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## LIST OF NOTATIONS AND ABBREVIATIONS

ACO	=	Ant Colony Optimization
ANOVA	=	Analysis of Variance
$c_{ij}$	=	Distance from $i$ to $j$
CO <sub>2</sub>	=	Carbon Dioxide
CO <sub>2</sub> e	=	Carbon Dioxide Equivalent
DCs	=	Distribution Centers
DI	=	Daerah Istimewa
$d$	=	Demand of customer
$\varepsilon$	=	Emission factor of vehicle
$e$	=	Emission
$F$	=	Fixed cost of establishing a vehicle
FLP	=	Facility Location Problem
$Fc$	=	Frontier Storage
$Fr$	=	Front
$g$	=	Current Generation
GA	=	Genetic Algorithm
$G_i$	=	Fixed cost of opening DC $i$
GLRP	=	Green Location-Routing Problem
HazMat	=	Hazard Material
kg	=	Kilogram
km	=	Kilometer
$l$	=	Litre
LRIP	=	Location-Routing-Inventory Problem
LRP	=	Location-Routing Problem
m	=	Meter
MA	=	Memetic Algorithm
MID	=	Mean-Ideal Distance

MOHH	= Multi-objective Hyper-Heuristic
MOICA	= Multi-objective Imperialist Competitive Algorithm
MOOP	= Multi-objective Optimization Problem
MOPSA	= Multi-objective Parallel Simulated Annealing
MOPSO	= Multi-objective Particle Swarm Optimization
MOSCA	= Multi-objective Sine-Cosine Algorithm
MS	= Maximum Spread
$N$	= Population Size
$NoG$	= Number of Generations
$Np$	= Domination Counter of $p$
NP-hard	= Nondeterministic Polynomial
NPS	= Number of Pareto Solutions
NRGA	= Non-Dominated Ranked Genetic Algorithm
NSGA-II	= Non-Dominated Sorting Genetic Algorithm-II
OLRP	= Open Location-Routing Problem
PAES	= Pareto Archived Evolution Strategy
PESA	= Pareto Enveloped-Based Selection Algorithm
PESA-II	= Pareto Enveloped-Based Selection Algorithm-II
$P$	= Population
$Pr$	= Probability
PSO	= Particle Swarm Optimization
$Q$	= Capacity of Vehicle
Rp	= Rupiah
$s$	= Service time
SCA	= Sine-Cosine Algorithm
SDGs	= Sustainable Development Goals
SM	= Spacing Metrics
$SN$	= Signal-to-Noise Ratio
SOOP	= Single-objective Optimization Problem
$Sp$	= Set of Solutions Dominated by $p$
SPEA-II	= Strength Pareto Evolutionary Algorithm-II



$t$	=	Iteration
$t_{ij}$	=	Travel time from $i$ to $j$
TLRP	=	Transportation Location-Routing Problem
TS	=	Tabu Search
TSP	=	Traveling Salesman Problem
$TT_k$	=	Total trip time at route $k$
$V$	=	Response Value in Experiment
VNS	=	Variable Neighbourhood Search
VRP	=	Vehicle Routing Problem
$w$	=	Curb weight of vehicle
$X$	=	Current Solution
$X_b$	=	Current Best Solution