

—— Duke University MIDS ——



IDS 702 TEAM PROJECT I

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Key Question

Whether job training for disadvantaged workers influenced their wages?

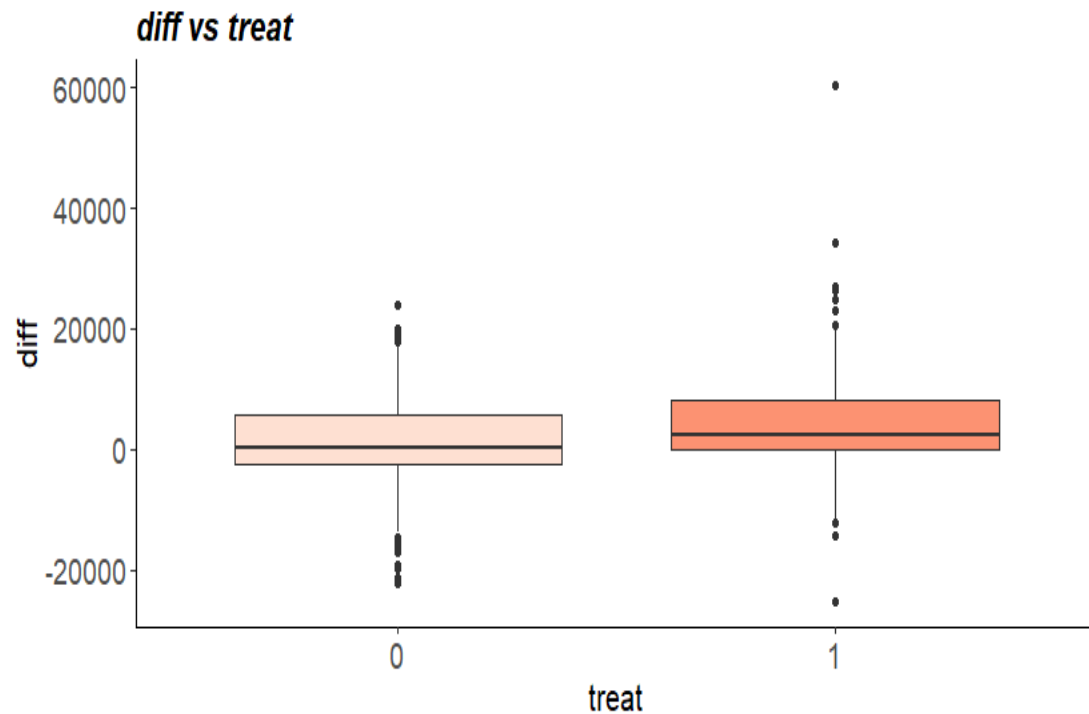
Data Set

- **Response Variable:**
 - wages difference = re78 - re74
- **Predictor Variables:**
 - 6 categorical variables & 1 numeric variable
- **Categorize Education for 3 Reasons:**
 - Insufficient data in the margins
 - American Education System
 - The Sheepskin Effect

Level	Condition	Total Number
Below High School	Year ≤ 9	134
High School Incomplete	Year ≥ 10 & ≤ 11	253
High School & Above	Year ≥ 12	227

