

Alscal Procedure Options

Data Options-

| | |
|---------------------------------------|---------------|
| Number of Rows (Observations/Matrix). | 10 |
| Number of Columns (Variables) . . . | 10 |
| Number of Matrices | 18 |
| Measurement Level | Ratio |
| Data Matrix Shape | Symmetric |
| Type | Dissimilarity |
| Approach to Ties | Leave Tied |
| Conditionality | Matrix |
| Data Cutoff at | .000000 |

Model Options-

| | |
|-----------------|---------|
| Model | Indscal |
|-----------------|---------|

>Note # 14697

>You have requested a solution with one dimension in a weighted model.

>Subject weights are undefined in a one dimensional model. ALSCAL continues

>the analysis with a minimum of two dimensions in the solution.

| | |
|----------------------------------|---------------|
| Maximum Dimensionality | 5 |
| Minimum Dimensionality | 2 |
| Negative Weights | Not Permitted |

Output Options-

| | |
|--------------------------------------|-------------|
| Job Option Header | Printed |
| Data Matrices | Not Printed |
| Configurations and Transformations . | Plotted |
| Output Dataset | Not Created |
| Initial Stimulus Coordinates . . . | Computed |
| Initial Subject Weights | Computed |

Algorithmic Options-

| | |
|-------------------------------------|----------|
| Maximum Iterations | 50 |
| Convergence Criterion | .00100 |
| Minimum S-stress | .00100 |
| Missing Data Estimated by | Ulbounds |

Iteration history for the 5 dimensional solution (in squared distances)

Young's S-stress formula 1 is used.

| Iteration | S-stress | Improvement |
|-----------|----------|-------------|
| 0 | .28986 | |
| 1 | .28986 | |
| 2 | .28010 | .00976 |
| 3 | .27967 | .00043 |

Iterations stopped because
S-stress improvement is less than .001000

Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities)
in the partition (row, matrix, or entire data) which
is accounted for by their corresponding distances.
Stress values are Kruskal's stress formula 1.

| Matrix | Stress | RSQ | Matrix | Stress | RSQ |
|--------|--------|------|--------|--------|------|
| 1 | .272 | .531 | 2 | .182 | .493 |
| 3 | .213 | .609 | 4 | .138 | .754 |
| 5 | .160 | .620 | 6 | .184 | .780 |
| 7 | .130 | .760 | 8 | .154 | .589 |
| 9 | .179 | .568 | 10 | .262 | .653 |
| 11 | .147 | .661 | 12 | .180 | .581 |
| 13 | .251 | .597 | 14 | .133 | .687 |
| 15 | .181 | .457 | 16 | .194 | .618 |
| 17 | .096 | .792 | 18 | .371 | .595 |

Averaged (rms) over matrices
Stress = .20068 RSQ = .63034

Configuration derived in 5 dimensions

Stimulus Coordinates

| Stimulus Number | Stimulus Name | Dimension | | | | |
|--------------------|------------------|-----------|---------|---------|---------|---------|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | var1 | -1.3140 | -.4157 | .0685 | .2934 | -1.5844 |
| 2 | var2 | -1.4977 | -.5953 | .2087 | .0142 | .0737 |
| 3 | var3 | -.2242 | -1.3106 | .8731 | .4455 | 1.0045 |
| 4 | var4 | .9367 | .3319 | -1.9322 | 1.2380 | .0245 |
| 5 | var5 | 1.0591 | -.8439 | -1.4602 | .5274 | .8825 |
| 6 | var6 | .9114 | .6002 | .1087 | -1.3124 | -1.8285 |
| 7 | var7 | -.3539 | 1.5602 | .3400 | -1.3229 | 1.4072 |
| 8 | var8 | .8879 | .7909 | 1.7578 | 1.7202 | -.4131 |
| 9 | var9 | .8352 | -1.3829 | .2479 | -1.1079 | .4488 |
| 10 | var10 | -1.2406 | 1.2652 | -.2122 | -.4954 | -.0152 |

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.

A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

Subject Weights

| Subject Number | Weird- ness | Dimension | | | | |
|--|----------------|-----------|-------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | .3663 | .3570 | .4525 | .2060 | .3854 | .0899 |
| 2 | .0575 | .4356 | .3502 | .2648 | .2428 | .2270 |
| 3 | .2548 | .5336 | .1805 | .3112 | .2975 | .3263 |
| 4 | .1328 | .6568 | .3521 | .2938 | .2274 | .2457 |
| 5 | .1504 | .4043 | .4371 | .2997 | .3535 | .2264 |
| 6 | .0451 | .5523 | .3927 | .3639 | .3389 | .2714 |
| 7 | .1038 | .6141 | .3545 | .3556 | .2435 | .2668 |
| 8 | .1738 | .3671 | .4711 | .3328 | .2759 | .2127 |
| 9 | .1577 | .5134 | .2497 | .2830 | .2869 | .2826 |
| 10 | .3380 | .5602 | .4852 | .2631 | .1603 | .0960 |
| 11 | .1922 | .5461 | .3043 | .3536 | .2089 | .3183 |
| 12 | .4862 | .4928 | .3990 | .1031 | .4085 | .0405 |
| 13 | .1507 | .5958 | .2660 | .2864 | .2100 | .2119 |
| 14 | .1346 | .4964 | .3460 | .3572 | .2962 | .3255 |
| 15 | .0852 | .4067 | .3307 | .3027 | .2424 | .1773 |
| 16 | .0973 | .5047 | .3234 | .2984 | .3411 | .2319 |
| 17 | .2787 | .5341 | .3666 | .4120 | .1853 | .4097 |
| 18 | .1898 | .5587 | .3232 | .3278 | .2329 | .1302 |
| Overall importance of each dimension: | | .2639 | .1317 | .0949 | .0798 | .0600 |

Flattened Subject Weights

| Subject Number | Plot Symbol | Variable | | | |
|-------------------|----------------|----------|---------|---------|---------|
| | | 1 | 2 | 3 | 4 |
| 1 | 1 | -1.4453 | 1.7094 | -1.2865 | 1.9436 |
| 2 | 2 | -.4108 | .2980 | -.1627 | -.1472 |
| 3 | 3 | .4038 | -2.0332 | .2897 | .2911 |
| 4 | 4 | 1.4224 | -.3202 | -.4360 | -.8167 |
| 5 | 5 | -1.5457 | .7539 | -.1652 | .8207 |
| 6 | 6 | -.3834 | -.1980 | .3187 | .2104 |
| 7 | 7 | .6502 | -.4175 | .4504 | -.7171 |
| 8 | 8 | -1.8470 | 1.3306 | .6589 | -.0086 |
| 9 | 9 | .2761 | -1.1633 | -.1323 | .2316 |
| 10 | A | 1.1616 | 1.8360 | -.3517 | -1.3578 |
| 11 | B | .2256 | -.7545 | .7761 | -.9730 |
| 12 | C | .7942 | 1.1854 | -3.3706 | 2.4590 |
| 13 | D | 1.6339 | -.8775 | .0935 | -.6959 |
| 14 | E | -.7176 | -.4801 | .5205 | -.0849 |
| 15 | F | -.5844 | .2253 | .8720 | -.0128 |
| 16 | G | -.1801 | -.4746 | -.1203 | .7204 |
| 17 | H | -.5546 | -.4381 | 1.1404 | -1.4703 |
| 18 | I | 1.1011 | -.1815 | .9051 | -.3922 |

