THE MAPPING OF PSYCHOLOGY OF INTERNET USERS VACOR vs KARAP

Summary

The mapping of the psychology of a social group can be accomplished using Data Analysis methods with impressive results such as Factorial Analysis of Correspondences, Hierarchical Classification with VACOR, but mainly using the methodology of the Semiometry and the method KARAP.

Questionnaire of Semiometry

This specialised questionnaire does not seek to obtain opinions from questions presented in the form of proposals, but to attribute values to words according to the pleasant or unpleasant feeling of their invocation, in order to emerge the basic semiometric structure of the society as a whole.

The form of the questionnaire is as follows: Each word corresponds to a scale of seven graduations rated from -3 to +3, where the sign (-) refers to an unpleasant sensation caused by the word, while the sign (+) refers to in a pleasant feeling. Then for processing the data, this scale is replaced by an equivalent scale scaled from 1 to 7, where -3 of the original corresponds obviously to the value 1 of the new scale, and +3 to the value 7.

Respondents' answers are initially converted into a coincidence table that crosses words with values from 1 to 7. This table is parsed with the Factorial Analysis of Correspondences to identify how each word was graded and other statistical conclusions. Then the table with respondents' answers is analyzed using the Pricipal Components Analysis.

On the factorial plans, the words and grades are displayed, while as complementary elements the variables that characterize social, economic and demographic information as well as questions of behavior and availability of the respondents.

The analysis is also enriched by creating other dual input tables, derived from the data of the semimetric questionnaire completing the researcher's knowledge on the subject he is studying using the KARAP method.

Table 1: The format of the semimetric questionnaire

By going to the Internet environment, put in a circle the corresponding degree of the feeling that causes you each of the following words. For example
  ▪ For the very unpleasant feeling circle -3
  ▪ For the very pleasant feeling, circle +3
  ▪ Grades from -2 to +2 incrementally increase the intensity of the emotion caused by the word

α/α	Words	Degree						
Λ1	Άγχος- Stress	-3	-2	-1	0	1	2	3
Λ2	Αναγνώριση- Recognition	-3	-2	-1	0	1	2	3
Λ3	Ανευθυνότητα- Irresponsibility	-3	-2	-1	0	1	2	3
Λ4	Ανοχή-Tolerance	-3	-2	-1	0	1	2	3
Λ5	Γνώση- Knowledge	-3	-2	-1	0	1	2	3
Λ6	Διάθεση- Disposal	-3	-2	-1	0	1	2	3
Λ7	Διασκέδαση- Distraction	-3	-2	-1	0	1	2	3
Λ8	Εγκατάλειψη- Abandonment	-3	-2	-1	0	1	2	3
Λ9	Εγκράτεια- Abstinence	-3	-2	-1	0	1	2	3
Λ10	Εικονική πραγματικότητα- Virtual reality	-3	-2	-1	0	1	2	3
Λ11	Εκκλησία- Church	-3	-2	-1	0	1	2	3
Λ12	Ελευθερία- Freedom	-3	-2	-1	0	1	2	3
Λ13	Εξάρτηση- Dependence	-3	-2	-1	0	1	2	3
Λ14	Επικοινωνία- Communication	-3	-2	-1	0	1	2	3
Λ15	Κατάθλιψη- Depression	-3	-2	-1	0	1	2	3
Λ16	Μανία- Mania	-3	-2	-1	0	1	2	3
Λ17	Μελαγχολία- Melancholy	-3	-2	-1	0	1	2	3
Λ18	Μοναξιά- Solitude	-3	-2	-1	0	1	2	3
Λ19	Ναρκωτικά- Drugs	-3	-2	-1	0	1	2	3
Λ20	Οικογένεια- Family	-3	-2	-1	0	1	2	3
Λ21	Παρέα- Friends	-3	-2	-1	0	1	2	3
Λ22	Πληροφόρηση- Information	-3	-2	-1	0	1	2	3
Λ23	Πορνογραφία- Pornography	-3	-2	-1	0	1	2	3
Λ24	Προβλήματα- Problems	-3	-2	-1	0	1	2	3
Λ25	Στοργή- Affection	-3	-2	-1	0	1	2	3
Λ26	Σύγκρουση- Conflict	-3	-2	-1	0	1	2	3
Λ27	Συναναστροφή- Company	-3	-2	-1	0	1	2	3
Λ28	Τυχερά παιχνίδια- Lucky games	-3	-2	-1	0	1	2	3
Λ29	Φυγή- Escape	-3	-2	-1	0	1	2	3
Λ30	Ψέματα- Lies	-3	-2	-1	0	1	2	3

Note: Each word has one identity. The identities remain in Greek (Λ1, ..., Λ30) for practical reasons, so as not to diminish the results of the analyzes made on the basis of Greek vocabulary. Of course, the conclusions are not affected by the replacement of the Greek words with the corresponding English.

Presentation of the data

In this research they took part 581 young boys and girls aged between 18 and 35 were included in this survey, of which 331 boys and 250 girls. The data table to be used for the post-transformation analysis of the initial values attributed to 30 words is as follows:

Table 2: Part of the coded responses

A/A	Stress	Recognition	Irresponsibility	Tolerance	Knowledge	Disposal	Distraction	Abandonment	Abstinence	Virtual reality	......	Company	Information	Pornography	Problems	Affection	Conflict	Company	Lucky games	Escape	Lies
I1	2	2	1	2	3	3	2	1	1	2	......	2	2	3	2	1	2	3	4	4	3
I2	2	3	2	3	2	3	2	3	2	3	......	2	3	2	3	2	3	2	3	2	3
I3	1	2	3	4	3	2	1	2	3	4	......	2	1	2	3	4	2	1	2	3	4
I4	3	3	3	3	3	3	3	3	2	2	......	3	3	3	2	2	2	3	2	2	3
I5	3	3	5	4	3	5	7	1	6	2	......	4	4	1	1	4	1	1	2	2	2
......	......	......	......	......	......	......	......	......	......	......		......	......	......	......	......	......	......	......	......	......
I580	4	5	5	6	7	6	6	7	5	4		4	5	6	5	3	5	7	5	4	6
I581	4	5	1	4	5	6	7	7	4	7		6	5	7	7	4	5	6	7	7	7

From Table 2, Table 3 gives an overview of how 581 young people rated 30 words.

