

Sta442/1008f05 Overheads 8

Replication of findings for Math data

```
/* mathreg3.sas */
%include 'mathexread3.sas';
title2 'Replicate this';

proc reg;
  title3 'Jerry''s favorite model, plus e4';
  model grade = gpa english hscalc totscore tongue e4;
  TongueE4: test tongue = e4 = 0;

proc reg;
  title3 'From the multivariate tests';
  model english = gender tongue e1;
  model totscore = gender e1 e3 e4 e5;
  ethnic: test e1=e3=e4=e5=0;
```

```
/* mathreplic2.sas */
%include 'mathrepread2.sas';
/* mathrepread2.sas has dummy variables e1-e5, c1 & c3, and gender*/
title2 'Replicate Findings from mathreg3.sas, using Bonferroni correction';

/*
Do 6 t-tests and the special F test from the first model, 3 t-tests from
the second model, and from the last model, tests for gender, e1 e4 and
ethnic. That's 7 + 3 + 4 = 14 tests. Believe a test is significant only if
      p < 0.05/14 = 0.003571429
*/

proc reg;
  title3 'Jerry''s favorite model, plus e4';
  model grade = gpa english hscalc totscore tongue e4;
  TongueE4: test tongue = e4 = 0;

proc reg;
  title3 'From the multivariate tests';
  model english = gender tongue e1;
  model totscore = gender e1 e3 e4 e5;
  ethnic: test e1=e3=e4=e5=0;
```

Combine mathreg3.lst and mathreplic2.lst: Show exploratory and confirmatory output together.

Math Diagnostic Study: Exploratory data 1
 Replicate this 10:11 Tuesday, November 1, 2005
 Jerry's favorite model, plus e4

The REG Procedure
 Model: MODEL1
 Dependent Variable: grade Mark in university calculus

Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	-5.75	<.0001
gpa	High School GPA	1	7.22	<.0001
english	Mark in HS English	1	-2.65	0.0086
hscal	Mark in HS Calculus	1	2.04	0.0420
totscore	Total # right on diagnostic test	1	3.79	0.0002
tongue	Mother Tongue	1	-2.12	0.0353
e4		1	1.99	0.0472

Test TongueE4 Results for Dependent Variable grade

Source	DF	Mean Square	F Value	Pr > F
Numerator	2	814.25539	4.45	0.0125
Denominator	280	182.93204		

Math Diagnostic Study: Replication data 1

The REG Procedure
 Model: MODEL1
 Dependent Variable: grade Mark in university calculus
 Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	-4.92	<.0001
gpa	High School GPA	1	4.59	<.0001
english	Mark in HS English	1	-0.34	0.7308
hscal	Mark in HS Calculus	1	1.76	0.0794
totscore	Total # right on diagnostic test	1	5.74	<.0001
tongue	Mother Tongue	1	-0.70	0.4835
e4		1	1.72	0.0865

Test TongueE4 Results for Dependent Variable grade

Source	DF	Mean Square	F Value	Pr > F
Numerator	2	337.46048	1.71	0.1822
Denominator	281	197.02695		

Math Diagnostic Study: Exploratory data 4
 Replicate this 10:11 Tuesday, November 1, 2005
 From the multivariate tests

The REG Procedure
 Model: MODEL1
 Dependent Variable: english Mark in HS English

Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	72.58	<.0001
gender		1	4.10	<.0001
tongue	Mother Tongue	1	3.08	0.0022
e1		1	-3.55	0.0004

Math Diagnostic Study: Replication data 4
 Replicate Findings from mathreg3.sas, using Bonferroni correction
 From the multivariate tests
 10:24 Tuesday, November 1, 2005

The REG Procedure
 Model: MODEL1
 Dependent Variable: english Mark in HS English

Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	69.67	<.0001
gender		1	2.73	0.0066
tongue	Mother Tongue	1	3.74	0.0002
e1		1	-3.02	0.0027

Math Diagnostic Study: Exploratory data

6

The REG Procedure

Model: MODEL2

Dependent Variable: totscore Total # right on diagnostic test

Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	22.98	<.0001
gender		1	-2.32	0.0210
e1		1	3.05	0.0025
e3		1	1.61	0.1086
e4		1	2.16	0.0316
e5		1	0.07	0.9457

Test ethnic Results for Dependent Variable totscore

Source	DF	Mean Square	F Value	Pr > F
Numerator	4	37.32780	2.90	0.0217
Denominator	392	12.85464		

Math Diagnostic Study: Replication data

6

The REG Procedure

Model: MODEL2

Dependent Variable: totscore Total # right on diagnostic test

Parameter Estimates

Variable	Label	DF	t Value	Pr > t
Intercept	Intercept	1	26.25	<.0001
gender		1	-4.11	<.0001
e1		1	2.14	0.0330
e3		1	1.78	0.0760
e4		1	0.78	0.4341
e5		1	0.74	0.4594

Test ethnic Results for Dependent Variable totscore

Source	DF	Mean Square	F Value	Pr > F
Numerator	4	17.16473	1.60	0.1731
Denominator	403	10.71892		