**Social Network Hashtag Analysis for the 75th Year of India’s Independence**

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*Objectives.* This study explores how the influential twitter users play an important role in social networks for the 75th Independence Day of India. *Methods.* This study aimed to analyse the hashtag of the 75th year of Indian Independence tweets using Social Network Analysis (SNA). This study employs social network analysis based on 12,253 Twitter users and 35,947 tweets of Twitter. SNA techniques are used to measure certain centrality measures and plot graphs to find the most influential user in the network. *Results.*

*Data Extraction.* This study involved extracting tweets containing the official hashtag #HarGharTiranga of the 75th Indian Independence campaign. The data was collected on 3rd Septmeber,2022.

*Generalized Insights.* After collecting the data, the next step was to pull out the basic measures from the dataset. A total of 35,847 tweets by 12,253 users were obtained. It was observed that there were a total of 33680 retweets and 2267 direct tweets. From the dataset, the top 10 most mentioned users were tabulated and the most mentioned user was Narendra Modi, the Prime Minister of India with 2609 mentions, followed by NYKS India, a youth organization established during the Rajiv Gandhi government. The other notable mentions in the most mentioned user list included the Indian actors Pawan Kalyan and Mahesh Babu. Retweet in Twitter means to share a tweet from another user.

*Conversion of data into a NetworkX graph.* All the users who tweeted or retweeted were considered as nodes. When a user mentions another user, an edge is formed and these nodes, edges were used to form a network. The number of nodes increased after adding edges since the user who have not tweeted were also mentioned by the users who have tweeted. After adding edges, the number of tweets increased from 12253 to 16742. The network formed consisted of a total of 16742 nodes and 25550 edges.

*Basic Social Network Measures.* Statistical measures like the density, degree, assortativity, page rank of the system are determined then from the obtained data. The density of the system gives use the possible connections actually present in the system. Usually density lies between the 0 and 1. In this network, the density of the system is obtained as 0.0001823190. The degree of the system gives us the number of connections a node has to other nodes. In our study, the node with the highest degree is Narendra Modi with a degree of 2362. Following Narendra Modi, the node “Amrita Mahotsav” has the second highest degree value of 693. Indian actors Pawan Kalyan and Mahesh Babu have a degree value of 353 and 315 respectively. The degree assortativity gives us the ability of nodes of higher degree to connect to higher degree nodes w.r.t. low degree nodes. In our analysis the degree assortativity for the data is obtained as -0.1211564434. A negative value of degree assortativity means that the higher degree nodes have more tendency to attach to lower degree nodes. Page Rank helps us in assigning a score to every node indicating the level of importance a node holds in the network.