

# Comprehensive Comparison Report

Experiments:

Baseline

Llm Baseline

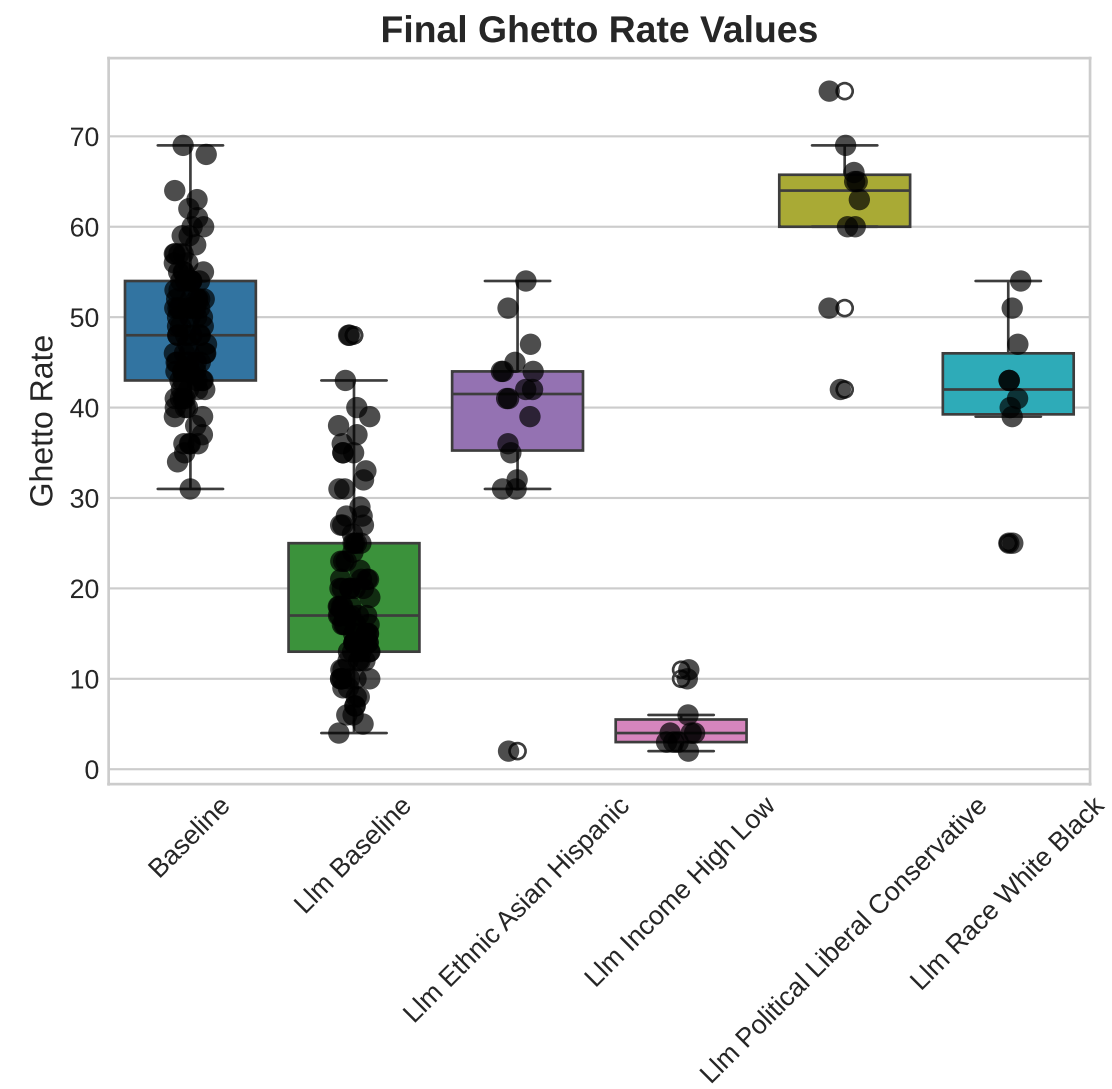
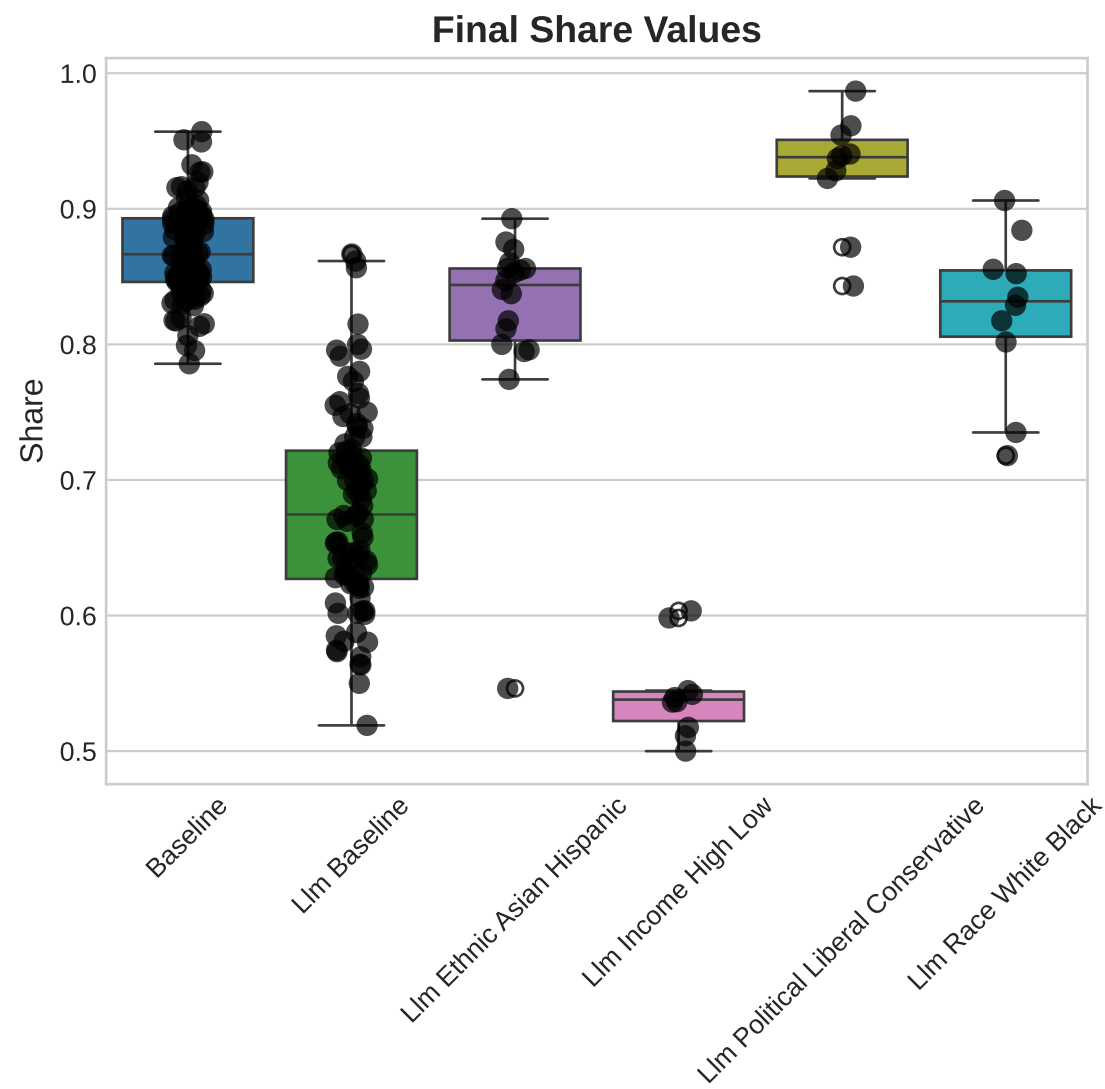
