

# Dataset View - UII

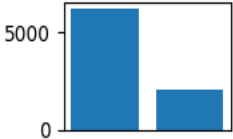
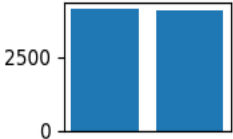
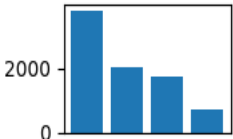
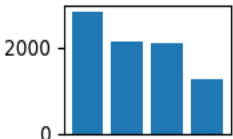
## Dataset Head

scores_M ATq_3	gender	mother_ed ucation	father_edu cation	mother_oc cupation	father_occ upation	immigrant _status	age_at_en rollment	books_in_ home	adults_rea ding_book s	school_ow nership	teacher_tr ansfer_rat e	capital_isl and	socioecon omic_stat us	decision
Middle Range	Male	Secondary	No Ed.	Unemploye d Not Looking	Unemploye d Looking	Spain	< 3	< 11	< 11	Public	High	No	High	Pass
Middle Range	Male	Tertiary	Tertiary	Unemploye d Not Looking	Retired	Spain	< 3	> 100	> 200	Public	Low	Yes	Low	Pass
Middle Range	Male	Primary	Primary	Retired	Unemploye d Looking	Spain	3 - 4	11 - 50	11 - 50	Public	Low	Yes	High	Pass
Middle Range	Female	Tertiary	Tertiary	Unemploye d Not Looking	Unemploye d Not Looking	Spain	< 3	51 - 100	101 - 200	Private	Low	Yes	Low	Pass
Middle Range	Female	Tertiary	Tertiary	Retired	Retired	Spain	< 3	11 - 50	> 200	Public	Low	Yes	High	Pass
Lower Tail	Female	Secondary	Secondary	Unemploye d Looking	Retired	Another Country	3 - 4	51 - 100	> 200	Public	High	Yes	High	Not Pass
Middle Range	Male	Primary	Primary	Retired	Unemploye d Not Looking	Spain	< 3	51 - 100	11 - 50	Private	Low	Yes	Low	Pass
Lower Tail	Female	No Ed.	No Ed.	Retired	Unemploye d Looking	Spain	< 3	11 - 50	> 200	Public	High	Yes	High	Not Pass
Middle Range	Male	Tertiary	Secondary	Unemploye d Not Looking	Unemploye d Not Looking	Spain	< 3	> 100	< 11	Private	Low	Yes	Low	Pass
Lower Tail	Female	Secondary	No Ed.	Retired	Unemploye d Looking	Spain	< 3	11 - 50	> 200	Public	High	No	Low	Not Pass
Lower Tail	Male	Secondary	Primary	Retired	Unemploye d Looking	Spain	< 3	51 - 100	11 - 50	Public	High	Yes	Low	Not Pass
Lower Tail	Male	Primary	Primary	Retired	Retired	Spain	3 - 4	< 11	11 - 50	Public	High	Yes	High	Not Pass
Middle Range	Female	Primary	Primary	Unemploye d Looking	Unemploye d Looking	Spain	< 3	< 11	> 200	Public	High	Yes	High	Pass
Middle Range	Male	Tertiary	Tertiary	Retired	Retired	Spain	< 3	< 11	11 - 50	Private	Low	Yes	High	Pass
Lower Tail	Female	Tertiary	Secondary	Unemploye d Not Looking	Retired	Spain	< 3	11 - 50	101 - 200	Public	Low	Yes	Low	Not Pass

