

SAS - Example of Use of DIFF option with DOMAIN statement in SAS 9.4 TS1M5
 November 14, 2017

This example shows how to use the DIFF option on the DOMAIN statement of PROC SURVEYMEANS. This provides a built-in difference of means test directly within this procedure. Note this option is for SAS 9.4 TS1M4 or later only.

SAS Code:

```
options ls=100 ps=66;
data Company;
  length Type $14;
  input Type$ Asset Sale Value Profit Employee Weight;
  datalines;
Other          2764.0 1828.0 1850.3 144.0 18.7 9.6
Energy        13246.2 4633.5 4387.7 462.9 24.3 42.6
Finance       3597.7 377.8 93.0 14.0 1.1 12.2
Transportation 6646.1 6414.2 2377.5 348.2 47.1 21.8
HiTech       1068.4 1689.8 1430.2 72.9 4.6 4.3
Manufacturing 1125.0 1719.4 1057.5 98.1 20.4 4.5
Other        1459.0 1241.4 452.7 24.5 20.1 5.5
Finance      2672.3 262.5 296.2 23.1 2.2 9.3
Finance      311.0 566.2 932.0 52.8 2.7 1.9
Energy      1148.6 1014.6 485.1 60.6 4.0 4.5
Finance     5327.0 572.4 372.9 25.2 4.2 17.7
Energy     1602.7 678.4 653.0 75.6 2.8 6.0
Energy     5808.8 1288.4 2007.0 318.8 5.9 19.2
Medical     268.8 204.4 820.9 45.6 3.7 1.8
Transportation 5222.6 2627.8 1910.0 245.6 22.8 17.4
Other       872.7 1419.4 939.3 69.7 12.2 3.7
Retail     4461.7 8946.8 4662.7 289.0 132.1 15.0
HiTech    6719.2 6942.0 8240.2 381.3 85.8 22.1
Retail     833.4 1538.8 1090.3 64.9 15.4 3.5
Finance    415.9 167.3 1126.8 56.8 0.7 2.2
HiTech    442.4 1139.9 1039.9 57.6 22.7 2.3
Other      801.5 1157.0 664.2 56.9 15.5 3.4
Finance   4954.8 468.8 366.4 41.7 3.0 16.5
Finance   2661.9 257.9 181.1 21.2 2.1 9.3
Finance   5345.8 530.1 337.4 36.4 4.3 17.8
Energy   3334.3 1644.7 1407.8 157.6 6.4 11.4
Manufacturing 1826.6 2671.7 483.2 71.3 25.3 6.7
Retail    618.8 2354.7 767.7 58.6 19.0 2.9
Retail   1529.1 6534.0 826.3 58.3 65.8 5.7
Manufacturing 4458.4 4824.5 3132.1 28.9 67.0 15.0
HiTech   5831.7 6611.1 9464.7 459.6 86.7 19.3
Medical  6468.3 4199.2 3170.4 270.1 59.5 21.3
Energy   1720.7 473.1 811.1 86.6 1.6 6.3
Energy   1679.7 1379.9 721.1 91.8 4.5 6.2
Retail   4018.2 16823.4 2038.3 178.1 162.0 13.6
Other    227.1 575.8 1083.8 62.6 1.9 1.6
Finance  3872.8 362.0 209.3 27.6 2.4 13.1
Retail   3359.3 4844.7 2651.4 224.1 75.6 11.5
Energy   1295.6 356.9 180.8 162.3 0.6 5.0
Energy   1658.0 626.6 688.0 126.0 3.5 6.1
Finance  12156.7 1345.5 680.7 106.6 9.4 39.2
HiTech   3982.6 4196.0 3946.8 313.9 64.3 13.5
Finance   8760.7 886.4 1006.9 90.0 7.5 28.5
Manufacturing 2362.2 3153.3 1080.0 137.0 25.2 8.4
Transportation 2499.9 3419.0 992.6 47.2 25.3 8.8
```

