

Malaysian Journal of Library & Information Science

Indexing Page

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Article Information

Title:	On giant components in research collaboration networks: Case of engineering disciplines in Malaysia
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Journal:	Malaysian Journal of Library & Information Science
Volume:	18, No 2
Year:	2013
Keywords:	Co-authorship networks; Social networks; Percolation level; Giant components; Scientific communications; Engineering.
Abstract:	<p>The purpose of this study was to empirically investigate the size of giant components in the scholarly networks of prominent engineering disciplines in Malaysia. A co-authorship network is constructed by connecting two authors if they have co-authored a research article together. By applying Social Network Analysis (SNA), the size of the giant component of co-authorship networks was investigated in the four prominent engineering disciplines, namely electrical and electronics (EEE), chemical (CHEM), civil (CIVIL), and mechanical (MECH), involving 3675 records of scholarly articles, in which at least one of the researchers per article had a Malaysian address. Results revealed that well-formed giant components (size >50% of all nodes) were already present in EEE and CHEM disciplines, whereas they were at an undeveloped stage in the case of both CIVIL and MECH. All the four disciplines demonstrated small-world properties. However, those with larger giant components also had larger degree of separation (geodesic distance) between the nodes. Density of the nodes was negatively correlated with the size of the giant component. After the mid-90s, both CHEM and EEE had a faster production of articles than the other two disciplines, which corresponds with their well-formed giant components</p>
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