Iteration history for the 4 dimensional solution (in squared distances)

Young's S-stress formula 1 is used.

| Iteration | S-stress | Improvement |
|-----------|----------|-------------|
| 0 | .32730 | |
| 1 | .32730 | |
| 2 | .31119 | .01611 |
| 3 | .31036 | .00084 |

Iterations stopped because
S-stress improvement is less than .001000

Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities)
in the partition (row, matrix, or entire data) which
is accounted for by their corresponding distances.
Stress values are Kruskal's stress formula 1.

| Matrix | Stress | RSQ | Matrix | Stress | RSQ |
|--------|--------|------|--------|--------|------|
| 1 | .287 | .452 | 2 | .194 | .472 |
| 3 | .206 | .609 | 4 | .147 | .710 |
| 5 | .191 | .495 | 6 | .195 | .675 |
| 7 | .151 | .676 | 8 | .179 | .507 |
| 9 | .205 | .467 | 10 | .259 | .651 |
| 11 | .186 | .510 | 12 | .176 | .587 |
| 13 | .228 | .639 | 14 | .186 | .473 |
| 15 | .195 | .436 | 16 | .221 | .482 |
| 17 | .158 | .582 | 18 | .368 | .578 |

Averaged (rms) over matrices
Stress = .21363 RSQ = .55569

Configuration derived in 4 dimensions

Stimulus Coordinates

| Stimulus Number | Stimulus Name | Dimension | | | |
|--------------------|------------------|-----------|---------|---------|---------|
| | | 1 | 2 | 3 | 4 |
| 1 | var1 | -1.2027 | -.4740 | -.4474 | -1.2619 |
| 2 | var2 | -1.3506 | -.2598 | -.8501 | -.3264 |
| 3 | var3 | -.7378 | 1.2734 | -.6031 | -.1043 |
| 4 | var4 | 1.8028 | -.2242 | -.8486 | -.4819 |
| 5 | var5 | 1.3229 | .7653 | -1.2422 | .3061 |
| 6 | var6 | .6931 | -.1881 | 1.7522 | .7395 |
| 7 | var7 | -.3812 | -1.3370 | .7343 | 1.5864 |
| 8 | var8 | .4103 | .7157 | 1.6801 | -1.7806 |
| 9 | var9 | .0648 | 1.4579 | -.1259 | 1.3152 |
| 10 | var10 | -.6216 | -1.7291 | -.0493 | .0079 |

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.

A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

Subject Weights

| Subject Number | Weird- ness | Dimension | | | |
|--|----------------|-----------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| 1 | .2054 | .2858 | .4212 | .3647 | .2449 |
| 2 | .0691 | .4094 | .3321 | .3259 | .2960 |
| 3 | .2917 | .5726 | .1923 | .3215 | .3756 |
| 4 | .1043 | .5417 | .4640 | .3674 | .2574 |
| 5 | .0798 | .3911 | .3933 | .3193 | .2915 |
| 6 | .0478 | .5002 | .4085 | .4071 | .3042 |
| 7 | .0962 | .5407 | .4123 | .3876 | .2524 |
| 8 | .0689 | .4081 | .4023 | .3300 | .2640 |
| 9 | .1875 | .4725 | .2821 | .2426 | .3250 |
| 10 | .1716 | .4400 | .4746 | .4231 | .2304 |
| 11 | .0813 | .4656 | .3082 | .3436 | .2830 |
| 12 | .3031 | .3822 | .4662 | .2099 | .4242 |
| 13 | .2874 | .6039 | .3935 | .3173 | .1385 |
| 14 | .0316 | .4102 | .3614 | .3226 | .2650 |
| 15 | .0805 | .3935 | .3111 | .3447 | .2569 |
| 16 | .0597 | .4526 | .3379 | .2879 | .2827 |
| 17 | .0688 | .5038 | .3428 | .3651 | .2774 |
| 18 | .0536 | .4964 | .3958 | .3223 | .2661 |
| Overall importance of each dimension: | | .2170 | .1434 | .1138 | .0815 |

Flattened Subject Weights

| Subject Number | Plot Symbol | Variable | | |
|-------------------|----------------|----------|---------|---------|
| | | 1 | 2 | 3 |
| 1 | 1 | -2.2254 | 1.4793 | 1.5072 |
| 2 | 2 | -.3798 | -.3220 | .2703 |
| 3 | 3 | 1.6470 | -2.9653 | -.3552 |
| 4 | 4 | .3286 | .6447 | -.1774 |
| 5 | 5 | -.8228 | .5826 | -.0620 |
| 6 | 6 | -.1913 | -.1198 | .6698 |
| 7 | 7 | .4876 | .0378 | .4094 |
| 8 | 8 | -.5940 | .6891 | .1377 |
| 9 | 9 | .8859 | -1.0353 | -1.5428 |
| 10 | A | -.8160 | 1.0722 | 1.2720 |
| 11 | B | .3346 | -.8769 | .4752 |
| 12 | C | -1.3215 | 1.3504 | -2.9085 |
| 13 | D | 2.1764 | .3203 | -.4062 |
| 14 | E | -.3462 | .2040 | .2149 |
| 15 | F | -.3581 | -.4496 | 1.0802 |
| 16 | G | .3355 | -.2120 | -.6274 |
| 17 | H | .4639 | -.6379 | .4700 |
| 18 | I | .3958 | .2383 | -.4271 |

Iteration history for the 3 dimensional solution (in squared distances)

Young's S-stress formula 1 is used.

| Iteration | S-stress | Improvement |
|-----------|----------|-------------|
| 0 | .38002 | |
| 1 | .38002 | |
| 2 | .36220 | .01782 |
| 3 | .36088 | .00132 |
| 4 | .36050 | .00039 |

Iterations stopped because
S-stress improvement is less than .001000

Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities)
in the partition (row, matrix, or entire data) which
is accounted for by their corresponding distances.
Stress values are Kruskal's stress formula 1.