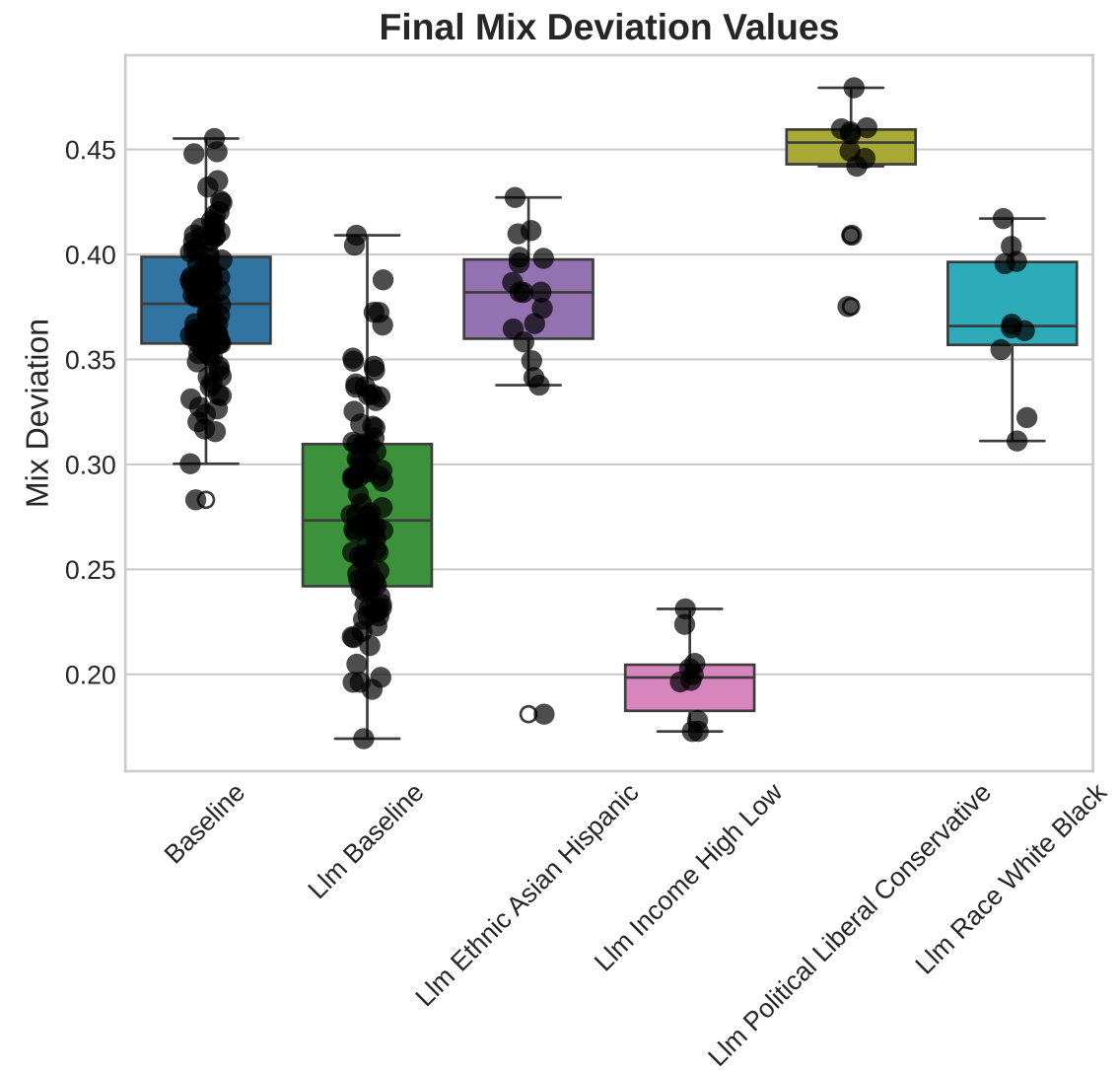
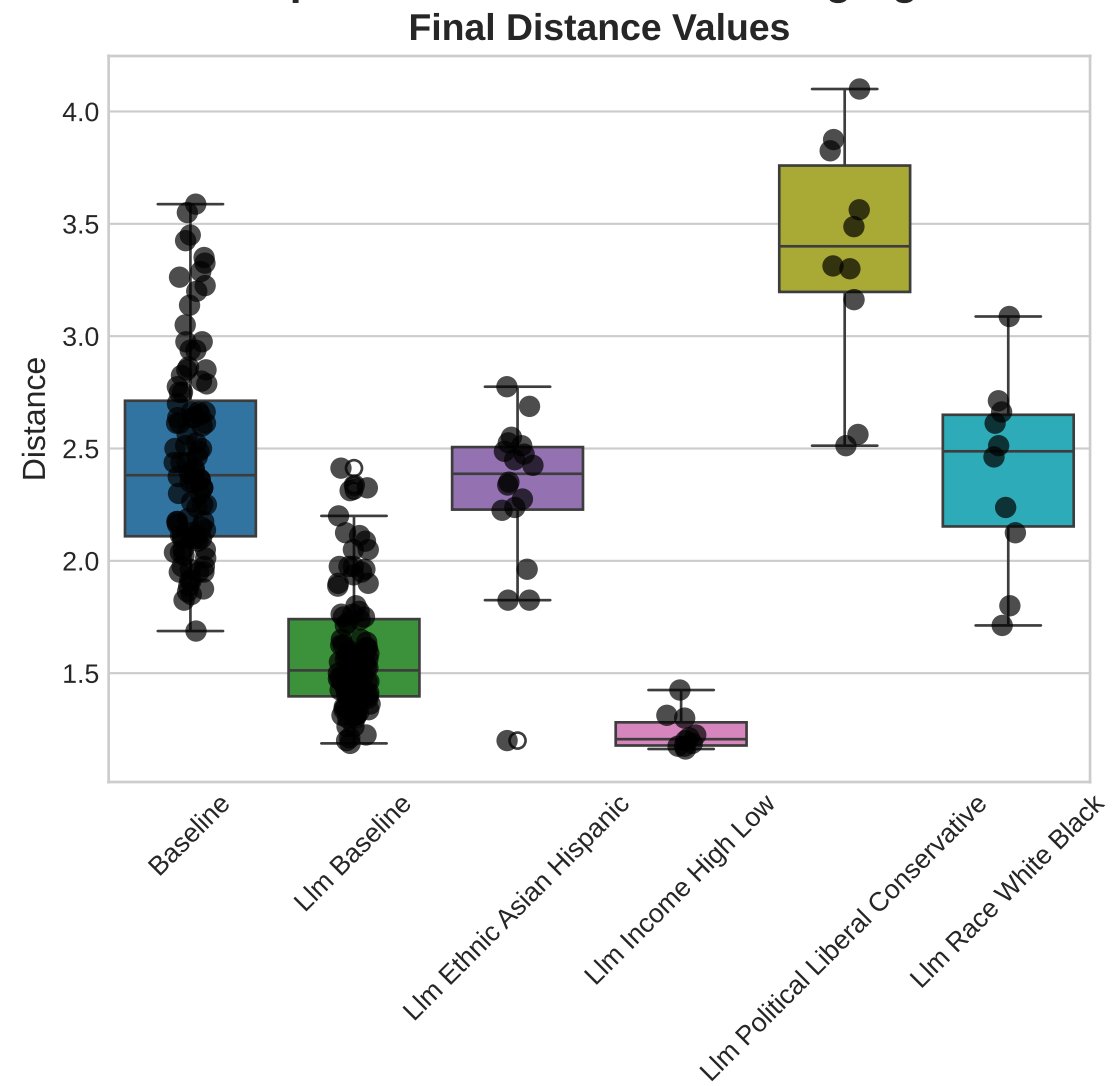