Middle Range	Male	Tertiary	Tertiary	Unemployed Not Looking	Retired	Spain	< 3	> 100	> 200	Private	Low	Yes	Low	Pass
Middle Range	Male	Tertiary	Secondary	Retired	Retired	Spain	< 3	> 100	101 - 200	Public	High	Yes	Low	Pass
Lower Tail	Female	Tertiary	No Ed.	Retired	Retired	Spain	3 - 4	51 - 100	> 200	Public	High	Yes	High	Not Pass
Middle Range	Female	Tertiary	Primary	Wage Employment	Retired	Spain	< 3	11 - 50	> 200	Public	High	Yes	High	Pass
Middle Range	Female	Tertiary	Tertiary	Unemployed Not Looking	Unemployed Not Looking	Spain	< 3	> 100	> 200	Private	Low	Yes	Low	Pass
Middle Range	Male	Tertiary	Tertiary	Retired	Retired	Another Country	< 3	51 - 100	101 - 200	Public	Low	No	High	Pass
Middle Range	Female	Primary	Secondary	Unemployed Not Looking	Retired	Spain	< 3	11 - 50	11 - 50	Public	High	Yes	Low	Pass
Middle Range	Male	No Ed.	No Ed.	Unemployed Looking	Retired	Spain	3 - 4	11 - 50	> 200	Public	High	Yes	High	Pass
Lower Tail	Female	Secondary	Secondary	Retired	Retired	Spain	< 3	11 - 50	11 - 50	Public	Low	Yes	High	Not Pass
Lower Tail	Male	Primary	No Ed.	Unemployed Looking	Retired	Spain	< 3	< 11	11 - 50	Public	High	Yes	High	Not Pass
Middle Range	Male	Tertiary	Tertiary	Unemployed Not Looking	Unemployed Not Looking	Spain	< 3	51 - 100	> 200	Public	High	Yes	Low	Pass
Middle Range	Female	No Ed.	Primary	Unemployed Looking	Retired	Spain	3 - 4	< 11	11 - 50	Public	High	Yes	High	Pass
Middle Range	Male	Tertiary	Tertiary	Unemployed Not Looking	Unemployed Not Looking	Spain	< 3	> 100	> 200	Public	High	Yes	Low	Pass
Middle Range	Female	Tertiary	Tertiary	Unemployed Not Looking	Unemployed Not Looking	Another Country	< 3	> 100	> 200	Public	High	Yes	Low	Pass
Middle Range	Female	Primary	Primary	Unemployed Looking	Retired	Spain	3 - 4	> 100	> 200	Public	High	Yes	Low	Pass

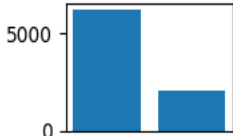
# Features View

## Stats

feature	missing_values	unique	top	freq	values	distribution	sensitive	target
scores_MATq_3	0	2	Middle Range	6217	Lower Tail, Middle Range		False	False
gender	0	2	Male	4172	Female, Male		True	False
mother_education	0	4	Tertiary	3796	No Ed., Primary, Secondary, Tertiary		False	False
father_education	0	4	Tertiary	2825	No Ed., Primary, Secondary, Tertiary		False	False

feature	missing_values	unique	top	freq	values	distribution	sensitive	target
mother_occupation	0	4	Retired	4898	Retired, Unemployed Looking, Unemployed Not Looking, Wage Employment		False	False
father_occupation	0	4	Retired	4725	Retired, Unemployed Looking, Unemployed Not Looking, Wage Employment		False	False
immigrant_status	0	2	Spain	7723	Another Country, Spain		False	False
age_at_enrollment	0	3	< 3	5521	3 - 4, < 3, > 4		False	False
books_in_home	0	4	11 - 50	3261	11 - 50, 51 - 100, < 11, > 100		False	False

feature	missing_values	unique	top	freq	values	distribution	sensitive	target
adults_reading_books	0	5	> 200	3552	101 - 200, 11 - 50, 51 - 100, < 11, > 200		False	False
school_ownership	0	2	Public	6187	Private, Public		False	False
teacher_transfer_rate	0	2	High	5382	High, Low		False	False
capital_island	0	2	Yes	7154	No, Yes		False	False
socioeconomic_status	0	2	Low	4149	High, Low		True	False