| Matrix | Stress | RSQ | Matrix | Stress | RSQ |
|--------|--------|------|--------|--------|------|
| 1 | .323 | .320 | 2 | .216 | .464 |
| 3 | .217 | .571 | 4 | .153 | .731 |
| 5 | .236 | .391 | 6 | .216 | .585 |
| 7 | .173 | .654 | 8 | .214 | .456 |
| 9 | .234 | .419 | 10 | .269 | .558 |
| 11 | .219 | .453 | 12 | .226 | .454 |
| 13 | .252 | .543 | 14 | .222 | .433 |
| 15 | .225 | .413 | 16 | .246 | .429 |
| 17 | .183 | .599 | 18 | .352 | .540 |

Averaged (rms) over matrices
Stress = .23655 RSQ = .50073

Configuration derived in 3 dimensions

Stimulus Coordinates

| Stimulus Number | Stimulus Name | Dimension | | |
|--------------------|------------------|-----------|---------|---------|
| | | 1 | 2 | 3 |
| 1 | var1 | 1.0480 | -.1705 | 1.2748 |
| 2 | var2 | 1.2008 | -.7187 | .5288 |
| 3 | var3 | .0461 | -1.2339 | .8559 |
| 4 | var4 | -1.3042 | .0856 | -1.2987 |
| 5 | var5 | -1.0699 | -1.0402 | -1.0438 |
| 6 | var6 | -.6237 | 1.6028 | -.1145 |
| 7 | var7 | 1.0335 | 1.0525 | -1.1885 |
| 8 | var8 | -1.0079 | 1.0003 | 1.7038 |
| 9 | var9 | -.6386 | -1.2885 | -.3508 |
| 10 | var10 | 1.3158 | .7106 | -.3670 |

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.

A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

Subject Weights

| Subject Number | Weird- ness | Dimension | | |
|--|----------------|-----------|-------|-------|
| | | 1 | 2 | 3 |
| 1 | .2913 | .3677 | .3978 | .1632 |
| 2 | .0907 | .4331 | .4067 | .3330 |
| 3 | .1833 | .4929 | .3620 | .4434 |
| 4 | .0775 | .6463 | .4370 | .3504 |
| 5 | .0872 | .4032 | .3800 | .2901 |
| 6 | .0340 | .5320 | .4088 | .3671 |
| 7 | .0767 | .6031 | .4303 | .3244 |
| 8 | .1483 | .3976 | .4111 | .3593 |
| 9 | .1180 | .4488 | .3140 | .3447 |
| 10 | .0955 | .5123 | .4510 | .3040 |
| 11 | .0845 | .4592 | .3484 | .3476 |
| 12 | .0511 | .4994 | .3467 | .2900 |
| 13 | .3118 | .6363 | .3164 | .1958 |
| 14 | .0151 | .4615 | .3548 | .3068 |
| 15 | .0554 | .4276 | .3728 | .3021 |
| 16 | .0515 | .4812 | .3280 | .2993 |
| 17 | .0860 | .5125 | .4187 | .4012 |
| 18 | .1193 | .5757 | .3396 | .3052 |
| Overall importance of each dimension: | | .2501 | .1455 | .1052 |

Flattened Subject Weights

| Subject Number | Plot Symbol | Variable | |
|-------------------|----------------|----------|---------|
| | | 1 | 2 |
| 1 | 1 | -.3892 | 2.9392 |
| 2 | 2 | -.9641 | .7275 |
| 3 | 3 | -.7415 | -1.1134 |
| 4 | 4 | .7926 | -.4089 |
| 5 | 5 | -.8283 | .9261 |
| 6 | 6 | -.1571 | -.1986 |
| 7 | 7 | .6501 | -.0814 |
| 8 | 8 | -1.5885 | .8703 |
| 9 | 9 | -.1886 | -.9872 |
| 10 | A | -.2109 | .9751 |
| 11 | B | -.3563 | -.4966 |
| 12 | C | .5500 | -.3992 |
| 13 | D | 3.0190 | -1.2050 |
| 14 | E | -.0664 | -.1082 |
| 15 | F | -.5648 | .4947 |
| 16 | G | .4330 | -.6516 |
| 17 | H | -.6333 | -.1529 |
| 18 | I | 1.2444 | -1.1299 |

Iteration history for the 2 dimensional solution (in squared distances)

Young's S-stress formula 1 is used.

| Iteration | S-stress | Improvement |
|-----------|----------|-------------|
| 0 | .49012 | |
| 1 | .49012 | |
| 2 | .44321 | .04691 |
| 3 | .44042 | .00279 |
| 4 | .44033 | .00010 |

Iterations stopped because
S-stress improvement is less than .001000

Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities)
in the partition (row, matrix, or entire data) which
is accounted for by their corresponding distances.
Stress values are Kruskal's stress formula 1.

| Matrix | Stress | RSQ | Matrix | Stress | RSQ |
|--------|--------|------|--------|--------|------|
| 1 | .358 | .274 | 2 | .297 | .353 |
| 3 | .302 | .378 | 4 | .237 | .588 |
| 5 | .308 | .308 | 6 | .282 | .450 |
| 7 | .247 | .547 | 8 | .302 | .332 |
| 9 | .320 | .271 | 10 | .280 | .535 |
| 11 | .299 | .341 | 12 | .301 | .343 |
| 13 | .292 | .455 | 14 | .302 | .328 |
| 15 | .290 | .371 | 16 | .311 | .327 |
| 17 | .281 | .433 | 18 | .369 | .443 |

Averaged (rms) over matrices
Stress = .30043 RSQ = .39323

Configuration derived in 2 dimensions

Stimulus Coordinates

| Stimulus Number | Stimulus Name | Dimension | |
|--------------------|------------------|-----------|---------|
| | | 1 | 2 |
| 1 | var1 | .6077 | 1.2221 |
| 2 | var2 | .3500 | 1.3026 |
| 3 | var3 | -.6334 | .9672 |
| 4 | var4 | -1.1739 | -.9959 |
| 5 | var5 | -1.4989 | -.1782 |
| 6 | var6 | .5022 | -1.3253 |
| 7 | var7 | 1.4608 | -.1061 |
| 8 | var8 | .3210 | -1.6578 |
| 9 | var9 | -1.1906 | .2490 |
| 10 | var10 | 1.2552 | .5224 |

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.

