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name: <unnamed>
log: D:\Jason\workshop\Stata workshop\Stata presentation\stata presentation5_part1.log
log type: text
opened on: 26 Jun 2023, 10:40:03
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. *****
. * This command files has three aims
. * 1. Demonstrate how to use -table-, -dtable-, and -etable- to quickly generate different tables
. * 2. Demonstrate how to use -table- and -collect- commands to generate and customize tables
. * 3. Shows how to use -graph- commands to generate and customize graphs
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. *****
. * Aim #1: Use -table-, -dtable-, and -etable- to quickly generate different tables
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```
. webuse nhanes21, clear
(Second National Health and Nutrition Examination Survey)
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```
. describe age sex diabetes race heartatk
```

Variable name	Storage type	Display format	Value label	Variable label
age	byte	%9.0g		Age (years)
sex	byte	%9.0g	sex	Sex
diabetes	byte	%12.0g	diabetes	Diabetes status
race	byte	%9.0g	race	Race
heartatk	byte	%16.0g	heartlbl	Prior heart attack

```
. sum heartatk age sex diabetes race
```

Variable	Obs	Mean	Std. dev.	Min	Max
heartatk	10,349	.0459948	.2094839	0	1
age	10,351	47.57965	17.21483	20	74
sex	10,351	1.525167	.4993904	1	2
diabetes	10,349	.0482172	.2142353	0	1
race	10,351	1.143561	.402008	1	3

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. *****
. * Frequencies and Percentages
. *****
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. *****
. * One-way tables
. *****
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```
. tab race
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Race	Freq.	Percent	Cum.
White	9,065	87.58	87.58
Black	1,086	10.49	98.07
Other	200	1.93	100.00
Total	10,351	100.00	

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. table race
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	Frequency
Race	
White	9,065
Black	1,086
Other	200
Total	10,351

. table race, statistic(frequency) statistic(percent)

	Frequency	Percent
Race		
White	9,065	87.58
Black	1,086	10.49
Other	200	1.93
Total	10,351	100.00

. collect label levels result frequency "N" percent "%", modify

. collect preview

	N	%
Race		
White	9,065	87.58
Black	1,086	10.49
Other	200	1.93
Total	10,351	100.00

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.
. *****
. * Two-Way Tables
. *****
. table race sex, statistic(percent, across(sex))

	Sex		
	Male	Female	Total
Race			
White	47.57	52.43	100.00
Black	46.04	53.96	100.00
Other	51.50	48.50	100.00
Total	47.48	52.52	100.00

. table sex race, statistic(percent, across(sex))

	Race			
	White	Black	Other	Total
Sex				
Male	47.57	46.04	51.50	47.48
Female	52.43	53.96	48.50	52.52
Total	100.00	100.00	100.00	100.00

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. *****
. * Multi-way Tables
. *****
.
. table (race sex) (diabete), statistic(percent, across(diabete))

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	Diabetes status		
	Not diabetic	Diabetic	Total
Race			
White			
Sex			
Male	95.96	4.04	100.00
Female	95.16	4.84	100.00
Total	95.54	4.46	100.00
Black			
Sex			
Male	92.40	7.60	100.00
Female	91.81	8.19	100.00
Total	92.08	7.92	100.00
Other			
Sex			
Male	95.15	4.85	100.00
Female	95.88	4.12	100.00
Total	95.50	4.50	100.00
Total			
Sex			
Male	95.58	4.42	100.00
Female	94.81	5.19	100.00
Total	95.18	4.82	100.00

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. *****
. * Summary Statistics
. *****
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.
. table race sex, statistic(mean age) nformat(%5.2f)

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	Sex		
	Male	Female	Total
Race			
White	47.65	48.04	47.85
Black	46.07	45.85	45.95
Other	44.62	43.53	44.09
Total	47.42	47.72	47.58

```

. collect title "Mean age by race and sex"
. collect preview

```

Mean age by race and sex

	Sex		
	Male	Female	Total
Race			
White	47.65	48.04	47.85
Black	46.07	45.85	45.95
Other	44.62	43.53	44.09

Total | 47.42 47.72 47.58

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.
.
. table race sex, statistic(mean age) statistic(sd age) ///
> nformat(%5.2f) sformat(("%s) sd)
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	Male	Sex Female	Total
Race			
White			
Mean	47.65	48.04	47.85
Standard deviation	(17.09)	(17.24)	(17.17)
Black			
Mean	46.07	45.85	45.95
Standard deviation	(17.77)	(17.18)	(17.45)
Other			
Mean	44.62	43.53	44.09
Standard deviation	(17.31)	(17.42)	(17.33)
Total			
Mean	47.42	47.72	47.58
Standard deviation	(17.17)	(17.26)	(17.21)

