

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 = C:\Users\migrant\AppData\Local\Temp\whlmtemp.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

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

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

$$\eta_{ii} = \pi_{0i} + \pi_{1i} * (EXECUTIV_{ii}) + \pi_{2i} * (WP\_HLM_{ii}) + \pi_{3i} * (MONATE_{ii}) + \pi_{4i} * (ANFRAGEN_{ii}) + \pi_{5i} * (POSITION_{ii})$$

#### Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01} * (GEN\_HLM_{-i}) + \beta_{02} * (GENDER_i) + \beta_{03} * (POL\_LEVE_i) + \beta_{04} * (VISMIN\_M_i) + \beta_{05} * (ZEIT\_MEA_i) + \beta_{06} * (LEFT\_RIG_i) + \beta_{07} * (STADT\_LA_i) + \beta_{08} * (VOLKSPAR_i)$$

$$\begin{aligned}
 & + \beta_{09} * (IA\_VISMI_i) + r_{0i} \\
 \pi_{1i} & = \beta_{10} \\
 \pi_{2i} & = \beta_{20} \\
 \pi_{3i} & = \beta_{30} \\
 \pi_{4i} & = \beta_{40} \\
 \pi_{5i} & = \beta_{50}
 \end{aligned}$$

MONATE ANFRAGEN have been centered around the grand mean.

ZEIT\_MEA has been centered around the grand mean.

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

### Mixed Model

$$\begin{aligned}
 \eta_{ii} & = \beta_{00} + \beta_{01} * GEN\_HLM_{-i} + \beta_{02} * GENDER_i + \beta_{03} * POL\_LEVE_i \\
 & + \beta_{04} * VISMIN\_M_i + \beta_{05} * ZEIT\_MEA_i + \beta_{06} * LEFT\_RIG_i + \beta_{07} * STADT\_LA_i \\
 & + \beta_{08} * VOLKSPAR_i + \beta_{09} * IA\_VISMI_i \\
 & + \beta_{10} * EXECUTIV_{ii} \\
 & + \beta_{20} * WP\_HLM_{ii} \\
 & + \beta_{30} * MONATE_{ii} \\
 & + \beta_{40} * ANFRAGEN_{ii} \\
 & + \beta_{50} * POSITION_{ii} \\
 & + r_{0i}
 \end{aligned}$$

The value of the log-likelihood function at iteration 6 = -5.277882E+002

## Results for Non-linear Model with the Log Link Function Unit-Specific Model, PQL Estimation - (macro iteration 9)

$$\sigma^2 = 2.28921$$

$\tau$   
INTRCPT1,  $\pi_0$  0.84558

Random level-1 coefficient	Reliability estimate
INTRCPT1, $\pi_0$	0.562

The value of the log-likelihood function at iteration 2 = -2.755229E+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, $\beta_{00}$	1.123664	0.493490	2.277	57	0.027
GEN_HLM_, $\beta_{01}$	-0.379845	0.351258	-1.081	57	0.284
GENDER, $\beta_{02}$	-0.183873	0.314451	-0.585	57	0.561
POL_LEVE, $\beta_{03}$	0.350592	0.440584	0.796	57	0.429
VISMIN_M, $\beta_{04}$	0.939520	0.405285	2.318	57	0.024
ZEIT_MEA, $\beta_{05}$	0.045360	0.032270	1.406	57	0.165
LEFT_RIG, $\beta_{06}$	0.609394	0.773873	0.787	57	0.434
STADT_LA, $\beta_{07}$	1.049395	0.425255	2.468	57	0.017
VOLKSPAR, $\beta_{08}$	-1.021887	0.365823	-2.793	57	0.007
IA_VISMI, $\beta_{09}$	-1.752520	1.071026	-1.636	57	0.107
For EXECUTIV slope, $\pi_1$					
INTRCPT2, $\beta_{10}$	-1.025598	0.247730	-4.140	51	<0.001
For WP_HLM slope, $\pi_2$					
INTRCPT2, $\beta_{20}$	0.117868	0.088499	1.332	51	0.189
For MONATE slope, $\pi_3$					
INTRCPT2, $\beta_{30}$	0.012116	0.005763	2.102	51	0.040
For ANFRAGEN slope, $\pi_4$					
INTRCPT2, $\beta_{40}$	0.011972	0.002452	4.882	51	<0.001
For POSITION slope, $\pi_5$					
INTRCPT2, $\beta_{50}$	-0.413563	0.214478	-1.928	51	0.059

