

PRIMARY TRAITS OF PERSONALITY FROM A BIO-SOCIAL MODEL

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INTRODUCTION AND PURPOSE

There is good agreement that personality description is best viewed as hierarchical (Eysenck, Barret, Wilson and Jackson, 1992) with the base formed by a large number of traits. Likewise, there is good agreement that measurement of primary factors of personality (traits) in combination with the measurement of secondary factors (types) provide more true variance that either alone (Eysenck, Barret, Wilson and Jackson, 1992).

On the other hand, if these primary traits are based on a bio-social model can provide causal explanations of individual differences in personality.

In this sense, the *Eysenck Personality Profiler (Short) (EPP-SF)* offers the possibility to assess primary traits for the three major dimensions of personality, E, N, P, plus a Lie scale. It appears that the statistical and psychometric properties of the EPP-SF are acceptable. So the goal of this paper is to analyse individual differences in primary traits through the Spanish version of the EPP-SF and to examine its psychometric and factor structure in a Spanish sample.

METHOD

□ SAMPLE

Subjects were 946 healthy students from School of Police of Catalonia.

N=946	N	AGE	Mean	S.D
Females	147	19-34	25.3	2.9
Males	799	20-49	25.6	3.1

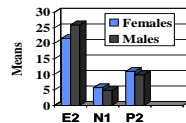
□ INSTRUMENTS

In addition to EPP-SF, the following questionnaires were administered: the Eysenck Personality Questionnaire, Revised, (EPQ-r) and the Taylor's Manifest Anxiety Scale (TMAS)

TYPES	TRAITS
EXTRAVERSION	SOCIABILITY (E1) ACTIVITY (E2) ASSERTIVENESS (E3)
NEUROTICISM	ANXIETY (N1) INFERIORITY (N2) UNHAPPINESS (N3)
PSYCHOTICISM	RISK-TAKING (P1) IMPULSIVENESS (P2) IRRESPONSABILITY (P3)
	LIE SCALE (L)

The Eysenck Personality Profiler- Short Form contain 3 scales for each major variable plus a Lie scale.

DIFFERENCES BETWEEN SEX



Males and females differs in Activity, Anxiety and Impulsiveness at p-level < 0.01. Simes'correction was applied.

DESCRIPTIVE STATISTICS

TRAITS	FEMALES		MALES	
	Mean	S.D	Mean	S.D.
Sociab. E1	27.7	5.1	27.7	5.1
Activit. E2	25.9	4.5	24.8	4.6
Assert. E3	21.6	3.9	22.3	4.3
Anxiet. N1	5.7	3.2	4.8	3.0
Infer. N2	3.9	2.2	4.3	2.4
Unhap. N3	1.7	2.1	2.0	2.3
Risk. P1	14.4	4.4	13.6	4.4
Impuls. P2	10.9	4.5	9.9	4.8
Irresp. P3	9.1	4.2	9.6	4.2
Lie Scale	17.7	9.8	16.9	8.6

PREDICTIVE VALIDITY

A subset (N=255) of sample filled in the EPQ-r and TMAS. In order to evaluate the predictive validity, several regression equations were computed taking as dependent variables Extroversion, and Psychoticism scales from the EPQ-R and TMAS scores; and as independent variables trait scales from EPP-SF. All equations were performed following Stepwise method with a Tolerance equal to 0.60. In the case of predicting TMAS scores, regression was computed from pooled-within-groups correlation and once again Simes'correction was applied.

□ EXTRAVERSION AS D.V.

I.V.	Beta	R ²	ΔR	p-level
E1	0.44	0.43	0.43	0.000
E2	0.17	0.48	0.05	0.003
P2	0.19	0.54	0.03	0.003

MULTIPLE R = 0.74 p = 0.000

□ ANXIETY FROM TMAS AS D.V.