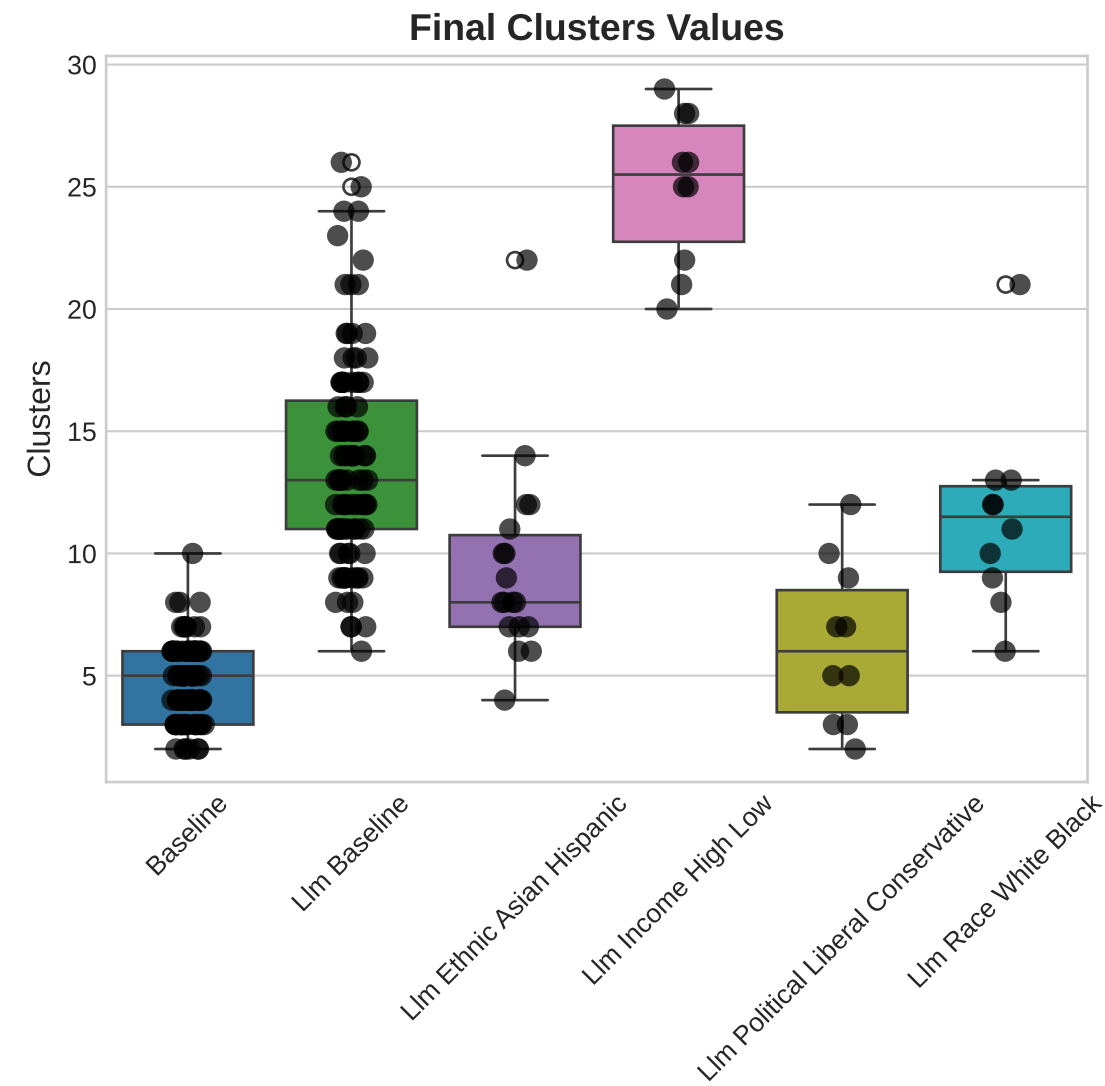
Llm Ethnic Asian Hispanic