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.123664	3.076104	(1.145,8.266)
GEN_HLM_, $\beta_{01}$	-0.379845	0.683968	(0.338,1.382)
GENDER, $\beta_{02}$	-0.183873	0.832042	(0.443,1.562)
POL_LEVE, $\beta_{03}$	0.350592	1.419908	(0.587,3.432)
VISMIN_M, $\beta_{04}$	0.939520	2.558753	(1.136,5.762)
ZEIT_MEA, $\beta_{05}$	0.045360	1.046404	(0.981,1.116)
LEFT_RIG, $\beta_{06}$	0.609394	1.839316	(0.390,8.666)
STADT_LA, $\beta_{07}$	1.049395	2.855924	(1.218,6.694)
VOLKSPAR, $\beta_{08}$	-1.021887	0.359915	(0.173,0.749)
IA_VISMI, $\beta_{09}$	-1.752520	0.173337	(0.020,1.481)
For EXECUTIV slope, $\pi_1$			
INTRCPT2, $\beta_{10}$	-1.025598	0.358582	(0.218,0.590)
For WP_HLM slope, $\pi_2$			
INTRCPT2, $\beta_{20}$	0.117868	1.125096	(0.942,1.344)
For MONATE slope, $\pi_3$			
INTRCPT2, $\beta_{30}$	0.012116	1.012190	(1.001,1.024)

For ANFRAGEN slope,  $\pi_4$

INTRCPT2,  $\beta_{40}$  0.011972 1.012044 (1.007,1.017)

For POSITION slope,  $\pi_5$

INTRCPT2,  $\beta_{50}$  -0.413563 0.661290 (0.430,1.017)

### Final estimation of fixed effects

(Unit-specific model with robust standard errors)

Fixed Effect	Coefficient	Standard error	t-ratio	Approx. df.	p-value
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	1.123664	0.431844	2.602	57	0.012
GEN_HLM_, $\beta_{01}$	-0.379845	0.293247	-1.295	57	0.200
GENDER, $\beta_{02}$	-0.183873	0.286537	-0.642	57	0.524
POL_LEVE, $\beta_{03}$	0.350592	0.404782	0.866	57	0.390
VISMIN_M, $\beta_{04}$	0.939520	0.324102	2.899	57	0.005
ZEIT_MEA, $\beta_{05}$	0.045360	0.028795	1.575	57	0.121
LEFT_RIG, $\beta_{06}$	0.609394	0.657922	0.926	57	0.358
STADT_LA, $\beta_{07}$	1.049395	0.438523	2.393	57	0.020
VOLKSPAR, $\beta_{08}$	-1.021887	0.291829	-3.502	57	<0.001
IA_VISMI, $\beta_{09}$	-1.752520	0.953302	-1.838	57	0.071
For EXECUTIV slope, $\pi_1$					
INTRCPT2, $\beta_{10}$	-1.025598	0.386317	-2.655	51	0.011
For WP_HLM slope, $\pi_2$					
INTRCPT2, $\beta_{20}$	0.117868	0.113535	1.038	51	0.304
For MONATE slope, $\pi_3$					
INTRCPT2, $\beta_{30}$	0.012116	0.005886	2.058	51	0.045
For ANFRAGEN slope, $\pi_4$					
INTRCPT2, $\beta_{40}$	0.011972	0.004244	2.821	51	0.007
For POSITION slope, $\pi_5$					
INTRCPT2, $\beta_{50}$	-0.413563	0.233150	-1.774	51	0.082

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.123664	3.076104	(1.295,7.306)
GEN_HLM_, $\beta_{01}$	-0.379845	0.683968	(0.380,1.231)
GENDER, $\beta_{02}$	-0.183873	0.832042	(0.469,1.477)
POL_LEVE, $\beta_{03}$	0.350592	1.419908	(0.631,3.194)
VISMIN_M, $\beta_{04}$	0.939520	2.558753	(1.337,4.897)

