

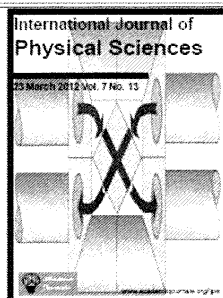
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## Mapping the structure, evolution and geo-spatiality of a social media network

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**Social media is the baby born out of the confluence of digital technology and human beings' desire to collaborate. Past researches in social media networks have mostly concentrated on investigation of large networks, which do not fully capture the micro-level dynamics of the network. In this study, an in-depth topological analysis of a small network (n=200) formed on Twitter during a 24 h period was carried out. The results showed that the network had both small-world and scale-free characteristics. Geo-spatiality revealed more interest by users in regions where the subject of tweets had its stake. The most influential nodes were those whose tweets got re-tweeted the most. Temporal analysis showed faster formation of network when there was a tweet of interest. Traditional news media had a powerful hold on the tweets being made by users. Communities formed around tweets of a certain theme and there was a common theme that kept the entire network together.**

**Key words:** Twitter, social media analysis, NodeXL, social network analysis.

### INTRODUCTION

Social Media has opened a new chapter in human beings' freedom of speech and action. People now freely collaborate, share videos, photos, news, reviews, opinions and stories using this media. Social networking sites like Facebook and Twitter facilitate individuals to connect with friends and acquaintances and remain in touch with them for as long as they wish. Researchers have been studying how broadcast of information on Twitter affect our thinking process, business and society as a whole (Chen, 2011; Chew and Eysenbach, 2010; Johnson, 2011; Ye and Wu, 2010). In 140 words or less, Twitter makes it possible for individuals to send short messages to those who follow them. This micro-blogging application, which now has over 200 million users (March 2011 estimates), is being increasingly used as an alternative to face-to-face interaction.

Profile and linkage data from Twitter can be collected using automated collection techniques enabling network researchers to understand the patterns of interactions,

usage and other visible indicators (Ellison, 2007). These patterns help researchers to understand how people feel, form and share opinion about other people, institutions, companies, products and issues. When specifically targeted on an institution or person or an issue, this could give us a snapshot of people's perception about the entity or the issue at a point in time. For example, Twitter profile and linkage data could be investigated to understand network's internal structure and dynamics of a news cycle.

Social network theory states that there are a few people in the social network that connect everyone else together. The famous Milgram's small-world experiment (Milgram, 1967), in reality, means that a 'few people' are connected to everyone in a few steps and the rest of them are connected to the world through those 'few people'. People in the network work as connectors who spread the idea, as databanks who provide the message and as salesmen who sway those who are not convinced at what they are hearing (Bruck, 2011). In organizations, these networks often facilitate participatory decision-making (Hashim et al., 2010). Social networks have been used to study the complex set of relationships at micro

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