

Application exercise 7.1: MLR interpretations

Submit your responses on [Sakai](#), under the appropriate assignment. Only one submission per team is required. One team will be randomly selected and their responses will be discussed.

Income in the US

The data come from a random sample of 783 observations from the 2012 ACS.

1. `income`: Yearly income (wages and salaries)
2. `employment`: Employment status, not in labor force, unemployed, or employed
3. `hrs_work`: Weekly hours worked
4. `race`: Race, White, Black, Asian, or other
5. `age`: Age
6. `gender`: gender, male or female
7. `citizens`: Whether respondent is a US citizen or not
8. `time_to_work`: Travel time to work
9. `lang`: Language spoken at home, English or other
10. `married`: Whether respondent is married or not
11. `edu`: Education level, hs or lower, college, or grad
12. `disability`: Whether respondent is disabled or not
13. `birth_qrtr`: Quarter in which respondent is born, jan thru mar, apr thru jun, jul thru sep, or oct thru dec

The following model was fit to predict income:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-15342.76	11716.57	-1.31	0.19
hrs_work	1048.96	149.25	7.03	0.00
raceblack	-7998.99	6191.83	-1.29	0.20
raceasian	29909.80	9154.92	3.27	0.00
raceother	-6756.32	7240.08	-0.93	0.35
age	565.07	133.77	4.22	0.00
genderfemale	-17135.05	3705.35	-4.62	0.00
citizenyes	-12907.34	8231.66	-1.57	0.12
time_to_work	90.04	79.83	1.13	0.26
langother	-10510.44	5447.45	-1.93	0.05
marriedyes	5409.24	3900.76	1.39	0.17
educollege	15993.85	4098.99	3.90	0.00
edugrad	59658.52	5660.26	10.54	0.00
disabilityyes	-14142.79	6639.40	-2.13	0.03
birth_qrtrapr thru jun	-2043.42	4978.12	-0.41	0.68
birth_qrtrjul thru sep	3036.02	4853.19	0.63	0.53
birth_qrthroct thru dec	2674.11	5038.45	0.53	0.60

1. Interpret the intercept.
2. Interpret the slope for `hrs_work`.
3. Interpret the slope for `gender`.