

Program: HLM 7 Hierarchical Linear and Nonlinear Modeling  
 Authors: Stephen Raudenbush, Tony Bryk, & Richard Congdon  
 Publisher: Scientific Software International, Inc. (c) 2010  
 techsupport@ssicentral.com  
 www.ssicentral.com

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Module: HLM2.EXE (7.01.21202.1001)  
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## Specifications for this Overdispersed Poisson HLM2 run

Problem Title: no title

The data source for this run = replicate\_jls  
 The command file for this run = E:\Istanbul\jls\_mod\_0\_1.hlm  
 Output file name = E:\Istanbul\hlm2.html  
 The maximum number of level-1 units = 123  
 The maximum number of level-2 units = 67  
 The maximum number of micro iterations = 14

Method of estimation: restricted PQL  
 Maximum number of macro iterations = 100

Distribution at Level-1: Poisson

The outcome variable is MIGR\_REL

### Summary of the model specified

#### Level-1 Model

$$E(MIGR\_REL_{it} | \pi_i) = \lambda_{it}$$

$$\log[\lambda_{it}] = \eta_{it}$$

$$\eta_{it} = \pi_{0i}$$

#### Level-2 Model

$$\pi_{0i} = \beta_{00} + r_{0i}$$

Level-1 variance =  $\sigma^2 / \lambda_{it}$

**Mixed Model**

$$\eta_{it} = \beta_{00} + r_{0i}$$

The value of the log-likelihood function at iteration 2 = -1.085496E+003

## Results for Non-linear Model with the Log Link Function Unit-Specific Model, PQL Estimation - (macro iteration 21)

$$\sigma^2 = 6.36729$$

$\tau$

INTRCPT1,  $\pi_0$  2.27666

Random level-1 coefficient	Reliability estimate
INTRCPT1, $\pi_0$	0.658

The value of the log-likelihood function at iteration 2 = -3.347816E+002

### Final estimation of fixed effects: (Unit-specific model)

Fixed Effect	Coefficient	Standard error	t-ratio	Approx. d.f.	p-value
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	1.461456	0.227298	6.430	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.461456	4.312235	(2.739,6.789)

### Final estimation of fixed effects (Unit-specific model with robust standard errors)

Fixed Effect	Coefficient	Standard error	t-ratio	Approx. d.f.	p-value
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	1.461456	0.225457	6.482	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.461456	4.312235	(2.749,6.765)

**Final estimation of variance components**

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>p</i> -value
INTRCPT1, $r_0$	1.50886	2.27666	66	1553.08754	<0.001
level-1, $e$	2.52335	6.36729			

**Results for Population-Average Model**

The value of the log-likelihood function at iteration 2 = -4.393978E+002

**Final estimation of fixed effects: (Population-average model)**

Fixed Effect	Coefficient	Standard error	<i>t</i> -ratio	Approx. <i>d.f.</i>	<i>p</i> -value
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	2.492408	0.196624	12.676	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	2.492408	12.090349	(8.164,17.905)

**Final estimation of fixed effects  
(Population-average model with robust standard errors)**

Fixed Effect	Coefficient	Standard error	<i>t</i> -ratio	Approx. <i>d.f.</i>	<i>p</i> -value
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	2.492408	0.238441	10.453	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	2.492408	12.090349	(7.510,19.464)