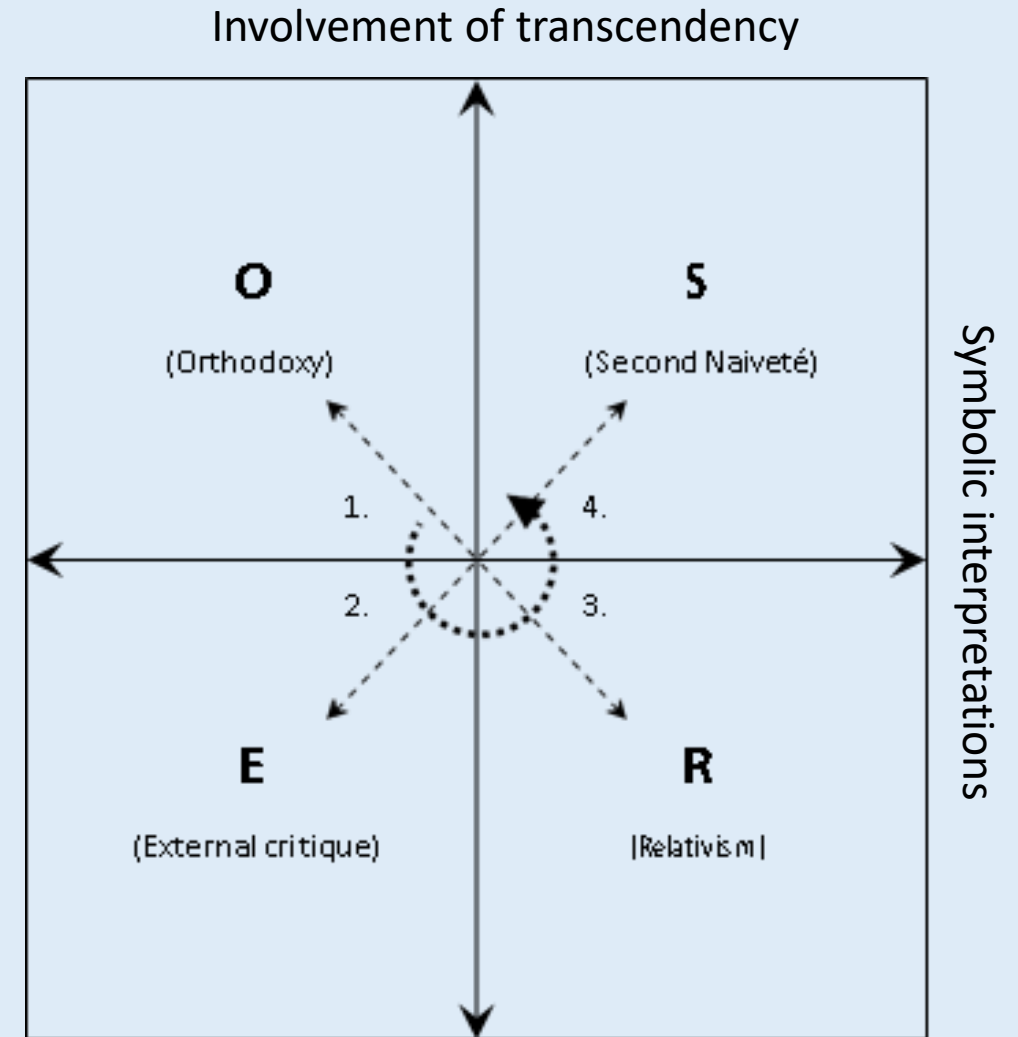


Exploring main types of religiosity based on the Post Critical Belief Scale

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Post Critical Belief Scale - Introduction

- 2 main factors:
 - Involvement of transcendency and symbolic interpretation of religious texts. (Wulff, 1997)
- 4 scales of the test:
 - Orthodoxy, External critique, Relativism, Second Naiveté



