## A10.3 (*CD-ROM TOPIC*) USING SPSS FOR TWO-SAMPLE TESTS

### Using SPSS for the *t* Test for the Difference between Two Means

You can use SPSS to test a hypothesis for the difference between the means of two independent populations. To illustrate the test of hypothesis for the difference in the mean cola sales for the two aisle locations on page 348, open the **COLA.SAV file**. You first need to stack the data with sales in one column and display type in a different column.

1. Copy the sales for the display into a new column with the sales for the normal display in rows 1–10 and the sales for the end-aisle display in rows 11–20. Label this column sales. Then, in a different column (labeled display), label rows 1–10 **0** and rows 11–20 **1**.
2. Click the **Variable View** sheet tab. In the Type column in the display row, click **Numeric** and then click the **. . .** tab. In the Variable Type: edit box select the **Numeric** option button. Click the **OK** button. Click the **Data View** sheet tab.
3. Select **Analyze➔Compare Means ➔ Independent Samples T Test**. In the Independent-Samples T Test dialog box (see Figure A10.11), enter **sales** in the Test Variable(s): edit box and **display** in the Grouping Variable: edit box. Select the **Define Groups** button. In the Define Groups dialog box (see Figure A10.12), enter **0** in the Group 1: edit box and **1** in the Group 2: edit box. Click the **Continue** button to return to the Independent-Samples T Test dialog box. Click the **OK** button.

Figure A10.13 represents SPSS output for the cola sales data.
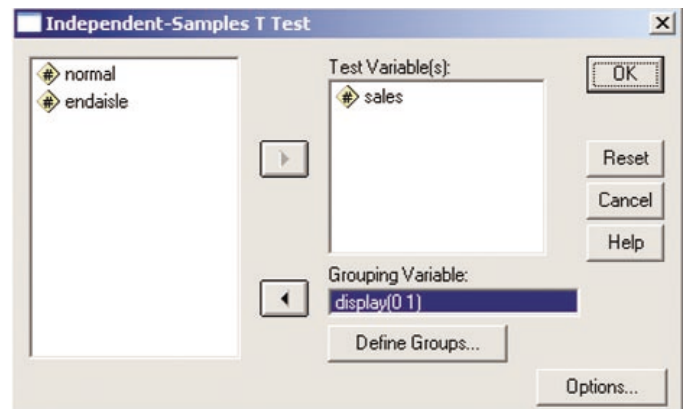
FIGURE A10.11 SPSS Independent-Samples T Test Dialog Box
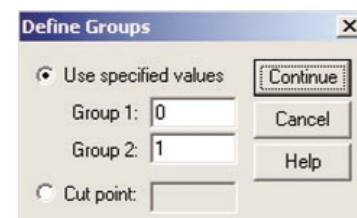
FIGURE A10.12 SPSS Define Groups Dialog Box

Using SPSS for the Paired *t* Test

You can use SPSS for the paired *t* test. To illustrate the paired *t* test, open the **COMPTIME.SAV** file. Select **Analyze ➔ Compare Means ➔ Paired-Samples T Test**.

**Group Statistics**

	display	N	Mean	Std. Deviation	Std. Error Mean
sales	Normal	10	50.3000	18.72639	5.92181
	Endaisle	10	72.0000	12.54326	3.96653

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
sales	Equal variances assumed	1.745	.203	-3.045	18	.007	-21.70000	7.12749
	Equal variances not assumed			-3.045	15.723	.008	-21.70000	7.12749

FIGURE A10.13 SPSS *t*-Test Output for the Two Display Locations

In the Paired-Samples T Test dialog box (see Figure A10.14), enter **current** and **new** in the Paired Variables: edit box (see Figure A10.14). Click the **OK** button. Figure A10.15 represents the output of the paired *t* test.
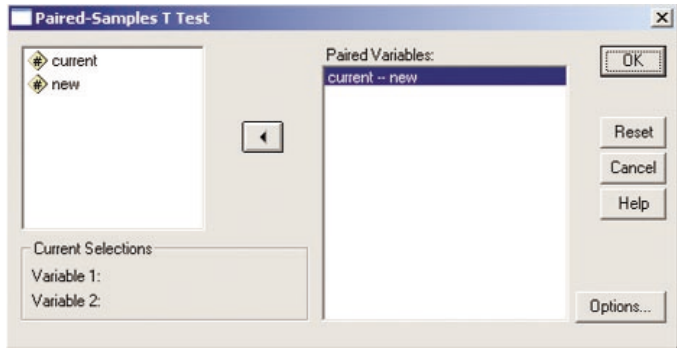
FIGURE A10.14 SPSS Paired-Samples T Test Dialog Box

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	current - new	.08400	.08435	.02667	.02366	.14434	3.149	9	.012

FIGURE A10.15 SPSS Paired *t*-Test Output for the Financial Packages Data