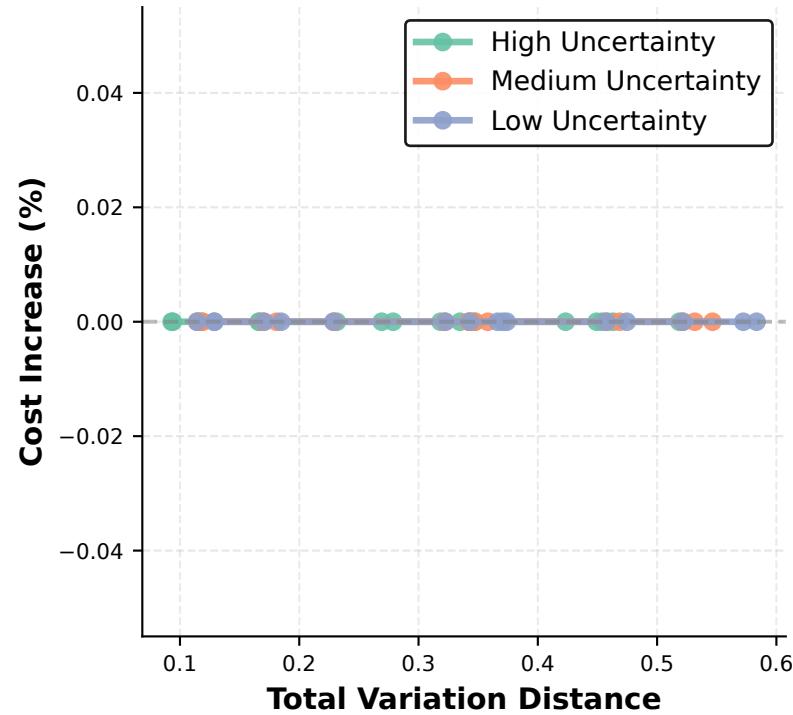
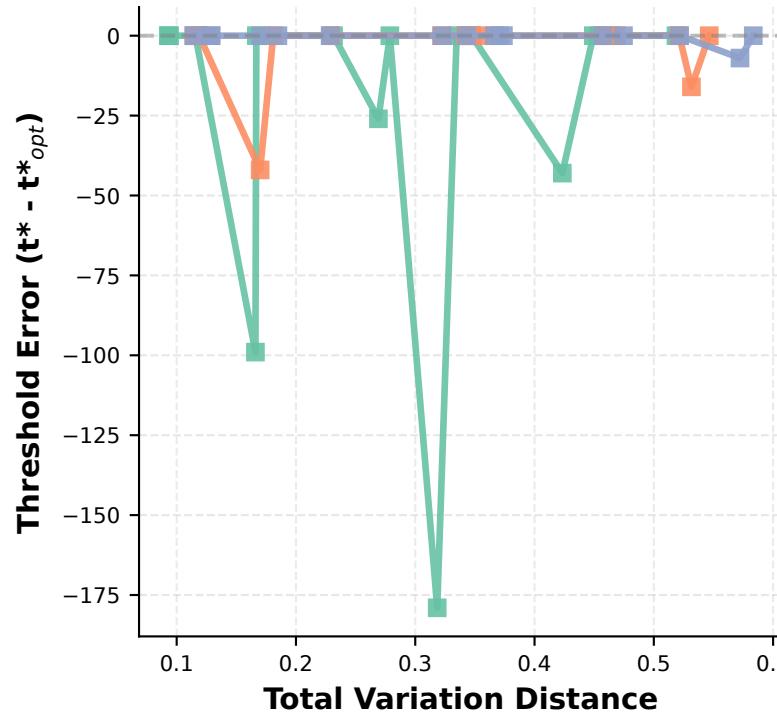


Experiment 3: Impact of Prior Misspecification on Bayesian Ski Rental

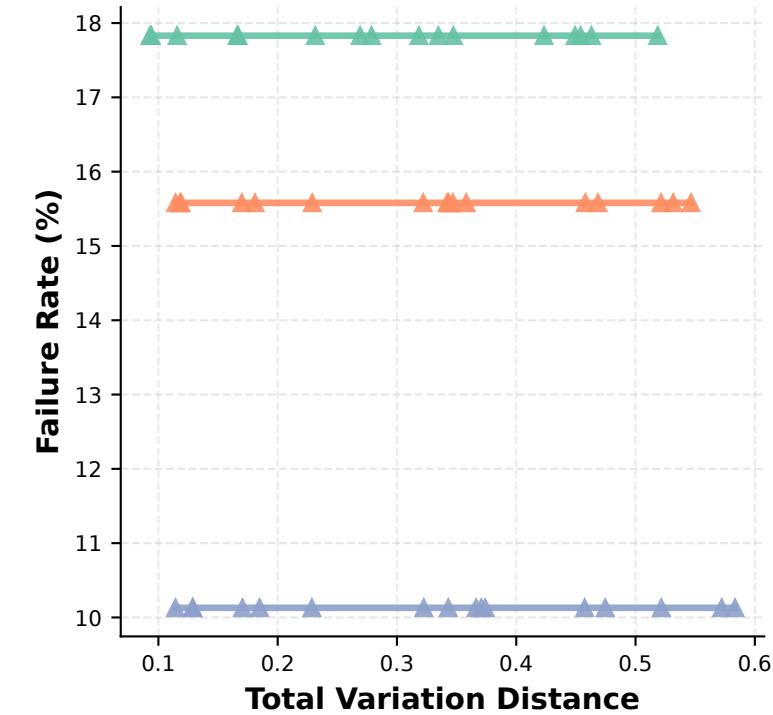
(a) Performance Degradation from Optimal



