

Effect of Job Training on Wages of Disadvantaged Workers

Modeling and Representation of Data

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The Data

Control
Group



Job Training



429

The Data

Control
Group



Job Training



429

Treatment
Group



Job Training



185

Goal



Likelihood of
workers with job
training having non
zero wages

Goal



Likelihood of
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Interaction effects
between job
training and
demographics

Goal



Likelihood of
workers with job
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Interaction effects
between job
training **and**
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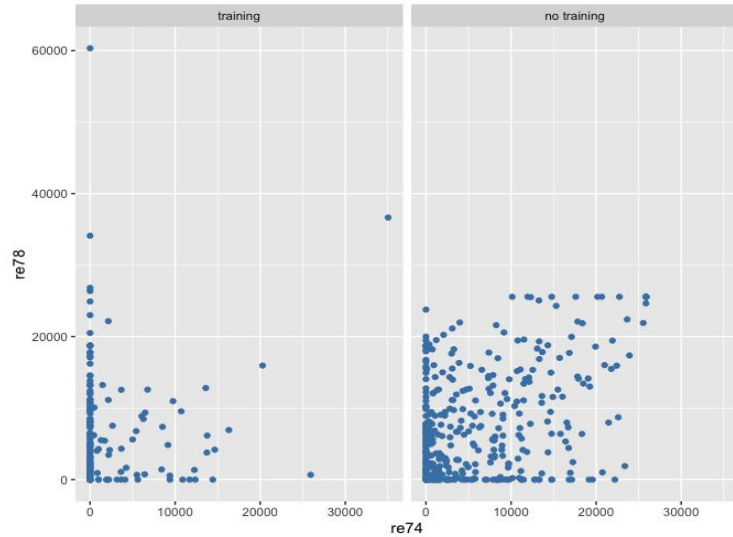


Interesting
associations **with**
positive wages

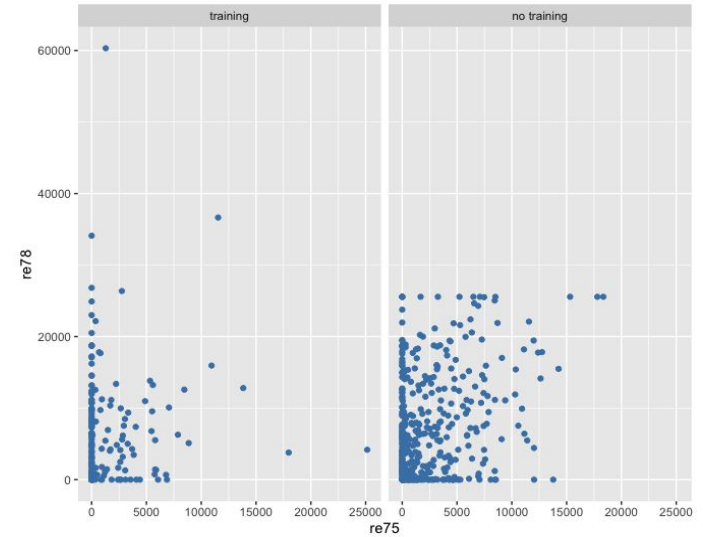
EDA

(re78 - response variable)

Real Annual Earnings in 1974 vs 1978 by Job Training



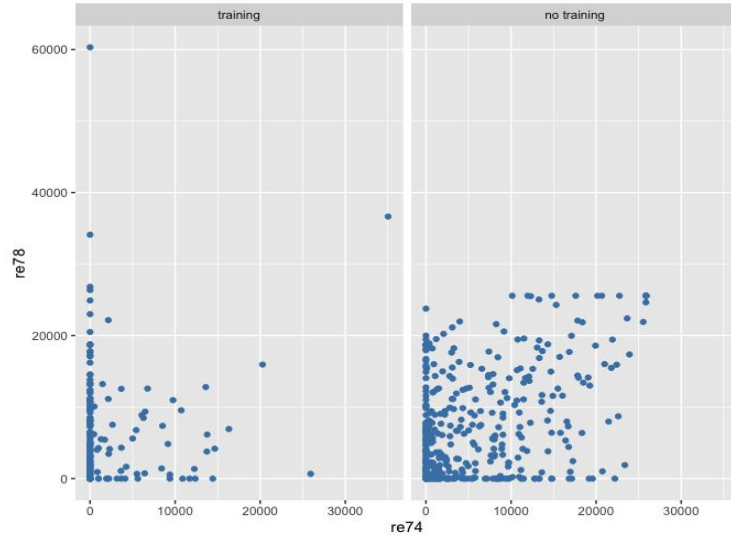
Real Annual Earnings in 1975 vs 1978 by Job Training



