Program:	HLM 8 Hierarchical Linear and Nonlinear Modeling
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Module:	HLM2.EXE (8.2.0.4)
Date:	17 January 2025, Friday
Time:	14:32: 4
License:	HLM Academic
Master Key:	18ef3bb8-****-****-****-dd3f95be3e1d
Installation Key:	33b8ebd5-****-****-****-303cc4207cb5
Expiration:	14/01/2026 07:34:58

Specifications for this HLM2 run

Problem Title: no title

The data source for this run = Tabela3
The command file for this run = C:\Users\mckos\AppData\Local\Temp\whlmtemp.hlm
Output file name = C:\Users\mckos\Dropbox\2025\Artigos_em_andamento\DADOS\Tabela_3\hlm2.html
The maximum number of level-1 units = 34335
The maximum number of level-2 units = 540
The maximum number of iterations = 100
Method of estimation: restricted maximum likelihood

The outcome variable is PROFLPSA

Summary of the model specified

Step 2 model

Level-1 Model

$$PROFLPSA_{ij} = \beta_{0j} + \beta_{1j}*(NSE1_INE_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(ZINSE_j) + \gamma_{02}*(PALTAESC_j) + \gamma_{03}*(COMPLEX_j) + \gamma_{04}*(DISTFAV_j) + \gamma_{05}*(PRESPOL6_j) + u_{0j}$$

$\beta_{1j} = \gamma_{10}$

NSE1_INE has been centered around the grand mean.

ZINSE PALTAESC COMPLEX DISTFAV PRESPOL6 have been centered around the grand mean.

Mixed Model

$$PROFLPSA_{ij} = \gamma_{00} + \gamma_{01}*ZINSE_j + \gamma_{02}*PALTAESC_j + \gamma_{03}*COMPLEX_j + \gamma_{04}*DISTFAV_j + \gamma_{05}*PRESPOL6_j + \gamma_{10}*NSE1_INE_{ij} + u_{0j} + r_{ij}$$

Final Results - Iteration 4

Iterations stopped due to small change in likelihood function

$\sigma^2 = 1906.92331$

τ
INTRCPT1,β_0 108.97011

Random level-1 coefficient	Reliability estimate
INTRCPT1,β_0	0.757

The value of the log-likelihood function at iteration 4 = -1.787929E+05

Final estimation of fixed effects:

Fixed Effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value
For INTRCPT1, β_0					
INTRCPT2, γ_{00}	213.492599	0.516844	413.069	534	<0.001
ZINSE, γ_{01}	1.841006	0.654742	2.812	534	0.005
PALTAESC, γ_{02}	0.290740	0.046297	6.280	534	<0.001
COMPLEX, γ_{03}	0.303580	0.447198	0.679	534	0.498
DISTFAV, γ_{04}	0.006027	0.001964	3.069	534	0.002
PRESPOL6, γ_{05}	-0.221144	0.082570	-2.678	534	0.008
For NSE1_INE slope, β_1					
INTRCPT2, γ_{10}	2.033881	0.175242	11.606	33794	<0.001

Final estimation of fixed effects (with robust standard errors)

Fixed Effect	Coefficient	Standard error	*t*-ratio	Approx. *d.f.*	*p*-value

For INTRCPT1, β_0					
INTRCPT2, γ_{00}	213.492599	0.512039	416.946	534	<0.001
ZINSE, γ_{01}	1.841006	0.728742	2.526	534	0.012
PALTAESC, γ_{02}	0.290740	0.046864	6.204	534	<0.001
COMPLEX, γ_{03}	0.303580	0.443836	0.684	534	0.494
DISTFAV, γ_{04}	0.006027	0.001849	3.259	534	0.001
PRESPOL6, γ_{05}	-0.221144	0.066701	-3.315	534	<0.001
For NSE1_INE slope, β_1					
INTRCPT2, γ_{10}	2.033881	0.193623	10.504	33794	<0.001

Final estimation of variance components

Random Effect	Standard Deviation	Variance Component	*d.f.*	χ^2	*p*-value
INTRCPT1, u_0	10.43888	108.97011	534	2484.19172	<0.001
level-1, r	43.66833	1906.92331			

Statistics for current covariance components model

Deviance = 357585.891475
Number of estimated parameters = 2