METRIC MDS

In the field of women's tights Golden Lady will analyze the positioning of its brand with respect to 4 competitors on its served segment.

Golden Lady

Omsa

San Pellegrino

Filodoro

Philippe Matignon

120 WOMEN ARE SELECTED BY NON PROBABILISTIC SAMPLING.

Basic features of each product identified by the Golden Lady staff

	Price	Resistance	Availability	Wearability	Colors
Omsa	1,03	low	medium	low	medum
G.Lady	1,55	medium	high	medium	medium
P.Matignon	6.61	high	low	high	low
S.Pellegrino	2.42	high	medium	high	high
Filodoro	1,81	medium	high	medium	high

The survey is conducted on proximity judgments based on ratio scale.

The matrix D, obtained as the arithmetic mean of the ratings by each consumers, is the following DISTANCE matrix (distances and proximity are assumed to be equal)
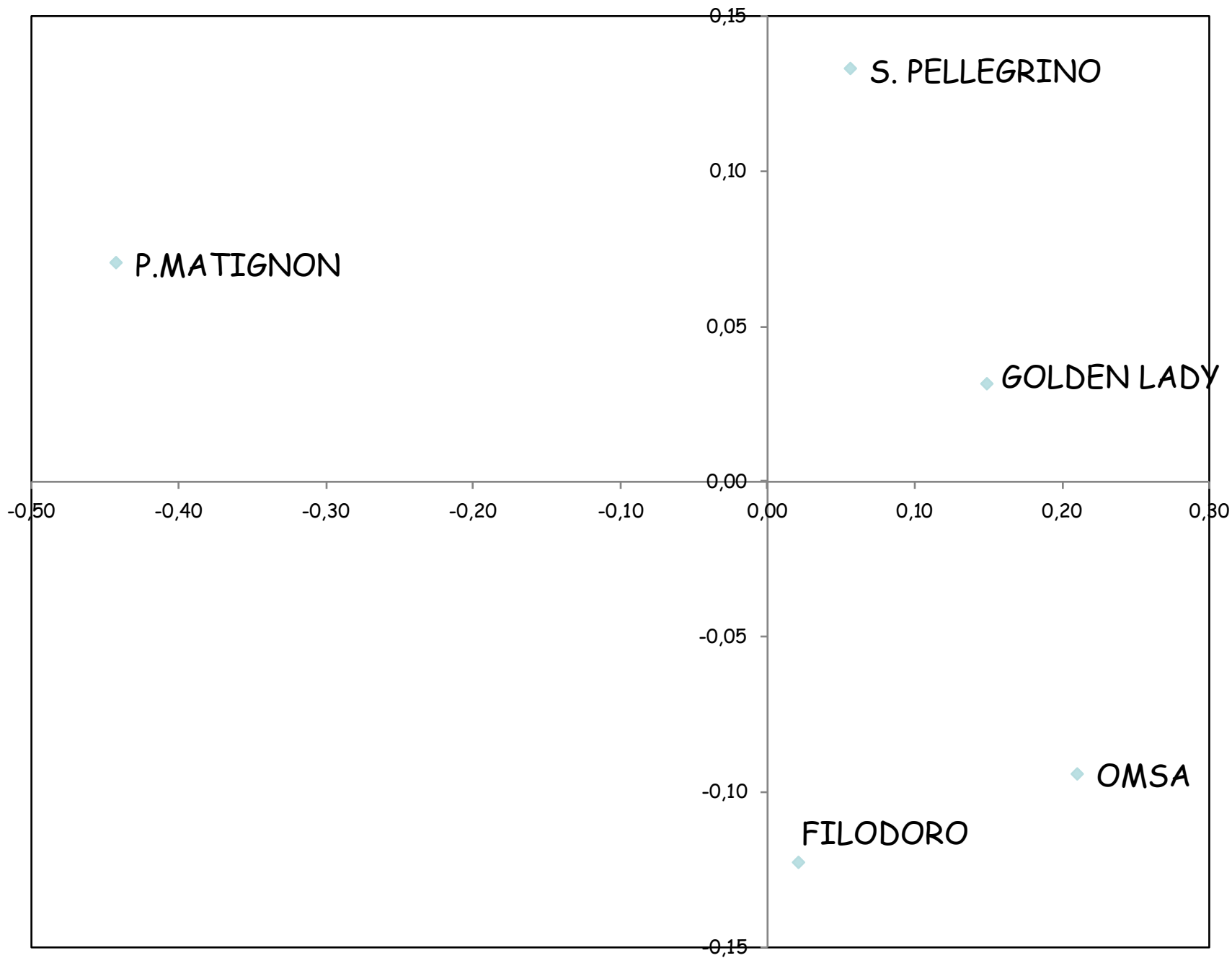
D Matrix

