Journal of Quality Measurement and Analysis *JQMA* 20(3) 2024, 153-162
e-ISSN: 2600-8602 *http://www.ukm.my/jqma*
https://doi.org/10.17576/jqma.2003.2024.11

A MINIMUM SPANNING TREE STOCK MARKET ANALYSIS OF MALAYSIA TECHNOLOGY COMPANIES

(Analisis Pepohon Rentangan Minimum Pasaran Saham Syarikat Teknologi Malaysia)

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ABSTRACT

In this study, the topological structure of Malaysian technology companies stock market was investigated for a one-month period, and a three-month period, before and after the 15th Malaysian General Election. The collected data is the daily closing prices of Malaysia's top 20 most active companies based on the volume traded in the list of technology companies. The minimum spanning tree was used to construct the network via Kruskal's algorithm, and the centrality measures of the stocks, such as degree, betweenness, closeness, and eigenvector, were measured to identify influential stocks. The results show that the connection between stocks in one and three months prior to the election is inconsistent, where variations were exhibited during both periods. Based on centrality measures of degree, betweenness, closeness, and eigenvector, the analysis reveals that over a one-month period, THET, AWAN, GREA, and JHMC consistently rank among the top five most influential stocks before the election, while MMST, MYEG, and GREA dominate as the most influential stocks after the election.

Keywords: minimum spanning tree; Kruskal algorithm; stock market; centrality measures

ABSTRAK

Dalam kajian ini, struktur topologi pasaran saham syarikat teknologi Malaysia disiasat untuk tempoh sebulan dan tempoh tiga bulan, sebelum dan selepas Pilihan Raya Umum Malaysia ke-15. Data yang dikumpul ialah harga penutupan harian 20 syarikat paling aktif di Malaysia berdasarkan jumlah dagangan dalam senarai syarikat teknologi. Pepohon rentangan minimum telah digunakan untuk membina rangkaian melalui algoritma Kruskal, dan ukuran kepusatan saham, seperti tahap, keterkaitan, kedekatan dan vektor eigen, diukur untuk mengenal pasti saham yang berpengaruh. Keputusan menunjukkan bahawa hubungan antara saham dalam satu dan tiga bulan sebelum pilihan raya adalah tidak konsisten, di mana kepelbagaian ditunjukkan semasa kedua-dua tempoh masa. Berdasarkan ukuran kepusatan tahap, keterkaitan, kedekatan, dan vektor eigen, analisis mendedahkan bahawa dalam tempoh sebulan, THET, AWAN, GREA, dan JHMC secara konsisten berada di kedudukan antara lima saham paling berpengaruh sebelum pilihan raya, manakala MMST, MYEG , dan GREA mendominasi sebagai saham paling berpengaruh selepas pilihan raya.

Kata kunci: pepohon rentangan minimum; algoritma Kruskal; pasaran saham; ukuran pemusatan

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Received: 17 September 2024
Accepted: 15 October 2024

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