Table 3: 30-word scores

ind	--1--	--2--	--3--	--4--	--5--	--6--	--7--	Ind	--1--	--2--	--3--	--4--	--5--	--6--	--7--
Λ1	83	125	146	172	33	16	6	Λ16	86	74	136	140	104	29	12
Λ2	15	58	133	181	116	56	22	Λ17	87	64	135	153	95	37	10
Λ3	55	73	166	178	80	23	6	Λ18	81	79	125	150	97	39	10
Λ4	29	46	181	155	116	52	2	Λ19	84	69	125	140	108	40	15
Λ5	13	43	108	118	128	105	66	Λ20	20	44	84	163	131	74	65
Λ6	8	40	90	135	132	96	80	Λ21	8	37	100	135	133	98	70
Λ7	17	29	95	132	126	88	94	Λ22	25	39	96	144	124	79	74
Λ8	71	71	127	165	103	33	11	Λ23	74	85	121	158	90	35	18
Λ9	26	45	126	201	124	48	11	Λ24	50	90	145	147	99	44	6
Λ10	32	39	107	176	123	80	24	Λ25	21	52	106	189	107	67	39
Λ11	33	55	127	177	117	42	30	Λ26	46	72	142	183	97	33	8
Λ12	22	50	88	142	129	59	91	Λ27	26	55	114	138	137	80	31
Λ13	44	89	123	131	129	43	22	Λ28	35	69	158	165	80	40	34
Λ14	25	43	79	145	125	106	58	Λ29	39	86	152	177	61	37	29
Λ15	77	94	135	145	84	40	6	Λ30	76	88	135	182	43	33	24

Note: The word Stress (Λ1) 83 people out of 581 rated it 1 (i.e. -3)

STATISTICAL PROCESSING OF DATA

Based on the data in Table 3, the figures in Table 4 are shown

Table 4: Statistical parameters of the values in Table 3

Degrees	--1--	--2--	--3--	--4--	--5--	--6--	--7--	Total
Sum	1308	1903	3705	4717	3171	1652	974	17430
Average	43,6	63,57	123,83	156,47	105,97	55,10	32,47	581
%	7,5	10,94	21,31	26,93	18,24	9,48	5,60	100

Note: The value of 1308 is the sum of the frequencies of "1" for the total of 30 words. The value of 43.6 was derived from quotient 1308/30. Interpretation of each average is as follows: Out of the 581 respondents, 43.6 rated the set of words with 1, 63.6 with 2, and 5.60%, used grade 7.

Table 5: Correlation coefficients between 30 words

IND	Λ1	Λ2	Λ3	Λ4	Λ5	Λ6	Λ7	Λ8	Λ9	Λ10	...	Λ25	Λ26	Λ27	Λ28	Λ29	Λ30
Λ1	1	0,07	0,34	0,23	-0,10	-0,20	-0,14	0,42	0,17	0,16	...	-0,15	0,17	-0,11	0,03	0,00	0,16
Λ2	0,07	1	-0,02	0,09	0,46	0,42	0,49	-0,16	0,06	0,12	...	0,27	-0,04	0,31	0,01	-0,08	-0,16
Λ3	0,34	-0,02	1	0,42	-0,12	-0,23	-0,17	0,36	0,08	0,14	...	-0,10	0,17	-0,15	0,18	0,18	0,17
Λ4	0,23	0,09	0,42	1	0,23	0,13	0,01	0,13	0,12	0,11	...	-0,01	0,13	-0,01	0,09	-0,01	-0,04
Λ5	-0,10	0,46	-0,12	0,23	1	**0,74**	0,50	-0,29	0,06	0,02	...	0,31	-0,07	0,34	0,00	-0,03	-0,17
Λ6	-0,20	0,42	-0,23	0,13	**0,74**	1	0,64	-0,33	-0,01	-0,02	...	0,32	-0,10	0,34	0,03	0,03	-0,14
Λ7	-0,14	0,49	-0,17	0,01	0,50	0,64	1	-0,10	0,02	0,06	...	0,31	-0,12	0,35	-0,03	0,00	-0,16
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Λ29	0,00	-0,08	0,18	-0,01	-0,03	0,03	0,00	0,14	0,00	0,09	...	-0,03	0,09	0,07	0,55	1	0,56
Λ30	0,16	-0,16	0,17	-0,04	-0,17	-0,14	-0,16	0,27	-0,02	0,06	...	-0,20	0,21	-0,12	0,31	0,56	1,00

Table 5 shows that the majority of correlation coefficients are very low, indicating the correctness of the choice of words. Relatively strong association has few pairs of words, such as Knowledge (Λ5) and Disposal (Λ6) with p = 0.74, Mania (Λ16) and Melancholy (Λ17) with p = 0.72, Depression (Λ15) and Mania (Λ16) with p = 0.70, Family (Λ20) and Friends (Λ21) with p = 0.67.

