

Bias Detection Report

Dataset Overview

Dataset Shape: (100, 12)

Statistical Summary

	count	mean	std	min	25%	50%	75%	max
DailyRate	100.00	1047.13	46.67	985.00	1005.00	1048.00	1065.00	1219.00
MonthlyIncome	100.00	6297.13	430.18	4511.00	6042.00	6147.00	6397.85	7060.00
YearsAtCompany	100.00	9.96	4.91	1.00	5.75	10.00	14.25	19.00
shortlisted	100.00	0.32	0.47	0.00	0.00	0.00	1.00	1.00
weight	100.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01

Distribution Analysis

Gender Distribution in Applicants:

Applicants (Female): 51.0%
Applicants (Male): 49.0%

Gender Distribution in Initially Shortlisted Candidates:

Shortlisted (Female): 53.1%
Shortlisted (Male): 46.9%

Percentage of Candidates Shortlisted Within Each Gender Group (Before Bias Filtering):

Female: 33.3% of Female candidates shortlisted
Male: 30.6% of Male candidates shortlisted

Gender Distribution in Accepted Candidates (After Bias Filtering):

Accepted (Female): 53.1%
Accepted (Male): 46.9%

Percentage of Candidates Accepted Within Each Gender Group (After Bias Filtering):

Female: 33.3% of Female candidates accepted

Male: 30.6% of Male candidates accepted

Fairness Metrics

Disparate Impact Ratio (Gender): 0.92 (Threshold: 0.8)
Note: DIR < 0.8 indicates significant bias (EEOC standard).

Fairness Metrics for Gender

Metric	Value
Demographic Parity Difference	0.027

Feature Contribution Check

Features potentially correlated with Gender (p-value < 0.05):

- Race (p-value: 0.000)
- Department (p-value: 0.000)
- DailyRate (p-value: 0.000)
- MonthlyIncome (p-value: 0.000)
- YearsAtCompany (p-value: 0.000)
- weight (p-value: 0.000)

Recommendation: These features may act as proxies for gender, contributing to bias.

Privacy Check

- email: Consider removing or anonymizing.
- phone: Consider removing or anonymizing.

Accepted Candidates Summary

Total Shortlisted Candidates (Before Bias Filtering): 32
Total Accepted Candidates (After Bias Filtering): 32
Candidates were filtered based on fairness metrics to reduce bias.

Accepted Candidates:

Person_5, Person_8, Person_11, Person_15, Person_18, Person_21, Person_24, Person_27, Person_30, Person_33, Person_36, Person_39, Person_42, Person_45, Person_48, Person_51, Person_54, Person_57, Person_60, Person_63, Person_66, Person_69, Person_72, Person_75, Person_78, Person_81, Person_84, Person_87, Person_90, Person_93, Person_96, Person_99