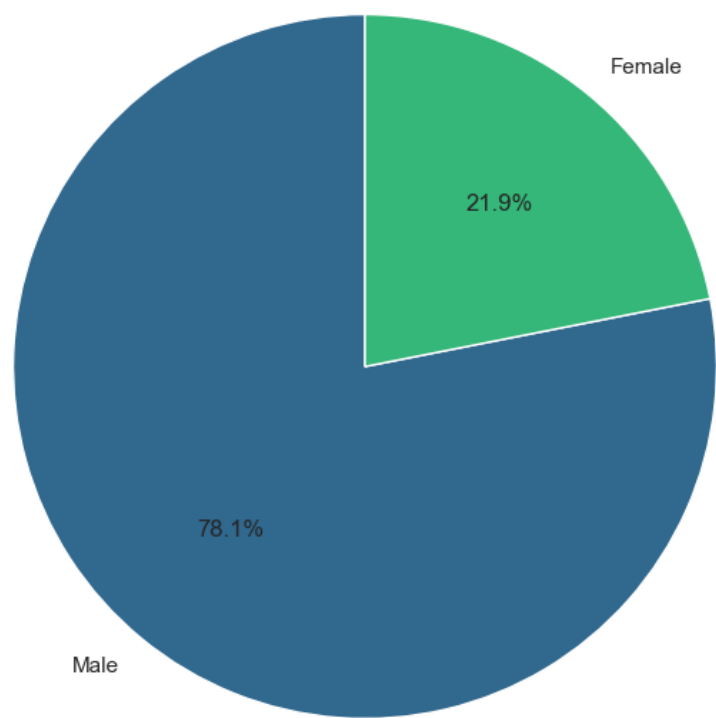# Bias Detection Report

Bias Detection Report for Gender Distribution in COMPAS Dataset

Introduction:

This report analyzes the potential bias introduced by the gender attribute in the COMPAS dataset. Multiple statistical methods have been employed to assess the distribution bias in the 'Sex_Code_Text' column.

Pie Chart of Sex_Code_Text

Analysis Summary:

1. Chi-Square Test: Indicated significant bias with a p-value of 0.0.

2. Kolmogorov-Smirnov Test: No significant bias, p-value of 1.0.

3. Jensen-Shannon Divergence: Moderate divergence with a value of 0.209.

4. Z-Score Analysis: Notable bias with Z-Scores of 1.0 for males and -1.0 for females.

5. Kullback-Leibler Divergence: Some divergence with a value of 0.167.

6. L2 Norm: Significant deviation with a value of 24172.45.

Overall Bias Level: The analysis concludes a 'Significant Bias' (Level 4) in the gender distribution.

Recommendations:

- Investigate potential causes of the bias.

- Consider dataset adjustments or additional data collection to address imbalance.