A15.3 (*CD-ROM TOPIC*) USING SPSS FOR MODEL BUILDING

In Appendices A13.3 and A14.3, instructions are provided for using SPSS for simple linear regression and multiple regression. The same set of instructions is valid for this chapter.

Using SPSS for Quadratic Regression

Using the **FLYASH.SAV** data, to create a new X variable that is the square of another X variable, select **Transform ➔ Compute**. In the Compute Variable dialog box, enter **flyashsq** in the Target Variable: edit box and **flyash**2** in the Numeric Expression: edit box. Click the **OK** button. A new X variable, flyashsq, is the square of flyash percentage. Continue with the regression analysis as discussed previously.

Using SPSS for Transformations

To transform a variable, select **Transform ➔ Compute**. In the Compute variable dialog box, enter the name of the new variable in the Target Variable: edit box and the transformation such as LG10 (for base 10 logarithms), LN (for natural logarithms), or SQRT (for square root) in the Numeric Expression: edit box. Click the **OK** button. Continue with the regression analysis as discussed previously.

Using SPSS to Compute the Variance Inflationary Factor

To compute the values of the variance inflationary factors (*VIF*), open the **OMNI.SAV** file. Select **Analyze ➔ Regression ➔ Linear**. In addition to the other selections made in the Linear Regression:Statistics dialog box, select the **Collinearity Diagnostics** check box.

Using SPSS for Stepwise Regression

To illustrate the use of SPSS for stepwise regression, open the **STANDBY.SAV** file. Select **Analyze ➔ Regression ➔ Linear**. In the Linear Regression dialog box, enter **standby** in the Dependent: edit box. Enter **total staff, remote, Dubner**, and **Total labor** in the Independent(s): edit box. Select **Stepwise** in the Method: drop-down list box. Click the **Statistics** button. In the Linear Regression: Statistics dialog box, select the **Estimates, Confidence intervals, Collinearity diagnostics**, and **Model fit** check boxes. Click the **Continue** button. Click the **Options** button. In the Linear Regression: Options dialog box (see Figure A15.4), select the **Use probability of F** option button. Enter **.05** in the Entry: edit box and **.051** in the Removal: edit box. (SPSS requires the value in the Entry: edit box to be lower than the value in the Removal: edit box.) Click the **Continue** button. Click the **OK** button.
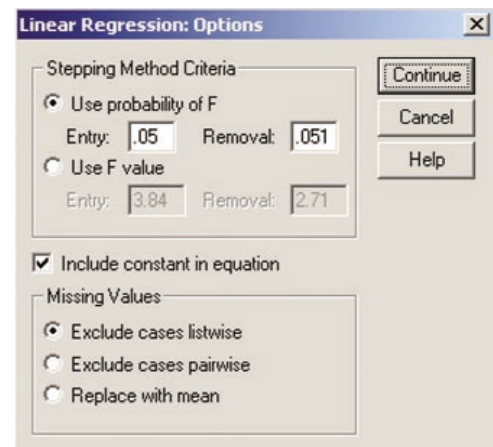
FIGURE A15.4 SPSS Linear Regression: Options Dialog Box