Llm Income High Low

Llm Political Liberal Conservative

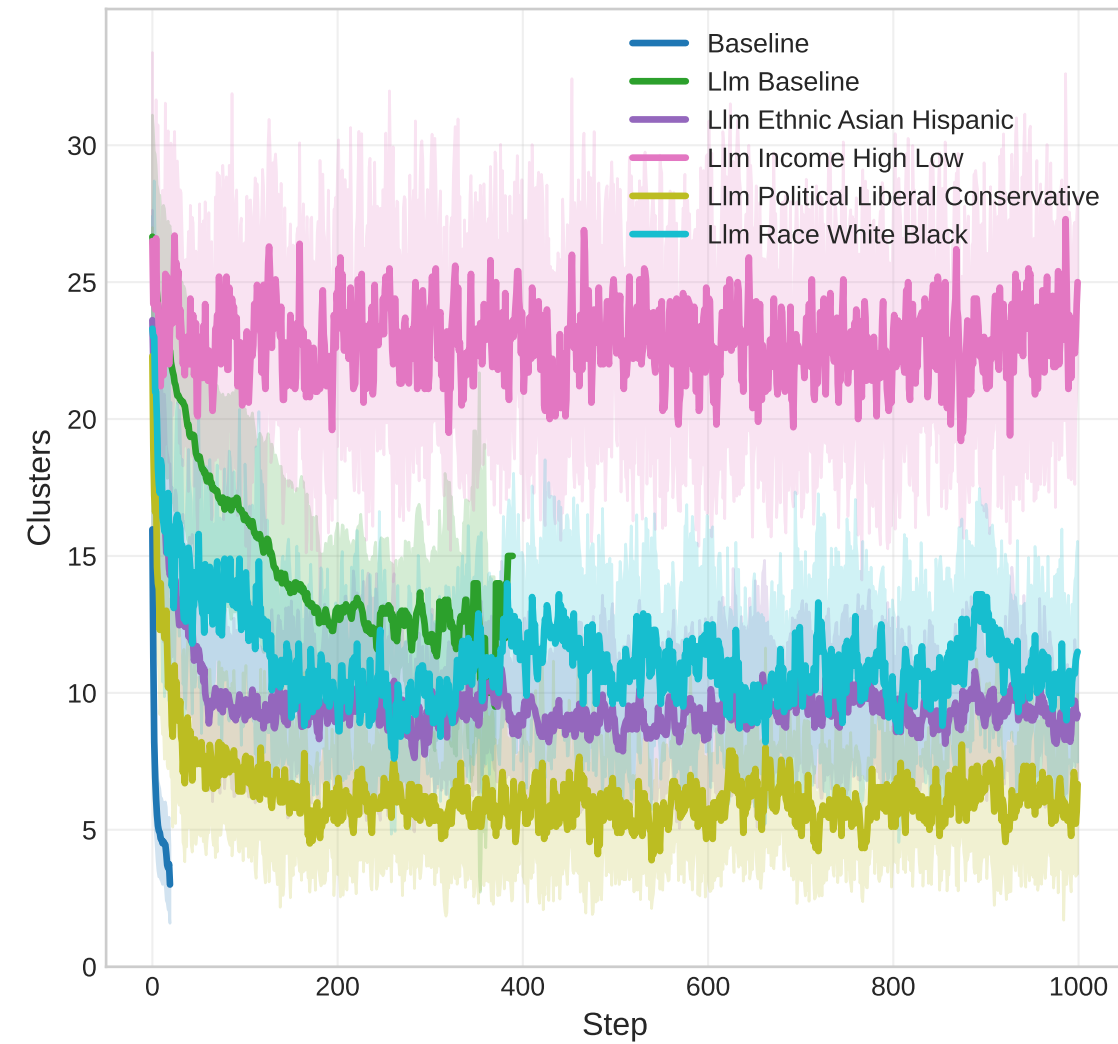
Llm Race White Black

## Final State Comparison: Distribution of Segregation Metrics

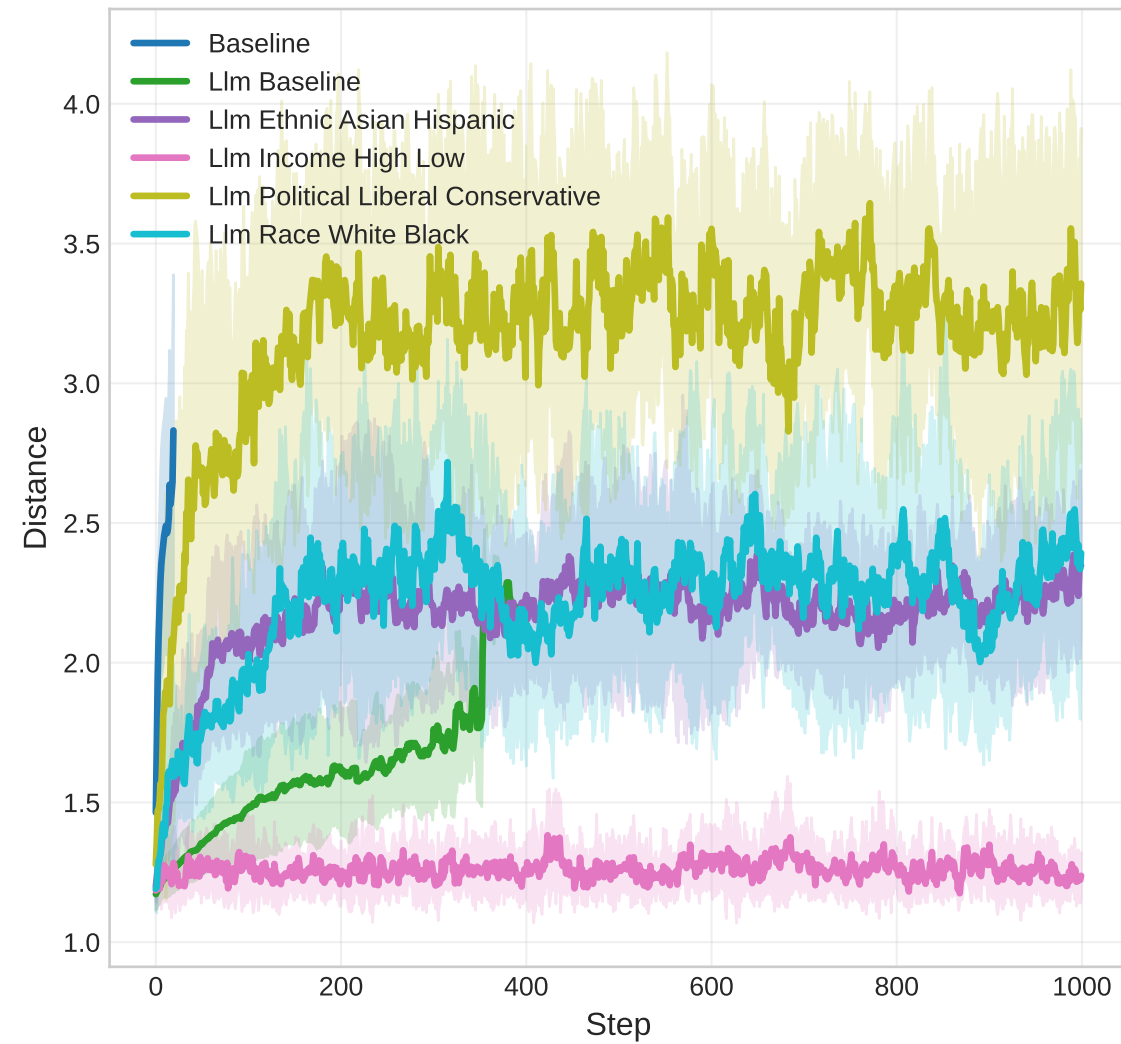


# Segregation Metrics Evolution: Pure Agent Type Comparison

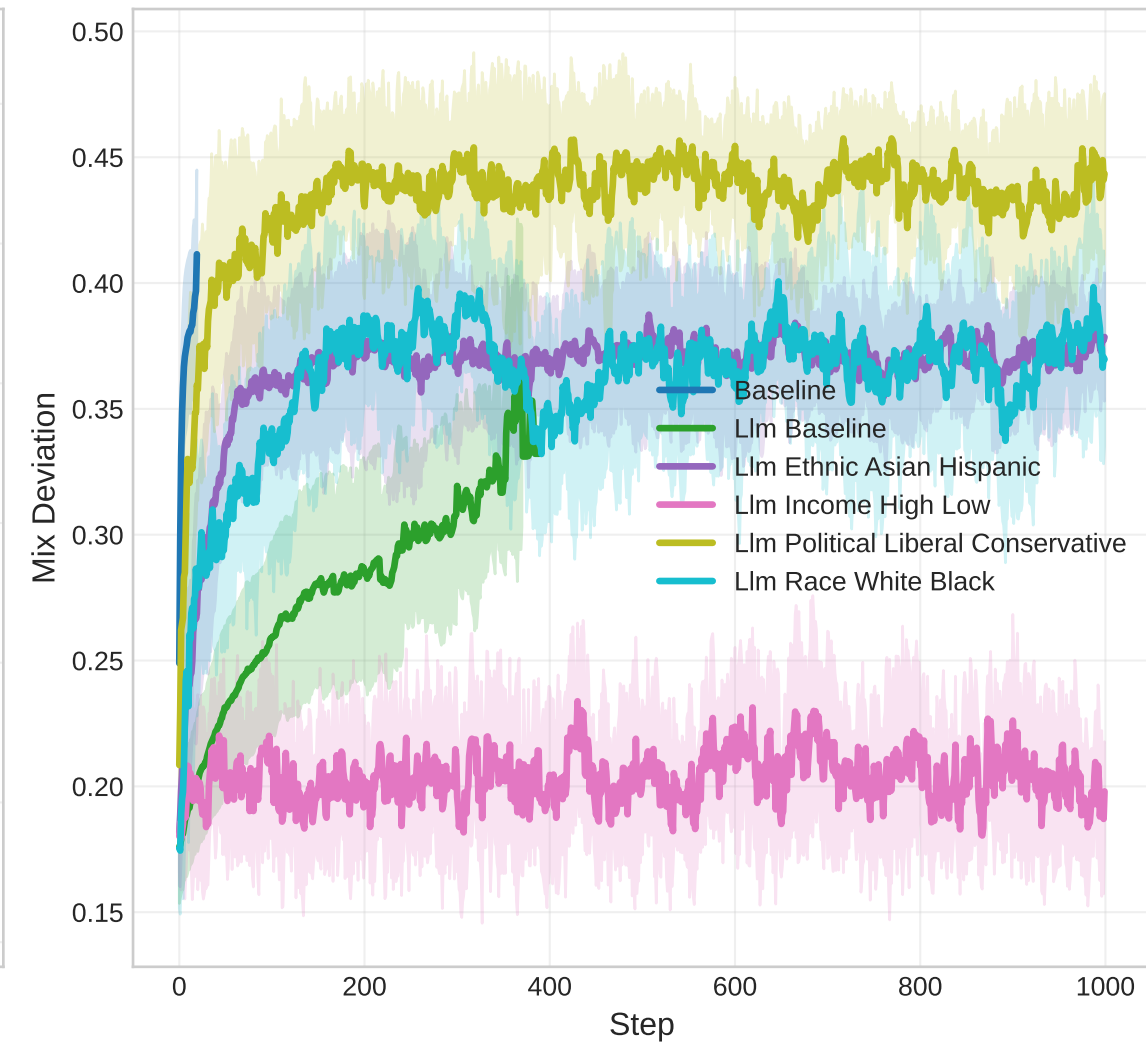
## Clusters Over Time



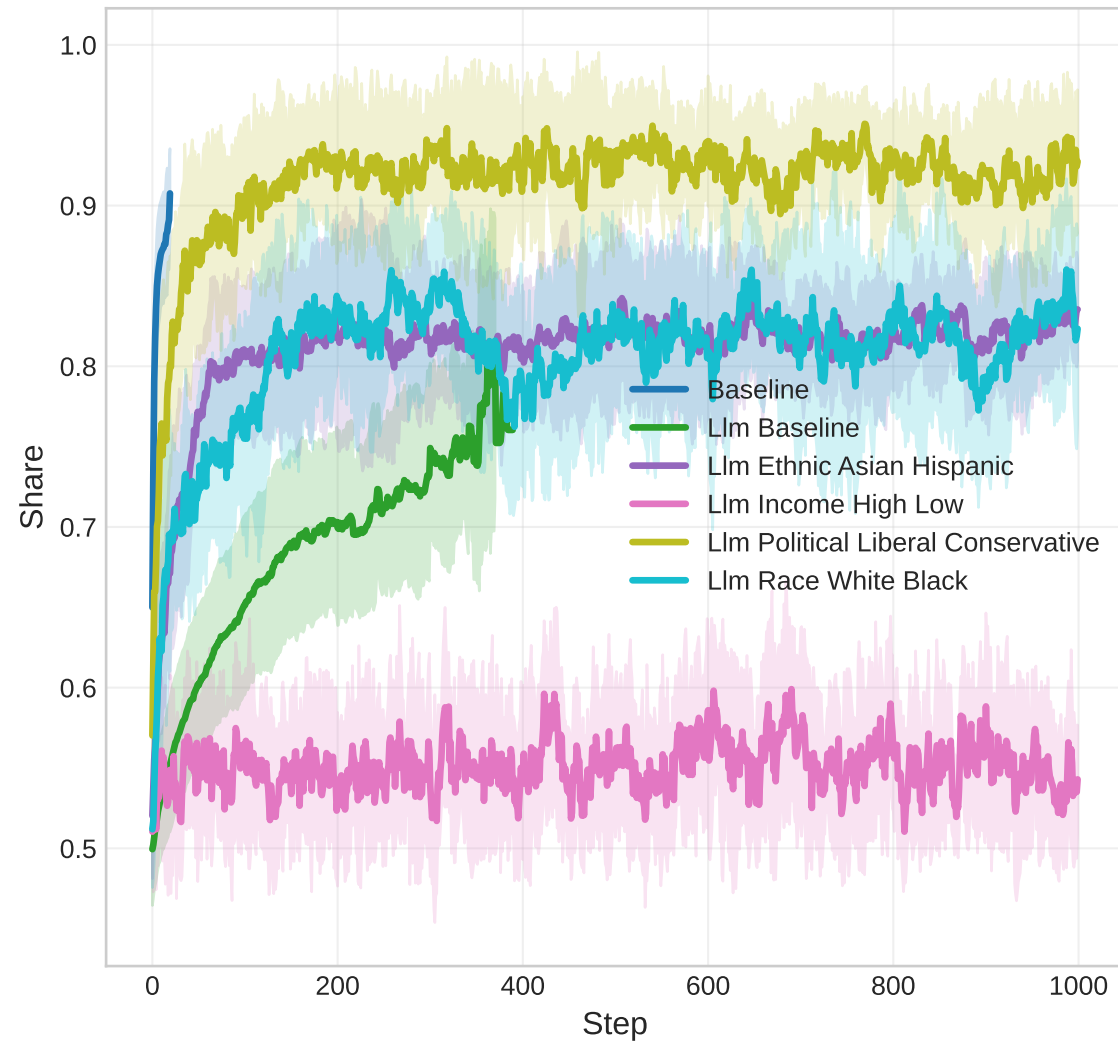
## Distance Over Time



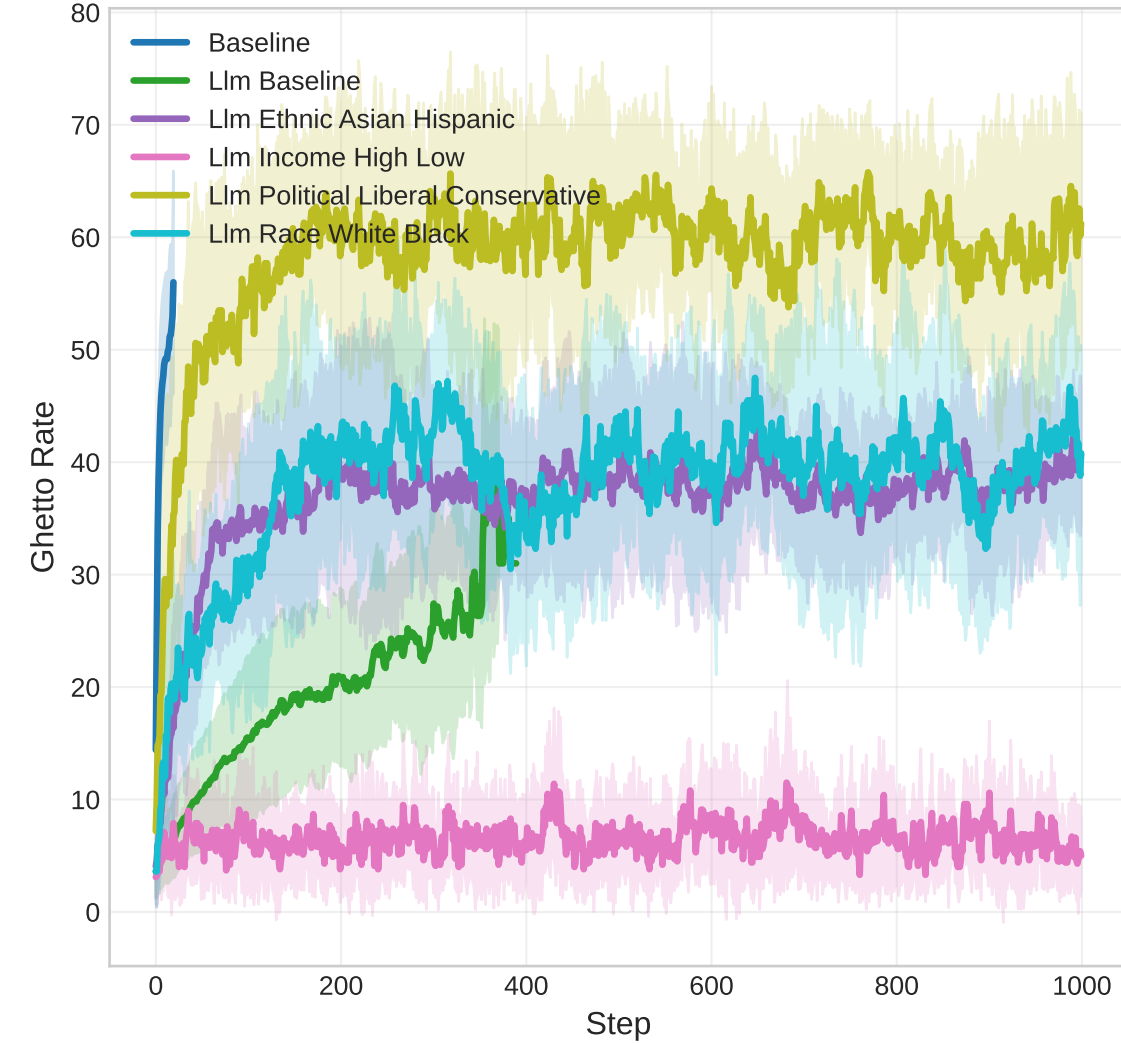
## Mix Deviation Over Time



## Share Over Time



## Ghetto Rate Over Time



Statistical Summary: Mean ± Standard Deviation

