Analysis of Rank Order Data in SPSS

breakfast.sav

In a classic study [(Green and Rao, 1972)](javascript:void(0)), 21 Wharton School MBA students and their spouses were asked to rank 15 breakfast items in order of preference with 1="most preferred" to 15="least preferred." Their preferences were recorded under six different scenarios, from "Overall preference" to "Snack, with beverage only."

Variables

Menu scenarios

Gender

Toast pop-up

Buttered toast

English muffin and margarine

Jelly donut

Cinnamon toast

Blueberry muffin and margarine

Hard rolls and butter

Toast and marmalade

Buttered toast and jelly

Toast and margarine

Cinnamon bun

Danish pastry

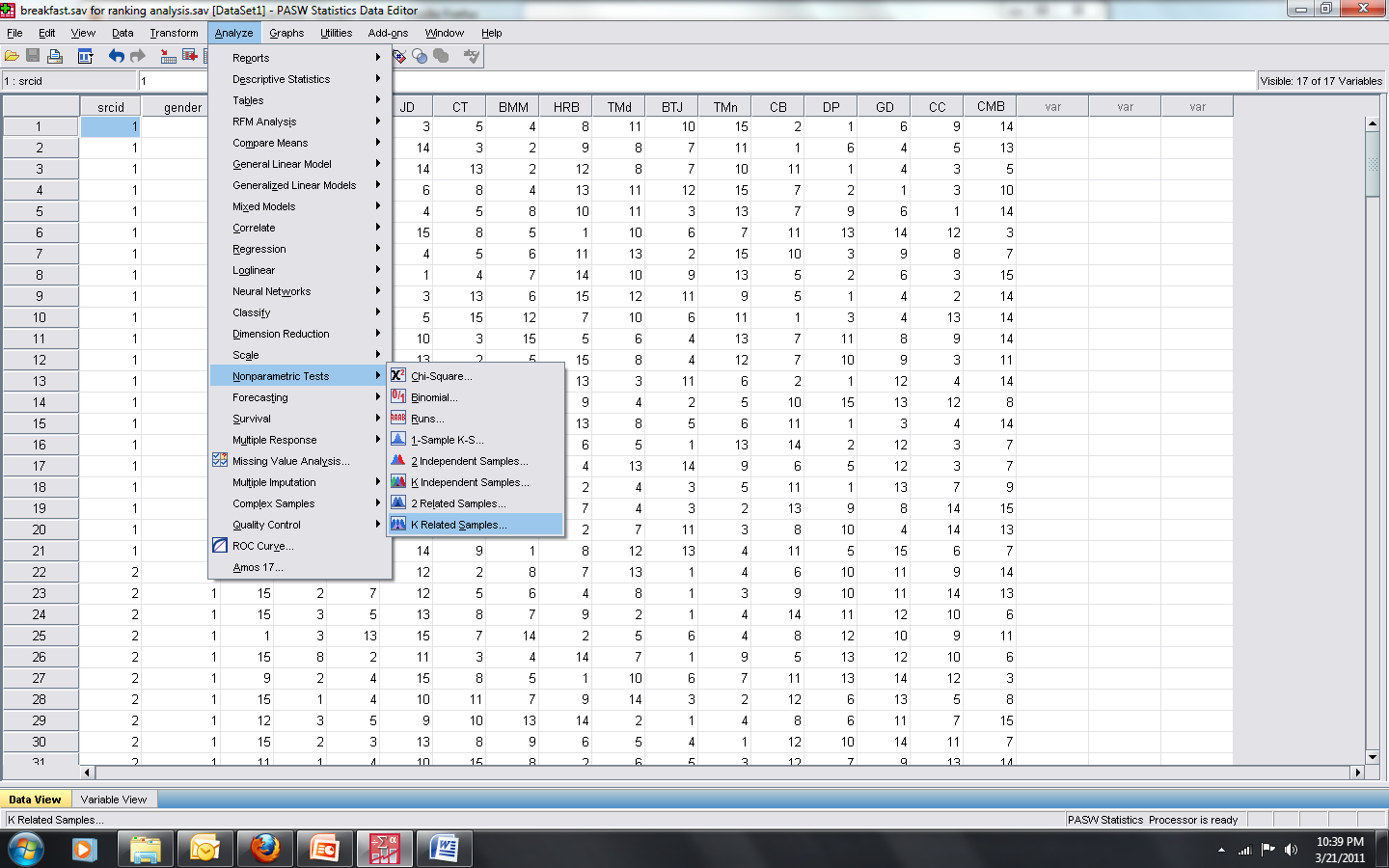
Glazed donut

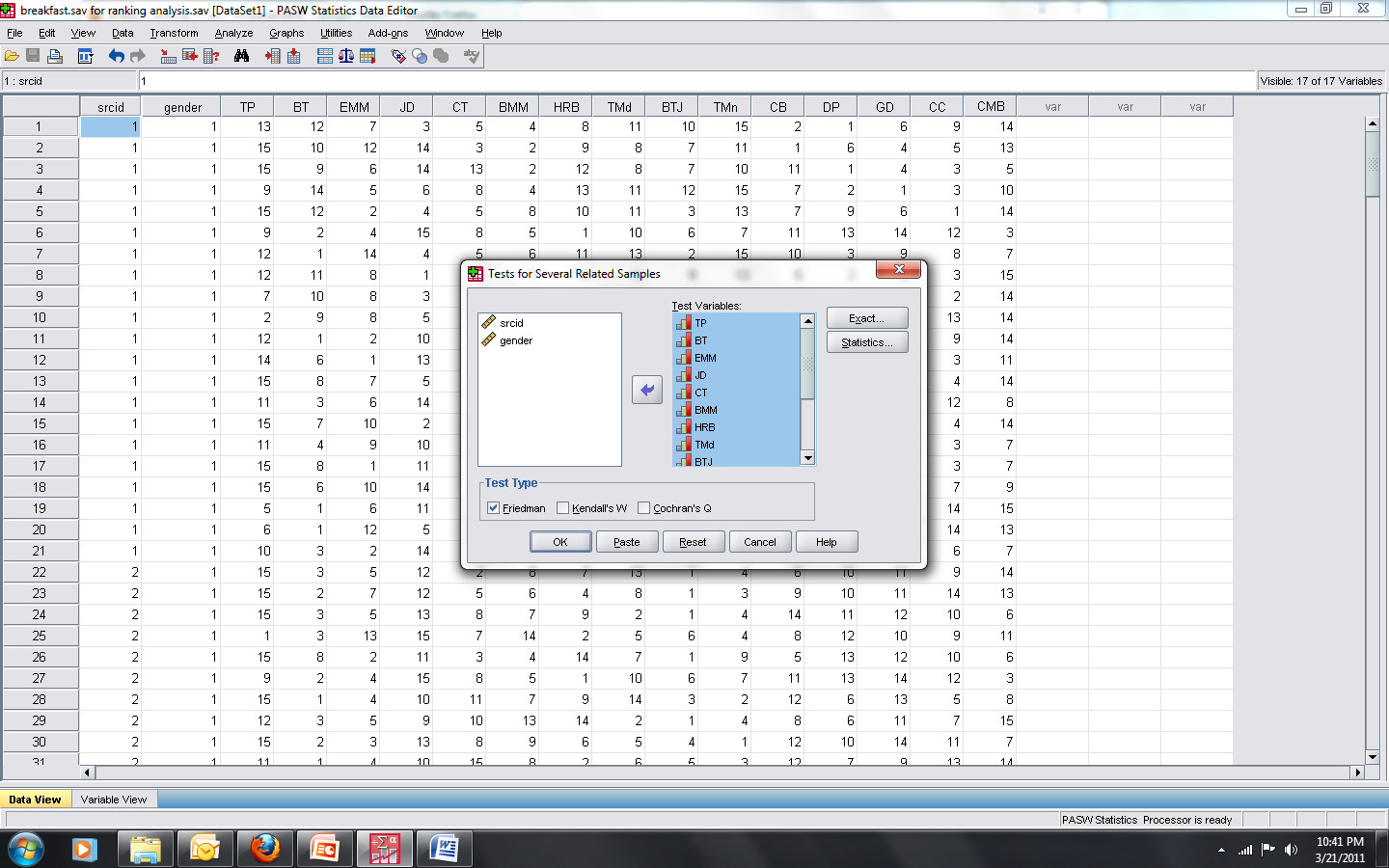
Coffee cake

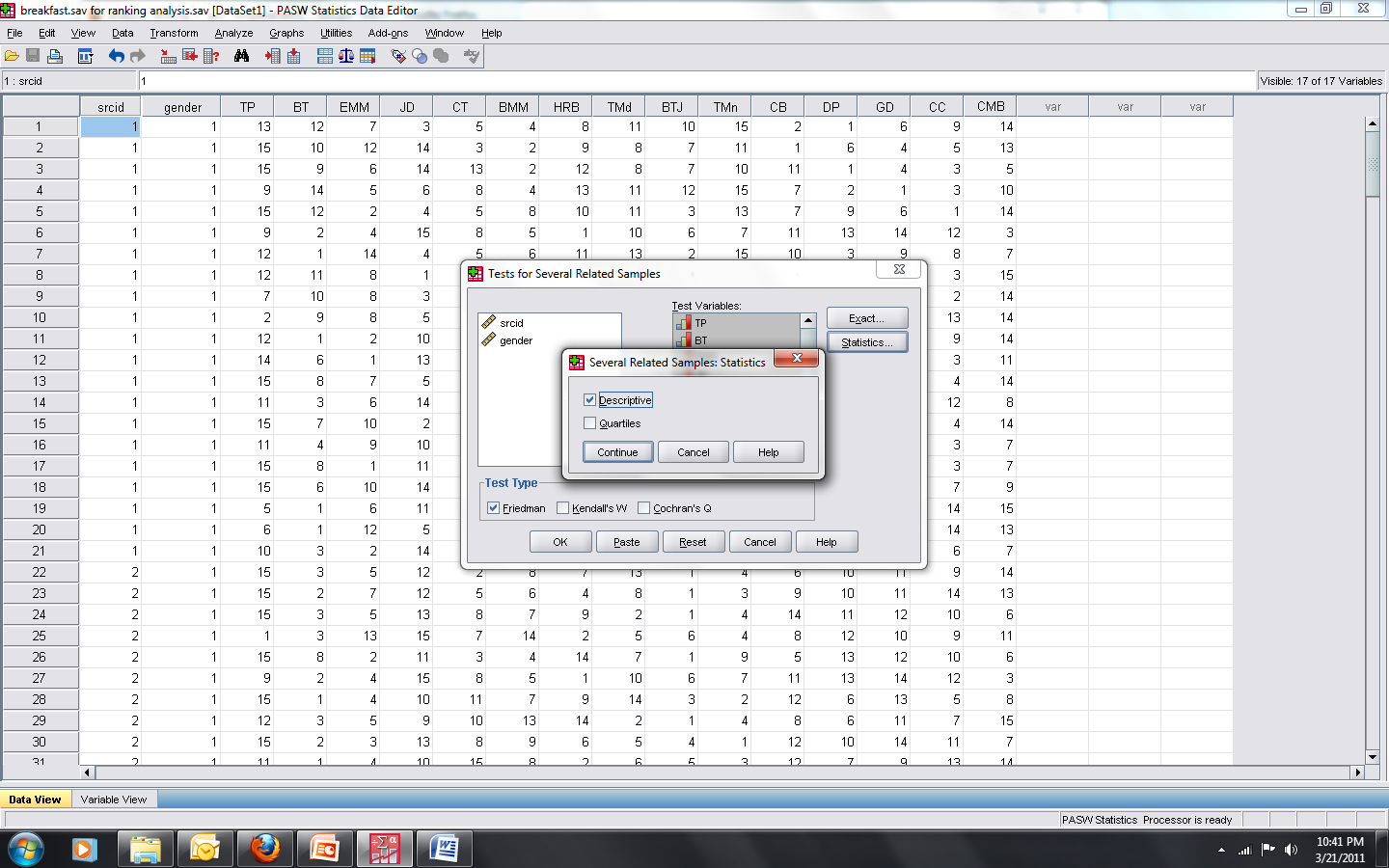
Corn muffin and butter