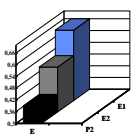
I.V.	Beta	R ²	ΔR	p-level
N1	0.34	0.45	0.45	0.000
N3	0.33	0.53	0.07	0.000
E3	-0.10	0.57	0.04	0.000

MULTIPLE R = 0.78 p = 0.000

□ PSYCHOTICISM AS D.V.

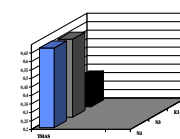
I.V.	Beta	R ²	ΔR	p-level
P3	0.25	0.09	0.09	0.000
P2	0.27	0.12	0.02	0.007
E1	-0.21	0.15	0.03	0.003
N1	-0.17	0.18	0.02	0.005

MULTIPLE R = 0.43 p = 0.000



COEFFICIENTS OF CORRELATION

Results shows a good predictive power both to extroversion and to neuroticism. Sociability, Activity and Impulsiveness explain 54% of variance of extroversion from the EPQ-r according to Eysenck's theory. It is worth it to denote that Impulsiveness appears like a trait of extroversion but its contribution is smaller than in explanation of Psychoticism. In relation to Anxiety from TMAS, we can see that Anxiety (from EPP-SF) and Inferiorty can explain more of 50% of variance of TMAS scores, by identifying two of the three components of TMAS's structure (Ruiz, Tous and Fusté, 1996).



COEFFICIENTS OF CORRELATION

FACTOR STRUCTURE

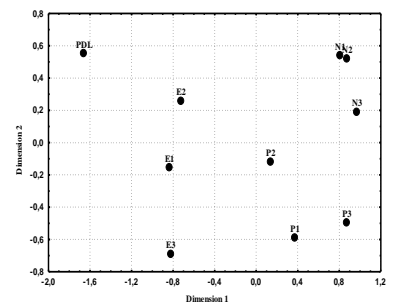
FACTOR	EIGENVALUE	Pct. of Var.	Cum. Pct.
1 (N)	2.57	25.7	25.7
2 (P)	1.71	17.0	42.7
3 (E)	1.31	13.0	55.8

A principal component analysis of the 10 scales was undertaken and yielded 3 factors with eigenvalues greater than 1 accounting for 55.8 percentage of variance. This factors were rotated using an oblimin rotation (delta = -.5). The Structure Matrix shows that Factor 1 is clearly N with high loadings on the anxiety, inferiority and unhappiness.

FACTOR 1		FACTOR 2		FACTOR 3	
Trait	Load	Trait	Load	Trait	Load
N1	0.76	P3	0.79	E2	0.80
N2	0.73	L	-0.75	P2	0.60
N3	0.68	P1	0.70	E1	0.58
E3	-0.49	P2	0.49		
E1	-0.41				

Factor 2 is clearly P with high loadings on risk-taking and irresponsibility; Impulsiveness has a lower loading in P than in Factor 3 which resembles E. This result is agree with multidimensional scaling, but is not agree with Eysenck, Wilson and Jackson's (1996) findings, showing the multifactor structure of Impulsiveness (Luengo, 1986).

MULTIDIMENSIONAL SCALING OF THE EPP-SF



Multi-dimensional scaling analysis (Guttman-Lingoes smallest space analysis) was used to demonstrate the homogeneity of the three major factors. Figure shows how the three N traits cohere to form a unit. Impulsiveness appears in the middle of P and E factors.

SUMMARY AND CONCLUSIONS

C Factor analysis and multidimensional scaling methods have been applied to 10 scales of EPP-SF. Reasonable factors and clusters have been found to identify superfactors E,N, and P. On the whole structure was as expected but some scales load on more than one factor. This may be due to the nature of the sample (applicant for police officer) and the conditions of testing: selection or advancement.

C In our results, Impulsiveness is located as a component of Extroversion superfactor.

C Even under conditions favouring dissimulation the scales still correlate together in meaningful ways being a tribute to the robustness of the theory underlying this study and hence a good questionnaire to assess personality from a bio-social model.

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