A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

Subject Weights

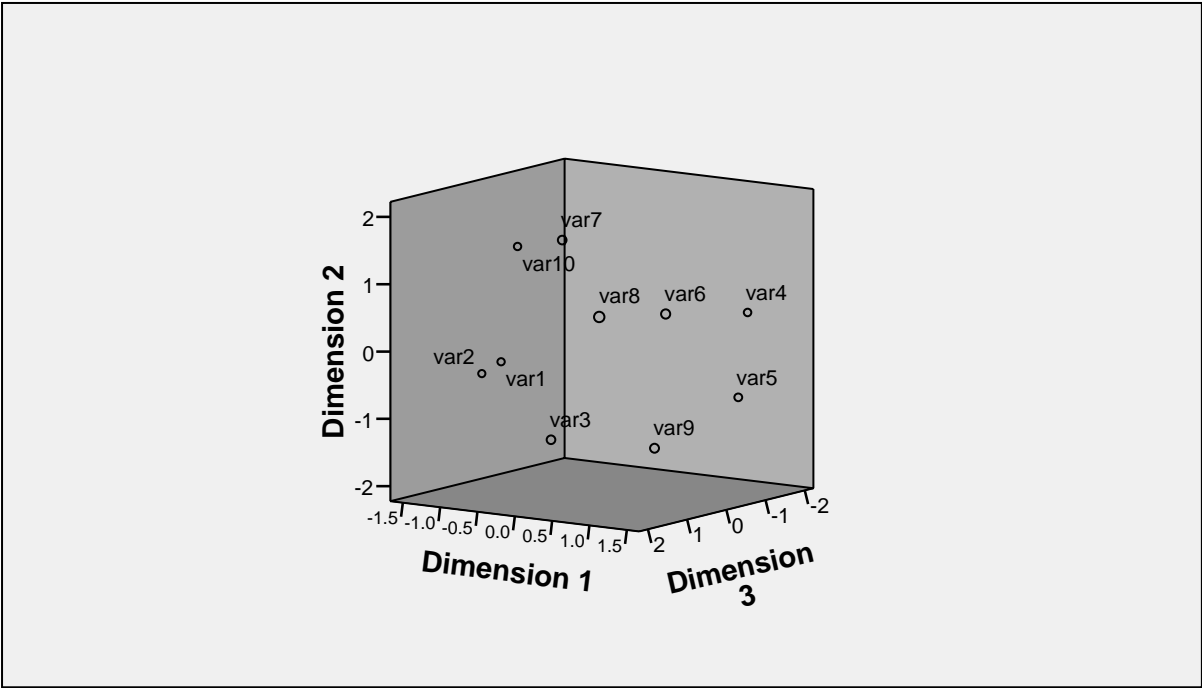
| Subject Number | Weird- ness | Dimension | |
|--|----------------|-----------|-------|
| | | 1 | 2 |
| 1 | .0163 | .3864 | .3534 |
| 2 | .0033 | .4322 | .4077 |
| 3 | .1527 | .3946 | .4717 |
| 4 | .0322 | .5724 | .5106 |
| 5 | .0138 | .4089 | .3755 |
| 6 | .0052 | .4876 | .4612 |
| 7 | .0168 | .5458 | .4988 |
| 8 | .0801 | .4438 | .3671 |
| 9 | .0899 | .3537 | .3824 |
| 10 | .0249 | .5235 | .5108 |
| 11 | .0902 | .3966 | .4290 |
| 12 | .0678 | .4476 | .3776 |
| 13 | .0141 | .4968 | .4560 |
| 14 | .0325 | .4273 | .3810 |
| 15 | .0263 | .4356 | .4260 |
| 16 | .0037 | .4183 | .3902 |
| 17 | .0204 | .4724 | .4578 |
| 18 | .1187 | .5253 | .4086 |
| Overall importance of each dimension: | | .2094 | .1838 |

Flattened Subject Weights

| Subject Number | Plot Symbol | Variable |
|-------------------|----------------|----------|
| | | 1 |
| 1 | 1 | .2790 |
| 2 | 2 | -.0367 |
| 3 | 3 | -2.4540 |
| 4 | 4 | .5337 |
| 5 | 5 | .2388 |
| 6 | 6 | -.0662 |
| 7 | 7 | .2871 |
| 8 | 8 | 1.3016 |
| 9 | 9 | -1.4304 |
| 10 | A | -.3835 |
| 11 | B | -1.4357 |
| 12 | C | 1.1033 |
| 13 | D | .2437 |
| 14 | E | .5377 |
| 15 | F | -.4048 |
| 16 | G | .0767 |
| 17 | H | -.3112 |
| 18 | I | 1.9209 |

