

Program: HLM 7 Hierarchical Linear and Nonlinear Modeling  
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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\_0.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 ANFRAGEN

### Summary of the model specified

#### Level-1 Model

$$E(ANFRAGEN_{ti} | \pi_i) = \lambda_{ti}$$

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

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

#### Level-2 Model

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

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

**Mixed Model**

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

The value of the log-likelihood function at iteration 3 = -1.223101E+003

## Results for Non-linear Model with the Log Link Function Unit-Specific Model, PQL Estimation - (macro iteration 59)

$$\sigma^2 = 13.09968$$

$\tau$

INTRCPT1,  $\pi_0$  0.97512

Random level-1 coefficient	Reliability estimate
INTRCPT1, $\pi_0$	0.611

The value of the log-likelihood function at iteration 2 = -3.697387E+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, $\beta_{00}$	2.665689	0.154394	17.265	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	2.665689	14.377854	(10.563,19.570)

### 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, $\beta_{00}$	2.665689	0.153150	17.406	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	2.665689	14.377854	(10.589,19.522)

**Final estimation of variance components**

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>p</i> -value
INTRCPT1, $r_0$	0.98748	0.97512	66	514.26957	<0.001
level-1, $e$	3.61935	13.09968			

**Results for Population-Average Model**

The value of the log-likelihood function at iteration 2 = -4.206682E+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, $\beta_{00}$	3.069445	0.141172	21.743	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	3.069445	21.529945	(16.241,28.542)

**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, $\beta_{00}$	3.069445	0.174081	17.632	66	<0.001

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	3.069445	21.529945	(15.208,30.480)