news coverage, showing that social platforms often acted as early indicators of public interest, amplifying discourse before mainstream media responded. This highlighted the role of social media as both a reflection and a driver of public discourse during socio-political movements. Furthermore, the research introduced archetypes for social media protests by analysing tweet volumes and sentiment distributions. Using LOESS smoothing techniques, it proposed generalized models to predict and understand the dynamics of future protest events in the digital space. These archetypes enhanced the ability to analyse, compare, and anticipate patterns of online activism, offering valuable insights into the evolving influence of social media on public opinion and mobilization. To refine these findings, the study suggested incorporating advanced time-series analyses and region-specific datasets to validate and expand the proposed archetypes, providing a more localized perspective on global protest dynamics.

Keywords: *Social Media Dynamics, Public Sentiment Analysis, Global Protests, Online Activism, Temporal Engagement Patterns*