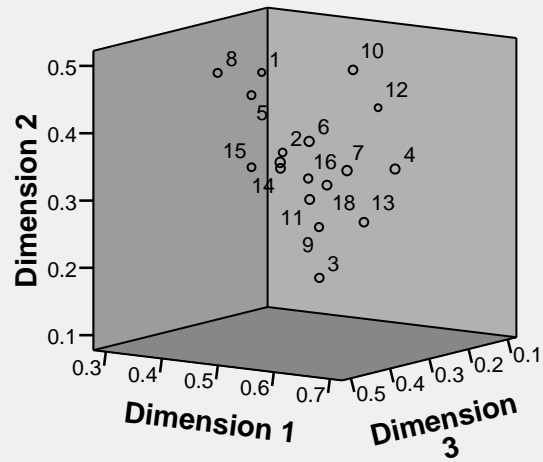
Derived Stimulus Configuration

Individual differences (weighted) Euclidean distance model



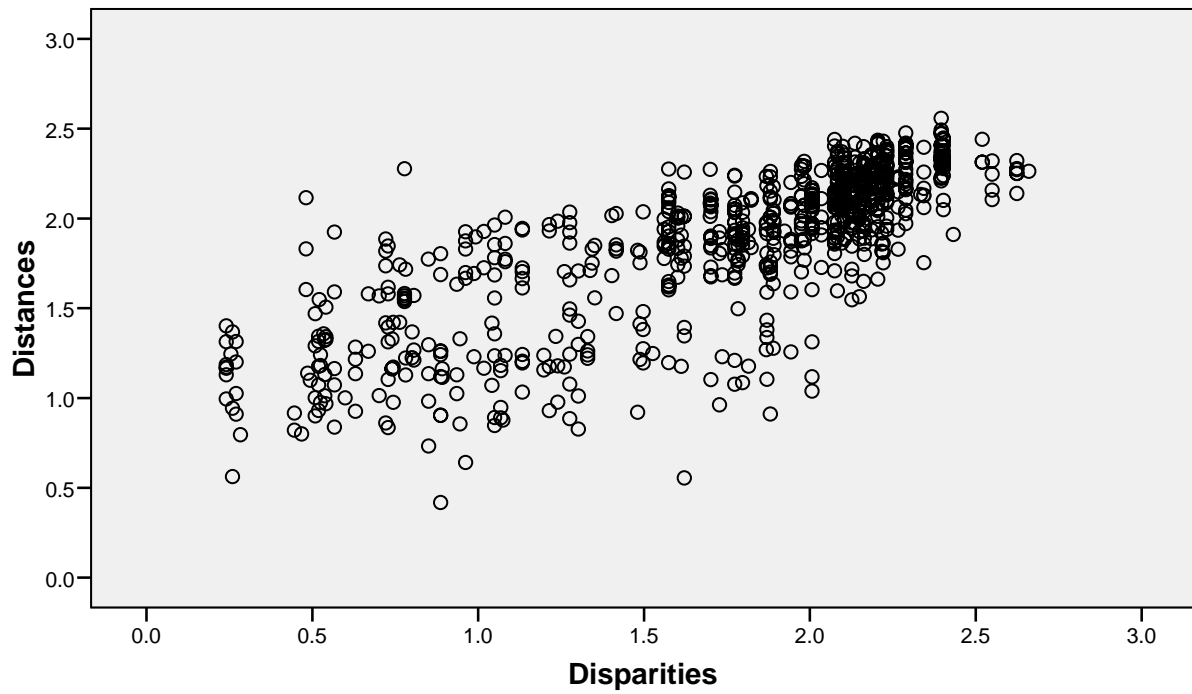
Derived Subject Weights

Individual differences (weighted) Euclidean distance model



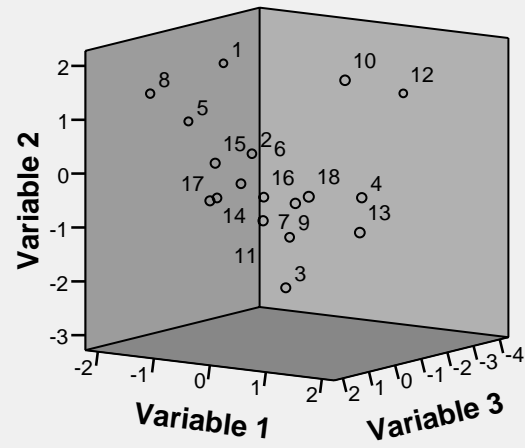
Scatterplot of Linear Fit

Individual differences (weighted) Euclidean distance model



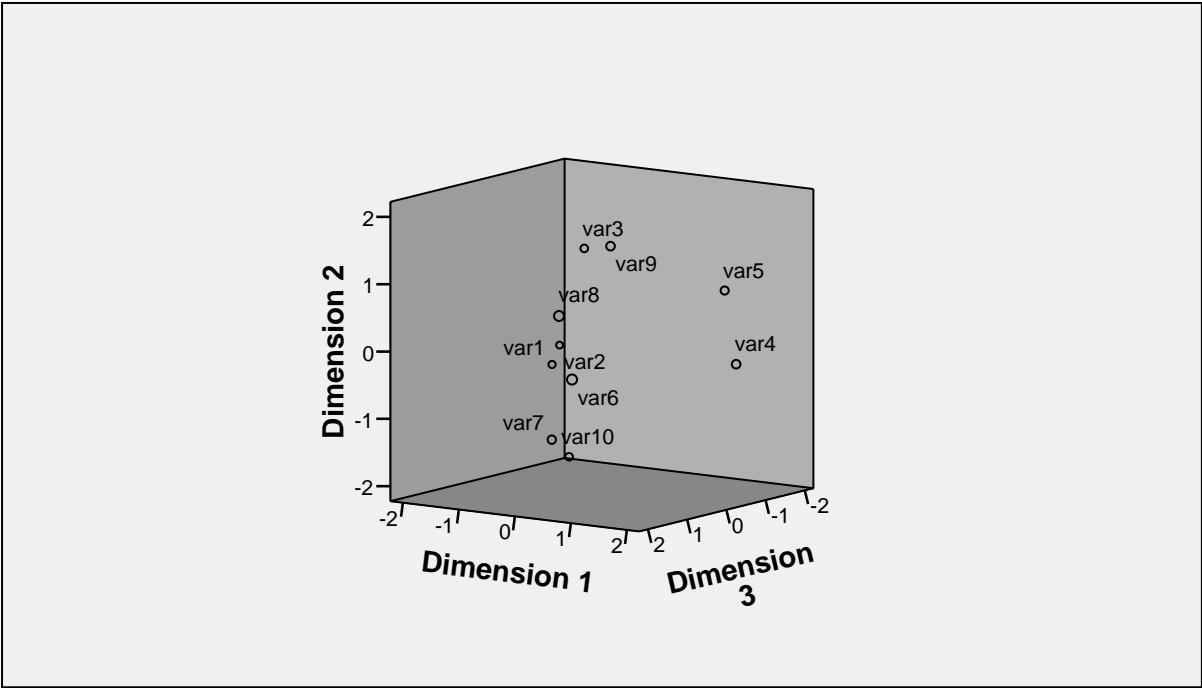
Flattened Subject Weights

Individual differences (weighted) Euclidean distance model



