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## Subject: How to make and interpreting Bivariate statistics analysis?

Posted by [hamzah](#) on Mon, 12 Dec 2016 19:14:49 GMT

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Dear experts

Regarding statistics to population survey, could you please tell me which one of the syntax using for bivariate analysis [chi square] and what does different the meaning of each syntax like below:

1.

svy: tabulate sex malaria

and output here :

Number of strata = 1                      Number of obs = 259,885  
Number of PSUs = 4,418                      Population size = 30,152,652  
Design df = 4,417

```
-----  
gender of |  
responde  | malaria  
ns         | no  yes Total  
-----+-----  
male | .4744 .0185 .4929  
female | .4909 .0162 .5071  
      |  
Total | .9653 .0347 1  
-----
```

Key: cell proportion

Pearson:

Uncorrected chi2(1) = 58.3020  
Design-based F(1, 4417) = 49.6352    P = 0.0000

2.

. svy: tabulate sex malaria, row

and output here :

(running tabulate on estimation sample)

Number of strata = 1                      Number of obs = 259,885  
Number of PSUs = 4,418                      Population size = 30,152,652  
Design df = 4,417

```
-----  
gender of |  
responde  | malaria  
ns         | no  yes Total  
-----
```

-----+-----			
male	.9625	.0375	1
female	.968	.032	1
Total	.9653	.0347	1

-----

Key: row proportion

Pearson:

Uncorrected chi2(1) = 58.3020  
 Design-based F(1, 4417) = 49.6352 P = 0.0000

3.

. svy linearized : tabulate sex malaria, obs row percent ci

and output here :

(running tabulate on estimation sample)

Number of strata = 1                      Number of obs = 259,885  
 Number of PSUs = 4,418                      Population size = 30,152,652  
    Design df = 4,417

-----			
gender of			
responden			
ts	no	malaria	Total
-----+-----			
male	96.25	3.746	100
	[96.01,96.48]	[3.518,3.987]	
	1.2e+05	5595	1.3e+05
female	96.8	3.198	100
	[96.57,97.02]	[2.979,3.431]	
	1.3e+05	4971	1.3e+05
Total	96.53	3.468	100
	[96.31,96.74]	[3.257,3.692]	
	2.5e+05	1.1e+04	2.6e+05

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Key: row percentage

[95% confidence interval for row percentage]

number of observations

Pearson:

Uncorrected  $\chi^2(1) = 58.3020$   
 Design-based  $F(1, 4417) = 49.6352$   $P = 0.0000$

How to make odds ratio for cross-sectional design survey? Should I make syntax for prevalence ratio or may I take directly odds ratio in the syntax below?

5.

. svy linearized : logistic sex malaria

and output here :

(running logistic on estimation sample)

Survey: Logistic regression

Number of strata = 1                      Number of obs = 259,885  
 Number of PSUs = 4,418                  Population size = 30,152,652  
    Design df = 4,417  
     $F(1, 4417) = 49.54$   
    Prob > F = 0.0000

-----						
	Linearized					
sex	Odds Ratio	Std. Err.	t	P> t	[95% Conf. Interval]	
-----						
malaria	.8488294	.0197667	-7.04	0.000	.8109481	.8884803
_cons	1.034818	.0042681	8.30	0.000	1.026484	1.043219
-----						

Based on the table above [chi square and binary logistic].

Where the sex variable which assumptions male is given code = 0 and female is given code = 1. Malaria prevalence differs by sex Males are more likely to have malaria than females (1.85% males versus 1.62% females,  $P = 0.000$ ). Based on odds ratio (OR) female have the chances of getting malaria 0.85% or 0.85 times than male (as categorical reference)

How do I interpret an odds ratio less than 1 in a logistic regression?

May I will be written male with a chance of 1 / 0.85 times or 1.2 times to get malaria compared than female as well?

or

The odds of malaria in male decreased by  $(1 - 0.85)$  15% compared those in a female. Whatever on the dependent variable decreases. For each unit increase, it decreases by a multiple of  $(1 -$

OR )

Thank you in advance for your reply

Sincerely yours,

Hamzah

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