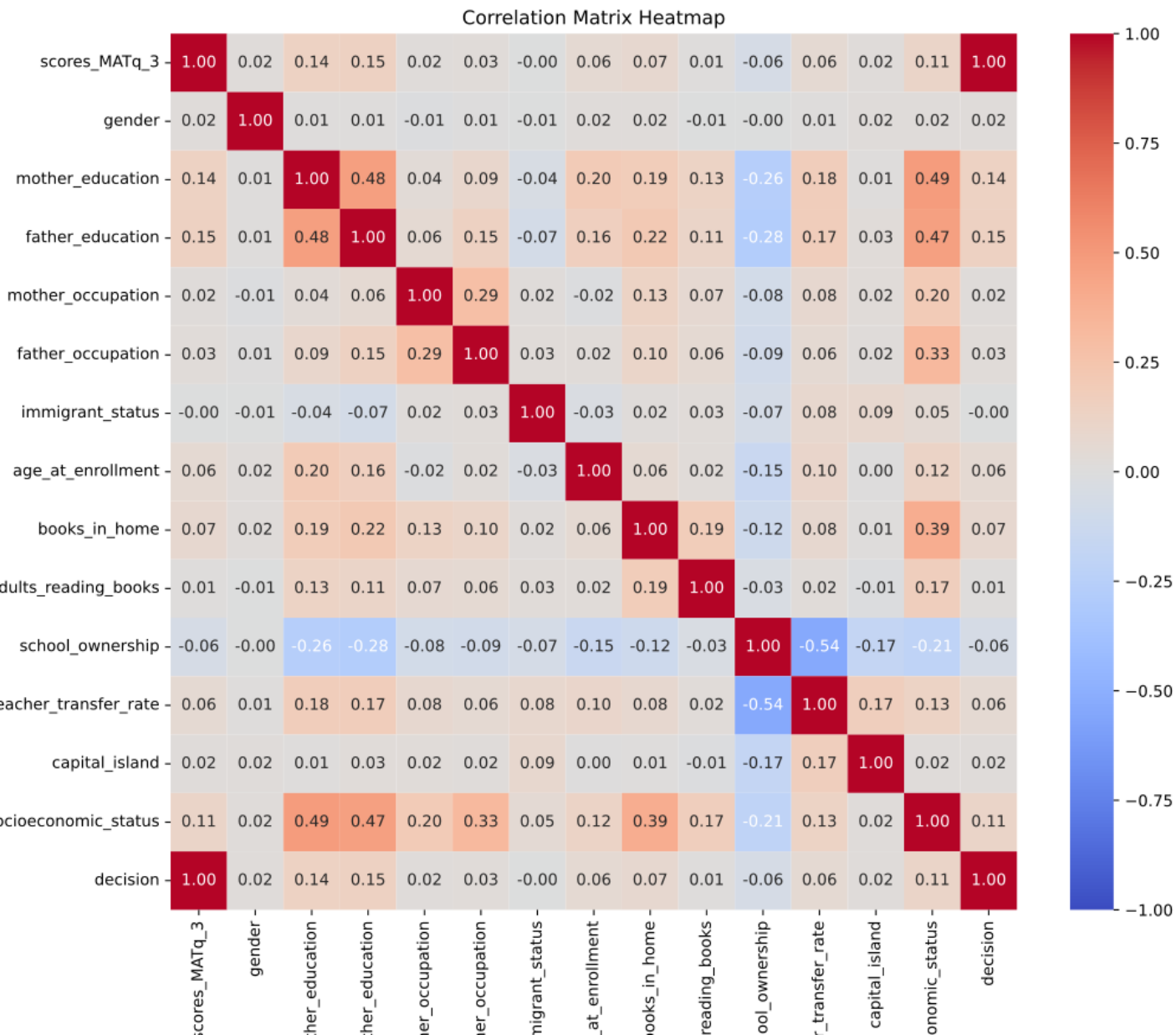
feature	missing_values	unique	top	freq	values	distribution	sensitive	target
decision	0	2	Pass	6217	Not Pass, Pass		False	True

## Features

Field Name	drop	sensitive	target
scores_MATq_3	✗	✗	✗
gender	✗	✓	✗
mother_education	✗	✗	✗
father_education	✗	✗	✗
mother_occupation	✗	✗	✗
father_occupation	✗	✗	✗
immigrant_status	✗	✗	✗
age_at_enrollment	✗	✗	✗
books_in_home	✗	✗	✗
adults_reading_books	✗	✗	✗
school_ownership	✗	✗	✗
teacher_transfer_rate	✗	✗	✗
capital_island	✗	✗	✗
socioeconomic_status	✗	✓	✗
decision	✗	✗	✓

# Proxies

## Correlation Matrix





## Suggested Proxies

### Gender

	scores_MATq_3	mother_education	father_education	mother_occupation	father_occupation	immigrant_status
correlation	1.85%	1.39%	1.21%	-1.40%	0.61%	-0.54%
suggested_proxy	✗	✗	✗	✗	✗	✗

### Gender

	age_at_enrollment	books_in_home	adults_reading_books	school_ownership	teacher_transfer_rate	capital_island
correlation	1.67%	1.69%	-0.75%	-0.04%	0.79%	1.59%
suggested_proxy	✗	✗	✗	✗	✗	✗

### Gender

	socioeconomic_status
correlation	1.78%
suggested_proxy	✗

## Socioeconomic\_status

	scores_MATq_3	gender	mother_education	father_education	mother_occupation	father_occupation
correlation	11.11%	1.78%	48.69%	46.50%	19.95%	32.76%
suggested_proxy	✗	✗	✗	✗	✗	✗

## Socioeconomic\_status

	immigrant_status	age_at_enrollment	books_in_home	adults_reading_books	school_ownership	teacher_transfer_rate
correlation	5.24%	12.11%	39.31%	16.93%	-20.82%	13.02%
suggested_proxy	✗	✗	✗	✗	✗	✗

