

*POSSIBILITY NEUTROSOPHIC BIPOLAR FUZZY
SOFT SETS*

SKRIPSI

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OLEH



NIM 2210431016

DOSEN PEMBIMBING:

1. Prof. Dr. ADMI NAZRA

2. Dr. YANITA

DEPARTEMEN MATEMATIKA DAN SAINS DATA

FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM

UNIVERSITAS ANDALAS

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ABSTRAK

Possibility neutrosophic bipolar fuzzy soft sets (PNBFSSs)

merupakan suatu kerangka yang diperoleh dari perluasan konsep *neutrosophic bipolar fuzzy soft sets* yang mampu menangani masalah pengambilan keputusan yang kompleks, yang melibatkan kontradiksi informasi dan preferensi ganda, dengan tetap memperhatikan keandalan data melalui nilai kemungkinan (*possibility*). Tulisan ini memperkenalkan definisi, operasi, dan sifat terkait dengan operasi tersebut, yang memenuhi sifat aljabarnya, seperti involusi, komutatif, asosiatif, distributif, idempotensi, absorpsi, serta hukum De Morgan. Selain itu, diperkenalkan pula suatu ukuran kesamaan untuk PNBFSSs. Berdasarkan ukuran kesamaan tersebut, dirancang suatu algoritma pengambilan keputusan yang diterapkan pada studi kasus pemilihan paket mata kuliah pilihan semester genap Program Studi S-1 Matematika Universitas Andalas. Hasil percobaan ini menunjukkan bahwa pendekatan ini dapat memberikan hasil yang akurat.

Kata kunci: *possibility neutrosophic bipolar fuzzy sets, ukuran kesamaan, algoritma pengambilan keputusan, aplikasi pemilihan paket mata kuliah pilihan*

ABSTRACT

The Possibility neutrosophic bipolar fuzzy soft sets (PNBFSSs) is a framework derived from the extension of the concept of neutrosophic bipolar fuzzy soft sets that is capable of addressing complex decision making problems involving information contradictions and multiple preferences, while maintaining data reliability through the possibility value. This paper introduces the definitions, operations, and properties related to these operations, which satisfy algebraic properties such as involution, commutativity, associativity, distributivity, idempotence, absorption, and De Morgan's laws. In addition, a similarity measure for PNBFSSs is also introduced. Based on this similarity measure, a decision making algorithm was designed and applied to a case study on the selection of elective courses for the even semester in the Bachelor of Mathematics program at Andalas University. The results of this experiment show that this approach can provide accurate results.

Keywords: *possibility neutrosophic bipolar fuzzy soft sets, similarity measure, decision making algorithm, selection of elective courses application*