Validity of replies

The processing of Table 3 with the Factorial Analysis of Correspondences gives the following results:

Table 6: Histogram of characteristic eigenvalues

TOTAL INERTIA : 0,12470				
Axis	Inertia	%Interpretation	Sum	Histogram Eigenvalues
1	0,0929573	74,59	74,59	|**
2	0,0138359	11,07	85,66	|******
3	0,0085538	6,86	92,52	|****

The first two axis, i.e. the factorial plane 1x2, interpret 85.66% of the information, a very satisfactory percentage for extrapolations.
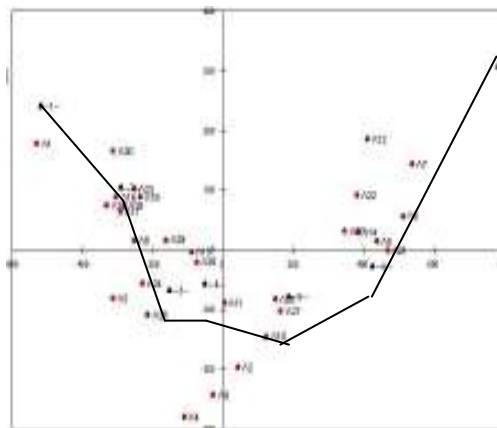
✓ Factorial plane 1x2

Diagram 1: Factorial plane 1x2

On the factorial plane 1x2 it is observed that the 7 values of the scoring scale which determine the emotions produced by these words to the respondents, present the

Guttmann effect. That is to say the succession of grades 1 to 7 on a curved line, certifies the rational behavior of the respondents as to how words are scaled.

Table 6 shows that the first three factorial axes interpret 92.52% of the total information derived from Table 3. The study and conclusions resulting from the study of the three-dimensional space are revealing the intensity of the emotion they cause 30 words of the respondents.

The analysis of Table 3 with the MAD software presents the following with respect to the three dimensional factorial space 1x2x3

Table 7: The distribution of 30 words in the 1x2x3 factorial space

Eight Under space of 1x2x3	1	2	3	4	5	6	7	8
Crowd	2	7	3	3	5	3	4	3
	Knowledge	Abandonment	Tolerance	Virtual reality	Disposal	Stress	Irresponsibility	Recognition
	Communication	Depression	Dependence	Friends	Distraction	Escape	Abstinence	Church
		Mania	Problems	Company	Freedom	Lies	Conflit	Affection
		Melancholy			Family		Lucky games	
		Solitude			Information			
		Drugs						
		Pornography						

Table 7a: The distribution of 7 degrees in the 1x2x3 factorial space

Eight Under space of 1x2x3	1	2	3	4	5	6	7	8
Degrees		1		2	7	2	3	
		(-3)		(+1)	(+3)	(-2)	(-1)	
				6			4	
				(+2)			0	

The combination of Tables 7 and 7a demonstrates that the seven words of the 2nd under space (Abandonment, Depression, Mania, Melancholy, Solitude, Drugs and Pornography) are associated with the most negative degree (1 or -3), showing the aversion of young people in these sad emerging situations, while the five words (Disposal, Distraction, Freedom, Family, Information) in the 5th under space are associated (see table 7a) with the most positive rating (7 or +3). The confrontation of these two groups of words means that the young Boys and Girls have principles and strong foundations to build a proper society.

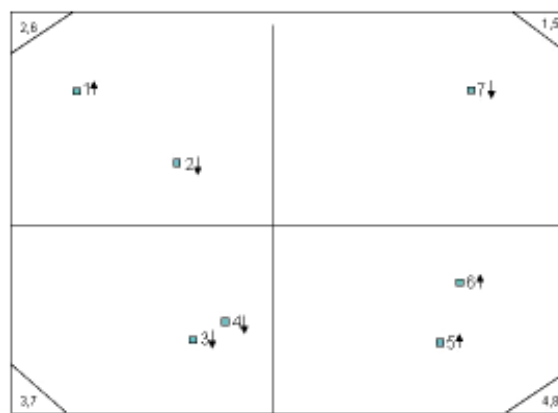The overview of Table 7a is given by the following Karapistoli diagram.

Figure 2: Factorial space 1x2x3

The corresponding chart for the eight under spaces of 1x2x3 for 30 words is as follows
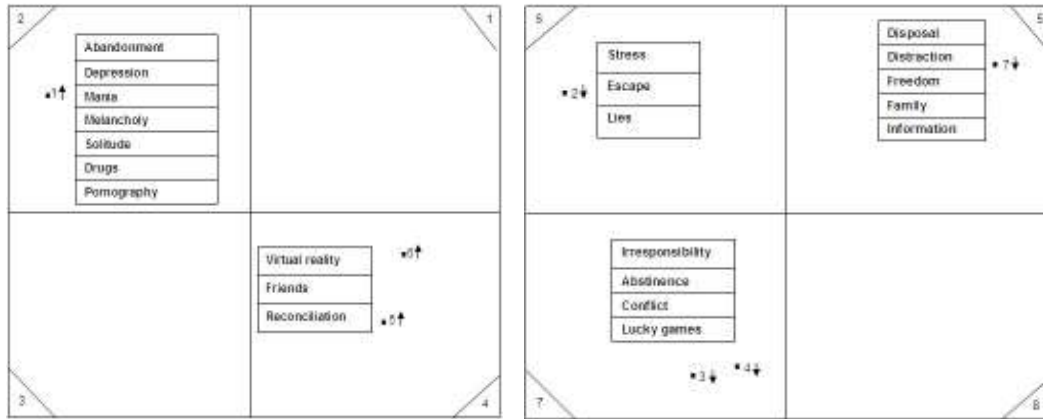
Figure 3: Under spaces 1,2,3,4 and 5,6,7,8

The words of the 1ˢᵗ (Knowledge, Communication), 3ʳᵈ (Tolerance, Dependence, Problems) and 8ᵗʰ (Recognition, Church, Affection) under spaces are «orphaned» by degrees because the same under spaces do not have a degree profile. That is why we are proceeding with the application of the KARAP method which will fill this gap.

