Dear Sir,

On behalf of my co-authors, I am submitting the research article entitled "Multi-objective multi-path COVID-19 medical waste collection problem with type-2 fuzzy logic based risk using partial opposition-based weighted genetic algorithm" for possible publication in Science of the Total Environment.

Concerning the aims and scope of the journal, we like to point out that in our submitted investigation, we have suggested a method, and its application, for the first time, to collect the most infectious COVID-19 medical waste from rural hospitals with type-2 fuzzy logic-based transportation and occupational risks.

To solve the model, heuristic mathematical programming technique-partial Opposition-Based weighted genetic algorithm is developed and applied for the first-time.

Novelties in this investigation are:

- Multi-objective multi-path COVID-19 waste collection routing plan with a fixed charge cost, for minimization three objectives-total cost, transportation and occupational risks is considered.
- Probability of accident is expressed in terms of imprecisely defined road surface condition and congestion using Type-2 fuzzy logic.
- Multi-objective minimization problem is solved using the weighted sum method.
- Partial OBL-based initialization and mutation, Probabilistic selection and problem-specific weighted crossover are introduced in GA for solving the proposed model.
- Multi-objective multi-path routing problem (with three objectives) is formulated and solved by POBGA.

I attest to the fact that all authors listed have read the manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to its submission to the estimated journal-Science of the Total Environment.

Thanks and Regards,

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