ZEIT_MEA, $\beta_{05}$	0.045360	1.046404	(0.988,1.109)
LEFT_RIG, $\beta_{06}$	0.609394	1.839316	(0.492,6.870)
STADT_LA, $\beta_{07}$	1.049395	2.855924	(1.187,6.874)
VOLKSPAR, $\beta_{08}$	-1.021887	0.359915	(0.201,0.646)
IA_VISMI, $\beta_{09}$	-1.752520	0.173337	(0.026,1.170)
For EXECUTIV slope, $\pi_1$			
INTRCPT2, $\beta_{10}$	-1.025598	0.358582	(0.165,0.779)
For WP_HLM slope, $\pi_2$			
INTRCPT2, $\beta_{20}$	0.117868	1.125096	(0.896,1.413)
For MONATE slope, $\pi_3$			
INTRCPT2, $\beta_{30}$	0.012116	1.012190	(1.000,1.024)
For ANFRAGEN slope, $\pi_4$			
INTRCPT2, $\beta_{40}$	0.011972	1.012044	(1.003,1.021)
For POSITION slope, $\pi_5$			
INTRCPT2, $\beta_{50}$	-0.413563	0.661290	(0.414,1.056)

### Final estimation of variance components

Random Effect	Standard Deviation	Variance Component	<i>d.f.</i>	$\chi^2$	<i>p</i> -value
INTRCPT1, $r_0$	0.91956	0.84558	57	537.67965	<0.001
level-1, $e$	1.51302	2.28921			

## Results for Population-Average Model

The value of the log-likelihood function at iteration 2 = -2.749943E+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, $\beta_{00}$	1.351469	0.449381	3.007	57	0.004
GEN_HLM_, $\beta_{01}$	-0.386810	0.316407	-1.223	57	0.227
GENDER, $\beta_{02}$	-0.255606	0.287614	-0.889	57	0.378
POL_LEVE, $\beta_{03}$	0.316648	0.400869	0.790	57	0.433
VISMIN_M, $\beta_{04}$	1.023450	0.370400	2.763	57	0.008
ZEIT_MEA, $\beta_{05}$	0.036922	0.029420	1.255	57	0.215
LEFT_RIG, $\beta_{06}$	0.641308	0.684793	0.936	57	0.353
STADT_LA, $\beta_{07}$	1.107315	0.389860	2.840	57	0.006
VOLKSPAR, $\beta_{08}$	-1.063390	0.337198	-3.154	57	0.003

IA_VISMI, $\beta_{09}$	-1.709183	0.941529	-1.815	57	0.075
For EXECUTIV slope, $\pi_1$					
INTRCPT2, $\beta_{10}$	-1.052096	0.199589	-5.271	51	<0.001
For WP_HLM slope, $\pi_2$					
INTRCPT2, $\beta_{20}$	0.132945	0.084998	1.564	51	0.124
For MONATE slope, $\pi_3$					
INTRCPT2, $\beta_{30}$	0.012701	0.005809	2.186	51	0.033
For ANFRAGEN slope, $\pi_4$					
INTRCPT2, $\beta_{40}$	0.011659	0.001997	5.839	51	<0.001
For POSITION slope, $\pi_5$					
INTRCPT2, $\beta_{50}$	-0.419926	0.160093	-2.623	51	0.011

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.351469	3.863096	(1.570,9.503)
GEN_HLM_, $\beta_{01}$	-0.386810	0.679220	(0.360,1.280)
GENDER, $\beta_{02}$	-0.255606	0.774447	(0.435,1.378)
POL_LEVE, $\beta_{03}$	0.316648	1.372519	(0.615,3.064)
VISMIN_M, $\beta_{04}$	1.023450	2.782780	(1.325,5.844)
ZEIT_MEA, $\beta_{05}$	0.036922	1.037612	(0.978,1.101)
LEFT_RIG, $\beta_{06}$	0.641308	1.898963	(0.482,7.485)
STADT_LA, $\beta_{07}$	1.107315	3.026223	(1.386,6.607)
VOLKSPAR, $\beta_{08}$	-1.063390	0.345283	(0.176,0.678)
IA_VISMI, $\beta_{09}$	-1.709183	0.181014	(0.027,1.193)
For EXECUTIV slope, $\pi_1$			
INTRCPT2, $\beta_{10}$	-1.052096	0.349205	(0.234,0.521)
For WP_HLM slope, $\pi_2$			
INTRCPT2, $\beta_{20}$	0.132945	1.142188	(0.963,1.355)
For MONATE slope, $\pi_3$			
INTRCPT2, $\beta_{30}$	0.012701	1.012782	(1.001,1.025)
For ANFRAGEN slope, $\pi_4$			
INTRCPT2, $\beta_{40}$	0.011659	1.011727	(1.008,1.016)
For POSITION slope, $\pi_5$			
INTRCPT2, $\beta_{50}$	-0.419926	0.657095	(0.476,0.906)

