ABSTRACT

MODIFICATION OF THE SIMPLE ADDITIVE WEIGHTING METHOD AND INTEGRATION OF DUAL HESITANT FUZZY SET FOR MULTI-CRITERIA DECISION MAKING

by

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Multi-criteria decision-making (MCDM) problems often involve uncertainty and hesitation in the decision maker's preferences. This final project applies the Dual Hesitant Fuzzy Set (DHFS) approach to model such uncertainty in the evaluation of alternatives across multiple criteria. The method is a modification of the Simple Additive Weighting (SAW) technique, incorporating the transformation of DHFS values into crisp scores, normalization of the decision matrix, preference value calculation, and criteria weighting. All processes are computed mathematically and simulated using a numerical approach. The simulation results demonstrate that this method is effective in handling uncertainty and provides appropriate solutions in the context of MCDM problems.

Keywords: Dual Hesitant Fuzzy, SAW Method, Multi-Criteria Decision Making.