Metric	Baseline 202507201174	Baseline 202507081	Asian Hispanic 202507081	High Political 202507081	Liberal Conservative 202507081	White Black 202507081
Clusters	4.660 ± 1.558	13.810 ± 4.259	9.389 ± 4.017	25.000 ± 3.091	6.300 ± 3.302	11.500 ± 4.035
Distance	2.460 ± 0.442	1.594 ± 0.280	2.285 ± 0.378	1.238 ± 0.084	3.370 ± 0.525	2.392 ± 0.426
Mix Deviation	0.377 ± 0.033	0.279 ± 0.049	0.369 ± 0.053	0.198 ± 0.020	0.444 ± 0.030	0.370 ± 0.035
Share	0.869 ± 0.035	0.679 ± 0.072	0.821 ± 0.076	0.543 ± 0.034	0.928 ± 0.042	0.823 ± 0.060
Ghetto Rate	48.540 ± 7.663	19.480 ± 9.568	38.944 ± 11.222	5.000 ± 3.091	61.600 ± 9.312	40.800 ± 9.601

# □ PURE COMPARISON STUDY: KEY FINDINGS SUMMARY

## □ KEY FINDINGS: PURE AGENT TYPE COMPARISON STUDY

### □ EXECUTIVE SUMMARY

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This study compares three pure agent types in the Schelling Segregation Model:

- □ Mechanical Baseline: Traditional utility-maximizing agents
- □ Standard LLM: AI agents making human-like decisions (current context)
- □ Memory LLM: AI agents with persistent memory and relationship history

### □ MAJOR DISCOVERIES

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#### 1. ✂ LLM AGENTS CONVERGE 2X FASTER THAN MECHANICAL AGENTS

##### CONVERGENCE SPEED:

- Baseline 20250729 174459: 12 steps
- Llm Baseline 20250703 101243: Did not converge
- Llm Ethnic Asian Hispanic 20250713 221759: Did not converge
- Llm Income High Low 20250724 154316: Did not converge
- Llm Political Liberal Conservative 20250724 154733: 185 steps (10% converged)
- Llm Race White Black 20250718 195455: Did not converge

#### 2. □□ SIMILAR FINAL SEGREGATION LEVELS, DIFFERENT PATHS