

:/

:

/

:

holakoin@sina.tums.ac.ir :

/

:

/

:

// : // :

Loglinear

( :% )

( :% ) %

% ( ) . % % %

:

Loglinear

:

.(1996

.(Peden et al. 2004)

/

Murray and Lopez )

Morrison and Stone )

(2000

/

(Peden et al. 2004)

)

% ( )

Tilling and Sterne)

(DALYs

(1999

( )

)

/

(

( )

)

(

K

Hook and )

K

(Regal 1995

Hook and )

(Regal 1995; Laska 2002

( :

(

(Wittes and Sidel 1968)

(

)

Tilling and )

HIV

(

(Sterne 1999

Loglinear

(Tercero and Andersson 2004) Tilling and Sterne )  
Loglinear (1999

: )  
(

Hook and Regal )  
Loglinear (1995

)  
( Logit Loglinear (Covariate)  
(Tilling and Sterne 1999)

Razzak and )  
Luby 1998; Tercero and Andersson 2004;  
Schoutman et al. 2000; Jarvis et al. 2000;  
(Dhillon et al. 2001

%  
:  
(Dhillon et al./ 2001)

Razzak and )  
:(Luby 1998; Tercero and Andersson 2004

n

Loglinear

Stata 8.0

$$CI_{95\%} = n \pm 1.96 \sqrt{\frac{(L1+1)(L2+1)(L1-d)(L2-d)}{(d+1)^2(d+2)}}$$

$$n = \frac{(L1+1)(L2+1)}{d+1} - 1$$

= ( ) ( ( :  
" " )  
( )

Loglinear

(  
" "

Loglinear

Microsoft Excel 2003

( ) ( / / )

$$\log \mu_{ijk} = \lambda + \lambda_i^X + \lambda_j^Y + \lambda_k^Z$$

$$\log \mu_{ijk} = \lambda + \lambda_i^X + \lambda_j^Y + \lambda_k^Z + \lambda_{ij}^{XY} + \lambda_{ik}^{XZ}$$

Sort (

If

(" " " "

(G<sup>2</sup>)

(BIC)

(AIC)

L1 ( )

L2 ( )

(Hook and Regal 1995)

d ( )

AIC

m

(% / )

Hook and Regal 1997; Hook )

.(and Regal 2000

(% / )

AIC

)

(

(Schootman et al. 2000)

Archive of SID

Loglinear

( " " )

n2=30 n1=2

n7=98 n6=138 n5=176 n4=27 n3=0

Loglinear

( :k)  $\frac{1}{2^{(k-1)}}$

Evans and Bonett 1994;)

(Hook and Regal 2000

( :% )

:" " " " " .

:% ) / AIC

( / /

BIC

BIC AIC .

" " AIC

(% ) " "

(% )

( :% )

( = + )

+ ) ( )

( =

% / % / % / ( )

% /

%

(% :% )

(

) /

( / / :%



Covariate

Loglinear

)

(

:

)

(

Loglinear

)

(

(" " )

(" " )

Archive of SID

Loglinear

( / )

