Program:	HLM 8 Hierarchical Linear and Nonlinear Modeling
Authors:	Stephen Raudenbush & Richard Congdon
Copyright:	Copyright © 1996-2021 Scientific Software International, Inc
Technical Support:	hlm@ssicentral.com
Website:	www.ssicentral.com

Module:	HLM2.EXE (8.2.0.4)
Date:	17 January 2025, Friday
Time:	14:27: 3
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

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(ZINSE_j) + \gamma_{02}*(PALTAESC_j) + \gamma_{03}*(COMPLEX_j) + \gamma_{04}*(DISTFAV_j) + \gamma_{05}*(PRESPOL4_j) + u_{0j}$$

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

NSE1_INE has been centered around the grand mean.

ZINSE PALTAESC COMPLEX DISTFAV PRESPOL4 have been centered around the grand mean.

Mixed Model

$$PROFLPSA_{ij} = \gamma_{00} + \gamma_{01}*ZINSE_j + \gamma_{02}*PALTAESC_j + \gamma_{03}*COMPLEX_j + \gamma_{04}*DISTFAV_j + \gamma_{05}*PRESPOL4_j + \gamma_{10}*NSE1_INE_{ij} + u_{0j} + r_{ij}$$

Final Results - Iteration 4

Iterations stopped due to small change in likelihood function

$\sigma^2 = 1906.91314$

τ

INTRCPT1,β_0 109.26163

Random level-1 coefficient	Reliability estimate
INTRCPT1,β_0	0.757

The value of the log-likelihood function at iteration 4 = -1.787931E+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}	213.490922	0.517372	412.645	534	<0.001
ZINSE, γ_{01}	1.915116	0.652316	2.936	534	0.003
PALTAESC, γ_{02}	0.294181	0.046237	6.362	534	<0.001
COMPLEX, γ_{03}	0.351019	0.446336	0.786	534	0.432
DISTFAV, γ_{04}	0.006297	0.001950	3.228	534	0.001
PRESPOL4, γ_{05}	-0.290044	0.115938	-2.502	534	0.013
For NSE1_INE slope, β_1					
INTRCPT2, γ_{10}	2.033691	0.175242	11.605	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}	213.490922	0.512386	416.660	534	<0.001
ZINSE, γ_{01}	1.915116	0.720006	2.660	534	0.008
PALTAESC, γ_{02}	0.294181	0.046792	6.287	534	<0.001
COMPLEX, γ_{03}	0.351019	0.444909	0.789	534	0.430
DISTFAV, γ_{04}	0.006297	0.001832	3.436	534	<0.001
PRESPOL4, γ_{05}	-0.290044	0.085778	-3.381	534	<0.001
For NSE1_INE slope, β_1					
INTRCPT2, γ_{10}	2.033691	0.193627	10.503	33794	<0.001

Final estimation of variance components

Random Effect	Standard Deviation	Variance Component	*d.f.*	χ^2	*p*-value
INTRCPT1, u_0	10.45283	109.26163	534	2495.08040	<0.001
level-1, r	43.66822	1906.91314			

Statistics for current covariance components model

Deviance = 357586.117330
Number of estimated parameters = 2