Energy	1430.4	1610.0	664.3	77.7	3.5	5.4
Energy	13666.5	15465.4	2736.7	411.4	26.6	43.9
Manufacturing	4069.3	4174.7	2907.6	289.2	38.2	13.7
Energy	2924.7	711.9	1067.8	146.7	3.4	10.1
Transportation	1262.1	1716.0	364.3	71.2	14.5	4.9
Medical	684.4	672.9	287.4	61.8	6.0	3.1
Energy	3069.3	1719.0	1439.0	196.4	4.9	10.6
Medical	246.5	318.8	924.1	43.8	3.1	1.7
Finance	11562.2	1128.5	580.4	64.2	6.7	37.3
Finance	9316.0	1059.4	816.5	95.9	8.0	30.2
Retail	1094.3	3848.0	563.3	29.4	44.7	4.4
Retail	1102.1	4878.3	932.4	65.2	47.3	4.4
HiTech	466.4	675.8	845.7	64.5	5.2	2.4
Manufacturing	10839.4	5468.7	1895.4	232.8	47.8	35.0
Manufacturing	733.5	2135.3	96.6	10.9	2.7	3.2
Manufacturing	10354.2	14477.4	5607.2	321.9	188.5	33.5
Energy	1902.1	2697.9	329.3	34.2	2.2	6.9
Other	2245.2	2132.2	2230.4	198.9	8.0	8.0
Transportation	949.4	1248.3	298.9	35.4	10.4	3.9
Retail	2834.4	2884.6	458.2	41.2	49.8	9.8
Retail	2621.1	6173.8	1992.7	183.7	115.1	9.2

;

run ;

title 'Top Companies Profile Study';

proc surveymeans data=Company total=800 mean sum;

var Asset;

weight Weight;

domain Type / diff ;

run;

SAS Output:

Top Companies Profile Study

The SURVEYMEANS Procedure

Data Summary

Number of Observations	66
Sum of Weights	799.8

Statistics

Variable	Mean	Std Error of Mean	Sum	Std Error of Sum
Asset	6523.488510	720.557075	5217486	1073829

Top Companies Profile Study
The SURVEYMEANS Procedure

Statistics for Type Domains

Type	Variable	Mean	Std Error of Mean	Sum	Std Error of Sum
Energy	Asset	7868.302932	1941.699163	1449341	785962
Finance	Asset	7890.190264	1057.185336	1855773	704506
HiTech	Asset	5031.959781	732.436967	321542	183302
Manufacturing	Asset	7403.004250	1454.921083	888361	492577
Medical	Asset	5046.570609	1218.444638	140799	131942
Other	Asset	1850.250000	338.128984	58838	31375
Retail	Asset	2939.845750	393.692369	235188	94605
Transportation	Asset	4712.047359	888.954411	267644	163516

Differences of Asset Means for Type Domains

Type	-Type	Diff Estimate	Std Error	DF	t Value	Pr > t
Energy	Finance	-21.887332	2210.845195	65	-0.01	0.9921
Energy	HiTech	2836.343151	2075.249275	65	1.37	0.1764
Energy	Manufacturing	465.298682	2426.312222	65	0.19	0.8485
Energy	Medical	2821.732322	2292.335703	65	1.23	0.2228
Energy	Other	6018.052932	1970.920306	65	3.05	0.0033
Energy	Retail	4928.457182	1981.209056	65	2.49	0.0154
Energy	Transportation	3156.255572	2135.517639	65	1.48	0.1442
Finance	HiTech	2858.230483	1286.120036	65	2.22	0.0297
Finance	Manufacturing	487.186014	1798.453834	65	0.27	0.7873
Finance	Medical	2843.619654	1613.148527	65	1.76	0.0826
Finance	Other	6039.940264	1109.942361	65	5.44	<.0001
Finance	Retail	4950.344514	1128.111039	65	4.39	<.0001
Finance	Transportation	3178.142904	1381.260576	65	2.30	0.0246
HiTech	Manufacturing	-2371.044469	1628.882828	65	-1.46	0.1503
HiTech	Medical	-14.610828	1421.643853	65	-0.01	0.9918
HiTech	Other	3181.709781	806.718737	65	3.94	0.0002
HiTech	Retail	2092.114031	831.539291	65	2.52	0.0144
HiTech	Transportation	319.912422	1151.826313	65	0.28	0.7821
Manufacturing	Medical	2356.433641	1897.736202	65	1.24	0.2188
Manufacturing	Other	5552.754250	1493.695607	65	3.72	0.0004
Manufacturing	Retail	4463.158500	1507.245514	65	2.96	0.0043
Manufacturing	Transportation	2690.956891	1705.003021	65	1.58	0.1194
Medical	Other	3196.320609	1264.491417	65	2.53	0.0139
Medical	Retail	2106.724859	1280.469061	65	1.65	0.1047
Medical	Transportation	334.523250	1508.259686	65	0.22	0.8252
Other	Retail	-1089.595750	518.965212	65	-2.10	0.0397
Other	Transportation	-2861.797359	951.089457	65	-3.01	0.0037
Retail	Transportation	-1772.201609	972.231261	65	-1.82	0.0729