Application the KARAP method

Applying the KARAP method to the data in Table 2, the following tables appear

Table 8: Distribution of the profiles of 581 respondents with the closest profile of one of the 30 words.

WORD	CROWD	%		WORD	CROWD	%
(Λ1) Stress	14	2.41		(Λ16) Mania	19	3.27
(Λ2) Recognition	11	1.89		(Λ17) Melancholy	26	4.48
(Λ3) Irresponsibility	34	5.85		(Λ18) Solitude	18	3.1
(Λ4) Tolerance	44	7.57		(Λ19) Drugs	10	1.72
(Λ5) Knowledge	19	3.27		(Λ20) Family	2	0.34
(Λ6) Disposal	29	4.99		(Λ21) Friends	73	12.56
(Λ7) Distraction	11	1.89		(Λ22) Information	10	1.72
(Λ8) Abandonment	25	4.3		(Λ23) Pornography	12	2.07
(Λ9) Abstinence	26	4.48		(Λ24) Problems	24	4.13
(Λ10) Virtual reality	16	2.75		(Λ25) Affection	1	0.17
(Λ11) Church	8	1.38		(Λ26) Conflict	36	6.2
(Λ12) Freedom	9	1.55		(Λ27) Company	6	1.03
(Λ13) Dependence	18	3.1		(Λ28) Lucky games	23	3.96
(Λ14) Communication	5	0.86		(Λ29) Escape	16	2.75
(Λ15) Depression	23	3.96		(Λ30) Lies	13	2.24

Note: 14 out of 581 respondents are more associated with the word Stress that is 2.41%

Table 9: Distances of the profile of each respondent from 30-word profiles

ITEM	DisΛ1	DisΛ2	DisΛ3	DisΛ4	...	DisΛ13	DisΛ14	...	DisΛ30	min DIS	VAR
I1	565,3	582,6	570,9	549,8	...	420,5	501,2	...	476,1	420,5	Λ13
I2	426,1	400,3	398,5	359,7	...	440,4	427,4	...	405,8	351,1	Λ26
I3	606,3	596,7	460,8	450,0	...	509,6	618,3	...	461,9	450,0	Λ4
...	...	...	...	...	...	...	...	...	...	...	...
I581	524,6	504,4	567,2	518,2		522,1	482,0		439,5	429,3	Λ29

Based on the data in Table 9, the classification of the profile of the 581 respondents based on the minimum Euclidean distance from each 30-word profile

This classification offers the ability to identify the profiles of respondents characterized by a specific word.

Table 10: Classification of the 581 respondents

WORD	Λ1	Λ2	...	Λ7	...	Λ11	Λ12	...	Λ20	...	Λ25	...	Λ30
Crowd	14	11	...	11	...	8	9	...	2	...	1	...	13
	I13	I53		I5		I48	I31		I70		I246		I58
	I97	I55		I46		I78	I107		I136				I71
	I181	I179		I56		I118	I128						I155
	I247	I206		I100		I125	I154						I189
	I308	I251		I193		I127	I164						I197
	I341	I398		I320		I347	I166						I239
	I387	I420		I449		I458	I180						I254
	I423	I450		I452		I488	I217						I274
	I476	I512		I524			I508						I300
	I479	I569		I533									I315
	I513	I573		I544									I408
	I514												I436
	I541												I545
	I577												

From Table 2, with the help of the column containing the gender codes (1 or 2), a comparative table 11 is created, resulting in the creation of Table 12 which shows the words and to what extent the boys and girls

Table 11: Comparative data table between Boys (Λb1..Λb30) and Girls (Λg1 .. Λg30)

IND	Λb1	Λb2	...	Λb28	Λb29	Λb30	IND	Λg1	Λg2	...	Λg28	Λg29	Λg30
I1	2	2	...	4	4	3	J1	2	2	...	4	3	2
I2	2	3	...	3	2	3	J2	1	2	...	4	4	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...
I250	4	3	...	4	4	4	J250	4	5	...	7	7	7
I251	4	4	...	3	3	3							
I252	2	7	...	5	4	6							
...	...	...	...	...	...	...							
I330	4	4	...	4	3	3							
I331	4	5	...	5	4	6							

Table 12: Part of the data table with the frequencies of the Boys and Girls degrees in 30 words

Ind	B-3	B-2	B-1	B0	B+1	B+2	B+3	G-3	G-2	G-1	G0	G+1	G+2	G+3
Λ1	40	70	76	122	10	11	2	43	55	70	50	23	5	4
Λ2	12	40	75	123	44	27	10	3	18	58	58	72	29	12
Λ3	26	44	96	101	52	9	3	29	29	70	77	28	14	3
Λ4	15	27	113	73	74	28	1	14	19	68	82	42	24	1
Λ5	5	27	69	76	80	53	21	8	16	39	42	48	52	45
Λ6	3	23	57	87	80	48	33	5	17	33	48	52	48	47
Λ7	11	21	53	82	77	49	38	6	8	42	50	49	39	56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Λ25	9	36	71	107	60	36	12	12	16	35	82	47	31	27
Λ26	19	37	88	109	55	19	4	27	35	54	74	42	14	4
Λ27	15	31	72	94	68	41	10	11	24	42	44	69	39	21
Λ28	16	40	101	88	49	22	15	19	29	57	77	31	18	19
Λ29	19	50	89	104	32	23	14	20	36	63	73	29	14	15
Λ30	33	49	84	99	30	21	16	43	39	51	83	13	12	9

Applying the KARAP method to the data in Table 12, Table 13 appears

Table 13: Classification of the data in Table 12 using the KARAP method

BOYS						
-3	-2	-1	0	+1	+2	+3
Mania	Depression	Tolerance	Recognition		Distraction	Freedom
Melancholy	Pornography	Problems	Affection		Communication	
Solitude	Escape	Conflict			Family	
Drugs	Lies	Lucky games			Information	

GIRLS						
-3	-2	-1	0	+1	+2	+3
	Stress	Irresponsibility	Abstinence	Virtual reality	Knowledge	
		Abandonment	Church	Company	Disposal	
		Dependence			Friends	

From Table 13 it is clear that the 30 words generally did not cause the girls too much negative or very positive emotions, that is they were more restrained than the boys.