**Nonparametrics**

**Tests for K Related Samples**







| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Minimum | Maximum |
| Toast pop-up | 252 | 11.30 | 3.808 | 1 | 15 |
| Buttered toast | 252 | 6.63 | 4.518 | 1 | 15 |
| English muffin and margarine | 252 | 7.25 | 3.854 | 1 | 15 |
| Jelly donut | 252 | 8.94 | 4.432 | 1 | 15 |
| Cinnamon toast | 252 | 8.33 | 3.692 | 1 | 15 |
| Blueberry muffin and margarine | 252 | 7.01 | 3.443 | 1 | 15 |
| Hard rolls and butter | 252 | 9.42 | 4.404 | 1 | 15 |
| Toast and marmalade | 252 | 7.64 | 3.956 | 1 | 15 |
| Buttered toast and jelly | 252 | 6.55 | 3.504 | 1 | 15 |
| Toast and margarine | 252 | 8.18 | 4.560 | 1 | 15 |
| Cinnamon bun | 252 | 7.94 | 4.073 | 1 | 15 |
| Danish pastry | 252 | 6.50 | 4.681 | 1 | 15 |
| Glazed donut | 252 | 8.25 | 4.425 | 1 | 15 |
| Coffee cake | 252 | 6.65 | 4.342 | 1 | 15 |
| Corn muffin and butter | 252 | 9.42 | 3.915 | 1 | 15 |

**Friedman Test**

| **Ranks** | |
| --- | --- |
|  | Mean Rank |
| Toast pop-up | 11.30 |
| Buttered toast | 6.63 |
| English muffin and margarine | 7.25 |
| Jelly donut | 8.94 |
| Cinnamon toast | 8.33 |
| Blueberry muffin and margarine | 7.01 |
| Hard rolls and butter | 9.42 |
| Toast and marmalade | 7.64 |
| Buttered toast and jelly | 6.55 |
| Toast and margarine | 8.18 |
| Cinnamon bun | 7.94 |
| Danish pastry | 6.50 |
| Glazed donut | 8.25 |
| Coffee cake | 6.65 |
| Corn muffin and butter | 9.42 |

| **Test Statisticsa** | |
| --- | --- |
| N | 252 |
| Chi-Square | 324.152 |
| df | 14 |
| Asymp. Sig. | .000 |
| a. Friedman Test | |

Friedman tests the null hypothesis that k related variables come from the same population. For each case, the k variables are ranked from 1 to k. The test statistic is based on these ranks.