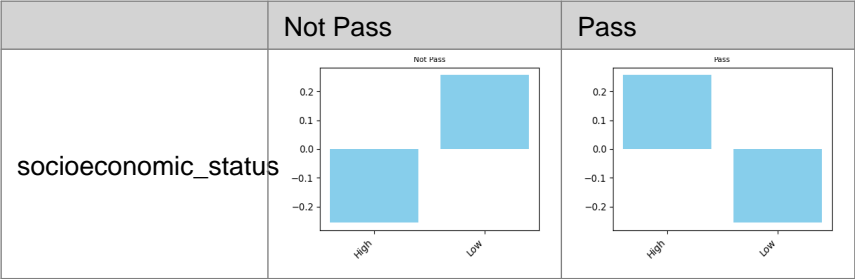
## Socioeconomic\_status

	capital_island
correlation	2.21%
suggested_proxy	✗

# Detection

## Selected Metrics

## ConditionedDemographicDisparity



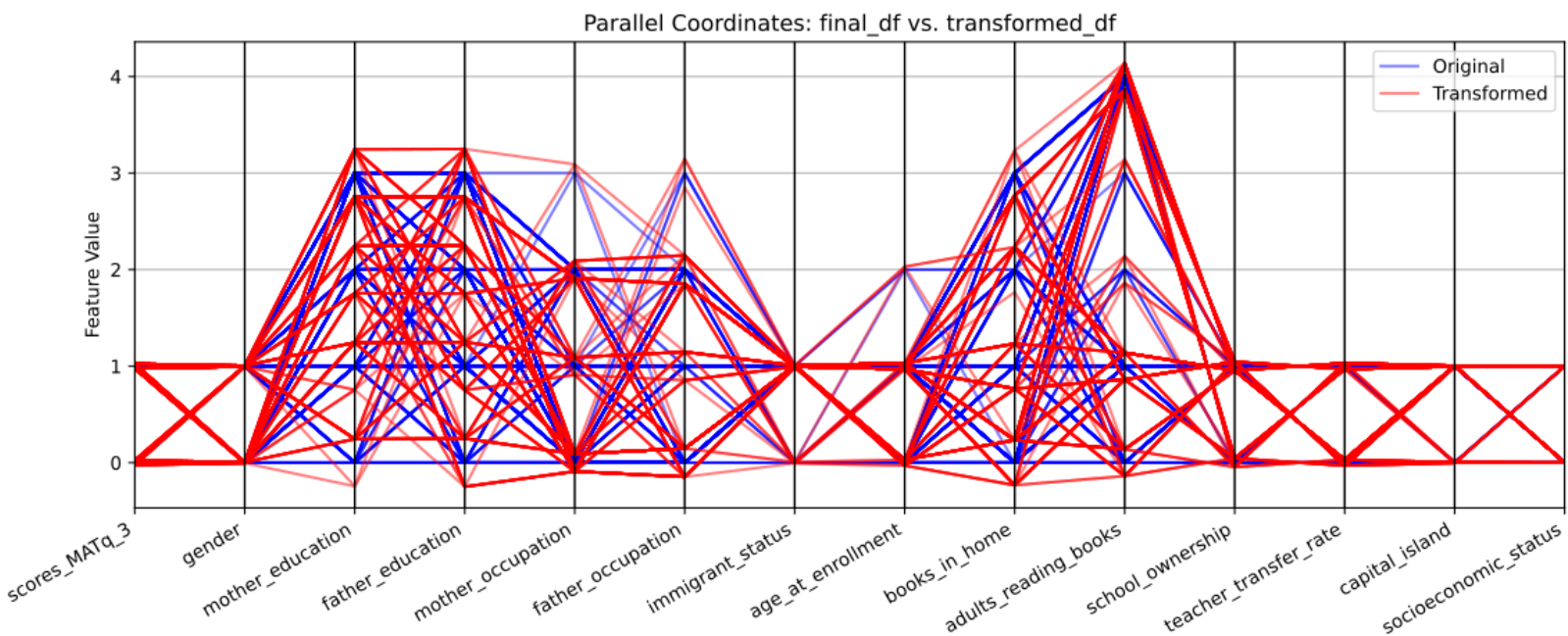
# Data Mitigation

## Preprocessing

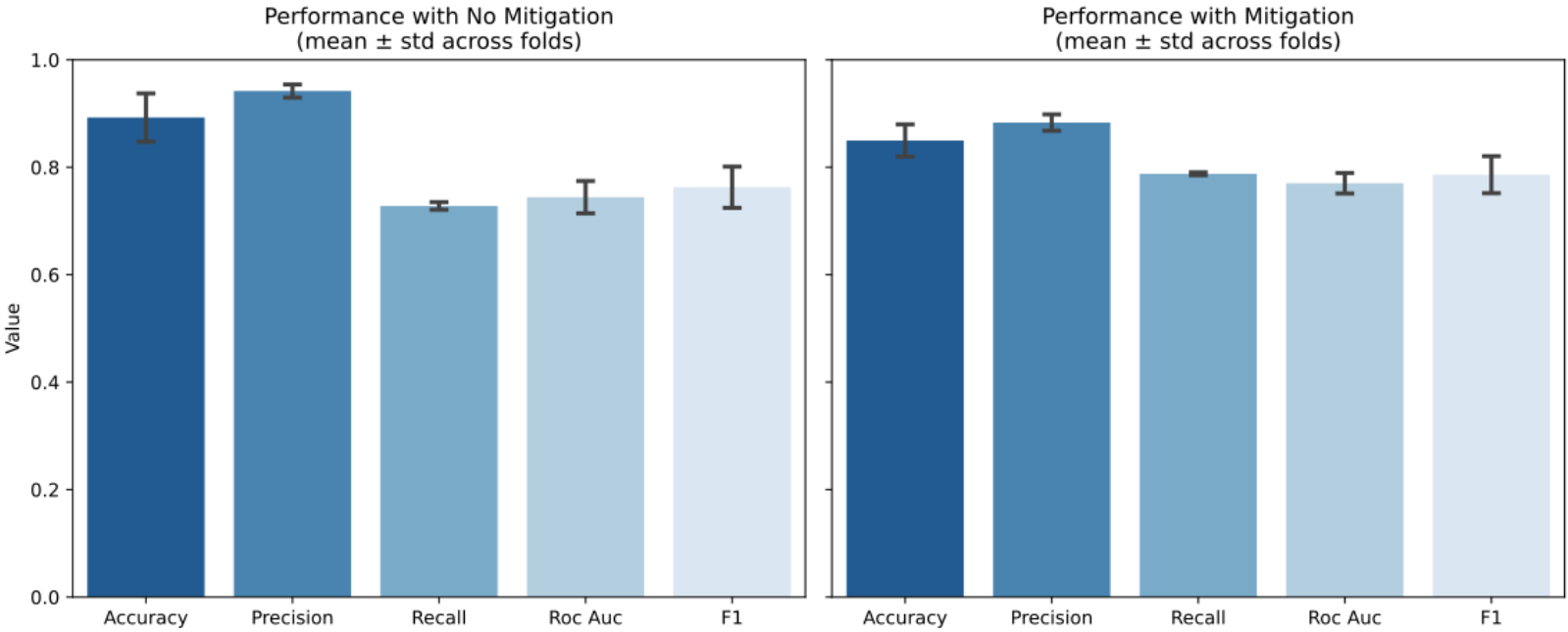
\$algorithm	alpha
CorrelationRemover	50.00%