In particular, the words that caused very strong negative feelings (-3) to the boys were Mania, Melancholy, Loneliness, and Drugs, while the word that gave them a very intense positive emotion (+3) was Freedom. With regard to Girls, the word that caused a relatively strong negative emotion (-2) was Stress, while the words that produced quite positive emotions (+2) were Knowledge, Disposal and Friends.

Table 14, which, based on the data in Table 2, shows the average load of 30 words in boys and girls. The ranking was based on the average score of each of the 581 respondents.

Table 14: classification of 30 words based on the average (see table 2)

A/A	WORDS	BOYS	WORDS	GIRLS
1	Distraction	4,625	Distraction	4,692
2	Disposal	4,622	Disposal	4,656
3	Friends	4,574	Friends	4,596
4	Knowledge	4,537	Freedom	4,544
5	Information	4,447	Knowledge	4,496
6	Communication	4,444	Communication	4,492
7	Freedom	4,389	Family	4,484
8	Family	4,362	Information	4,424
9	Virtual reality	4,184	Affection	4,224
10	Company	4,138	Company	4,172
11	Affection	4,09	Recognition	4,059
12	Abstinence	4,024	Virtual reality	4,056
13	Recognition	3,954	Church	3,9
14	Church	3,939	Dependence	3,84
15	Tolerance	3,845	Abstinence	3,8
16	Lucky games	3,761	Lucky games	3,76
17	Dependence	3,655	Tolerance	3,668
18	Escape	3,613	Escape	3,632
19	Conflict	3,598	Problems	3,608
20	Solitude	3,567	Conflict	3,592
21	Abandonment	3,552	Irresponsibility	3,472
22	Drugs	3,552	Abandonment	3,464
23	Pornography	3,507	Drugs	3,464
24	Melancholy	3,498	Pornography	3,456
25	Problems	3,483	Mania	3,38
26	Mania	3,425	Lies	3,38
27	Irresponsibility	3,395	Depression	3,372
28	Lies	3,38	Melancholy	3,364
29	Depression	3,353	Solitude	3,292
30	Stress	3	Stress	3,072

The order of magnitude of the same word in boys and girls is a clear indication of the hierarchy of the emotion that each word produces in both sexes.

From Table 14, table 15 is presented which presents the differences in the 30-word ranking order between boys and girls.

Table 15

WORDS	rank		Rank Differences
	Boys	Girls	
Stress	30	30	0
Recognition	13	11	2
Irresponsibility	27	21	6
Tolerance	15	17	-2
Knowledge	4	5	-1
Disposal	2	2	0
Distraction	1	1	0
Abandonment	21	22	-1
Abstinence	12	15	-3
Virtual reality	9	12	-3
Church	14	13	1
Freedom	7	4	3
Dependence	17	14	3
Communication	6	6	0
Depression	29	27	2
Mania	26	25	1
Melancholy	24	28	-4
Solitude	20	29	-9
Drugs	22	23	-1
Family	8	7	1
Friends	3	3	0
Information	5	8	-3
Pornography	23	24	-1
Problems	25	19	6
Affection	11	9	2
Conflict	19	20	-1
Company	10	10	0
Lucky games	16	16	0
Escape	18	18	0
Lies	28	26	2

Table 16, which is derived from the logical table 0-1 of the KARAP classification (Table 10), shows the number and profiles of boys and girls that are closest to the profile of each of the 30 words.

Table 16: Frequency the profiles of boys and girls closest to the profile of each of the 30 words

1	2	3	4	5	6	7	8
Words	Frequency	%		BOYS	%	GIRLS	%
Stress	14	2,41		10	3,02	4	1,6
Recognition	11	1,89		4	1,21	7	2,8
Irresponsibility	34	5,85		26	7,85	8	3,2
Tolerance	44	7,57		30	9,06	14	5,6
Knowledge	19	3,27		4	1,21	15	6
Disposal	29	4,99		11	3,32	18	7,2
Distraction	11	1,89		5	1,51	6	2,4
Abandonment	25	4,3		16	4,83	9	3,6
Abstinence	26	4,48		15	4,53	11	4,4
Virtual reality	16	2,75		8	2,42	8	3,2
Church	8	1,38		6	1,81	2	0,8
Freedom	9	1,55		6	1,81	3	1,2
Dependence	18	3,1		10	3,02	8	3,2
Communication	5	0,86		4	1,21	1	0,4
Depression	23	3,96		14	4,23	9	3,6
Mania	19	3,27		10	3,02	9	3,6
Melancholy	26	4,48		20	6,04	6	2,4
Solitude	18	3,1		9	2,72	9	3,6
Drugs	10	1,72		8	2,42	2	0,8
Family	2	0,34		2	0,60	0	0
Friends	73	12,56		31	9,37	42	16,8
Information	10	1,72		4	1,21	6	2,4
Pornography	12	2,07		9	2,72	3	1,2
Problems	24	4,13		14	4,23	10	4
Affection	1	0,17		1	0,30	0	0
Conflict	36	6,2		21	6,34	15	6
Company	6	1,03		3	0,91	3	1,2
Lucky games	23	3,96		14	4,23	9	3,6
Escape	16	2,75		10	3,02	6	2,4
Lies	13	2,24		6	1,81	7	2,8
TOTAL	581	100		331	100	250	100

The mapping of Psychology of the 581 respondents

To make the training the psychology mapping of the 581 respondents, the VACOR method must first be applied to the data in Table 3,in order that to create a 30-word dendrogramme, from which the classes with the specific characteristics of each one will be identified, which will be the psychology of the participants in it.