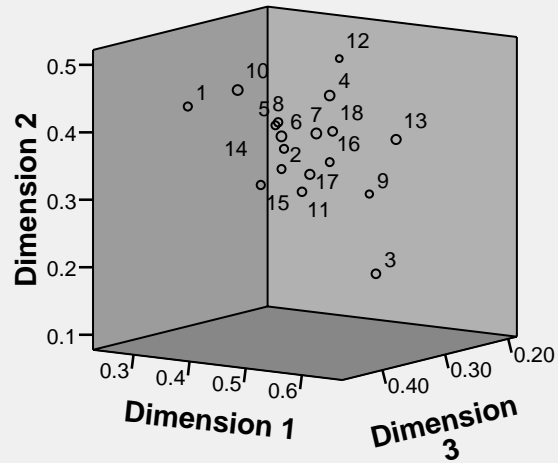
Derived Stimulus Configuration

Individual differences (weighted) Euclidean distance model



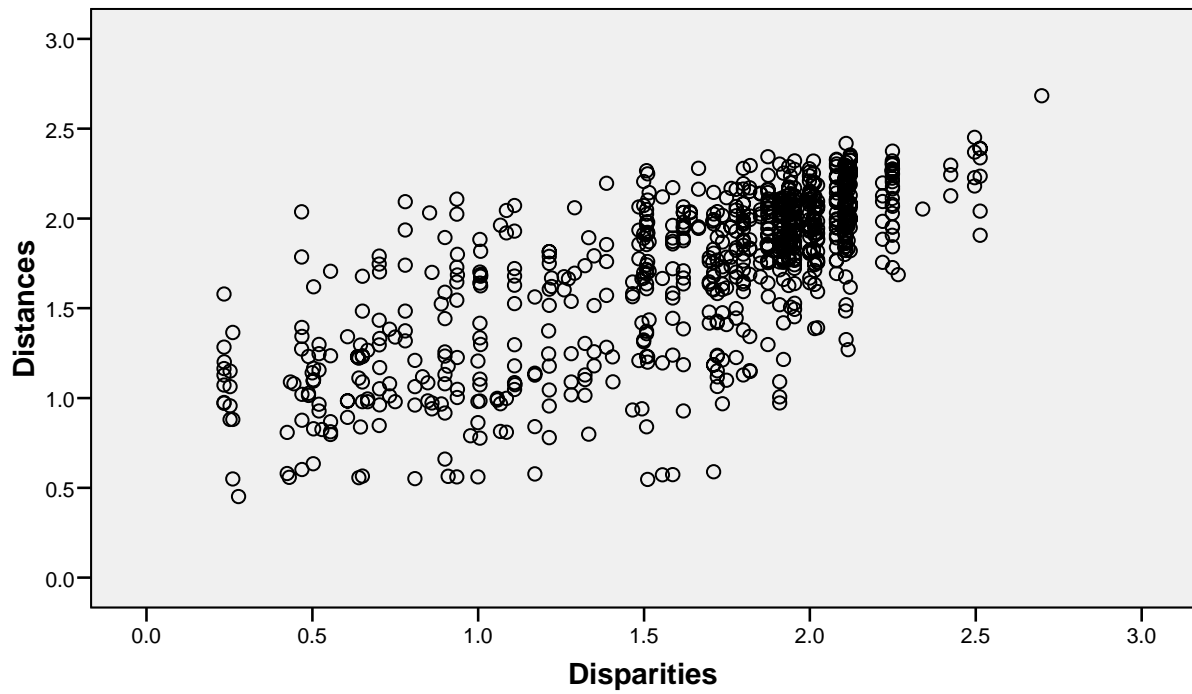
Derived Subject Weights

Individual differences (weighted) Euclidean distance model



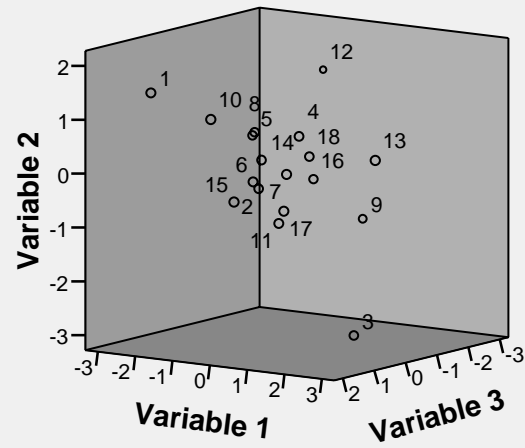
Scatterplot of Linear Fit

Individual differences (weighted) Euclidean distance model



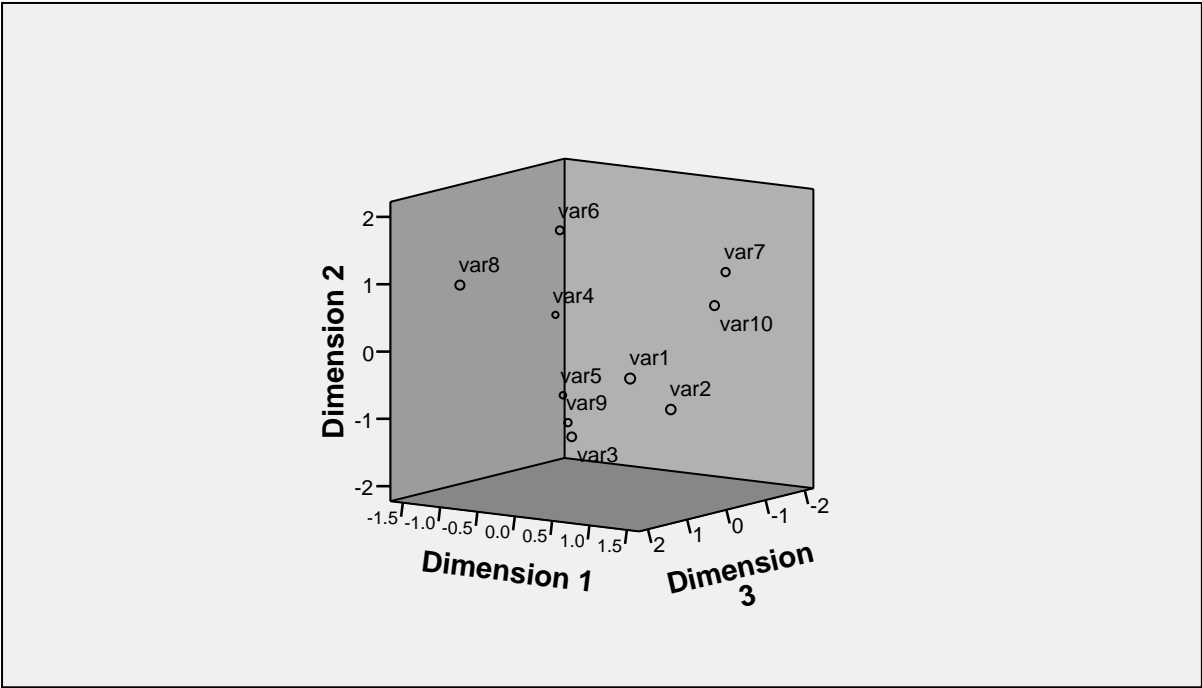
Flattened Subject Weights