Marche	Omsa	G.Lady	S.Pellegrino	P.Matignon	Filodoro
Omsa	0				
G.Lady	0.25	0			
S.Pellegrino	0.4	0.29	0		
P.Matignon	0.67	0.61	0.56	0	
Filodoro	0.38	0.34	0.37	0.55	0

Results

These 2 eigenvalues are selected

	Eigenvalues	%	% Cumulative
1	0.2636	62.93	62.93
2	0.0675	16.95	79.88
3	0.0630	15.10	94.98
4	0.0182	5.02	100.00
5	0.0077	0.000	100.00
TOT	0.42812		

On the first dimension (x-axis) the main contrast is between:

P.Matignon vs Omsa-Golden Lady

Such dimension can be identified as a variable that measures the quality and opportunities of using tights, identifying the "status" of the customer

On the second dimension (y-axis) the main contrast is between:

S.Pellegrino vs Filodoro

The significance of this dimension could be interpreted as strategies and marketing policies

NON METRIC MDS

Now, we want to show that the previous results can be reached also with non metric MDS

Assuming: 130 as maximum number of iterations and 0,001 as the value of improvement between two successive iterations.

After only 4 iterations the improvement of S-STRESS is lower than 0.001, providing a STRESS value equal to 0.13256.

GOODNESS OF FIT MEASURES

Young's S-stress formula 1 is used.

Iteration	S-stress	Improvement
1	,19438	
2	,17361	,02077
3	,16282	,01079
4	,16218	,00064

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

Stress = ,13256   RSQ = ,92453

STRESS is good, because it is included in 0,05-0,20.

Also RSQ gives a good fit

Coordinate matrix.

N.	Brand	1ª Coordinate	2ª Coordinate
1	Omsa	1,2194	-,4195
2	Golden Lady	,8005	,4066
3	S.Pellegrino	,1664	1,0934
4	P.Matignon	-2,2726	-,0149
5	Filodoro	,0863	-1,0655

Disparity matrix.

MARCHE	Omsa	Golden Lady	S.Pellegrino	P.Matignon	Filodoro
Omsa	,000				
Golden Lady	1,241	,000			
S.Pellegrino	1,986	1,439	,000		
P.Matignon	3,326	3,028	2,780	,000	
Filodoro	**1,886**	**1,688**	**1,837**	**2,730**	,000