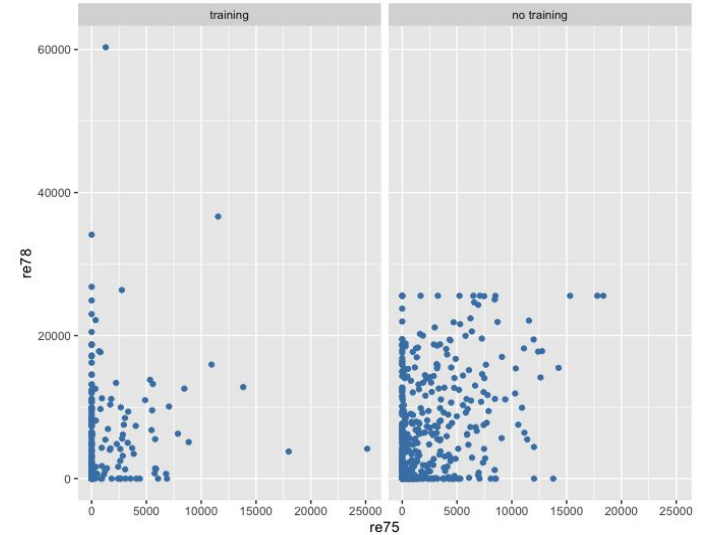
EDA

(re78 - response variable)

Real Annual Earnings in 1974 vs 1978 by Job Training



Real Annual Earnings in 1975 vs 1978 by Job Training



The data is **not** balanced

Predictors

(we did not include)



re74



re75

EDA



(treat - main predictor)

Conditional Probabilities of re78 by Treat

	training	no training
income	0.76	0.77
no income	0.24	0.23

Pearson's Chi-squared test with Yates' continuity correction

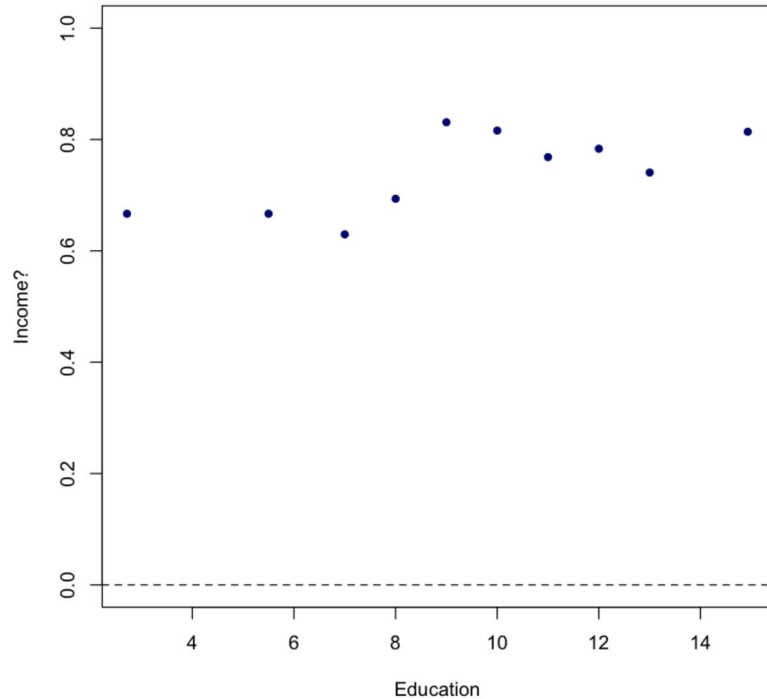
X-squared	df	p-value
0.086	1	.77

EDA



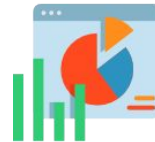
(educ)

Binned Education and Income in Year 1978



Transformed **educ** into a
factor variable with two levels

Results



$$positiveWages_i | x_i \sim \text{Bernoulli}(\pi_i)$$

$$\log(\pi_i / 1 - \pi_i) = \beta_0 + \beta_1 black_{i1} + (\beta_2 treat_{i2} * \beta_3 age_{i3}) + \beta_4 educ_{i4} + \beta_5 married_{i5}$$