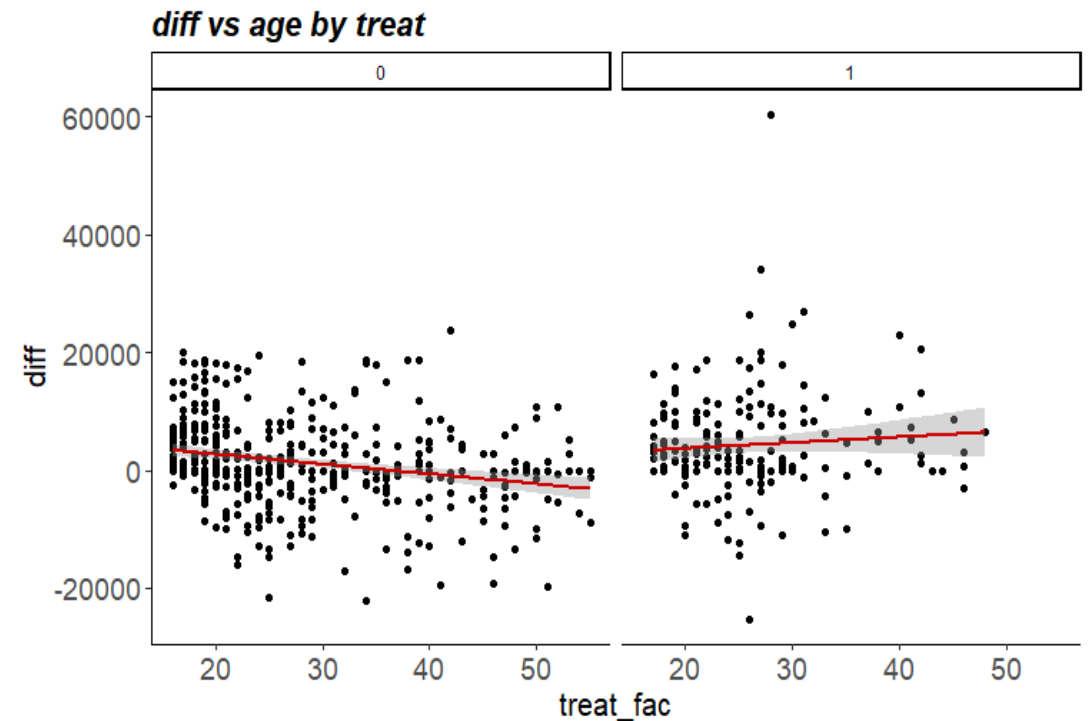
Predictor Variables

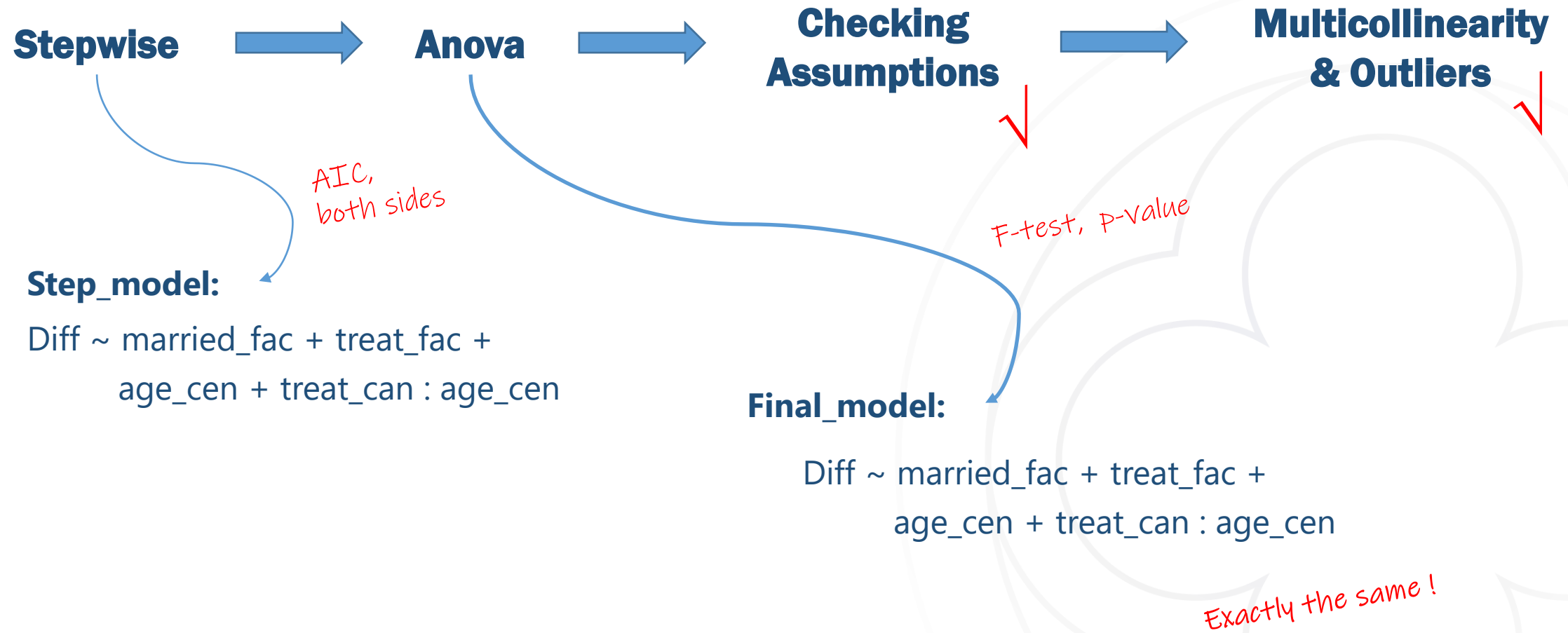
According to the boxplot, there is difference in distribution or potential association.



