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                                            Statistics/Data Analysis

                                          Project: Salary Analysis
```

1 . reg lwage sibs

Source	SS	df	MS		
				Number of obs	= 935
				F(1, 933)	= 22.31
Model	3.86818211	1	3.86818211	Prob > F	= 0.0000
Residual	161.788112	933	.173406337	R-squared	= 0.0234
				Adj R-squared	= 0.0223
Total	165.656294	934	.177362199	Root MSE	= .41642

lwage	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
sibs	-.0279044	.0059082	-4.72	0.000	-.0394992	-.0163096
_cons	6.861076	.0220776	310.77	0.000	6.817748	6.904403

2 . # Having siblings causes it to be more likely to have a negative impact on salary
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3 . correlate lwage sibs, covariance
(obs=935)

	lwage	sibs
lwage	.177362	
sibs	-.148418	5.31881

4 . correlate educ exper tenure age IQ, covariance
(obs=935)

	educ	exper	tenure	age	IQ
educ	4.82529				
exper	-4.37781	19.137			
tenure	-.403202	5.4096	25.7577		
age	-.083655	6.73418	4.26813	9.65844	
IQ	17.0517	-14.8103	3.22073	-2.04623	226.582

5 . ivregress 2sls lwage married exper urban (educ = sibs)

Instrumental variables (2SLS) regression

Number of obs	=	935
Wald chi2(**4**)	=	93.46
Prob > chi2	=	0.0000
R-squared	=	0.1164
Root MSE	=	.39566

lwage	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
educ	.1345113	.0281745	4.77	0.000	.0792902	.1897324
married	.2218666	.0421676	5.26	0.000	.1392197	.3045135
exper	.0318867	.0070583	4.52	0.000	.0180527	.0457207
urban	.1640385	.0296162	5.54	0.000	.1059918	.2220852
_cons	4.28276	.4533685	9.45	0.000	3.394174	5.171346

Instrumented: educ
Instruments: married exper urban sibs

6 . reg lwage educ married exper urban

Source	SS	df	MS		
Model	31.5368615	4	7.88421538		
Residual	134.119433	930	.144214444		
Total	165.656294	934	.177362199		

Number of obs = 935
F(4, 930) = 54.67
Prob > F = 0.0000
R-squared = 0.1904
Adj R-squared = 0.1869
Root MSE = .37976

lwage	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
educ	.0758398	.0063651	11.91	0.000	.0633481	.0883314
married	.2183497	.0404417	5.40	0.000	.1389822	.2977172
exper	.0185617	.003204	5.79	0.000	.0122737	.0248497
urban	.1784549	.0276823	6.45	0.000	.1241278	.2327819
_cons	5.219855	.1146223	45.54	0.000	4.994906	5.444803

7 . # Via the comparison between 2SLS and OLS, the educ parameter displays disparate results, strong
> ly indicating endogeneity
Unknown #command

8 . reg married age black sibs meduc feduc, vce(robust)

Linear regression

Number of obs = 722
F(5, 716) = 2.82
Prob > F = 0.0156
R-squared = 0.0181
Root MSE = .31404

married	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
age	.0102375	.0035619	2.87	0.004	.0032445	.0172306
black	-.088297	.0543056	-1.63	0.104	-.1949143	.0183204
sibs	.0018156	.0048892	0.37	0.710	-.0077832	.0114145
meduc	-.0037291	.0047716	-0.78	0.435	-.013097	.0056389
feduc	-.0018073	.0043515	-0.42	0.678	-.0103506	.006736
_cons	.6125827	.1325136	4.62	0.000	.3524211	.8727444

9 . probit married meduc feduc black educ wage

Iteration 0:   log likelihood = -253.46989
Iteration 1:   log likelihood = -239.8312
Iteration 2:   log likelihood = -239.5684
Iteration 3:   log likelihood = -239.56819
Iteration 4:   log likelihood = -239.56819

Probit regression

Number of obs = 722
LR chi2(5) = 27.80
Prob > chi2 = 0.0000
Pseudo R2 = 0.0548

Log likelihood = -239.56819

married	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
meduc	-.0195521	.0287381	-0.68	0.496	-.0758778	.0367737
feduc	-.0173289	.024234	-0.72	0.475	-.0648266	.0301688
black	-.3094681	.2070831	-1.49	0.135	-.7153436	.0964074
educ	-.0628024	.0321562	-1.95	0.051	-.1258275	.0002226
wage	.0008607	.000197	4.37	0.000	.0004745	.0012469
_cons	1.719931	.4243604	4.05	0.000	.8882003	2.551662

10 . margins, dydyx
   option dydyx not allowed
   r(198);

11 . margins, dydx(*)

   Average marginal effects   Number of obs   =   **722**
   Model VCE   : **OIM**

   Expression   : **Pr(married), predict()**
   dy/dx w.r.t. : **meduc feduc black educ wage**

	dy/dx	Delta-method Std. Err.	z	P>|z|	[95% Conf. Interval]	
meduc	-.0035385	.0052014	-0.68	0.496	-.0137332	.0066561
feduc	-.0031362	.0043846	-0.72	0.474	-.0117299	.0054575
black	-.0560078	.0374726	-1.49	0.135	-.1294526	.0174371
educ	-.011366	.005817	-1.95	0.051	-.0227671	.000035
wage	.0001558	.0000358	4.35	0.000	.0000856	.0002259

12 . save "\\Client\C$\Users\adityamukherjee\Documents\Data Projects\wage 2 statistical report.dta"
   file \\Client\C$\Users\adityamukherjee\Documents\Data Projects\wage 2 statistical report.dta saved

13 .