

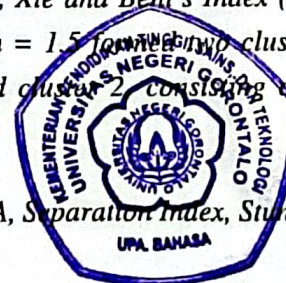
## ABSTRACT

**Djahara A. Nusi, 2024. COMPARISON OF ARTIFICIAL BEE COLONY AND GRAVITATIONAL SEARCH ALGORITHM IN FUZZY GEOGRAPHICALLY WEIGHTED CLUSTERING. Undergraduate Thesis.** Gorontalo. Study Program of Statistics. Department of Mathematics. Faculty of Mathematics and Natural Sciences. Universitas Negeri Gorontalo.

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*Stunting is a chronic nutritional problem that affecting child growth, particularly in areas with high prevalence such as Sulawesi Island. This study compared two optimization methods, Artificial Bee Colony (ABC) and Gravitational Search Algorithm (GSA), in Fuzzy Geographically Weighted Clustering (FGWC) analysis to group regencies and cities in Sulawesi Island based on factors contributing to stunting. The data used included health and socio-economic indicators from 66 regencies/cities. The study findings indicated that the FGWC-ABC method created more optimal clustering than FGWC-GSA based on three validity indices: namely Classification Entrophy (CE), Separation Indeks (SI), Xie and Beni's Index (XB). The FGWC-ABC method at the fuzziness value of  $m = 1.5$  created two clusters: cluster 1, consisting of 49 regencies and cities, and cluster 2, consisting of 17 regencies and cities.*

**Keywords:** ABC, Classification Entrophy, FGWC, GSA, Separation Indeks, Stunting, Xie and Beni's Index.



LEMBAR PENGESAHAN

Skripsi yang berjudul "PERBANDINGAN ARTIFICIAL BEE COLONY DAN GRAVITATIONAL SEARCH ALGORITHM PADA FUZZY GEOGRAPHICALLY WEIGHTED CLUSTERING"

Oleh

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Telah dipertahankan di depan pembimbing dan dewan penguji

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Waktu : 10.00-11.00 WITA

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