



## Polychoric correlation matrix with all variables ordinal (MA = PM)

Swedish school children in grade 9 were asked about their attitudes on social issues in family, school, and society. Among the questions asked were the following eight items (Hasselrot & Lernberg, 1980).

For me, questions about

1. Human rights
2. Equal conditions for all people
3. Racial problems
4. Equal value of all people
5. Euthanasia
6. Crime and punishment
7. Conscientious objecors
8. Guilt and bad conscience

are:

\_\_\_unimportant \_\_\_not important \_\_\_important \_\_\_very important

For example 2, we use a subsample of 200 cases. Response to the eight questions were scored 1, 2, 3, and 4 (4 = very important). Missing values were scored zero. The data matrix consists of 200 rows and 8 columns. It is stored in the file **data.ex2**.

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EXAMPLE 2: ATTITUDES OF MORALITY AND EQUALITY
DA NI=8 NO=200 MI=0 TR=PA
LA
RA FI=DATA.EX2
OR ALL
OU MA=PM
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Number of Missing Values per Variable

HUMRGHTS	EQUALCON	RACEPROB	EQUALVAL	EUTHANAS	CRIMEPUN	CONSCOBJ	GUILT
2	1	3	0	0	0	0	1

Distribution of Missing Values

Total Sample Size (N) = 200

Number of Missing Values	0	1	2	3
Number of Cases	195	4	0	1

There are only five cases with missing values.

Effective Sample Sizes

Univariate (in Diagonal) and Pairwise Bivariate (off Diagonal)

	HUMRGHTS	EQUALCON	RACEPROB	EQUALVAL	EUTHANAS	CRIMEPUN
HUMRGHTS	198					
EQUALCON	198	199				
RACEPROB	196	197	197			
EQUALVAL	198	199	197	200		
EUTHANAS	198	199	197	200	200	
CRIMEPUN	198	199	197	200	200	200
CONSCOBJ	198	199	197	200	200	200
GUILT	197	198	196	199	199	199

  

	CONSCOBJ	GUILT
CONSCOBJ	200	
GUILT	199	199

Percentage of Missing Values

Univariate (in Diagonal) and Pairwise Bivariate (off Diagonal)

	HUMRGHTS	EQUALCON	RACEPROB	EQUALVAL	EUTHANAS	CRIMEPUN
HUMRGHTS	1.00					
EQUALCON	1.00	0.50				
RACEPROB	2.00	1.50	1.50			
EQUALVAL	1.00	0.50	1.50	0.00		
EUTHANAS	1.00	0.50	1.50	0.00	0.00	
CRIMEPUN	1.00	0.50	1.50	0.00	0.00	0.00
CONSCOBJ	1.00	0.50	1.50	0.00	0.00	0.00
GUILT	1.50	1.00	2.00	0.50	0.50	0.50

  

	CONSCOBJ	GUILT
CONSCOBJ	0.00	
GUILT	0.50	0.50

Univariate Marginal Parameters

Variable	Mean	St. Dev.	Thresholds		
HUMRGHTS	0.000	1.000	-2.166	-1.434	-0.140
EQUALCON	0.000	1.000	-1.958	-1.033	0.209
RACEPROB	0.000	1.000	-1.432	-0.984	0.238
EQUALVAL	0.000	1.000	-1.645	-0.583	0.305
EUTHANAS	0.000	1.000	-1.812	-1.036	0.088



EUTHANAS vs. EQUALCON	0.706 (PC)	9.872	8	0.274	0.034	0.968
EUTHANAS vs. RACEPROB	0.317 (PC)	7.348	8	0.500	0.000	0.990
EUTHANAS vs. EQUALVAL	0.692 (PC)	26.238	8	0.001	0.107	0.364
CRIMEPUN vs. HUMRGHTS	0.215 (PC)	12.460	8	0.132	0.053	0.918
CRIMEPUN vs. EQUALCON	0.236 (PC)	17.785	8	0.023	0.078	0.736
CRIMEPUN vs. RACEPROB	0.282 (PC)	14.366	8	0.073	0.064	0.862
CRIMEPUN vs. EQUALVAL	0.423 (PC)	13.672	8	0.091	0.060	0.889
CRIMEPUN vs. EUTHANAS	0.218 (PC)	13.103	8	0.108	0.056	0.905
CONSCOBJ vs. HUMRGHTS	0.190 (PC)	11.504	8	0.175	0.047	0.940
CONSCOBJ vs. EQUALCON	0.292 (PC)	10.694	8	0.220	0.041	0.955
CONSCOBJ vs. RACEPROB	0.312 (PC)	6.467	8	0.595	0.000	0.994
CONSCOBJ vs. EQUALVAL	0.340 (PC)	14.912	8	0.061	0.066	0.850
CONSCOBJ vs. EUTHANAS	0.224 (PC)	7.263	8	0.509	0.000	0.991
CONSCOBJ vs. CRIMEPUN	0.312 (PC)	9.113	8	0.333	0.026	0.977
GUILT vs. HUMRGHTS	0.094 (PC)	17.361	8	0.027	0.077	0.749
GUILT vs. EQUALCON	0.314 (PC)	15.453	8	0.051	0.069	0.827
GUILT vs. RACEPROB	0.239 (PC)	8.626	8	0.375	0.020	0.980
GUILT vs. EQUALVAL	0.320 (PC)	7.392	8	0.495	0.000	0.990
GUILT vs. EUTHANAS	0.340 (PC)	8.500	8	0.386	0.018	0.983
GUILT vs. CRIMEPUN	0.207 (PC)	7.595	8	0.474	0.000	0.989
GUILT vs. CONSCOBJ	0.202 (PC)	12.879	8	0.116	0.055	0.909

Despite the fact that most of the marginal distributions are highly skewed, only 1 out of 28 of the model tests reject the hypothesis of an underlying bivariate normal distribution at the 1 percent nominal level of significance. When examining many tests like this, bear in mind that if all the hypotheses were true, a 1 percent long-run rejection rate should be expected by pure chance.

Correlation Matrix

	HUMRGHTS	EQUALCON	RACEPROB	EQUALVAL	EUTHANAS	CRIMEPUN
HUMRGHTS	1.000					
EQUALCON	0.418	1.000				
RACEPROB	0.221	0.202	1.000			
EQUALVAL	0.373	0.635	0.285	1.000		
EUTHANAS	0.442	0.706	0.317	0.692	1.000	
CRIMEPUN	0.215	0.236	0.282	0.423	0.218	1.000
CONSCOBJ	0.190	0.292	0.312	0.340	0.224	0.312
GUILT	0.094	0.314	0.239	0.320	0.340	0.207

Correlation Matrix

	CONSCOBJ	GUILT
CONSCOBJ	1.000	
GUILT	0.202	1.000

Total Variance = 8.000 Generalized Variance = 0.0831

Largest Eigenvalue = 3.381 Smallest Eigenvalue = 0.241

Condition Number = 3.744