Interactions

According to the plots, we found 5 possible interactions.





Results

Final Model

$$wage \sim married + age_cen + treat_fac + treat_fac : age_cen$$

Coefficients & Statistical Values

	Estimate	Std. Error	t value	$Pr(> t)$	2.5 %	97.5 %
(Intercept)	2356.30	518.80	4.542	6.73e-06 ***	1337.44491	3375.15370
married_fac1	-1756.52	715.72	-2.454	0.014399 *	-3162.08942	-350.94220
age_cen	-135.79	37.11	-3.659	0.000275 ***	-208.68099	-62.90425
treat_fac1	2415.36	724.25	3.335	0.000905 ***	993.01918	3837.69125
age_cen:treat_fac1	255.88	87.21	2.934	0.003472 **	84.60686	427.15133

Other Statistical Values

Residual standard error	Multiple R^2	Adjusted R^2	F-statistic	p-value
7756 on 609 DF	0.07408	0.068	12.18 on 4 and 609 DF	1.561e-09

Results



Treat

2415 increase in salary if receive training



Married

1757 decrease in salary if married



Age

Compared to average age, 27: if age increase by 1 with no training, salary decrease by 135 (vice versa)



Treat: Age

If age difference increase by 1, salary will increase by 255.88 with training

Results



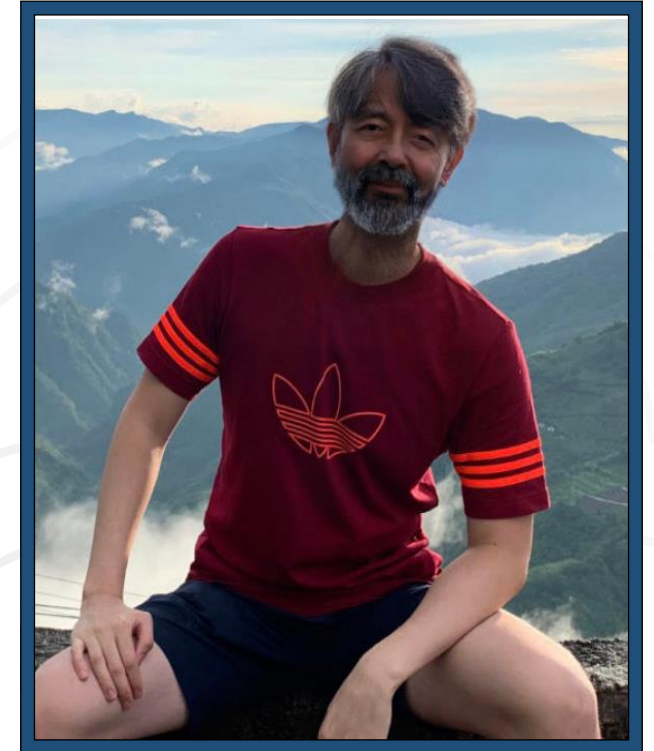
19 years old Dean
Receiving Job Training...

\$3442
+ \$3810



27 years old Dean
Receiving Job Training...

-\$1310
+ \$2415



67 years old Dean
Receiving Job Training...

- \$3075
+ \$9575

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Thank you

THE END

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