Derived Stimulus Configuration

Euclidean distance model
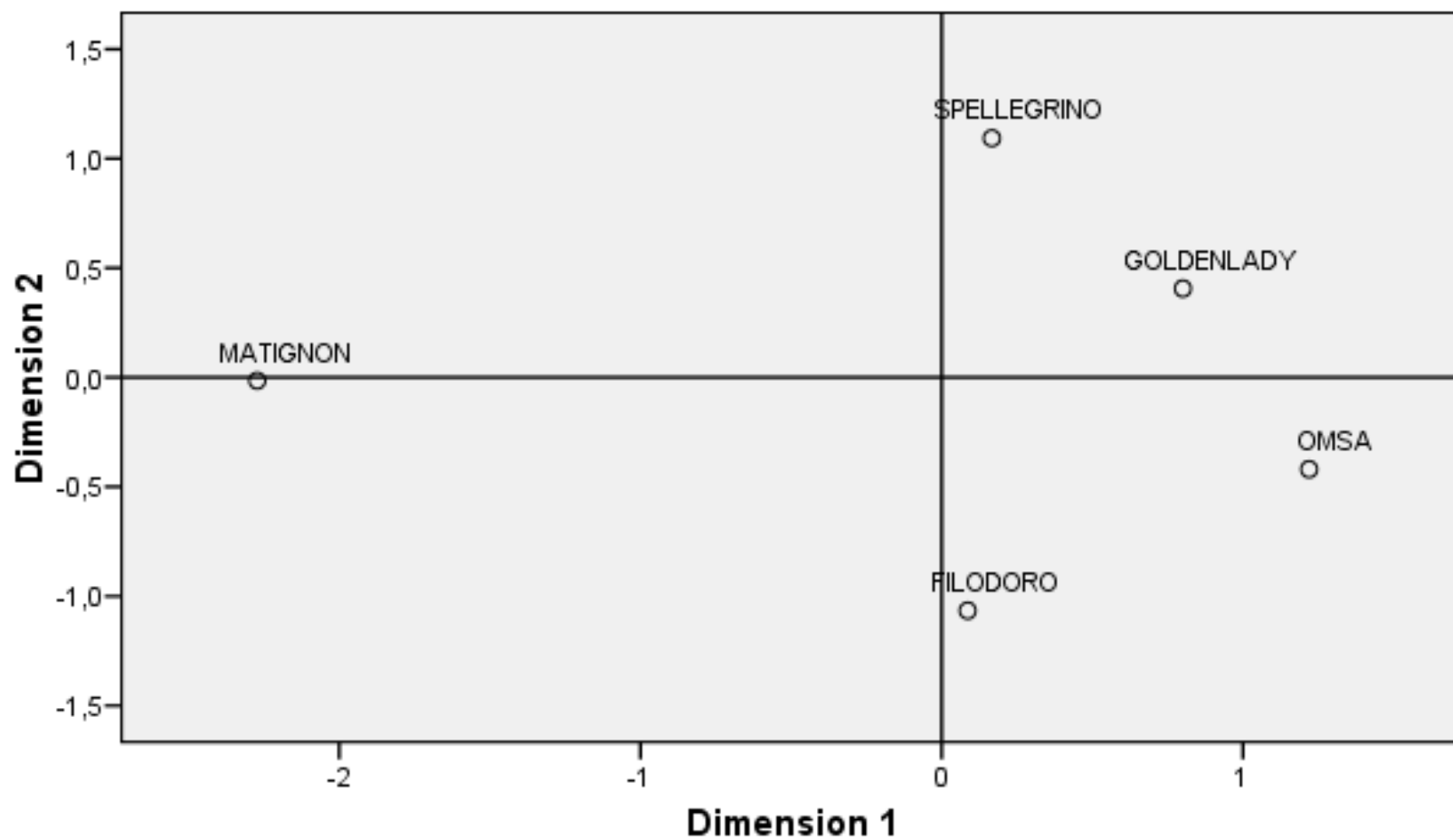
Scatter-plot of linear relationship fit