AIC

Saturated

BIC





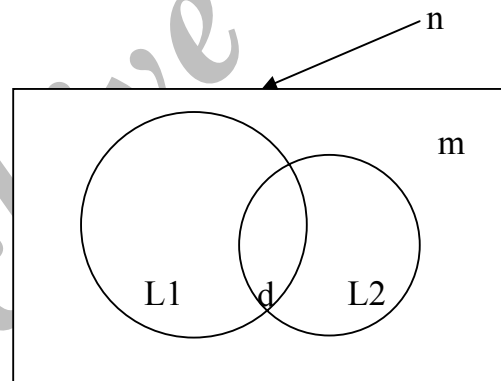


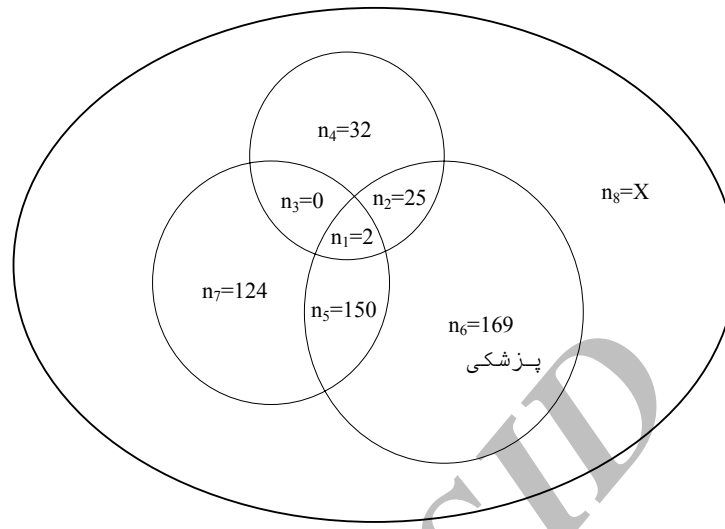
							loglinear
							( " " )
CI95% for N	*N	*X	*BIC	*AIC	G <sup>2</sup>	*df	Loglinear
			/	/	/		P/ FM/ H*
			/	/	/		P×FM/ H
			/	/	/		P×H/ FM
			/	/	/		H×FM/ P
			/	/	/		P×H/ H×FM
			/	/	/		P×H/ P×FM
:	:	:	/	/	/		P×FM/ H×FM
:	:	:					P×H/ P×FM/ H×FM

\*df: degree of freedom/ AIC: Akaike Information Criterion/ BIC: Bayesian Information Criterion/ FM: Forensic Medicine/ H: Hospital/ P: Police

★

✦





" "

estimators of closed population size. *Biometrics*. **50**: 388-95.

Hook E.B. and Regal R.R. (1995) Capture-recapture methods in epidemiology: methods and limitations. *Epidemiol Rev*. **17**: 243-64.

Hook E.B. and Regal R.R. (1997) Validity of methods for model selection/ weighting for model uncertainty/ and small sample adjustment in capture-recapture estimation. *Am J Epidemiol*. **145**: 1138-44.

Hook E.B. and Regal R.R. (2000) Accuracy of alternative approaches to capture-recapture estimates of disease frequency: internal validity analysis of data from five sources. *Am J Epidemiol*. **152**: 771-9.

Jarvis S.N., Lowe P.J., Avery A., Levene S. and Cormack R.M. (2000) Children are not goldfish-mark/recapture techniques and their application to injury data. *Inj Prev*. **6**: 46-50.

( ) .

( )

( )

( ) .

Dhillon P.K., Lightstone A.S., Peek-asa C. and Kraus J.F. (2001) Assessment of hospital and police ascertainment of automobile versus childhood pedestrian and bicyclist collisions. *Accid Anal Prev*. **33**:529-37.

Evans M.A. and Bonett D.G. (1994) Bias reduction for multiple-recapture

- Schootman M., Harlan M. and Fuortes L. (2000) Use of the capture-recapture method to estimate severe traumatic brain injury rates. *J Trauma*. **48**: 70-5.
- Tercero F. and Anersson R. (2004) Measuring transport injuries in a developing country: an application of the capture-recapture method. *Accid Anal Prev*. **36**: 13-20.
- Tilling K. and Sterne J.A. (1999) Capture-recapture models including covariate effects. *Am J Epidemiol*. **149**: 392-400.
- Wittes J. and Sidel V.W. (1968) A generalization of the simple capture-recapture model with applications to epidemiological research. *J Chronic Dis*. **21**: 287-301.
- Laska E.M. (2002) The use of capture-recapture methods in public health. *Bull World Health Organ*. **80**: 845.
- Morrison A. and Stone D.H. (2000) Capture-recapture: a useful methodological tool for counting traffic related injuries? *Inj Prev*. **6**: 299-304.
- Murray C.J.L. and Lopez A.D. (1996) The global burden of disease: a comprehensive assessment of mortality and disability from diseases/ injuries/ and risk factors in 1990 and projected to 2020. Boston, MA. Harvard School of Public Health.
- Peden M., Scurfield R., Sleet D., Mohan D., Hyder A.A., Jarawan E. and Mathers C. (2004) World Report on Road Traffic Injury Prevention. Geneva. World Health Organization.
- Razzak J.A. and Luby S.P. (1998) Estimating deaths and injuries due to road traffic accidents in Karachi, Pakistan. Through the capture-recapture method. *Int J Epidemiol*. **27**: 866-70.

Archive of SID