PERFORMING THE FRIEDMAN TEST USING SPSS

OBJECTIVE

In this lecture, you will learn the following items:

- How to perform the Friedman Test Using SPSS

We will analyze the data from the example of Lect. 9 using SPSS.

1. **Define Your Variables**

First, click the "Variable View" tab at the bottom of your screen. Then, type the names of your variables in the "Name" column. As shown in Figure 1, we have named our variables "Baseline," "Month_1," and "Month_2."

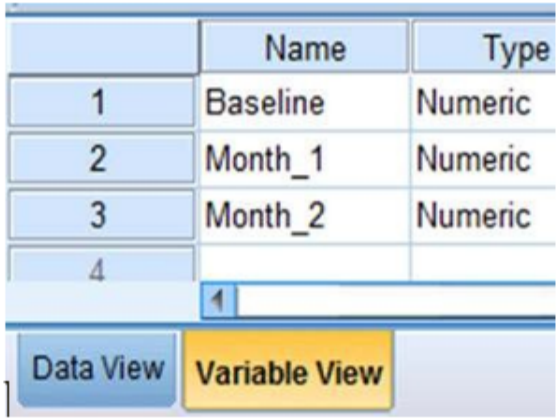
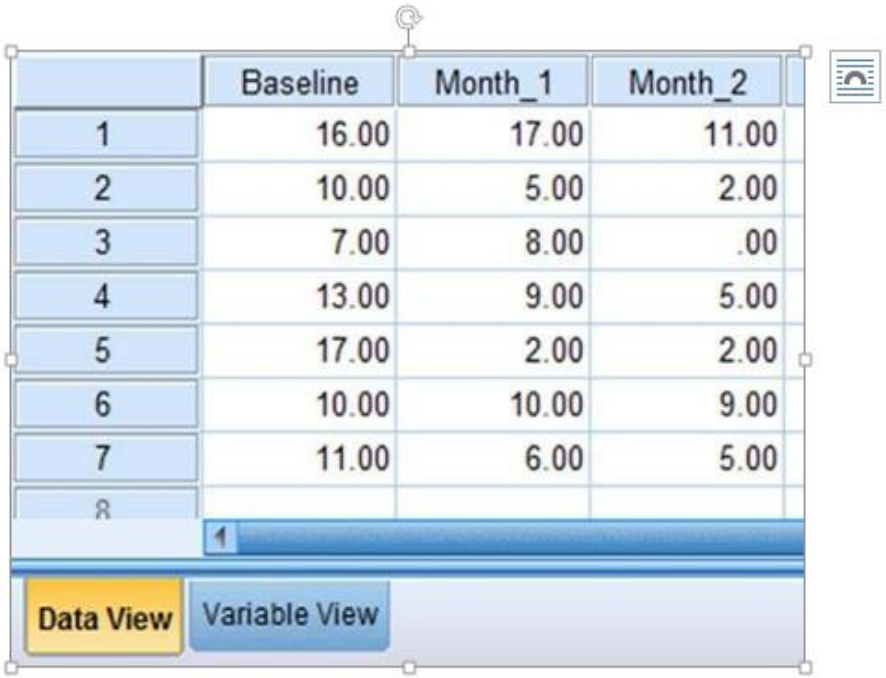


FIGURE 1

2. Type in Your Values

Click the "Data View" tab at the bottom of your screen and type your data under the variable names. As shown in Figure 2, we are comparing "Baseline," "Month_1," and "Month_2."



	Baseline	Month_1	Month_2
1	16.00	17.00	11.00
2	10.00	5.00	2.00
3	7.00	8.00	.00
4	13.00	9.00	5.00
5	17.00	2.00	2.00
6	10.00	10.00	9.00
7	11.00	6.00	5.00
8			

Data View | Variable View

FIGURE 2

3. Analyze Your Data

As shown in Figure 3, use the pull-down menus to choose "Analyze," "Nonparametric Tests," "Legacy Dialogs," and "K Related Samples. . . ."