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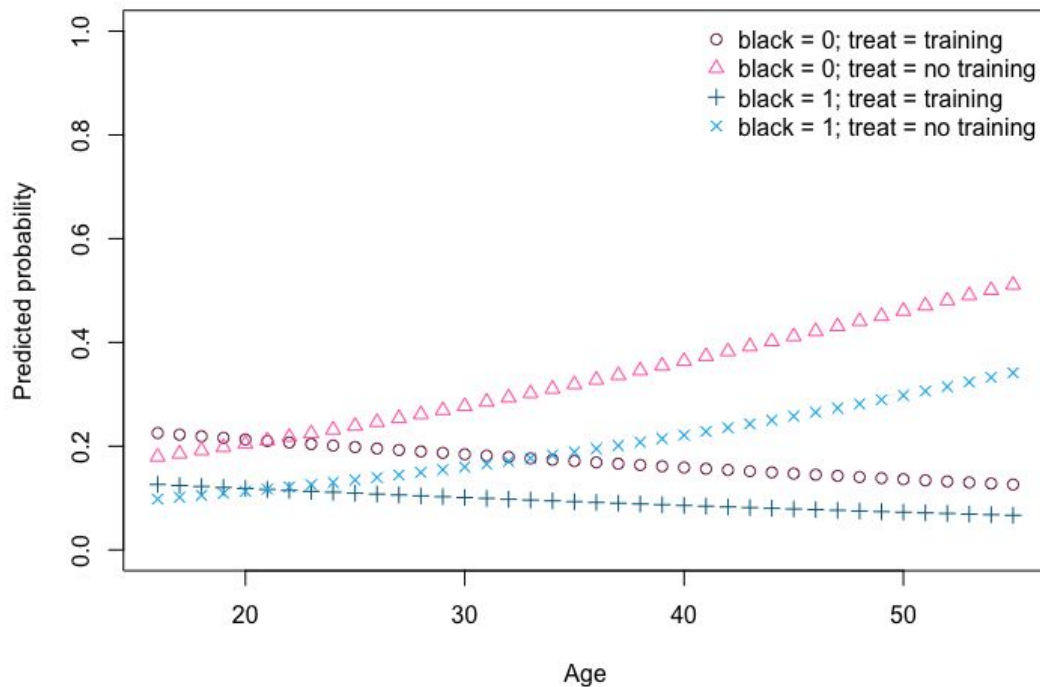
Summary of Final Model

Coefficients	Estimate	Std. Error	Z value	P value
(Intercept)	-0.39	0.74	-0.52	0.60
treat - no training	-1.21	0.74	-1.65	0.10 [*]
age	-0.02	0.03	-0.72	0.47
black - not black	-0.70	0.25	-3.06	0.00 ^{**}
edunew - >8yrs	-0.56	0.23	-2.45	0.01 [*]
married - not married	0.33	0.23	1.41	0.16
treat - no training:age	0.06	0.03	2.22	0.03 [*]

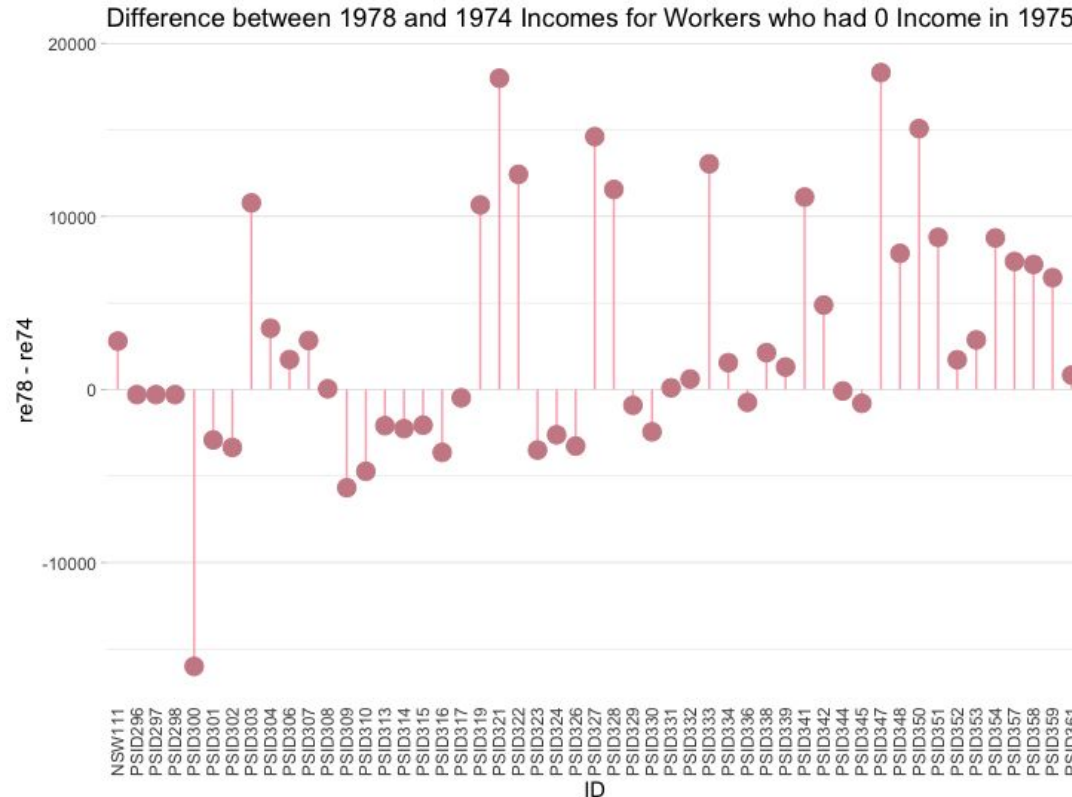
Interaction Effects

(treat and age)

Predicted Probability vs. Age by Treat



Interesting Insight



THANK YOU!