

## Abstract

There are many kind of information that we can found using Social Network Analysis (SNA), for example, centrality level of a node or in social media it's called user influence. In Data mining using social network analysis, there are some method that can be used to measure actor centrality, one of them is Kretschmer method. It is the development method from degree centrality. In this research is developed weighted method namely Probabilistic Affinity Index (PAI) into centrality measurement. Using PAI, the strength of tie found is suitable with the reality. Centrality analysis using PAI will be implemented in twitter as popular social media. In this paper, there are two kind of testing, namely analysis data testing with the number of dataset is 308 user taken from twitter using NodeXL to analyze the influence by PAI and weight changes on following, mention and reply relation. And the second testing is simulation data testing with the number of dataset is 821 user downloaded from nodexlgraphgallery.org to tests performance both of PAI and Kretschmer method in centrality measurement for twitter case. Finally, It is concluded that PAI and Kretschmer can be used in centrality measurement for twitter case to find influence user in his community or on a particular topic namely E-Toll.

**Keywords:** *social network, social network analysis, centrality measurement Kretschmer method, probabilistic affinity index (PAI) .*