

# Bias Detection Report

## Bias Detection Report

### Dataset Analyzed:

- Student Performance Dataset

### Features Examined:

- Categorical Feature: 'paid' (extra paid classes)
- Numerical Feature: 'G3' (final grades)

### Type of Bias Detected:

- Correlation

### Tools and Methods Used:

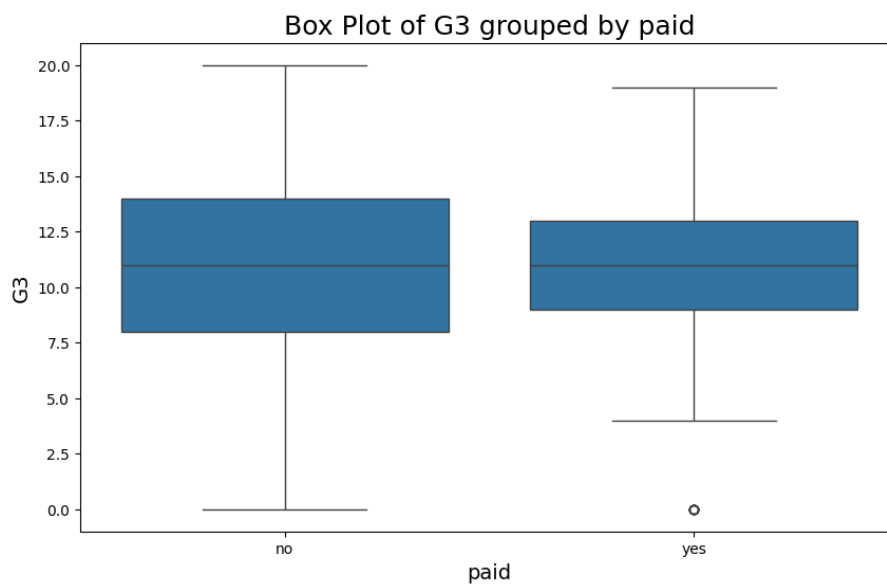
1. Max Absolute Mean Method
2. Cohen's d Effect Size
3. Average Causal Effect (ACE)
4. Z-Score Analysis from Literature

## Results and Bias Levels:

- **Max Absolute Mean:** 0.11 (Level 2 - Minimal Bias)
- **Cohen's d:** 0.21 (Level 2 - Minimal Bias)
- **ACE:** 0.94 (Level 1 - No Bias)
- **Z-Scores:** 'no' group: -0.09, 'yes' group: 0.11 (Level 1 - No Bias)

## Visualizations:

- See the box plot for distribution of 'G3' grades across 'paid' groups.



## Interpretation and Recommendations:

Based on the analysis, the correlation between attending extra paid classes ('paid') and final grades ('G3') shows minimal to no bias. The effect of paid classes on academic success appears negligible. You can confidently use this dataset for further academic performance analysis without concern for significant bias in this aspect.