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

Fixed Effect	Coefficient	Standard	t-ratio	Approx.	p-value
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	error			<i>d.f.</i>	
For INTRCPT1, $\pi_0$					
INTRCPT2, $\beta_{00}$	1.351469	0.326719	4.136	57	<0.001
GEN_HLM_, $\beta_{01}$	-0.386810	0.224763	-1.721	57	0.091
GENDER, $\beta_{02}$	-0.255606	0.216586	-1.180	57	0.243
POL_LEVE, $\beta_{03}$	0.316648	0.304707	1.039	57	0.303
VISMIN_M, $\beta_{04}$	1.023450	0.259482	3.944	57	<0.001
ZEIT_MEA, $\beta_{05}$	0.036922	0.020359	1.814	57	0.075
LEFT_RIG, $\beta_{06}$	0.641308	0.433853	1.478	57	0.145
STADT_LA, $\beta_{07}$	1.107315	0.339478	3.262	57	0.002
VOLKSPAR, $\beta_{08}$	-1.063390	0.236150	-4.503	57	<0.001
IA_VISMI, $\beta_{09}$	-1.709183	0.732759	-2.333	57	0.023
For EXECUTIV slope, $\pi_1$					
INTRCPT2, $\beta_{10}$	-1.052096	0.246146	-4.274	51	<0.001
For WP_HLM slope, $\pi_2$					
INTRCPT2, $\beta_{20}$	0.132945	0.106689	1.246	51	0.218
For MONATE slope, $\pi_3$					
INTRCPT2, $\beta_{30}$	0.012701	0.005920	2.145	51	0.037
For ANFRAGEN slope, $\pi_4$					
INTRCPT2, $\beta_{40}$	0.011659	0.002434	4.791	51	<0.001
For POSITION slope, $\pi_5$					
INTRCPT2, $\beta_{50}$	-0.419926	0.141902	-2.959	51	0.005

Fixed Effect	Coefficient	Event Rate Ratio	Confidence Interval
For INTRCPT1, $\pi_0$			
INTRCPT2, $\beta_{00}$	1.351469	3.863096	(2.008,7.433)
GEN_HLM_, $\beta_{01}$	-0.386810	0.679220	(0.433,1.065)
GENDER, $\beta_{02}$	-0.255606	0.774447	(0.502,1.195)
POL_LEVE, $\beta_{03}$	0.316648	1.372519	(0.746,2.527)
VISMIN_M, $\beta_{04}$	1.023450	2.782780	(1.655,4.680)
ZEIT_MEA, $\beta_{05}$	0.036922	1.037612	(0.996,1.081)
LEFT_RIG, $\beta_{06}$	0.641308	1.898963	(0.796,4.528)
STADT_LA, $\beta_{07}$	1.107315	3.026223	(1.533,5.973)
VOLKSPAR, $\beta_{08}$	-1.063390	0.345283	(0.215,0.554)
IA_VISMI, $\beta_{09}$	-1.709183	0.181014	(0.042,0.785)
For EXECUTIV slope, $\pi_1$			
INTRCPT2, $\beta_{10}$	-1.052096	0.349205	(0.213,0.572)
For WP_HLM slope, $\pi_2$			
INTRCPT2, $\beta_{20}$	0.132945	1.142188	(0.922,1.415)

For MONATE slope,  $\pi_3$

INTRCPT2,  $\beta_{30}$       0.012701      1.012782      (1.001,1.025)

For ANFRAGEN slope,  $\pi_4$

INTRCPT2,  $\beta_{40}$       0.011659      1.011727      (1.007,1.017)

For POSITION slope,  $\pi_5$

INTRCPT2,  $\beta_{50}$       -0.419926      0.657095      (0.494,0.874)

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