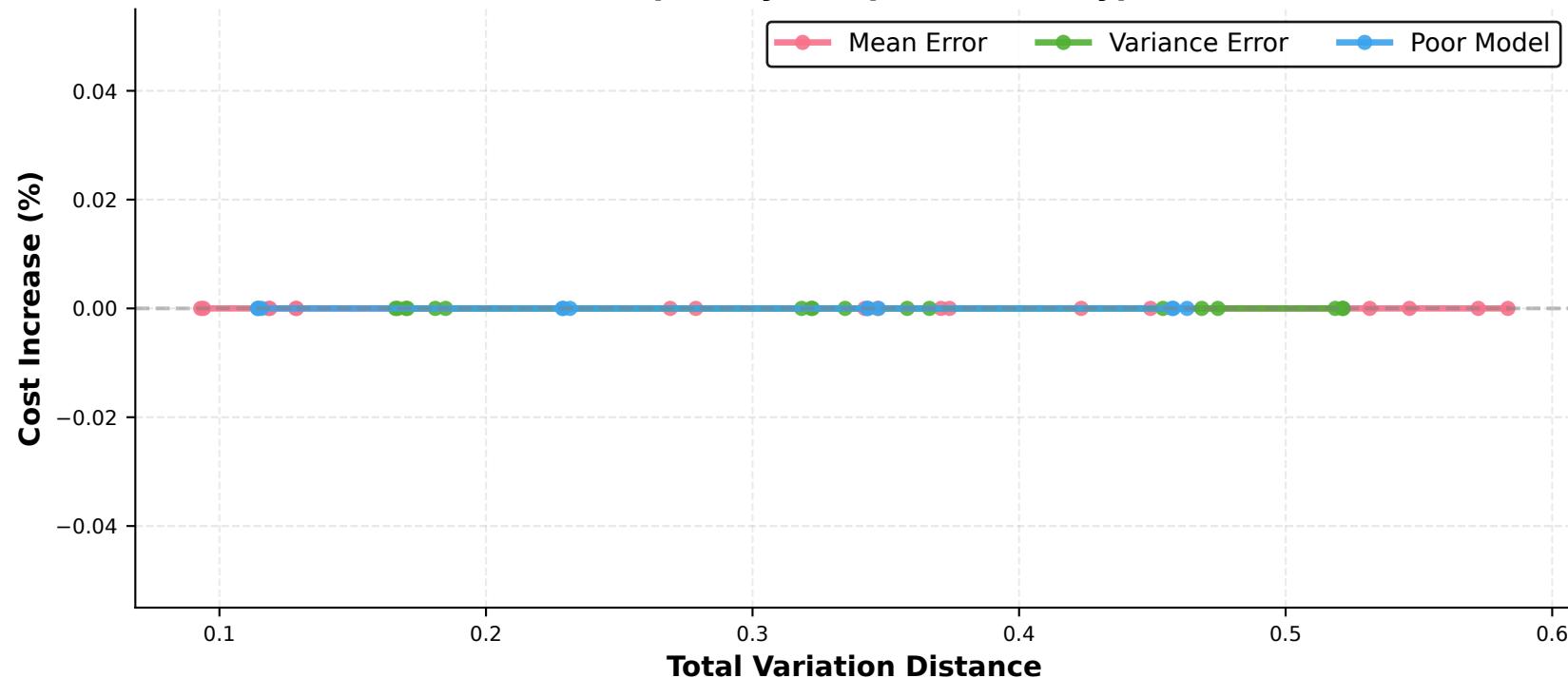
(b) Decision Threshold Deviation



(c) Failure Rate ($CR > 1.5$)



(d) Impact by Misspecification Type



KEY FINDINGS

High Uncertainty:
 Avg cost increase: 0.000%
 Max cost increase: 0.000%
 Avg failure rate: 17.83%
 Max threshold error: 179

Medium Uncertainty:
 Avg cost increase: 0.000%
 Max cost increase: 0.000%
 Avg failure rate: 15.58%
 Max threshold error: 42

Low Uncertainty:
 Avg cost increase: 0.000%
 Max cost increase: 0.000%
 Avg failure rate: 10.13%
 Max threshold error: 7

INTERPRETATION:

- Higher uncertainty → more sensitive to prior errors
- Threshold deviations can be large, but cost impact modest
- Algorithm is robust overall