Psychological features	Involvement of transedency	Symbolic interpretation
Moral competence	No correspondence	Positive correspondence
Empathy	No correspondence	Positive correspondence
Cognitive style	Order, structural thinking, predictability	Endurance of confliction, and lack of closed thinking
Identity development (adolesency)	Sensibility to parental expectations	Active search of identity, less postponing

Some results
based on
the two
dimensional
evaluation

(Duriez et al,
2003-2005)

Description of the sample (Martos et al, 2009)

Index	N	Means of ages (SD)	Male – Female (%)	Sectarian distribution (%)	Attending in services (%)	Sample	Importance of religiosity mean (SD)	Importance of interaction with god mean (SD)
1	370	26,1 (10,2)	30 – 67	69–21–5–2	67–22–8	mixed: students and adults	5,4 (1,6)	5,8 (1,5)
2	429	20,0 (4,3)	41 – 57	72–18–4–4	46–32–10	students	4,4 (1,9)	4,8 (1,9)
3	310	27,0 (10,9)	32 – 68	64–15–11–10	35–33–32	average adults	4,0 (2,1)	4,3 (2,2)
4	520	27,0 (11,7)	35 – 64	66–12–7–14	39–33–27	average adults	4,4 (2,0)	4,6 (2,1)
5	191	27,8 (11,8)	38 – 62	81–12–7–0	64–12–23	average adults	no data	no data
Total	1820	25,2 (10,4)	35 – 63	69–16–6–8	48–28–20		4,5 (2,0) N = 1600	4,8 (2,0) N = 1439

- Sectarian distribution: Catholic/Protestant/Other/None
- Attending in services: Weekly or more often/Rarely/Just in special events/Never

Our main goal was to create well interpretable, real groups of religiosity, with the help of the two independent variable (TR and Symb)

Preparations for Cluster Analysis

- TR1 and Symb measures were rounded to the first decimal
- Is there a linear relationship between the two variables?

- Linear relationship:

r =	0	p = 0,9922	C95 = (-0,054; 0,054)
Rpb =	-0,004	p = 0,8764	C95 = (-0,058; 0,050)

- Nonlinear correlations

- Polinomial regression:

Regression coefficients and their tests of significance					
Independ ent	Unstand.		Standard		Signif.
variable	B coeff.	St.error	Beta	t-value	(p-value)
Constant	-0,011	0,04	.	-0,275	0,7837
TR1	0,1652	0,054	0,165	3,06	0,0023**
TR1-2	0,1504	0,055	0,198	2,742	0,0062**
TR1-3	-0,0931	0,021	-0,311	-4,529	0,0000***
TR1-4	-0,0589	0,012	-0,415	-4,778	0,0000***

Outline of performed cluster analyses

- Residual analysis: no outliers
- Hierarchical CA (Ward's method)
- Relocation for different cluster numbers
- Validation of cluster structures for different cluster numbers with MORI coefficients

Possible solutions obtained, with Hierarchical Cluster Analysis

Step	CL#	ESSplus	EESS%	Pointbis	XBmod	SilCoef	HCmean	HC range	Clusters to fuse	
i=795	7	56,54	81,01	0,381	0,527	0,581	0,382	0,21-0,77	7 (115)	11 (188)
i=796	6	57,269	78,83	0,409	0,661	0,616	0,425	0,30-0,77	16 (176)	63 (168)
i=797	5	124,224	74,09	0,426	0,659	0,603	0,52	0,39-0,77	1 (268)	9 (150)
i=798	4	154,567	68,2	0,434	0,736	0,62	0,637	0,39-0,90	7 (303)	14 (247)
i=799	3	328,22	55,68	0,44	0,714	0,623	0,888	0,70-1,00	1 (418)	16 (344)

Great EESS% measures in cluster 5 to 7, but huge decrease below 5. Lower amount of clusters cause better homogeneity measures. Cluster 4 and 7 seem to be the best solution.