# Data Mitigation Results

## Preprocessing Plot

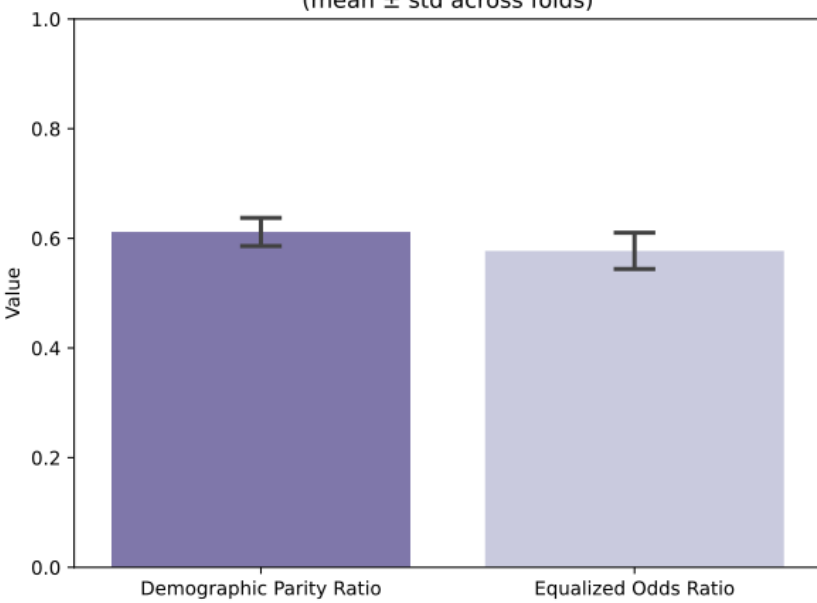


# Performance Plot

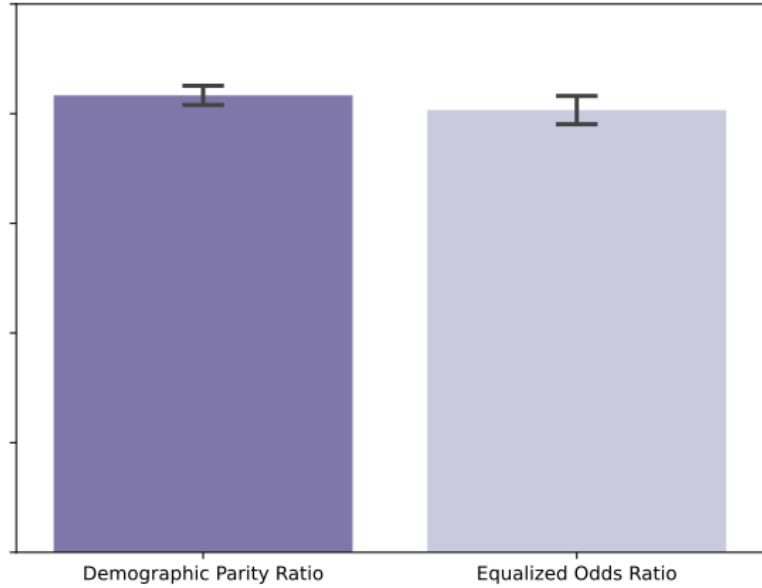


# Fairness Plot

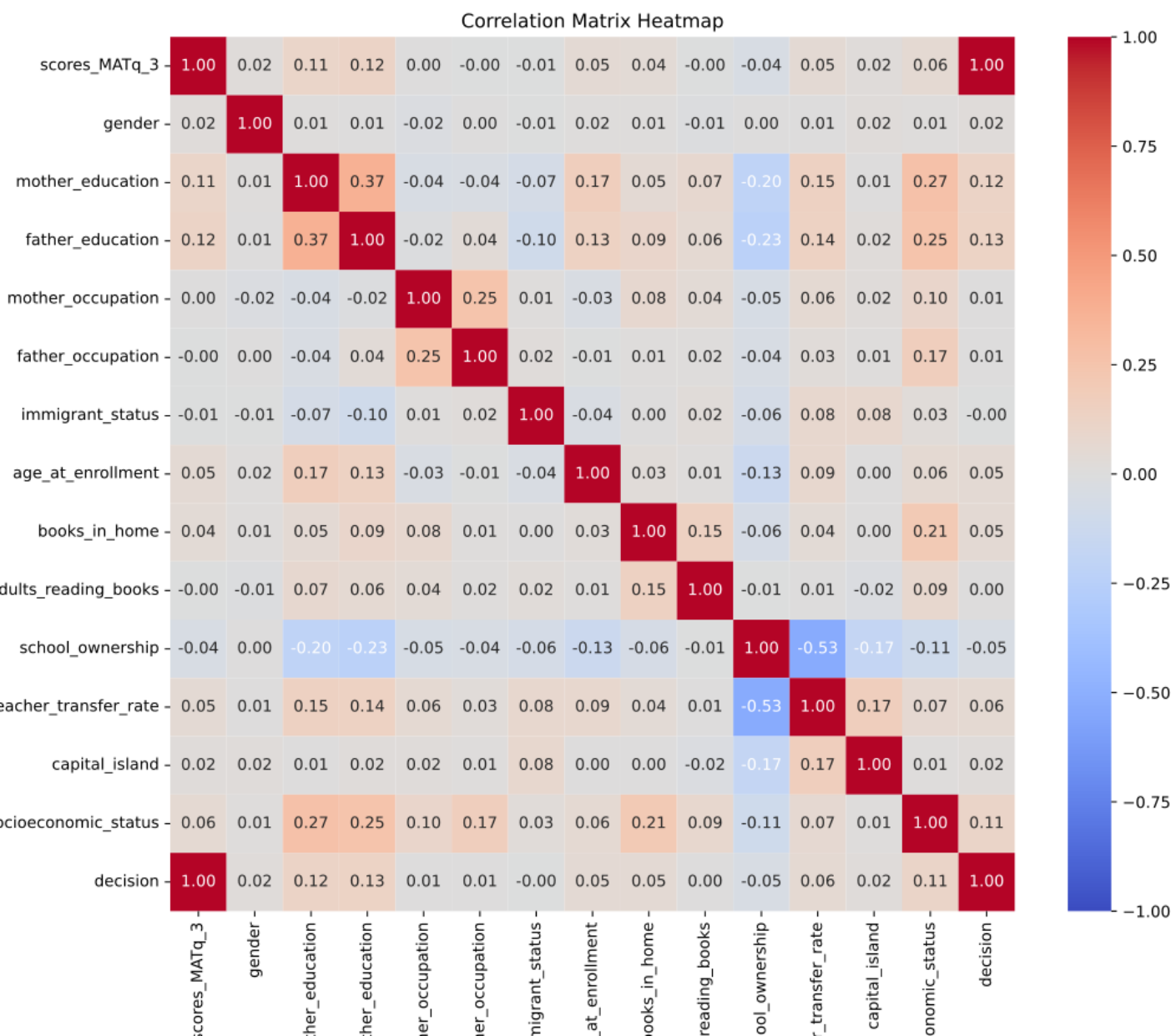
Fairness with No Mitigation  
(mean  $\pm$  std across folds)



