

ABSTRAK

Ester Tarigan, NIM 4213530018 (2025). Penerapan Metode PROMETHEE Untuk Penentuan Penerima Bantuan Pangan Non Tunai (BPNT).

Kemiskinan masih menjadi permasalahan yang dihadapi masyarakat, khususnya di Desa Silait-Lait, Kabupaten Tapanuli Utara. Program Bantuan Pangan Non Tunai (BPNT) merupakan salah satu upaya pemerintah dalam mengurangi beban pengeluaran masyarakat miskin, namun dalam praktiknya masih sering terjadi ketidaktepatan sasaran akibat subjektivitas dan kesalahan manusia dalam proses seleksi penerima. Penelitian ini bertujuan untuk menerapkan metode *Preference Ranking Organization Method for Enrichment Evaluation* (PROMETHEE) berbasis logika *fuzzy* sebagai sistem pendukung keputusan dalam menentukan penerima BPNT agar lebih objektif, transparan, dan tepat sasaran. Data yang digunakan adalah data sekunder dari Kantor Desa Silait-Lait dengan tujuh kriteria, yaitu pendapatan, pekerjaan, jumlah tanggungan, luas rumah, jenis dinding, jenis lantai, dan sumber air minum. Proses perhitungan dilakukan menggunakan bahasa pemrograman Python dengan langkah-langkah meliputi pembobotan *fuzzy*, perhitungan indeks preferensi multikriteria, hingga perhitungan *leaving flow*, *entering flow*, dan *net flow* untuk memperoleh hasil perangkingan. Hasil penelitian menunjukkan bahwa metode PROMETHEE mampu mengidentifikasi penerima BPNT secara lebih adil dan sesuai kondisi masyarakat, dimana alternatif A27 memiliki nilai *net flow* tertinggi. Peringkat 1 sampai dengan 30 dijadikan prioritas utama penerima bantuan. Dengan demikian, metode PROMETHEE berbasis *fuzzy* terbukti efektif sebagai alat bantu dalam menyalurkan bantuan sosial secara tepat sasaran dan dapat dijadikan rekomendasi untuk diterapkan di desa lain.

Kata Kunci: Bantuan Pangan Non Tunai (BPNT), Sistem Pendukung Keputusan, PROMETHEE.

ABSTRACT

Ester Tarigan, NIM 4213530018 (2025). The Application of the PROMETHEE Method for Determining Recipients of Non-Cash Food Assistance (BPNT).

Poverty remains a major issue faced by society, particularly in Silait-Lait Village, North Tapanuli Regency. The Non-Cash Food Assistance (BPNT) program is one of the government's efforts to reduce the financial burden of low-income households. However, in practice, the program often faces problems of inaccuracy in targeting due to subjectivity and human error in the selection process. This research aims to apply the Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE) combined with fuzzy logic as a decision support system to determine BPNT recipients more objectively, transparently, and accurately. The data used in this study are secondary data from the Silait-Lait Village Office with seven criteria: income, occupation, number of dependents, house size, wall type, floor type, and water source. The computation process was carried out using Python programming language, including fuzzy weighting, multicriteria preference index calculation, and the computation of leaving flow, entering flow, and net flow to obtain the ranking results. The research results indicate that the PROMETHEE method is capable of identifying BPNT recipients more fairly and in accordance with community conditions, with alternative A27 having the highest net flow value. Rankings 1 to 30 are prioritized as the main aid recipients. Thus, the fuzzy-based PROMETHEE method is proven effective as a decision-making tool for distributing social assistance accurately and can be recommended for implementation in other villages.

Keywords: Non-Cash Food Assistance (BPNT), Decision Support System, , PROMETHEE.