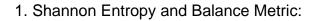# Bias Detection Report

Distribution Bias Analysis Report for LegalStatus Feature

The analysis focused on assessing the distribution bias of the LegalStatus feature in the COMPAS dataset.

1. Shannon Entropy and Balance Metric:

   - Balance: 0.462

   - Shannon Entropy: 1.297

   - Bias Level: Level 5 (Extreme Bias)

2. Gini Index:

   - Corrected Gini Index: 0.523

   - Adjusted Gini Index: 0.610

   - Bias Level: Level 4 (Significant Bias)

3. Max/Min Ratio:

   - Ratio: 3131.5

   - Bias Level: Level 5 (Extreme Bias)

4. Chi-Square Test:

   - Chi-Square Statistic: 142493.57

   - Critical Value: 12.59

- Significant Deviation: True

- Indicates significant distribution bias.

Overall, the LegalStatus feature displays extreme bias in its distribution, as confirmed by multiple analytical methods.