Econ203B HW2

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Contents

1 Question 6

a)

Dep. Variable:	totalscore	**R-squared:**	0.005
Model:	OLS	**Adj. R-squared:**	0.004
Method:	Least Squares	**F-statistic:**	12.36
Date:	Mon, 08 Feb 2021	**Prob (F-statistic):**	0.000446
Time:	17:36:06	**Log-Likelihood:**	-3674.1
No. Observations:	2530	**AIC:**	7352.
Df Residuals:	2528	**BIC:**	7364.
Df Model:	1		

	coef	**std err**	**t**	**P> |t|**	**[0.025**	**0.975]**
const	0.0623	0.032	1.945	0.052	-0.001	0.125
tracking	0.1469	0.042	3.516	0.000	0.065	0.229

Omnibus:	185.750	**Durbin-Watson:**	1.427
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	172.304
Skew:	0.576	**Prob(JB):**	3.84e-38
Kurtosis:	2.447	**Cond. No.**	2.88

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

b)

Dep. Variable:	totalscore	**R-squared:**	0.005
Model:	OLS	**Adj. R-squared:**	0.004
Method:	Least Squares	**F-statistic:**	12.35
Date:	Mon, 08 Feb 2021	**Prob (F-statistic):**	0.000449
Time:	17:36:27	**Log-Likelihood:**	-3674.1
No. Observations:	2530	**AIC:**	7352.
Df Residuals:	2528	**BIC:**	7364.
Df Model:	1		

	coef	**std err**	**t**	**P> |t|**	**[0.025**	**0.975]**
const	0.0623	0.032	1.942	0.052	-0.001	0.125
tracking	0.1469	0.042	3.514	0.000	0.065	0.229

Omnibus:	185.750	**Durbin-Watson:**	1.427
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	172.304
Skew:	0.576	**Prob(JB):**	3.84e-38
Kurtosis:	2.447	**Cond. No.**	2.88

Notes:
[1] Standard Errors are heteroscedasticity robust (HC1)

Dep. Variable:	totalscore	**R-squared:**	0.005
Model:	OLS	**Adj. R-squared:**	0.004
Method:	Least Squares	**F-statistic:**	12.35
Date:	Mon, 08 Feb 2021	**Prob (F-statistic):**	0.000449
Time:	17:37:31	**Log-Likelihood:**	-3674.1
No. Observations:	2530	**AIC:**	7352.
Df Residuals:	2528	**BIC:**	7364.
Df Model:	1		

	coef	**std err**	**t**	**P> |t|**	**[0.025**	**0.975]**
const	0.0623	0.032	1.942	0.052	-0.001	0.125
tracking	0.1469	0.042	3.514	0.000	0.065	0.229

Omnibus:	185.750	**Durbin-Watson:**	1.427
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	172.304
Skew:	0.576	**Prob(JB):**	3.84e-38
Kurtosis:	2.447	**Cond. No.**	2.88

Notes:
[1] Standard Errors are heteroscedasticity robust (HC2)

c) Part (b) includes confidence intervals.

d) Neither of these standard errors is consistent if there is clustering; these "robust" standard errors only trying to deal with heteroskedasticity.

e)

Dep. Variable:	totalscore	**R-squared:**	0.158
Model:	OLS	**Adj. R-squared:**	0.158
Method:	Least Squares	**F-statistic:**	325.5
Date:	Mon, 08 Feb 2021	**Prob (F-statistic):**	1.64e-193
Time:	17:52:05	**Log-Likelihood:**	-6923.8
No. Observations:	5150	**AIC:**	1.386e+04
Df Residuals:	5146	**BIC:**	1.388e+04
Df Model:	3		

	coef	**std err**	**t**	**P> |t|**	**[0.025**	**0.975]**
const	-0.3987	0.026	-15.389	0.000	-0.449	-0.348
tracking	0.1349	0.034	3.947	0.000	0.068	0.202
tophalf	0.7869	0.039	20.170	0.000	0.710	0.863
top_tracking	0.0151	0.052	0.291	0.771	-0.087	0.117

Omnibus:	304.400	**Durbin-Watson:**	1.499
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	359.630
Skew:	0.645	**Prob(JB):**	8.08e-79
Kurtosis:	2.889	**Cond. No.**	7.52

Notes:
[1] Standard Errors are heteroscedasticity robust (HC1)

The confidence interval on the coefficient for the interaction between top-half and tracking ("top-tracking") covers zero, so we cannot reject the null that the treatment effect is the same for the top half of the distribution.