Individual differences (weighted) Euclidean distance model



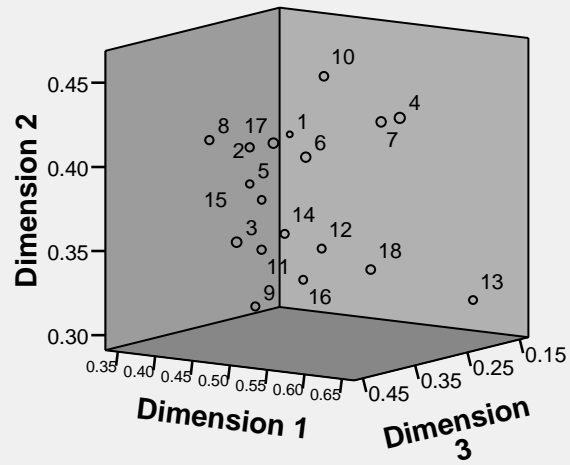
Derived Stimulus Configuration

Individual differences (weighted) Euclidean distance model



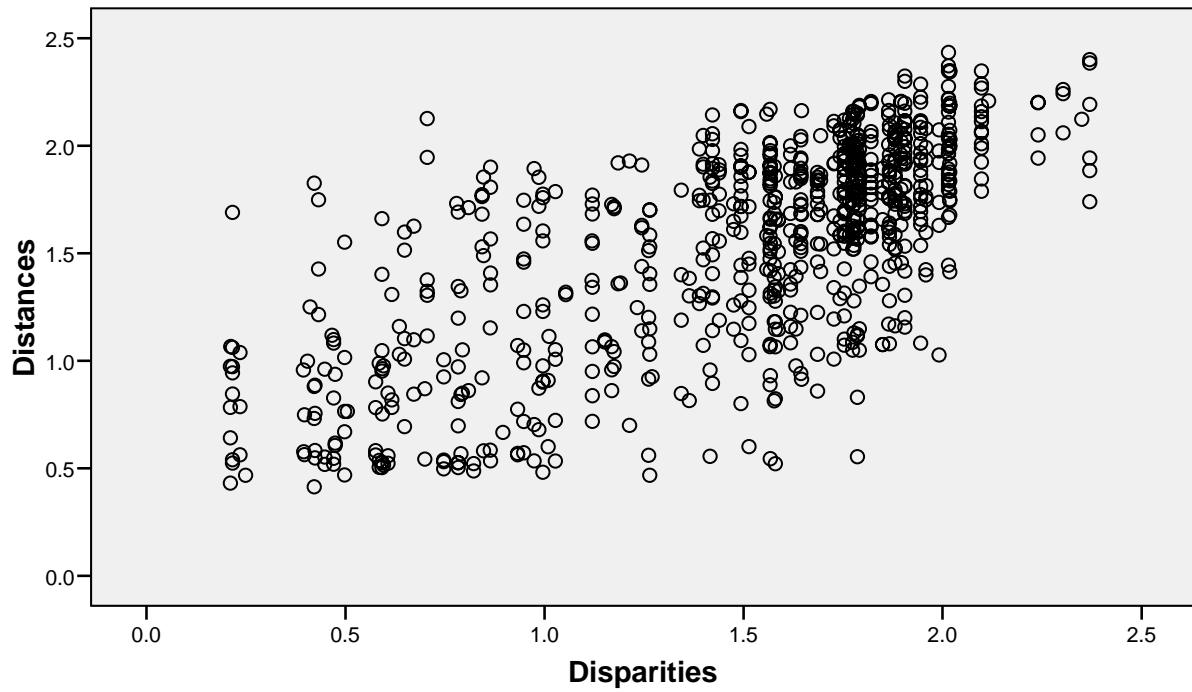
Derived Subject Weights

Individual differences (weighted) Euclidean distance model



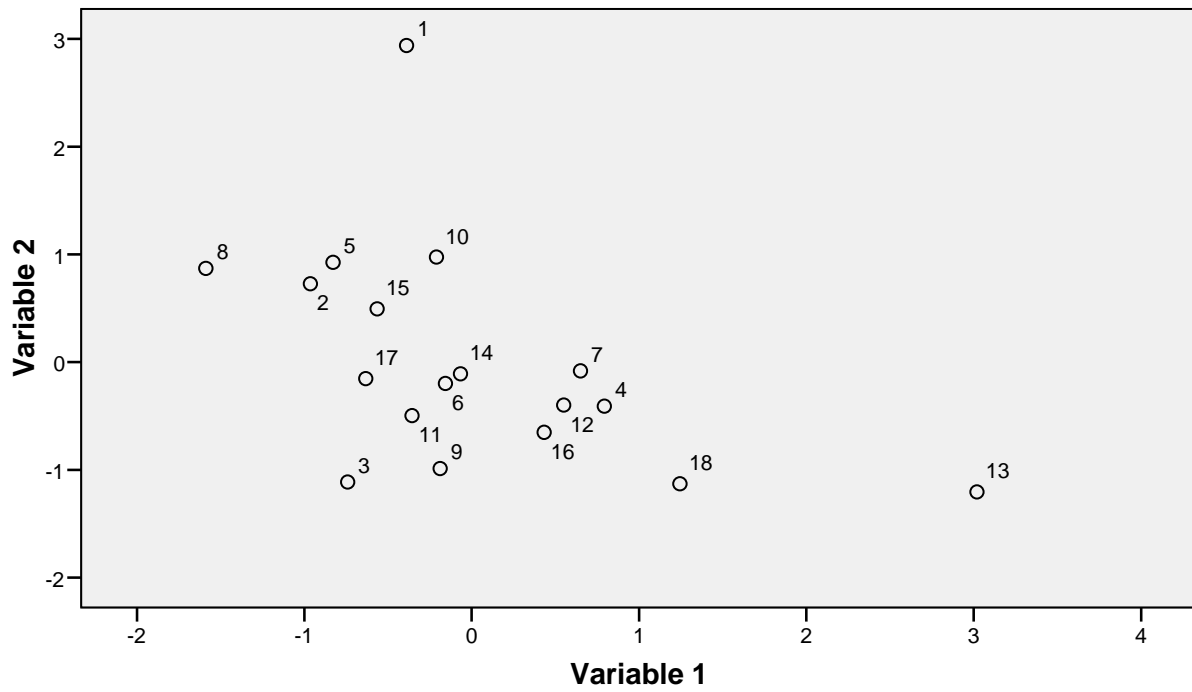
Scatterplot of Linear Fit

Individual differences (weighted) Euclidean distance model



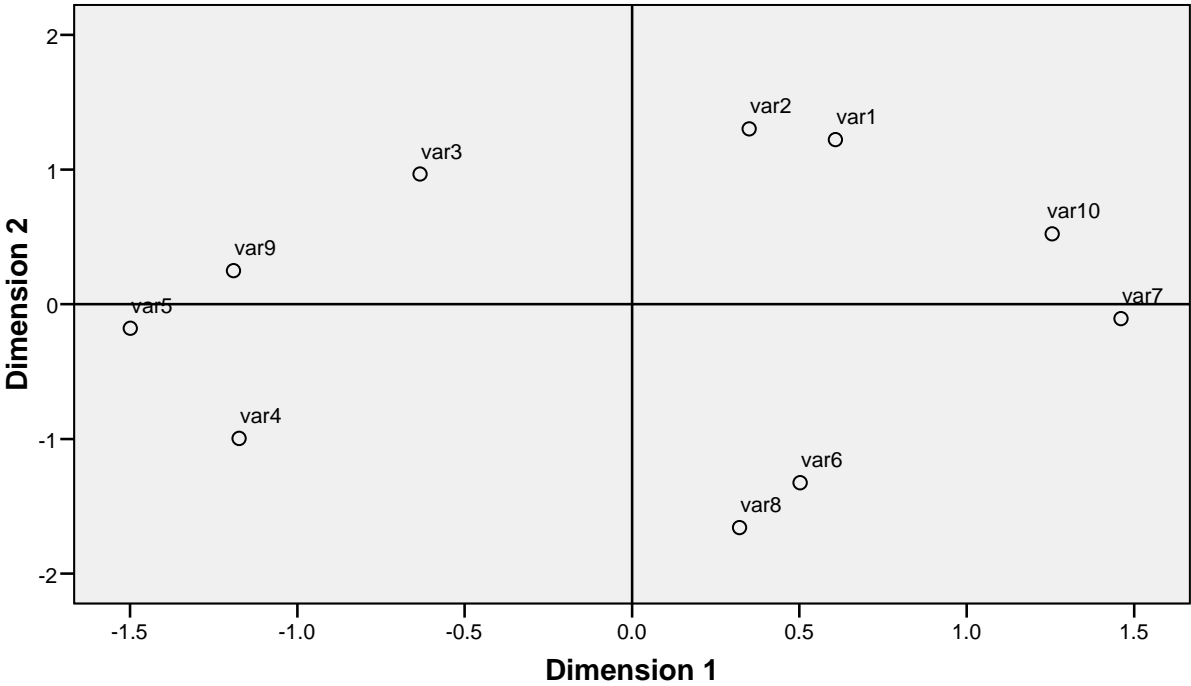
Flattened Subject Weights