```
. collect style header result, level(hide)
. collect preview
```

	Male	Sex Female	Total
Race			
White	47.65	48.04	47.85
	(17.09)	(17.24)	(17.17)
Black	46.07	45.85	45.95
	(17.77)	(17.18)	(17.45)
Other	44.62	43.53	44.09
	(17.31)	(17.42)	(17.33)
Total	47.42	47.72	47.58
	(17.17)	(17.26)	(17.21)

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. *****
. * Descriptive Statistics
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```
. dtable age i.race i.diabetes, by(sex, test)
note: using test regress across levels of sex for age.
note: using test pearson across levels of sex for race and diabetes.
```

	Male	Sex Female	Total	Test
N				
	4,915 (47.5%)	5,436 (52.5%)	10,351 (100.0%)	
Age (years)	47.424 (17.168)	47.721 (17.257)	47.580 (17.215)	0.381
Race				
White	4,312 (87.7%)	4,753 (87.4%)	9,065 (87.6%)	0.329
Black	500 (10.2%)	586 (10.8%)	1,086 (10.5%)	
Other	103 (2.1%)	97 (1.8%)	200 (1.9%)	
Diabetes status				

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Not diabetic  4,698 (95.6%)  5,152 (94.8%)  9,850 (95.2%) 0.066
Diabetic      217 (4.4%)      282 (5.2%)      499 (4.8%)

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. gen N = 1
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. table (var) (sex) , ///
> stat(count N)          /// /*sample*/
> stat(mean age) stat(sd age)  /// /*continuous*/
> stat(fvpercent race diabetes) /// /*factor*/
> nformat(%5.2f mean sd) nformat(%5.1f fvpercent) ///
> sformat(("%s) sd) sformat(%s%% fvpercent) style(table-1)

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	Male	Female	Total
N	4,915	5,436	10,351
Age (years)	47.42 (17.17)	47.72 (17.26)	47.58 (17.21)
Race			
White	87.7%	87.4%	87.6%
Black	10.2%	10.8%	10.5%
Other	2.1%	1.8%	1.9%
Diabetes status			
Not diabetic	95.6%	94.8%	95.2%
Diabetic	4.4%	5.2%	4.8%

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. *****
. * Tables of Estimates
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. *****
. * Single Regression
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. logistic diabetes sex age
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Logistic regression                               Number of obs = 10,349
                                                  LR chi2(2)      = 345.17
                                                  Prob > chi2     = 0.0000
Log likelihood = -1827.1756                    Pseudo R2      = 0.0863

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diabetes	Odds ratio	Std. err.	z	P> z	[95% conf. interval]
sex	1.168237	.1098757	1.65	0.098	.9715681 1.404716
age	1.060579	.0039543	15.77	0.000	1.052857 1.068357
_cons	.0016096	.0004369	-23.69	0.000	.0009455 .0027402

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Note: _cons estimates baseline odds.
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. etable, showstars showstarsnote
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diabetes	
Sex	1.168 (0.110)
Age (years)	1.061 **

```

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Race          [0.046    0.057]
  White          0.044
    [0.040    0.048]
  Black          0.084
    [0.068    0.101]
  Other          0.053
    [0.020    0.086]
Number of observations      10349
-----

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. *Same as above, but use a comma as the delimiter between confidence interval limits and hide the number of observations
. etable, margins cstat(_r_b) cstat(_r_ci, cidelimiter(,)) mstat(_hide)

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-----
diabetes
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Sex
  Male          0.045
    [0.039,    0.050]
  Female        0.051
    [0.046,    0.057]
Race
  White          0.044
    [0.040,    0.048]
  Black          0.084
    [0.068,    0.101]
  Other          0.053
    [0.020,    0.086]
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. *****
. * Compare two regression
. *****
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. logistic diabetes sex age

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```

Logistic regression          Number of obs = 10,349
                             LR chi2(2)    = 345.17
                             Prob > chi2   = 0.0000
Log likelihood = -1827.1756   Pseudo R2  = 0.0863

```

diabetes	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
sex	1.168237	.1098757	1.65	0.098	.9715681	1.404716
age	1.060579	.0039543	15.77	0.000	1.052857	1.068357
_cons	.0016096	.0004369	-23.69	0.000	.0009455	.0027402

Note: _cons estimates baseline odds.