Distance

Disparity
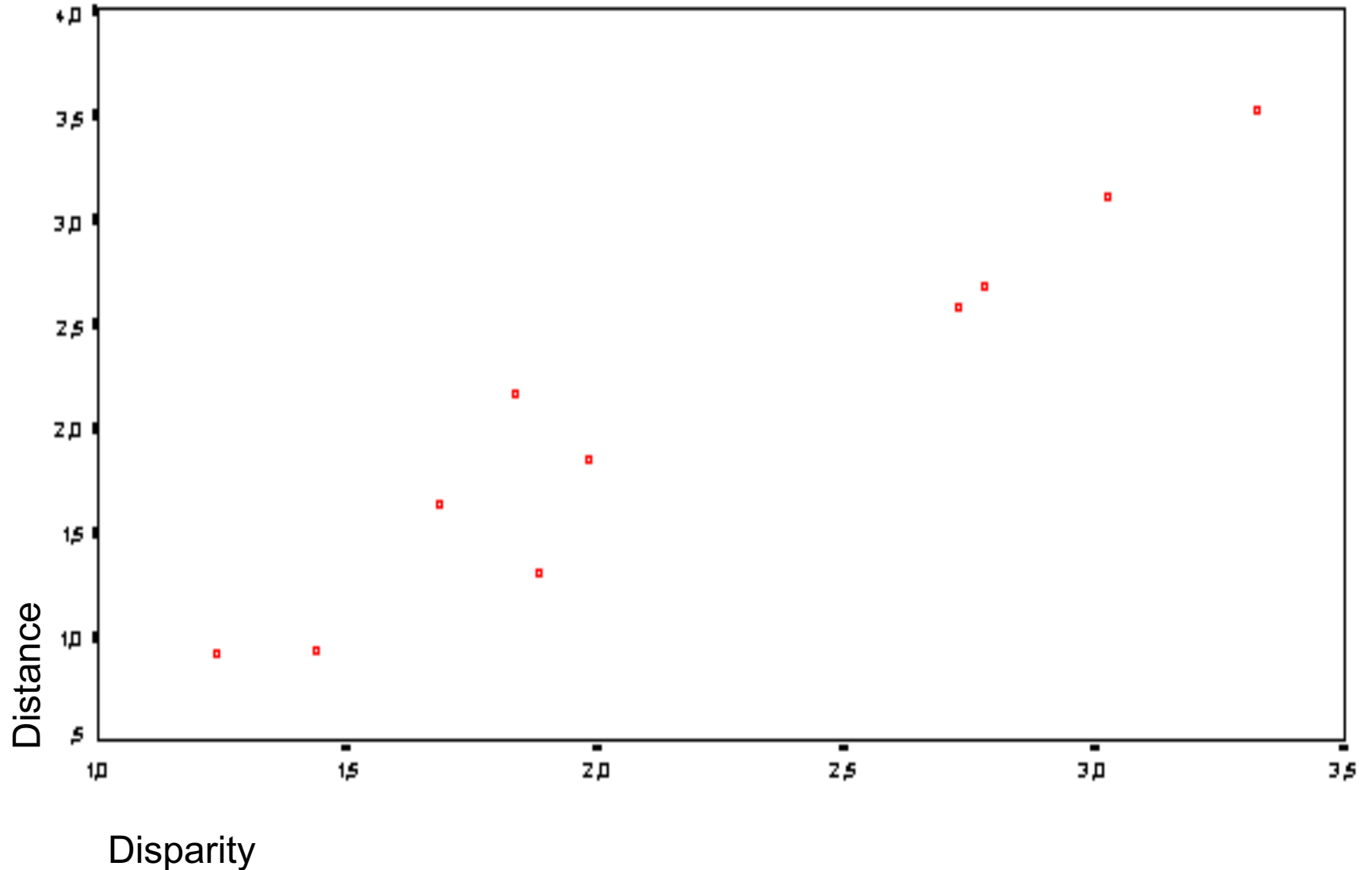
MDS for individual differences

The company Galbi, producer of yogurt, is interested to anticipate changes in the market trend through a positioning analysis within its market target, consisting mainly by women aged between 15 and 50 years.

It decides, therefore, to interview a small group of privileged clients, consists of 8 managers of creameries, located in the various districts of the city of Naples and 10 women, randomly selected among the consumers of the product purchased every two-weeks.

The proximity judgments were detected on interval scale, in relation to other competitors:

- ✓ Yomo
- ✓ Parmalat
- ✓ Yma
- ✓ Muller
- ✓ Vitasnella.

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

Young's S-stress formula 1 is used.

Iteration	S-stress	Improvement
0	,46649	
1	,46649	
2	,44031	,02619
3	,43850	,00181
4	,43826	,00024

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

Stress values are Kruskal's stress formula 1.

Matrix	Stress	RSQ	Matrix	Stress	RSQ
1	,209	,665	2	,191	,755
3	,199	,723	4	,324	,308
5	,357	,296	6	,207	,703
7	,207	,703	8	,262	,602
9	,350	,149	10	,415	,187
11	,269	,458	12	,161	,816
13	,249	,539	14	,307	,307
15	,307	,268	16	,386	,167
17	,460	,021	18	545	,033

Averaged (rms) over matrices

Stress = ,31688   RSQ = ,42777

Weighted coordinates

Stimulus Number	Stimulus Name	1	2
1	YOMO	-1,0553	-,7927
2	GALBI	1,8060	-,1540
3	PARMALAT	,7683	,8815
4	YMA	-,9028	-,4174
5	MULLER	-,1865	-1,2216
6	VITASNEL	-,4297	1,7042

