

Hasil Penelitian Hibah Fundamental

Telaah Subruang Invariant yang Dibangun oleh Faktorisasi Matriks Perbandingan Pasang Demi Pasang yang Berasal dari Metode Pengambilan Keputusan Kriteria Majemuk

Study of structures of invariant subspaces induced by factorisation of pairwise comparison matrices arising in multicriteria decision process.

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This work studies properties of perturbed pairwise comparison matrices (PPCMs). A pairwise comparison matrix (PCM) is a positive symmetrically reciprocal matrix arising in Analytical Hierarchy Process (AHP). The AHP is a multicriteria decision model introduced by Saaty which solves decision problems by prioritizing alternatives. The application of the AHP as a decision problem tools gives rise to pairwise comparison matrices (PCMs).

The core of the AHP is the priority vector corresponding to any PCM. This vector is the normalized principal right eigenvector of the PCM corresponding to the largest eigenvalue which is simple and its existence is guaranteed by Perron's Theorem. We use this method to study the top rank student selection system.

Concerning the study and analysis of the principal eigenvector of a PCM, Farkas developed the spectral properties of PCM. He shows conditions resulting in a reversal of the rank order of the decision alternatives for the perturbed PCM. In this study we show explicit necessary and sufficient condition on the disturbance resulting in rank order reversal. Meanwhile, in application point of view, investigation of consistent PPCM is of interest. We investigate sufficient conditions on the disturbance resulting in the consistency ratio of the PPCM remains in the acceptable interval according to Saaty.

LIST OF RESEARCH OUTPUT

1. Sistem Pemilihan Siswa Teladan Menggunakan Metoda Analytical Hierarcy Process
2. Pengaruh Gangguan pada Perubahan Prioritas dan Indeks Konsistensi Matriks Perbandingan Berpasangan dalam *Analytical Hierarchy Process*