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. estimates store model_1

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. logistic diabetes sex age i.race

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```

Logistic regression          Number of obs = 10,349
                             LR chi2(4)    = 373.96
                             Prob > chi2   = 0.0000
Log likelihood = -1812.778   Pseudo R2  = 0.0935

```

diabetes	Odds ratio	Std. err.	z	P> z	[95% conf. interval]	
sex	1.168636	.1102073	1.65	0.098	.971421	1.40589

age	1.061271	.0039633	15.92	0.000	1.053532	1.069068
race						
Black	2.06343	.2621415	5.70	0.000	1.608614	2.646841
Other	1.226853	.4316001	0.58	0.561	.6156651	2.444784
_cons	.0014038	.0003851	-23.95	0.000	.00082	.0024032

Note: _cons estimates baseline odds.

. estimates store model_2

```
.
.
. etable, estimates(model_1 model_2) column(estimates) ///
> cstat(_r_b) cstat(_r_z, sformat(("%s"))) ///
> note(test statistic in parentheses) showstars showstarsnote
```

	model_1	model_2
Sex	1.168 (1.65)	1.169 (1.65)
Age (years)	1.061 ** (15.77)	1.061 ** (15.92)
Race		
Black		2.063 ** (5.70)
Other		1.227 (0.58)
Intercept	0.002 ** (-23.69)	0.001 ** (-23.95)
Number of observations	10349	10349

** p<.01, * p<.05

test statistic in parentheses

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. *****
. *Regressions with Different Outcomes
. *****
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. logistic diabetes sex age i.race
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```
Logistic regression                               Number of obs = 10,349
                                                    LR chi2(4)      = 373.96
                                                    Prob > chi2     = 0.0000
Log likelihood = -1812.778                       Pseudo R2      = 0.0935
```

diabetes	Odds ratio	Std. err.	z	P> z	[95% conf. interval]
sex	1.168636	.1102073	1.65	0.098	.971421 1.40589
age	1.061271	.0039633	15.92	0.000	1.053532 1.069068
race					
Black	2.06343	.2621415	5.70	0.000	1.608614 2.646841
Other	1.226853	.4316001	0.58	0.561	.6156651 2.444784
_cons	.0014038	.0003851	-23.95	0.000	.00082 .0024032

Note: _cons estimates baseline odds.

. estimates store diabetes

```
. logistic heartatk sex age i.race
```


Logistic regression

Number of obs = 10,349
LR chi2(4) = 609.02
Prob > chi2 = 0.0000
Pseudo R2 = 0.1577

Log likelihood = -1626.0838

heartatk	Odds ratio	Std. err.	z	P> z	[95% conf. interval]
sex	.4014619	.0409358	-8.95	0.000	.3287381 .4902738
age	1.089297	.0053133	17.54	0.000	1.078932 1.09976
race					
Black	1.007946	.1644903	0.05	0.961	.7320261 1.387867
Other	.5958506	.2782567	-1.11	0.268	.23858 1.488129
_cons	.0013919	.0004665	-19.62	0.000	.0007217 .0026847

Note: _cons estimates baseline odds.

. estimates store heartatk

. etable, estimates(diabetes heart_attack) eqrcode(diabetes=both heartatk=both) mstat(N) mstat(r2) showstars showstarsnote

	diabetes	heartatk
Sex	1.169 (0.110)	0.401 ** (0.041)
Age (years)	1.061 ** (0.004)	1.089 ** (0.005)
Race		
Black	2.063 ** (0.262)	1.008 (0.164)
Other	1.227 (0.432)	0.596 (0.278)
Intercept	0.001 ** (0.000)	0.001 ** (0.000)
Number of observations	10349	10349

** p<.01, * p<.05

. log close
name: <unnamed>
log: D:\Jason\workshop\Stata workshop\Stata presentation\stata presentation5_part1.log
log type: text
closed on: 26 Jun 2023, 10:40:05