**ANP-D0449**

**DATA ANALYSIS USING PYTHON**

**TWITTER HASHTAG ANALYSIS: UNDERSTANDING ENGAGEMENT TRENDS**

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**ABSTRACT:**

Twitter is a dynamic social media platform where hashtags play a crucial role in content discovery and trend analysis. Understanding engagement patterns associated with hashtags is essential for businesses, influencers, and researchers to optimize their strategies. However, the vast amount of daily-generated data makes it challenging to track and analyze trends effectively. This study focuses on Twitter hashtag analysis using text processing, frequency distribution analysis, data aggregation, visualization, and trend detection. By extracting hashtags from tweets, analyzing their frequency, and aggregating engagement metrics, we identify the most influential and viral hashtags. Visualization techniques, such as bar charts, enhance interpretability, while trend detection methods help differentiate between short-lived viral trends and long-term engagement patterns. This approach enables data-driven decision-making in social media marketing, content creation, and audience engagement. The insights gained from this study can support predictive analytics for future trend forecasting and improved social media outreach.