The 30-word class K59 (diagram 1) is initially split into two classes of K58 and K54, while class K58 is split into two others by K57 and K55. These three classes will then be analyzed separately.
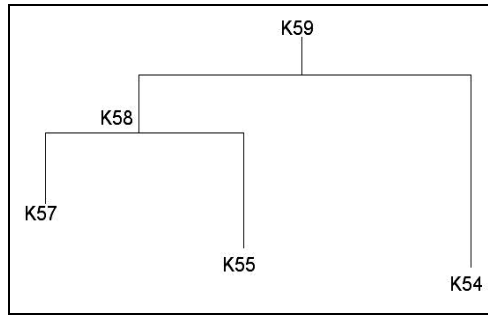
Diagram 1: Split K59 into three classes

♦ For K57 class

Class K57 is split into two classes of K56 and K53. K56 is broken down into K50 and K44, which in turn breaks down in K41 and K34, and class K53 is split into two classes of K51 and K45. These five classes represent the five psychological profiles of 311 respondents who present **negative psychology** with the following characteristics. Particularly
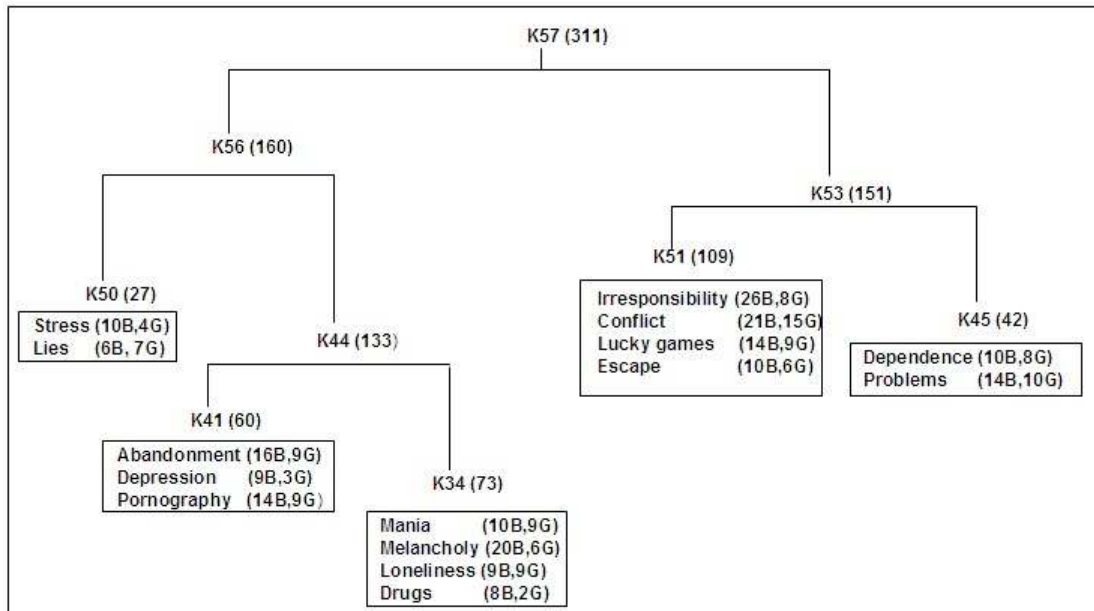

Diagram 2: Split of class K57 into five classes (in parenthesis the Boys and Girls composing the class)

♦ For K55 class

Class K55 is split into two classes of K52 and K48, which split into two classes of K43 and K25. The three classes (K52, K43, K25) represent the three psychological profiles of 112 respondents who show **positive psychology** with the following characteristics.
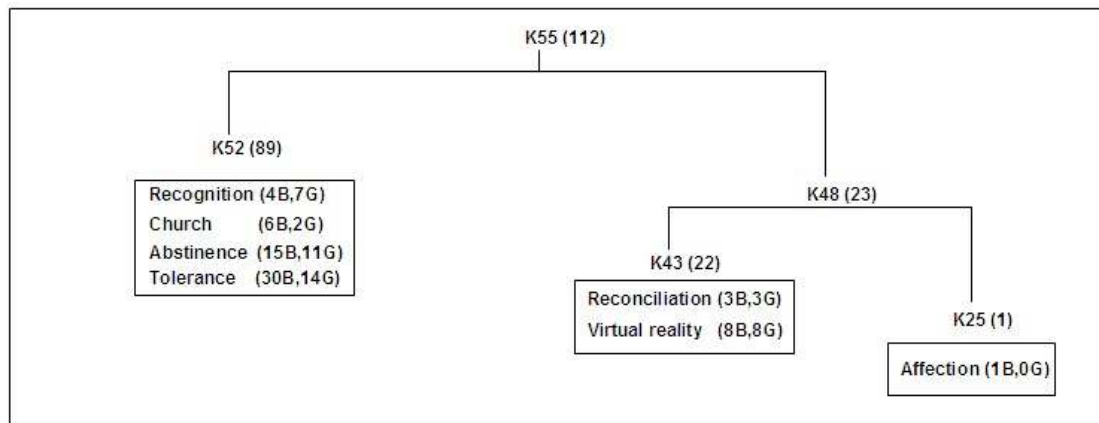
Diagram 3: Split of class K55 into three classes