Perceptive map
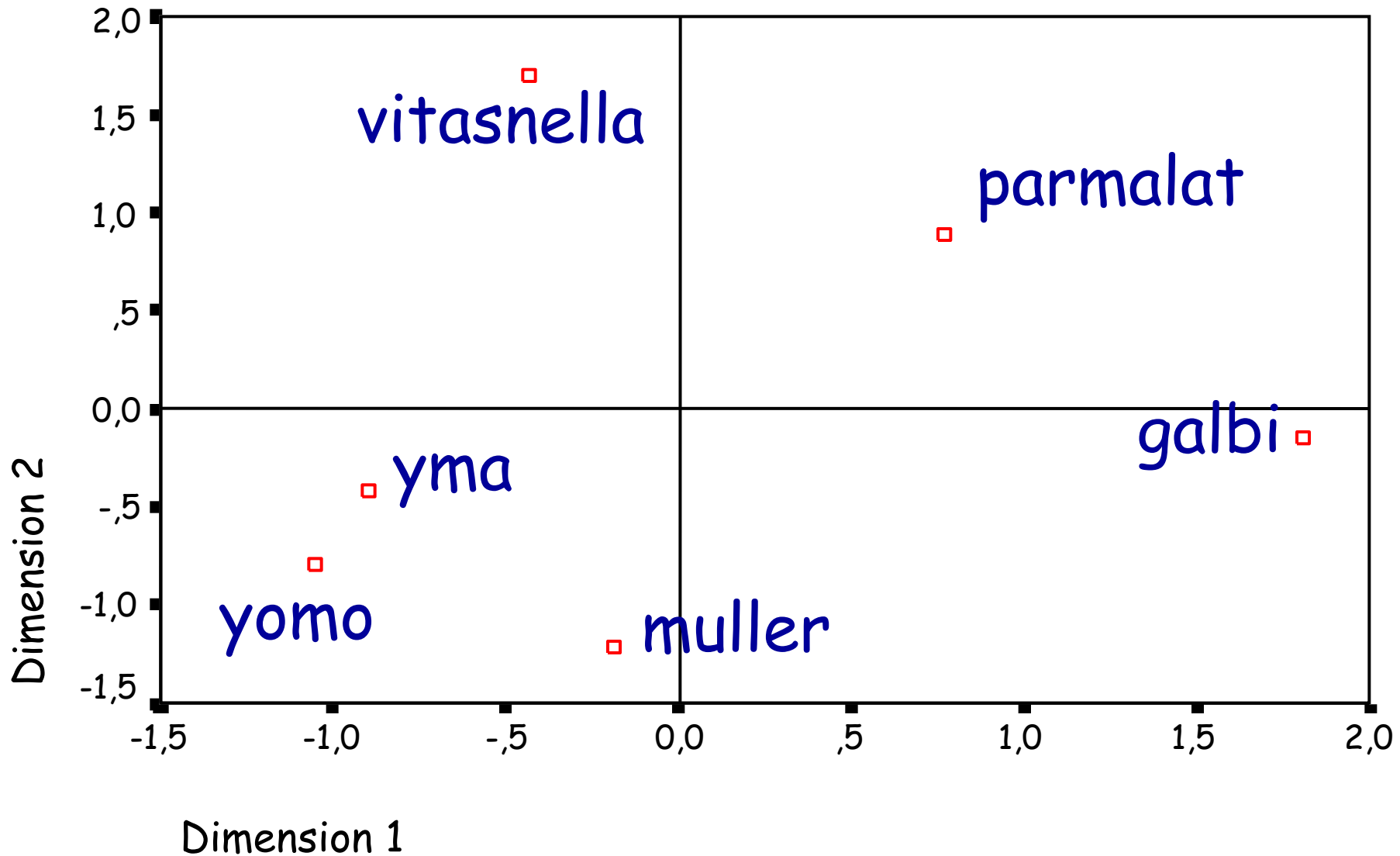
Subject	Weirdness	1	2
1	,1331	,5661	,5867
2	,0505	,6430	,5844
3	,3525	,4704	,7083
4	,4490	,5173	,2006
5	,4152	,5024	,2086
6	,1899	,7126	,4419
7	,1899	,7126	,4419
8	,1538	,5295	,5673
9	,1303	,3182	,2174
10	,3683	,3935	,1788
11	,0004	,5180	,4352
12	,1360	,6258	,6515
13	,0593	,5833	,4460
14	,1232	,4560	,3151
15	,0497	,4090	,3176
16	,6688	,1236	,3900
17	,3871	,0762	,1225
18	,1823	,1212	,1361

Overall importance of each dimension:,2466   ,1812

	Attributes					
	Price	Lactic	Collection points	Calories	Proteine %	Assortment
Brand						
Yomo	1.4	yes	no	103	2.8	high
Galbi	0.65	no	no	68	3.3	low
Parmalat	1.08	no	si	112	3.2	high
Yma	0.72	yes	no	77	3.2	low
Muller	1.03	yes	no	104	5.1	low
Vitasnella	1.21	no	si	44	4.2	medium

