**Analyzing Hazardous Materials (HAZMAT) Transportation Incidents Using Text Mining Techniques.**

Text mining has emerged as an essential tool in data analytics, offering cost-effective, accurate, and scalable solutions, particularly in transportation engineering where incident reports are predominantly text-based. This study delves into Hazardous Materials (HAZMAT) incidents in Tennessee by applying text mining techniques to over 3,192 incident reports from 2013 to 2022. The methodology focuses on extracting insights from event descriptions and identifying patterns and key elements. The text network analysis reveals that most HAZMAT incidents are concentrated in four critical phases: packaging, loading, transit, and unloading, highlighting the need for targeted interventions and safety measures in these areas. The findings demonstrate the effectiveness of text mining in analyzing extensive incident reports, contributing significantly to enhancing safety protocols, risk mitigation, and overall transportation safety awareness. In summary, text mining is invaluable in transportation engineering for extracting meaningful patterns from written documentation, thereby improving safety practices.