Relocations for k = 4 to 7

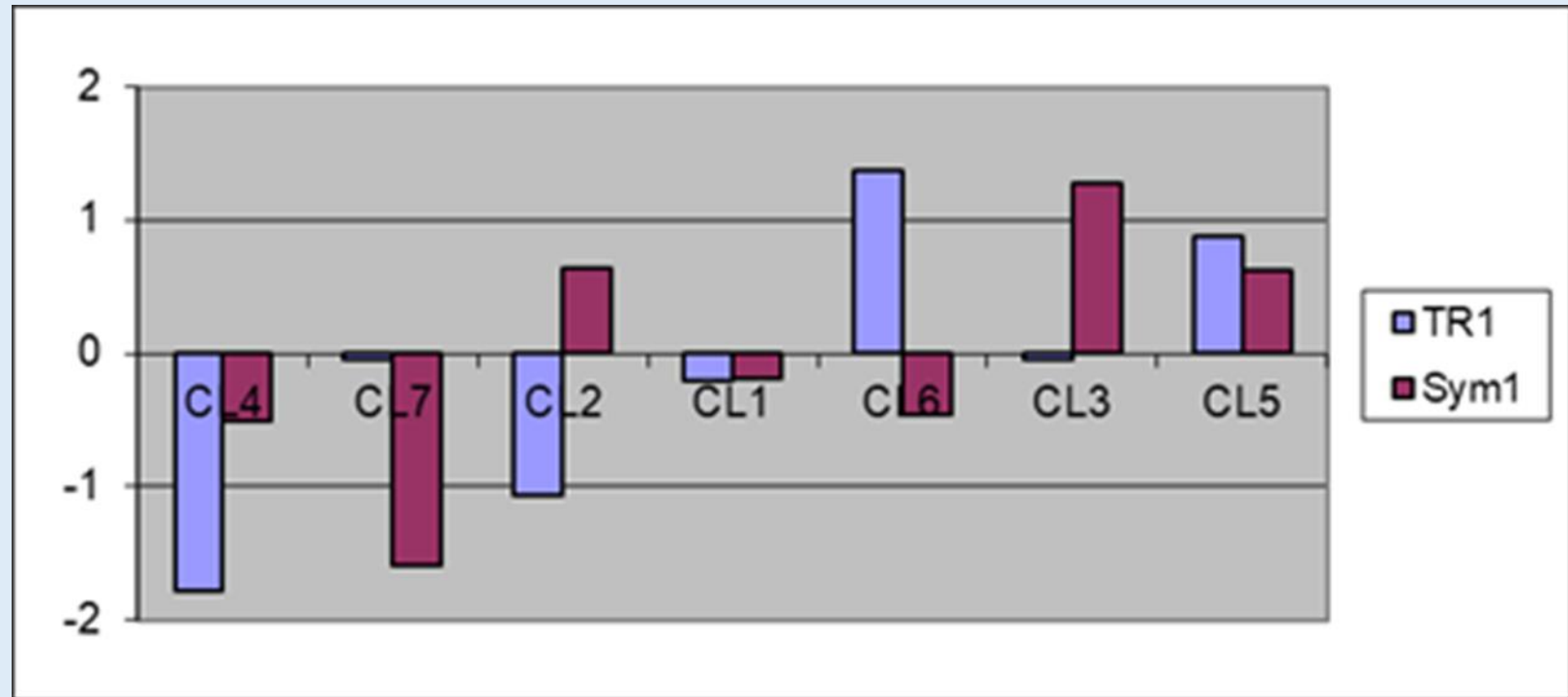
	EESS%	Pointbis	XBmod	SilCoef	HCmean	CLdelta	GDI24	HC range
k = 7	83,87	0,389	0,747	0,682	0,324	1,099	1,109	0,19-0,57
k = 6	80,96	0,416	0,759	0,684	0,382	1,096	1,360	0,32-0,58
k = 5	77,35	0,446	0,673	0,691	0,455	1,094	1,139	0,40-0,61
k = 4	72,93	0,481	0,770	0,712	0,543	1,097	1,772	0,46-0,66