The main contrast on dimension 1 is between:

Yomo & Yma – Galbi & Parmalat

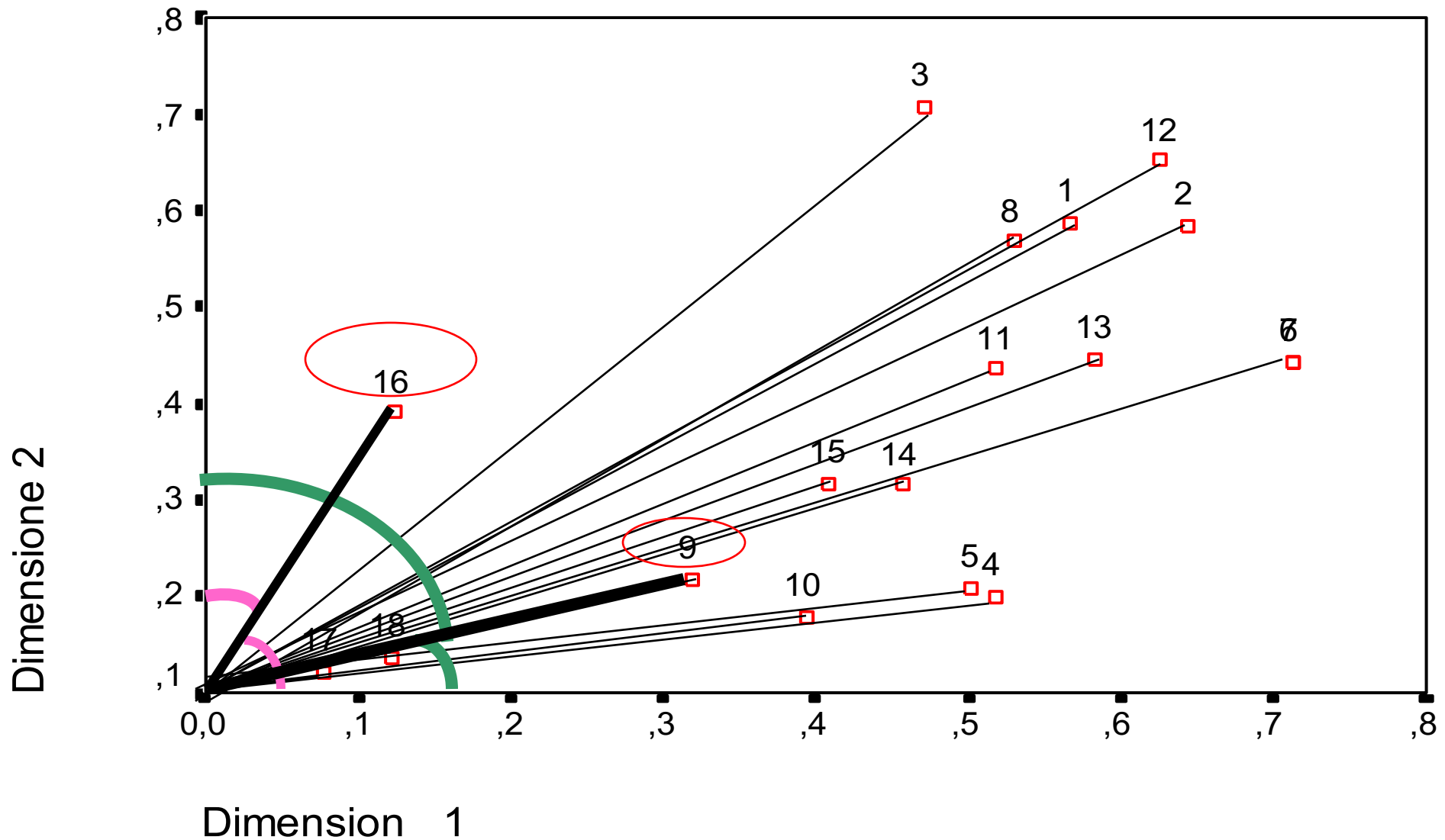Such dimension can be explained by presence/absence of

lactic

The main contrast on dimension 2 is between:

Vitasnella - Muller & Yomo

Such dimension can be correlated to

Calories

Weight space of 18 subjects

Scatter-plot to fit a linear relationship

Distanze
Distance

Disparity