Individual differences (weighted) Euclidean distance model



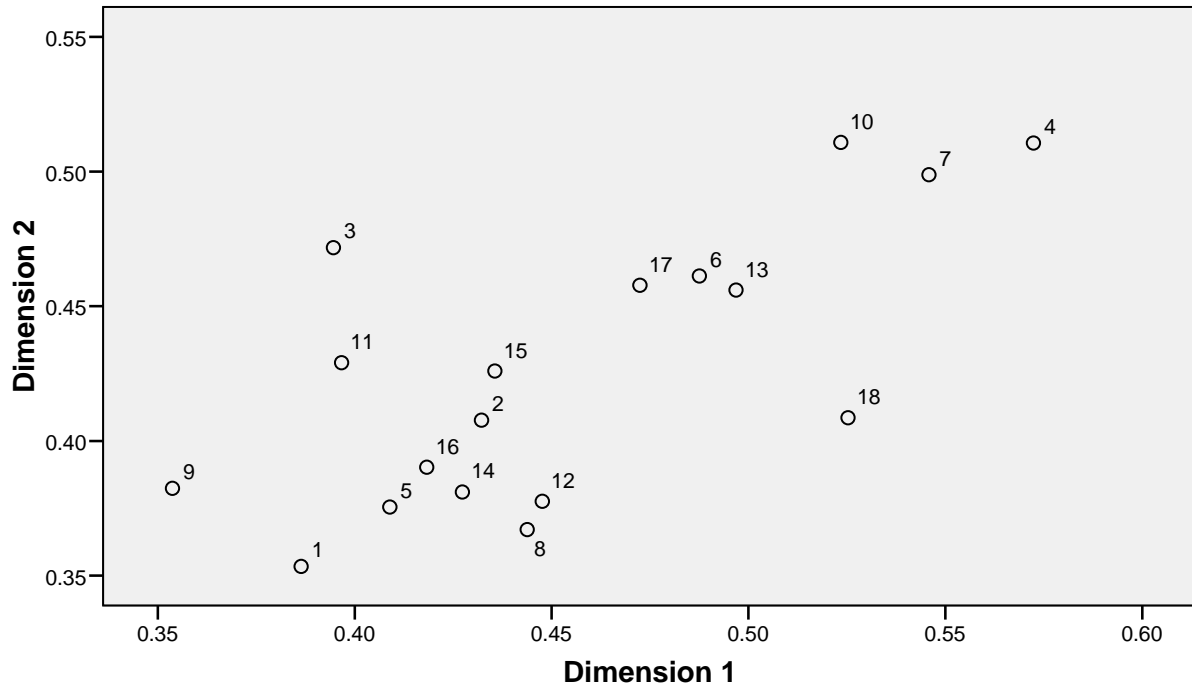
Derived Stimulus Configuration

Individual differences (weighted) Euclidean distance model



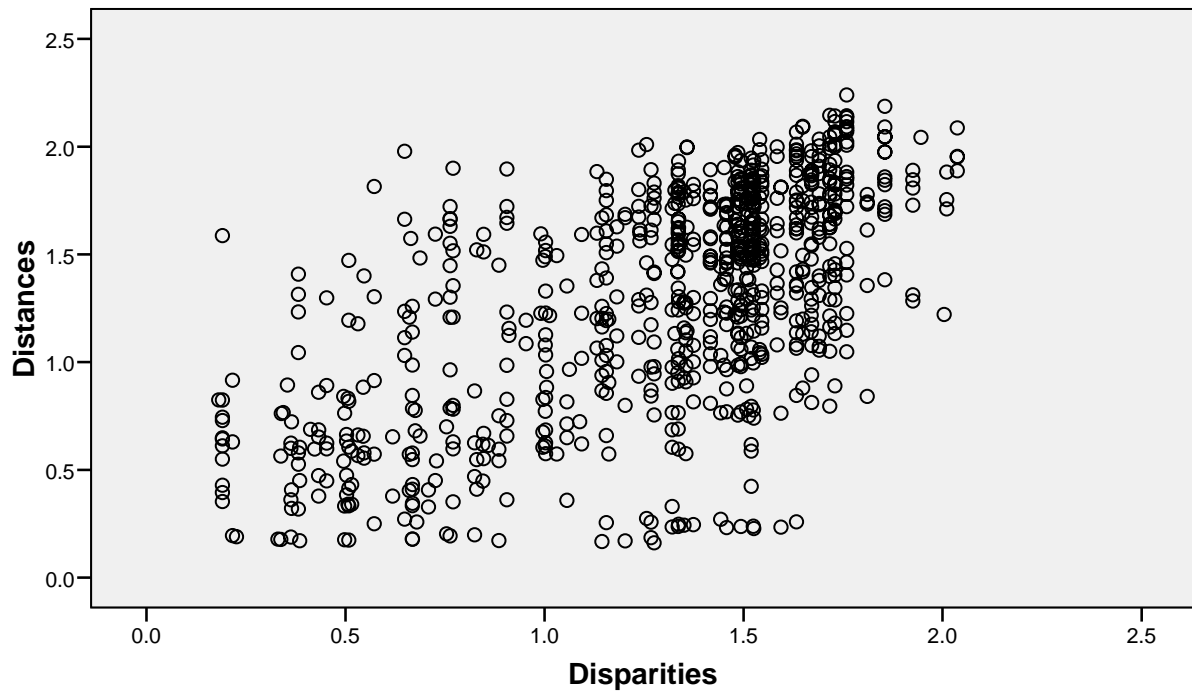
Derived Subject Weights

Individual differences (weighted) Euclidean distance model



Scatterplot of Linear Fit

Individual differences (weighted) Euclidean distance model



Flattened Subject Weights

Individual differences (weighted) Euclidean distance model