♦ For K54 class

Class K54 is split into two classes of K49 and K47. These two classes represent 158 respondents who have **very optimistic** psychology with the following characteristics.
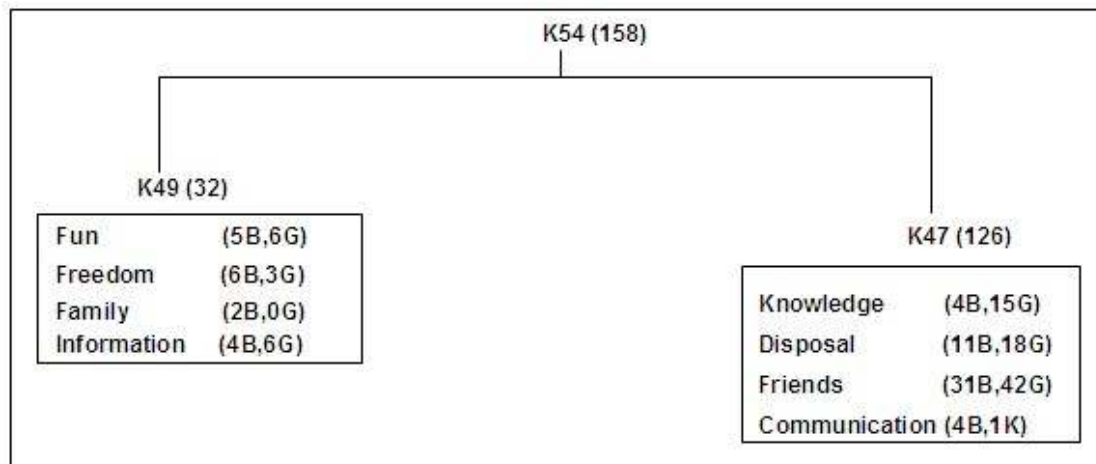

Diagram 4: Split of class K54 into four classes

Finally, with the mapping of the psychology of the 581 young people, 10 different profiles were identified, but they are needed by scientific analysis psychologists for the behavior of the individuals of each class.

VACOR vs KARAP

The two VACOR and KARAP classification methods, while using the same hierarchical classification class creation algorithm, have a substantial difference in the identification of objects involved in the classes based on the variables that make up each class.

In the case of the VACOR method, using the MAD software, initially with the two tables "Contribution of the variables to the node characterization", "Contribution of the variables to the splitting of the nodes" and then with the z distribution table, which more easily informs about the contribution of each variable to the configuration of classes, we have the ability to identify which variable is helping to shape them.

Table 17: Table with z values for the contribution of each variable

ind	--1--	--2--	--3--	--4--	--5--	--6--	--7--
Λ25	-19,5148	-8,3311	-9,7341	16,247	0,7433	9,2493	6,4486
34	35,2565	5,8506	3,7224	-5,8913	-2,7815	-14,6393	-20,5087
41	26,1864	14,4866	2,3025	-0,6316	-7,8806	-14,8196	-20,6237
43	-12,5995	-12,0141	-7,2493	-0,1264	14,2952	19,3005	-4,9321
45	2,8848	18,9739	5,8199	-9,3384	4,8842	-9,0052	-18,3245
47	-25,9791	-16,5438	-16,2526	-12,2803	13,9872	35,7972	35,6477
49	-19,5148	-16,7131	-18,221	-6,1291	12,8237	15,4243	48,0055
50	30,947	31,3776	9,4342	10,0958	-39,878	-23,744	-17,2899
51	0,1287	8,3906	17,2112	9,4421	-15,4436	-16,938	-13,094
52	-15,4057	-9,0931	10,1118	10,8684	7,3824	-4,3627	-16,0829

From the data in Table 17 we find that the configuration of each class is affected by more than one variable (degrees), but to a different degree. Taking into account the variable with the most important contribution (something similar when we study a factorial plan using the COR and CTR parameters), we can identify which objects belong to each class.

By looking at the split of class K56 in the three classes K50, K34 and K41, we take into account, on the one hand, the elements of Table 16 for each variable, the highest value of the z distribution, on the other hand, the data in Table 17, resulting in the creation of Table 18

Πίνακας 18

ind	--1--	--2--	--3--	--4--	--5--	--6--	--7--		ind	--1--	--2--	--3--	--4--	--5--	--6--	--7--
Λ15	v								Λ30	v						
Λ14						v			Λ29		v					
Λ13		v							Λ28			v				
Λ12							v		Λ27						v	
Λ11				v					Λ26				v			
Λ10						v			Λ25				v			
Λ9				v					Λ24		v					
Λ8	v								Λ23	v						
Λ7							v		Λ22							v
Λ6							v		Λ21							v
Λ5						v			Λ20							v
Λ4			v						Λ19	v						
Λ3			v						Λ18	v						
Λ2				v					Λ17	v						
Λ1		v							Λ16	v						

Table 19: Words of the three classes that make up the node K56

Node	34	41	50
A(I)	33	35	1
B(I)	17	15	30
Crowd	4	3	2
	Λ16	Λ8	Λ1
	Λ19	Λ23	Λ30
	Λ18	Λ15	
	Λ17		

Table 20: Respondents composing the three classes K50, K34 and K41 based on the highest value of the z distribution (κόμβος=node)

