


Lecture 5b: Practice Problems: John McGready



Lecture 5b: Practice Problems

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Hourly Wages

1. Recall the MLR relating hourly wages to years of formal education and worker's sex? (1 = female, 0 = male). Years of education in this sample ranged from 2 to 18 years.

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regress wage edlevel sex
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Source	SS	df	MS	Number of obs =
Model	2651.49936	2	1325.74968	534
Residual	11425.1992	531	21.5163827	F(2, 531) = 61.62
Total	14076.6985	533	26.4103162	Prob > F = 0.0000

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
edlevel	.7512834	.0768225	9.78	0.000	.6003701 .9021967
sex	-.1240857	.4028322	-.31	0.919	-2.915397 -1.332716
_cons	.2178312	1.036322	0.21	0.834	-1.817962 2.253624

2

Hourly Wages

1. Recall the MLR relating hourly wages to years of formal education and worker's sex? (1 = female, 0 = male). Years of education in this sample ranged from 2 to 18 years.

- What does the model estimate for the mean difference in hourly wages for male workers with 16 years of education compared to male workers with 12 years of education?
- Compute a 95% CI for the true mean difference in hourly wages for the same comparison in part a.
- What does the model estimate for the mean difference in hourly wages for female workers with 16 years of education compared to female workers with 12 years of education?

3

Hourly Wages

1. Recall the MLR relating hourly wages to years of formal education and worker's sex? (1 = female, 0 = male). Years of education in this sample ranged from 2 to 18 years.

- What does the model estimate for the mean difference in hourly wages for female workers with 16 years of education compared to male workers with 12 years of education?

4

Hemoglobin

2. Recall the MLR relating Hb to PCV and age. In this sample, PCV ranges from 25% to 55%; age ranges from 20 years to 67 years.

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. regress Hb PCV age
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Source	SS	df	MS	Number of obs =
Model	86.7923124	2	44.3961562	21
Residual	16.5591129	18	.919950714	F(2, 18) = 48.26
Total	105.351425	20	5.26757126	Prob > F = 0.0000

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
PCV	.1023427	.0312317	3.28	0.004	.0367274 .167959
age	-.1013414	.0164271	-6.17	0.000	-.0668293 -.1358574
_cons	5.516596	1.114866	4.95	0.000	3.174349 7.858842

5

Hourly Wages

2. Recall the MLR relating Hb to PCV and age. In this sample, PCV ranges from 25% to 55%; age ranges from 20 years to 67 years.

- What does the model estimate for the mean difference in Hb for 60 year old subjects with PCV of 40% compared to 60 year old subjects with PCV of 32%?
- Compute a 95% CI for the true mean difference in Hb levels for the same comparison in part a.
- What does the model estimate for the mean difference in Hb for 60 year old subjects with PCV of 40% compared to 50 year old subjects with PCV of 32%?

6