

## An Investigation of Applying Centrality Measures as Indicators of Citation-Based Relation in Relational Information Retrieval: A Pilot Study

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### Abstract

**Purpose:** this is a pilot study tends to investigate correlation between centrality measures with bibliographic coupling as a well-known citation-based document similarity measure.

**Methodology:** using citation analysis method, 40 research articles belonging to four engineering/pure disciplines (Physics, Chemistry, Biology, and computer) and four Humanities and Social disciplines (Economics, Education, Psychology, and Sociology) published in 2011 and indexed in Web of Knowledge Database besides their citation links with 4000 other article(100 citation per article) were randomly selected as research population. Data were extracted and analyzed using UCINET and Bibexcel programs.

**Findings:** findings demonstrated that there are high significant correlation ( $\alpha=0/01$ ) between centrality measures and bibliographic coupling; and so, centrality measures have potential features for further analysis in order to apply them as new citation- based similarity measures.

**Originality/Value:** this research suggested new citation-based similarity measures which can be applied in databases and search engines algorithms to measure similarity of documents more accurately.

**Keywords:** Centrality Measures, Bibliographic Coupling, Similarity Measures, Relational Information Retrieval, Citation-based Retrieval