K50 IND	Λ1	Λ30		K56 K34 IND	Λ16	Λ17	Λ18	Λ19		K41 IND	Λ8	Λ15	Λ23
I7	2	1		I5	1	1	1	1		I5	1	1	1
I22	2	1		I20	1	1	1	1		I20	1	1	1
I23	2	1		I26	1	1	1	1		I45	1	1	1
I27	2	1		I45	1	1	1	1		I62	1	1	1
I31	2	1		I56	1	1	1	1		I83	1	1	1
I32	2	1		I62	1	1	1	1		I92	1	1	1
I40	2	1		I68	1	1	1	1		I93	1	1	1
I50	2	1		I79	1	1	1	1		I98	1	1	1
I51	2	1		I83	1	1	1	1		I107	1	1	1
I62	2	1		I92	1	1	1	1		I124	1	1	1
I63	2	1		I93	1	1	1	1		I131	1	1	1
I65	2	1		I124	1	1	1	1		I160	1	1	1
I73	2	1		I131	1	1	1	1		I169	1	1	1
I106	2	1		I132	1	1	1	1		I175	1	1	1
I107	2	1		I140	1	1	1	1		I205	1	1	1
I126	2	1		I142	1	1	1	1		I208	1	1	1
I141	2	1		I169	1	1	1	1		I220	1	1	1
I171	2	1		I175	1	1	1	1		I223	1	1	1
I176	2	1		I178	1	1	1	1		I225	1	1	1
I202	2	1		I202	1	1	1	1		I227	1	1	1
I230	2	1		I220	1	1	1	1		I232	1	1	1
I325	2	1		I225	1	1	1	1		I246	1	1	1
I352	2	1		I227	1	1	1	1		I260	1	1	1
				I228	1	1	1	1		I302	1	1	1
				I232	1	1	1	1		I325	1	1	1
				I281	1	1	1	1		I415	1	1	1
				I283	1	1	1	1					
				I321	1	1	1	1					
				I331	1	1	1	1					
				I361	1	1	1	1					
				I397	1	1	1	1					
				I409	1	1	1	1					
				I412	1	1	1	1					
				I415	1	1	1	1					
				I480	1	1	1	1					
				I508	1	1	1	1					

From Table 20 we find that some respondents based on the highest value of the distribution z are in two classes (but also in three i.e I62, blue in k50, red in k34 and red in k41), the number of which is shown in Table 21.

Table 21: Table of coincidences

Class	K34	K41	K50	Total
K34	18 (black)	16 (red)	2 (I62,I202)	36
K41	16 (red)	8 (black)	2 (green)	26
K50	2 (blue)	2 (green)	19 (black)	23
Total	36	26	23	85

The identification of respondents with this process in two classes is obviously a problem for the pure composition of the Hierarchical Classification classes in the participation of objects with defined characteristics.

This problem is solved by the KARAP method after combining the elements of Tables 10 and 21. This combination creates Table 22, which shows for each class which EXACTLY respondents have the closest profile to the variables forming the class (as we do in studying a factorial plan), without having respondents belonging to two or more classes.

Table 22: Respondents that belong to each class

Words	K34					K41				K50	
	Λ16	Λ17	Λ18	Λ19		Λ8	Λ15	Λ23		Λ1	Λ30
Crowd	19	26	18	10		25	23	12		14	13
	I36	I23	I9	I21		I18	I30	I67		I13	I58
	I59	I60	I12	I47		I24	I38	I117		I97	I71
	I65	I84	I14	I50		I27	I82	I126		I181	I155
	I94	I91	I19	I121		I29	I89	I138		I247	I189
	I112	I109	I22	I198		I37	I161	I145		I308	I197
	I123	I116	I33	I256		I69	I212	I163		I341	I239
	I144	I133	I41	I353		I77	I215	I177		I387	I254
	I162	I143	I76	I392		I187	I226	I243		I423	I274
	I173	I183	I111	I405		I219	I235	I266		I476	I300
	I186	I196	I148	I455		I229	I275	I311		I479	I315
	I221	I216	I151			I231	I280	I413		I513	I408
	I234	I224	I257			I255	I297	I430		I514	I436
	I242	I340	I330			I278	I298			I541	I545
	I245	I349	I351			I279	I335			I577	
	I294	I375	I384			I285	I344				
	I314	I377	I471			I306	I378				
	I556	I391	I549			I424	I402				
	I560	I406	I574			I432	I442				
	I576	I407				I441	I468				
		I410				I462	I494				
		I444				I503	I505				
		I456				I509	I535				
		I499				I510	I565				
		I518				I553					
		I530				I580					
		I578									

This difference in the KARAP method for this particular problem is its comparative advantage over the implementation of the VACOR method in a data table, which attempts the Ascending Hierarchical Classification of Objects.

Then, for each group of respondents, we can analyze the specific features that distinguish them, completing the analysis with more specific results.

Conclusion

As it is known, words beyond the commemorations that motivate individuals have the power to cause pleasant or unpleasant feelings. Taking advantage of these words' properties, very simple market research questionnaires can be created, but mostly neutral with regard to the intentions of the investigator.

In general, the proposed questionnaire processing technique aims to evaluate respondents' feelings, caused by a limited number of words that are relevant to the research. This list appears to be arbitrary at first glance, but it aims at identifying the interpersonal thoughts of respondents, which with different wording of questions might not have the researcher the possibility to reveal.

The specific technique of processing a questionnaire offers the researcher an unprecedented experience. Particularly

1) By using the Semiometry

It is not intended to obtain opinions from questions presented in the form of proposals, for which it is often not only difficult for the researcher to propose classified answers, but to understand their content, the length of the proposal is large

- The number of questions in each case is significantly limited, so the questionnaire completion time is limited, parameters very basic for the validity of the answers.

2) By studying the phenomenon Guttmann

- It is not necessary to carry out a statistical check on the validity of the questionnaire; on the other hand, the investigator avoids statistical checks, whose effectiveness depends, as is well known, on a variety of assumptions which may not even apply.

3) Using the KARAP method

Using the KARAP method, we achieve the purest composition of Ascending Hierarchical Classification classes in the participation of objects with defined characteristics of the variables that contribute decisively to their creation, which is not achieved by the VACOR process.

Note: The analyzes were carried out with the software of Dr Dimitrios Karapistolis M.A.D (www.pylimad.gr)

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