Fairness with Mitigation  
(mean  $\pm$  std across folds)



# Correlation Matrix





## Dataset Head

scores_M ATq_3	gender	mother_ed ucation	father_edu cation	mother_oc cupation	father_occ upation	immigrant _status	age_at_en rollment	books_in_ home	adults_rea ding_book s	school_ow nership	teacher_tr ansfer_rat e	capital_isl and	socioecon omic_stat us	decision
1.0240884 135781845	1.0044659 46903614	2.2450739 88701644	0.2495604 722436403	2.0908243 464906677	1.1472560 429422567	1.0066135 69503704	1.0301468 0929095	2.2337239 13007382	3.1390910 39646199	0.9546624 869024312	0.0311032 194749087	0.0038092 405551126	High	Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	-0.1469721 074533345	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	3.8611771 52283704	1.0452500 94417217	0.9689567 529897332	0.9961981 04329062	Low	Pass
1.0240884 135781845	1.0044659 46903614	1.2450739 88701644	1.2495604 722436404	0.0908243 464906673	1.1472560 429422567	1.0066135 69503704	0.0301468 0929095	0.2337239 130073819	1.1390910 396461988	0.9546624 869024312	1.0311032 194749088	1.0038092 40555113	High	Pass
0.9759580 331098427	-0.0044573 357743709	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	0.7667267 477070213	-0.1388228 477162954	0.0452500 944172168	0.9689567 529897332	0.9961981 04329062	Low	Pass
1.0240884 135781845	0.0044659 469036138	3.2450739 88701644	3.2495604 722436404	0.0908243 464906673	0.1472560 429422566	1.0066135 69503704	1.0301468 0929095	0.2337239 130073819	4.1390910 39646199	0.9546624 869024312	1.0311032 194749088	1.0038092 40555113	High	Pass
0.0240884 135781845	0.0044659 469036138	2.2450739 88701644	2.2495604 722436404	1.0908243 464906673	0.1472560 429422566	0.0066135 695037038	0.0301468 0929095	1.2337239 13007382	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Not Pass
0.9759580 331098427	0.9955426 642256292	0.7553985 569502271	0.7509207 241357159	-0.0906492 212142331	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	0.7667267 477070213	0.8611771 522837046	0.0452500 944172168	0.9689567 529897332	0.9961981 04329062	Low	Pass
0.0240884 135781845	0.0044659 469036138	0.2450739 88701644	0.2495604 722436403	0.0908243 464906673	1.1472560 429422567	1.0066135 69503704	1.0301468 0929095	0.2337239 130073819	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Not Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	1.7509207 24135716	1.9093507 787857669	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	2.8611771 522837044	0.0452500 944172168	0.9689567 529897332	0.9961981 04329062	Low	Pass
-0.0240419 668901571	-0.0044573 357743709	1.7553985 56950227	-0.2490792 758642841	-0.0906492 212142331	0.8530278 925466654	0.9933991 826187424	0.9699113 190470416	-0.2332732 522929786	3.8611771 52283704	1.0452500 94417217	-0.0310432 470102668	-0.0038018 956709379	Low	Not Pass
-0.0240419 668901571	0.9955426 642256292	1.7553985 56950227	0.7509207 241357159	-0.0906492 212142331	0.8530278 925466654	0.9933991 826187424	0.9699113 190470416	0.7667267 477070213	0.8611771 522837046	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Not Pass
0.0240884 135781845	1.0044659 46903614	1.2450739 88701644	1.2495604 722436404	0.0908243 464906673	0.1472560 429422566	1.0066135 69503704	0.0301468 0929095	2.2337239 13007382	1.1390910 396461988	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Not Pass
1.0240884 135781845	0.0044659 469036138	1.2450739 88701644	1.2495604 722436404	1.0908243 464906673	1.1472560 429422567	1.0066135 69503704	1.0301468 0929095	2.2337239 13007382	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Pass
1.0240884 135781845	1.0044659 46903614	3.2450739 88701644	3.2495604 722436404	0.0908243 464906673	0.1472560 429422566	1.0066135 69503704	1.0301468 0929095	2.2337239 13007382	1.1390910 396461988	-0.0453375 130975688	1.0311032 194749088	1.0038092 40555113	High	Pass
-0.0240419 668901571	-0.0044573 357743709	2.7553985 56950227	1.7509207 24135716	1.9093507 787857669	-0.1469721 074533345	0.9933991 826187424	0.9699113 190470416	-0.2332732 522929786	-0.1388228 477162954	1.0452500 94417217	0.9689567 529897332	0.9961981 04329062	Low	Not Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	-0.1469721 074533345	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	3.8611771 52283704	0.0452500 944172168	0.9689567 529897332	0.9961981 04329062	Low	Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	1.7509207 24135716	-0.0906492 212142331	-0.1469721 074533345	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	-0.1388228 477162954	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass

