

6.7.1: Using Minitab

In Minitab, specifying the mixed model is a little different.

In **Stat > ANOVA > General Linear Model > Fit General Linear Model**

we complete the dialog box:

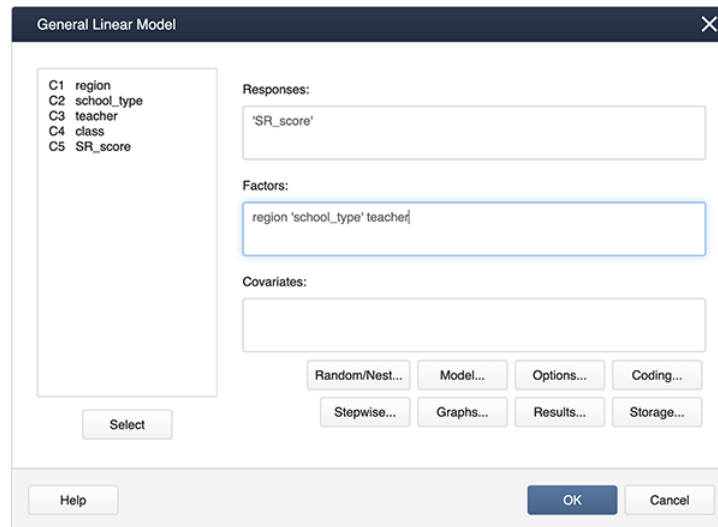


Figure 6.7.1.1: General Linear Model pop-up window.

We can create interaction terms under **Model...** by selecting "region" and "school_type" and clicking **Add**.

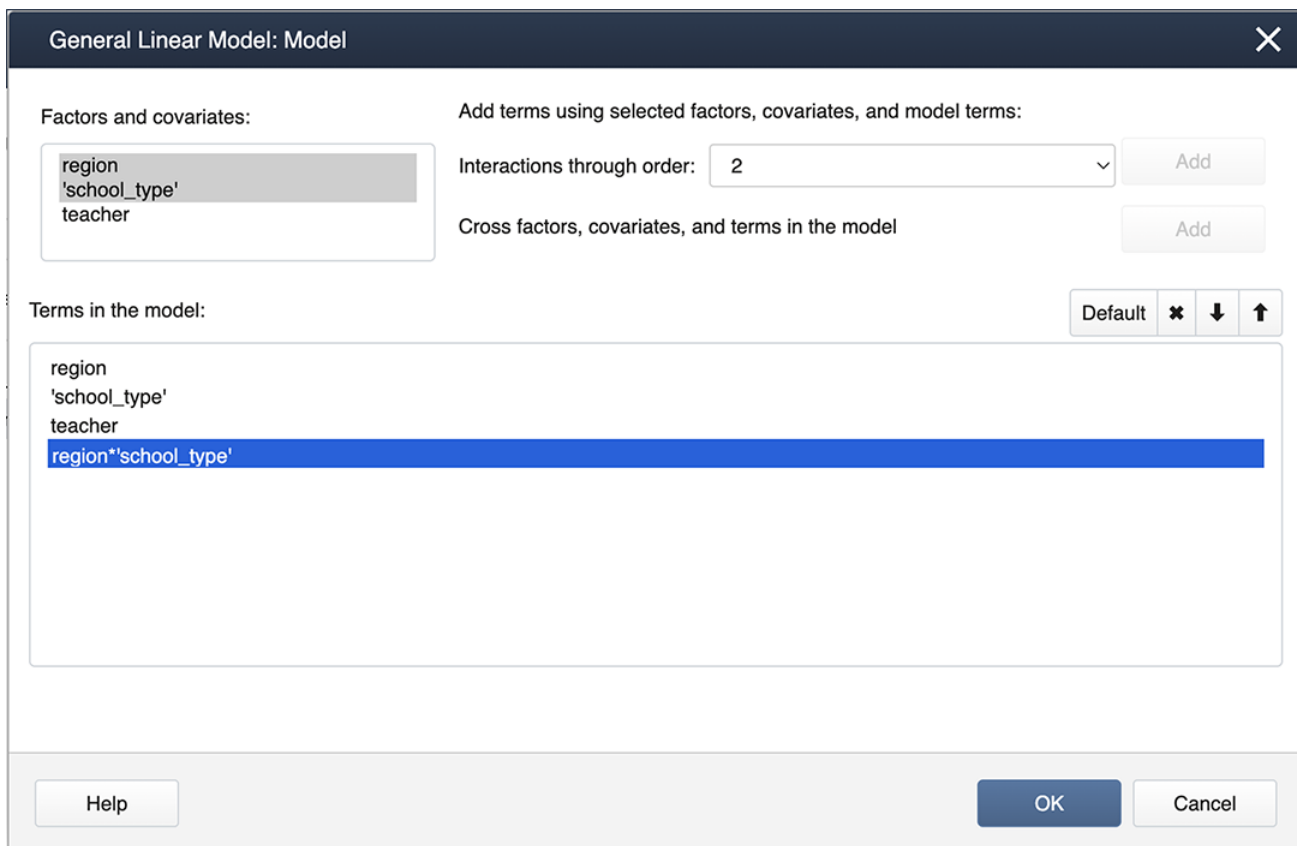


Figure 6.7.1.2: General Linear Model: Model pop-up window.

Finally, we create nested terms and effects are random under **Random/Nest...**:

General Linear Model: Random Nest
✕

Nesting:

Factor/Covariate	Nested in specified factors
region	
school_type	
teacher	region 'school_type'

Factor type:

Factor	Type
region	Fixed ▾
school_type	Fixed ▾
teacher	Random ▾

Figure 6.7.1.3: General Linear Model: Random Nest pop-up window.

Minitab Output for the mixed model:

Factor Information

Factor	Type	Levels	Values
region	Fixed	2	EastUS, WestUS
school_type	Fixed	2	Private, Public
teacher(region school_type)	Random	8	1(EastUS,Private), 2(EastUS,Private), 1(EastUS,Public), 2(EastUS, Public), 1(WestUS, Private), 2(WestUS, Private), 1(WestUS,Public), 2(WestUS,Public)

Analysis of Variance

Source	DF	Seq SS	Adj SS	Adj MS	F-Value	P-Value
region	1	564.06	564.06	564.06	24.07	0.008
school_type	1	76.56	76.56	76.56	3.27	0.145
region*school_type	1	264.06	264.06	264.06	11.27	0.028
teacher(region school_type)	4	93.75	93.75	23.44	5.00	0.026
Error	8	37.50	37.50	4.69		
Total	15	1035.94				

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.16506	96.38%	93.21%	85.52%

Minitab's results are in agreement with SAS Proc Mixed .

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