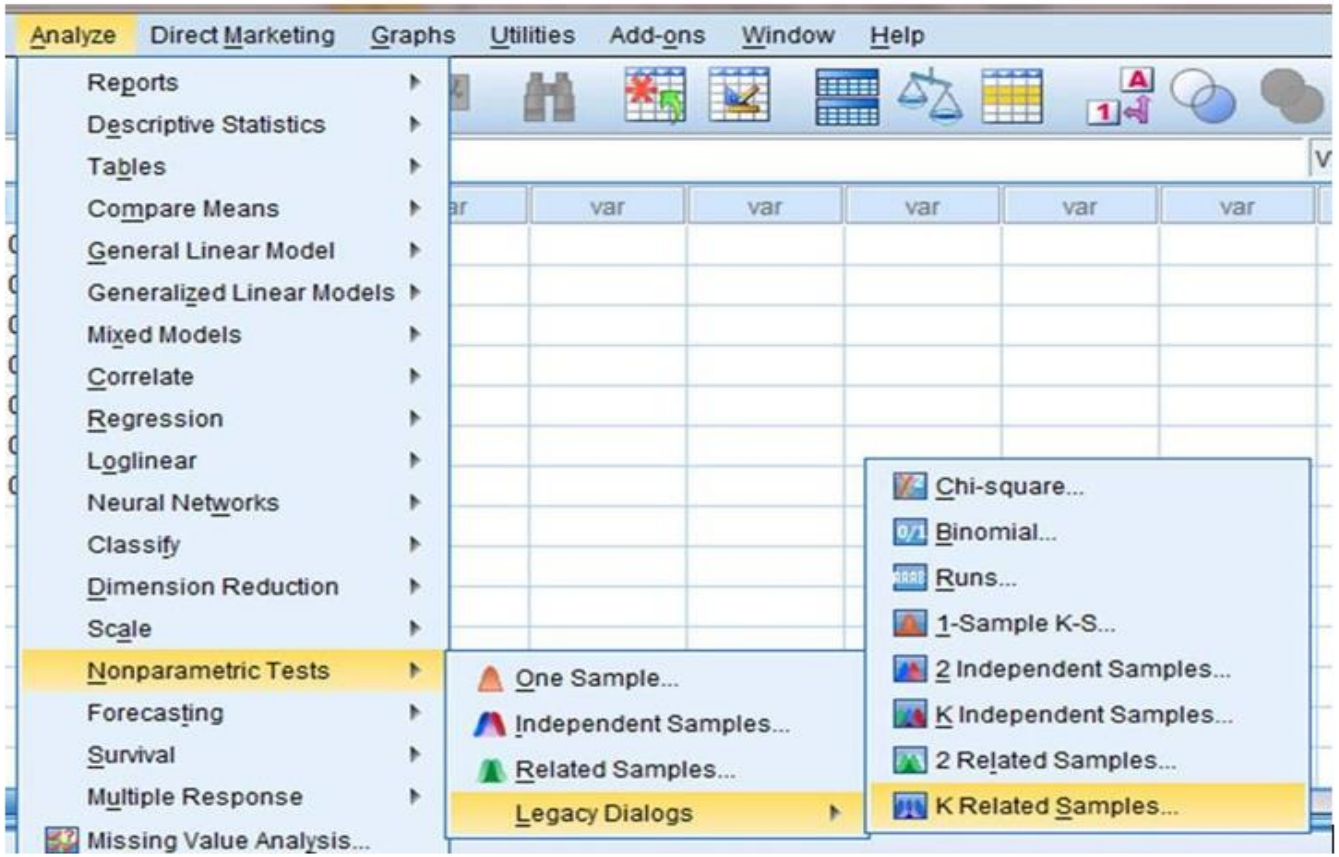


FIGURE 5.3

Select each of the variables that you want to compare and click the button in the middle to move it to the "Test Variables:" box as shown in Figure 4. Notice that the "Friedman" box is checked by default. After the variables are in the "Test Variables:" box, click "OK" to perform the analysis.

