

RQ2: Operator Performance Metrics (Mean Across All Runs)

Operator	NE (%)	EHR (%)	IR (%)	cEHR (%)	$\Delta\mu$	$\Delta\sigma$
ConceptAdditionOperator	55.08	4.08	39.33	6.74	-0.06	0.13
InformedEvolutionOperator	45.96	8.28	43.98	14.95	-0.18	0.11
LLMBackTranslation_H	70.85	4.35	20.08	5.52	-0.08	0.13
LLMBasedParaphrasing	55.11	3.01	40.23	5.13	-0.07	0.13
OSAwareSynonymReplace	76.59	5.89	12.59	6.95	-0.06	0.12
MLM	59.50	5.55	27.95	8.34	-0.06	0.12
NegationOperator	71.24	4.45	18.38	5.67	-0.07	0.12
SAwareAntonymReplace	83.78	6.29	4.79	6.76	-0.06	0.12
SemanticFusionCrossover	40.20	2.06	55.68	4.60	-0.06	0.09
SemanticSimilarityCrossover	20.85	1.99	0.00	8.69	-0.06	0.10
StylisticMutator	55.32	2.47	40.56	4.13	-0.07	0.13
TopographicalErrorsOperator	41.88	3.02	53.62	6.41	-0.07	0.12