0.0240884 135781845	0.0044659 469036138	3.2450739 88701644	0.2495604 722436403	0.0908243 464906673	0.1472560 429422566	1.0066135 69503704	0.0301468 0929095	1.2337239 13007382	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Not Pass
1.0240884 135781845	0.0044659 469036138	3.2450739 88701644	1.2495604 722436404	3.0908243 464906677	0.1472560 429422566	1.0066135 69503704	1.0301468 0929095	0.2337239 130073819	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Pass
0.9759580 331098427	-0.0044573 357743709	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	3.8611771 52283704	0.0452500 944172168	0.9689567 529897332	0.9961981 04329062	Low	Pass
1.0240884 135781845	1.0044659 46903614	3.2450739 88701644	3.2495604 722436404	0.0908243 464906673	0.1472560 429422566	0.0066135 695037038	1.0301468 0929095	1.2337239 13007382	0.1390910 396461989	0.9546624 869024312	1.0311032 194749088	0.0038092 405551126	High	Pass
0.9759580 331098427	-0.0044573 357743709	0.7553985 569502271	1.7509207 24135716	1.9093507 787857669	-0.1469721 074533345	0.9933991 826187424	0.9699113 190470416	-0.2332732 522929786	0.8611771 522837046	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass
1.0240884 135781845	1.0044659 46903614	0.2450739 88701644	0.2495604 722436403	1.0908243 464906673	0.1472560 429422566	1.0066135 69503704	0.0301468 0929095	0.2337239 130073819	4.1390910 39646199	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Pass
0.0240884 135781845	0.0044659 469036138	2.2450739 88701644	2.2495604 722436404	0.0908243 464906673	0.1472560 429422566	1.0066135 69503704	1.0301468 0929095	0.2337239 130073819	1.1390910 396461988	0.9546624 869024312	1.0311032 194749088	1.0038092 40555113	High	Not Pass
0.0240884 135781845	1.0044659 46903614	1.2450739 88701644	0.2495604 722436403	1.0908243 464906673	0.1472560 429422566	1.0066135 69503704	1.0301468 0929095	2.2337239 13007382	1.1390910 396461988	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Not Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	0.7667267 477070213	3.8611771 52283704	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass
1.0240884 135781845	0.0044659 469036138	0.2450739 88701644	1.2495604 722436404	1.0908243 464906673	0.1472560 429422566	1.0066135 69503704	0.0301468 0929095	2.2337239 13007382	1.1390910 396461988	0.9546624 869024312	0.0311032 194749087	1.0038092 40555113	High	Pass
0.9759580 331098427	0.9955426 642256292	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	1.8530278 925466652	0.9933991 826187424	0.9699113 190470416	2.7667267 47707021	3.8611771 52283704	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass
0.9759580 331098427	-0.0044573 357743709	2.7553985 56950227	2.7509207 24135716	1.9093507 787857669	1.8530278 925466652	-0.0066008 173812575	0.9699113 190470416	2.7667267 47707021	3.8611771 52283704	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass
0.9759580 331098427	-0.0044573 357743709	0.7553985 569502271	0.7509207 241357159	0.9093507 787857668	-0.1469721 074533345	0.9933991 826187424	-0.0300886 809529583	2.7667267 47707021	3.8611771 52283704	1.0452500 94417217	-0.0310432 470102668	0.9961981 04329062	Low	Pass

## **Selected\_metrics**

Field Name