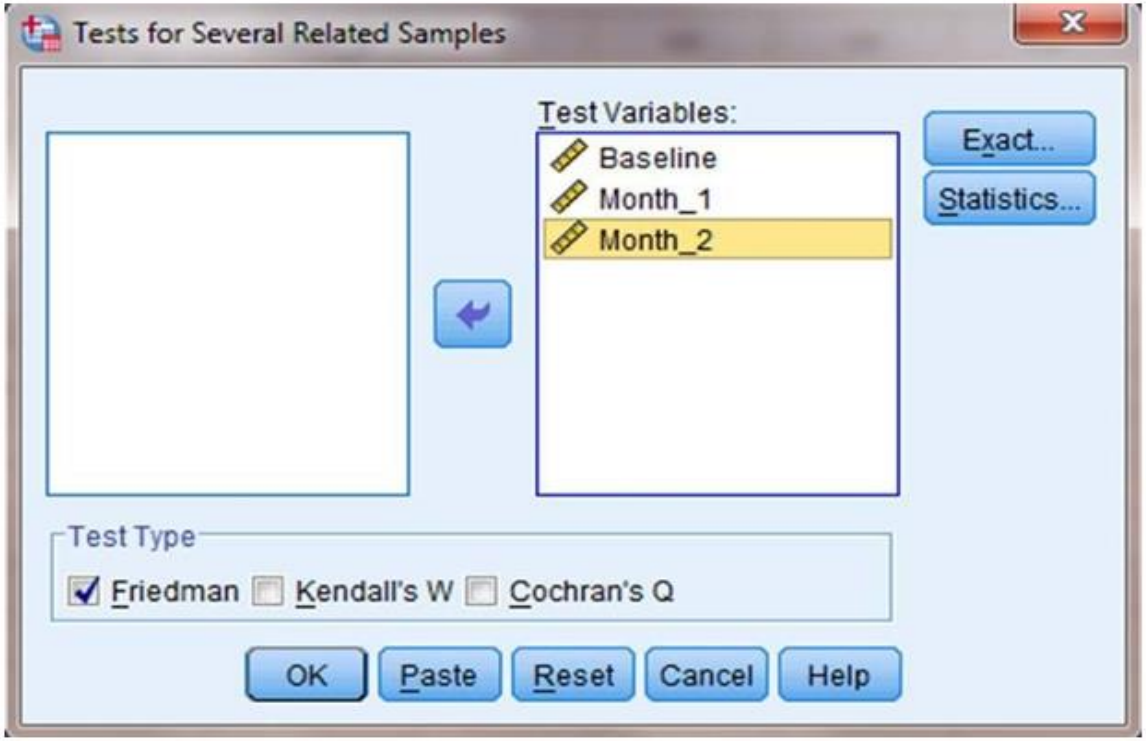


FIGURE 4

4. Interpret the Results from the SPSS Output Window

The first output table in SPSS (Output 1) provides the mean ranks of each condition. The second output table provides the Friedman test statistic, 10.231. Since this test uses a $\chi 2$ distribution, SPSS calls the Fr statistic "Chi-Square." This table also returns the number of subjects ($n = 7$) degrees of freedom ($df = 2$) and the significance ($p = 0.006$).

Ranks

	Mean Rank
Baseline	2.64
Month_1	2.29
Month_2	1.07

Test Statistics[a]

N	7
Chi-Square	10.231
df	2
Asymp. Sig.	.006

a. Friedman Test

SPSS OUTPUT 1

Based on the results from SPSS, three conditions were compared among employees ($n = 7$). The Friedman test was significant ($F_{r\,(2)} = 10.23$, $p < 0.05$).

In order to compare individual pairs of conditions, contrasts may be used. Note that to perform Wilcoxon signed rank tests for sample contrasts, remember to use your corrected level of risk, α_B, when examining your significance.