Validation

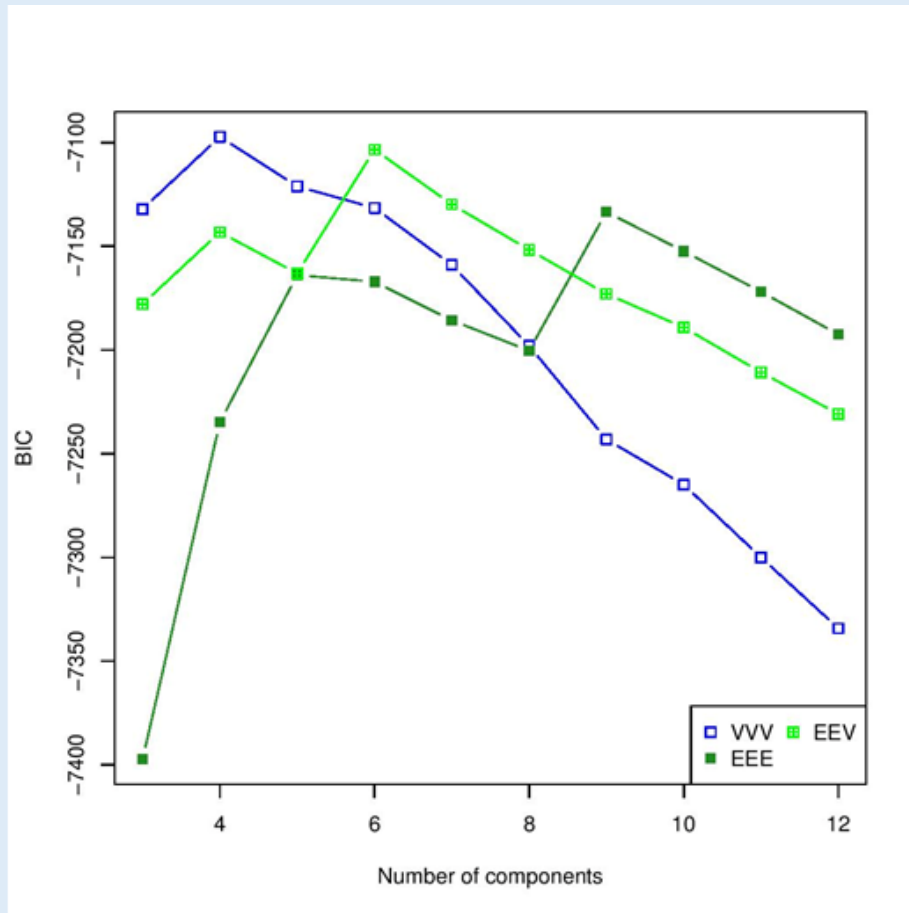
MORI	EESS%	Pointbis	XBmod	SilCoef	HCmean	CLdelta	GDI24
k = 7	0,27	0,07	0,18	0,11	0,27	0,17	-0,12
k = 6	0,23	0,10	0,14	0,10	0,23	0,18	-0,03
k = 5	0,25	0,13	0,04	0,14	0,25	0,22	-0,06
k = 4	0,25	0,17	0,24	0,19	0,25	0,28	0,15

Pattern of unstandardized means

Cluster	TR1	Sym1	CLsize	HC
CL1	.	.	191	0,30
CL2	L+	(H)	174	0,31
CL3	.	H+	203	0,31
CL4	L+++	(L)	115	0,56
CL5	H	(H)	240	0,20
CL6	H+	(L)	181	0,33
CL7	.	L++	208	0,37



Model-based cluster analysis



- Also indicate that $k = 4$ and $k = 7$ are the most promising solutions

VVV = ellipsoidal, variable volume, variable shape clusters

EEV = ellipsoidal, equal volume and shape clusters

EEE = spherical, equal volume and shape clusters

Reference

New data for the application of the Post Critical Belief Scale – Theory and methodology
(Martos Tamás – Kézdy Anikó – Robu Magda – Urbán Szabolcs – Horváth-Szabó Katalin)

Bevezetés a Matematikai Statisztikába 2 – Többváltozós statisztikai módszerek (Takács Szabolcs)

Matematikai Statisztika: Vargha András