Notes on statistics

Statistical terms used are mainly measures of appropriateness, the reliability of the method.

Latent variables: These are unobserved variables derived from measured (observed) variables.

Dimension: Factor analysis as a data reduction technique can lead to one latent variable indicating unidimensionality or several latent variables indicating multidimensionality.

Correlation: An association between variables. When the association is strong, they have high correlation, when low, they have low correlation. The measure of correlation, the correlation coefficient, ranges from -1.0 to +1.0. Zero is no relationship, closer to 1 indicates a strong positive relationship (as one rises, the other rises) and closer to minus 1 indicates a negative relationship (as one rises, the other falls). Pearson's correlation coefficient measures the relationship. Other measures are Kendall and Spearman.

Communalities: The extent to which a variable associates with others in the analysis, belongingness to the community of variables.

Variance: A measure of how much the numbers of a set are spread out from each other, how far they are from the average. The explained variance is a measure of how much the analysis can account for out of the total variance. It is about the goodness of the predictive value of the analysis.

SPSS functions: Promax oblique rotation, orthogonal rotation and maximum likelihood are statistical functions used to define the type of factor analysis required and are informed by the characteristics of the data.

Statistical measures of appropriateness of the analysis: Determinant, Kaiser–Meyer–Olkin Measure of Sampling Adequacy, Cronbach alpha are all measures indicating the appropriateness of the analysis. All the numbers fall within specified ranges.

Appendix 1: Full exploratory factor analysis outputs for Ghana, Nigeria, Zimbabwe and the USA with factor names and positions from the pattern matrices, Cronbach alpha, percentage of variance explained and factor positions

Culture metrics	Not-for-profit				Political				Social functioning/order				Watchdog/fourth estate				For-profit/business			
	USA	Zimbabwe	Nigeria	Ghana	USA	Zimbabwe	Nigeria	Ghana	USA	Zimbabwe	Nigeria	Ghana	USA	Zimbabwe	Nigeria	Ghana	USA	Zimbabwe	Nigeria	Ghana
Factor number	1	2	4	1	2	1	1	2	3	5	Nil	5	4	3	3	3	5	4	2	4
Environmental NGOs	0.85	0.70	0.56	0.67																
Women's organisations	0.82	0.74	0.91	0.82																
Charities	0.70	0.63	0.66	0.80																
Universities	0.58																	0.74	0.79	0.68
Labour unions	0.34*						0.33*						0.33*	0.34	0.31*					
Civil service	0.31					0.39		0.38											0.47	
Parliament					0.98	0.94	0.82	0.95												
Political parties					0.76	0.70	0.75	0.60												
Central government					0.71	0.48*	0.87	0.38*		0.45*		0.32*								
Police							0.57		0.92	0.75		0.86								
Courts							0.53		0.61	0.84		0.74								
Armed forces									0.54	0.38					0.50	0.32				
Television													0.85	0.77	0.66	0.80				
Press													0.75	0.84	0.85	0.79				
Major companies																	0.73	0.79	0.79	0.71
Banks																	0.68	0.54	0.72	0.72
Churches									0.30*								0.30*			
% variance	34	10	3	35	8	34	37	7	6	3		3	4	4	4	4	4	3	9	3
Cronbach's alpha	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8		0.8	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.8

*Cross loadings

Note: Below 0.3 loading for Ghana with labour unions variable

Pearson's correlation matrix

USA

	Churches	Army	The press	Television	Unions	Police	Courts	Centralgovt	Pol_Parties	Parliament	Civil_service	Universities	MajorComp	Banks	Environorgs	Womenorgs
Churches	1															
Army	0.415**															
The press	0.113**	0.195**														
Television	0.140**	0.225**	0.667**													
Unions	0.024	0.077**	0.403**	0.365**												
Police	0.299**	0.469**	0.228**	0.198**	0.110**											
Courts	0.227**	0.324**	0.335**	0.277**	0.184**	0.637**										
Centralgovt	0.130**	0.160**	0.422**	0.365**	0.338**	0.338**	0.537**									
Pol_Parties	0.228**	0.207**	0.399**	0.406**	0.283**	0.287**	0.405**	0.575**								
Parliament	0.164**	0.157**	0.404**	0.365**	0.304**	0.262**	0.433**	0.678**	0.687**							
Civil_service	0.211**	0.304**	0.365**	0.304**	0.334**	0.416**	0.442**	0.462**	0.402**	0.450**						
Universities	0.114**	0.149**	0.353**	0.291**	0.317**	0.276**	0.404**	0.446**	0.297**	0.415**	0.498**					
MajorComp	0.294**	0.323**	0.257**	0.320**	0.090**	0.346**	0.383**	0.279**	0.356**	0.315**	0.308**	0.347**				
Banks	0.307**	0.276**	0.220**	0.300**	0.102**	0.317**	0.344**	0.312**	0.350**	0.343**	0.272**	0.283**	0.602**			
Environorgs	-0.024	0.026	0.395**	0.312**	0.439**	0.149**	0.263**	0.409**	0.272**	0.350**	0.389**	0.521**	0.178**	0.213**		
Womenorgs	0.091**	0.135**	0.366**	0.316**	0.375**	0.242**	0.339**	0.409**	0.306**	0.373**	0.406**	0.514**	0.248**	0.237**	0.630**	
Charities	0.186**	0.195**	0.219**	0.177**	0.218**	0.298**	0.305**	0.284**	0.223**	0.255**	0.359**	0.420**	0.277**	0.217**	0.463**	0.569**

** Correlation is significant at the 0.01 level (2-tailed).

Zimbabwe

	Churches	Army	The press	Television	Unions	Police	Courts	Centralgovt	Pol_Parties	Parliament	Civil_service	Universities	MajorComp	Banks	Environorgs	Womenorgs
Churches	1															
Army	0.121**															
The press	0.113**	0.409**														
Television	0.107**	0.351**	0.640**													
Unions	0.109**	0.267**	0.413**	0.351**												
Police	0.152**	0.505**	0.454**	0.448**	0.397**											
Courts	0.106**	0.497**	0.419**	0.358**	0.373**	0.663**										
Centralgovt	0.120**	0.421**	0.385**	0.361**	0.293**	0.575**	0.607**									
Pol_Parties	0.086**	0.354**	0.357**	0.309**	0.312**	0.403**	0.403**	0.511**								
Parliament	0.120**	0.444**	0.407**	0.355**	0.325**	0.517**	0.527**	0.627**	0.593**							
Civil_service	0.080**	0.402**	0.356**	0.318**	0.364**	0.406**	0.424**	0.431**	0.343**	0.518**						
Universities	0.126**	0.328**	0.217**	0.205**	0.218**	0.282**	0.380**	0.250**	0.187**	0.313**	0.392**					
MajorComp	0.094**	0.257**	0.271**	0.269**	0.256**	0.228**	0.318**	0.194**	0.189**	0.263**	0.352**	0.554**				
Banks	0.157**	0.227**	0.250**	0.266**	0.259**	0.220**	0.273**	0.218**	0.187**	0.241**	0.292**	0.426**	0.464**			
Environorgs	0.034	0.258**	0.142**	0.182**	0.347**	0.230**	0.302**	0.145**	0.146**	0.245**	0.278**	0.328**	0.378**	0.349**		
Womenorgs	0.125**	0.190**	0.132**	0.165**	0.248**	0.225**	0.263**	0.186**	0.072**	0.206**	0.285**	0.310**	0.271**	0.234**	0.493**	
Charities	0.091**	0.183**	0.127**	0.146**	0.241**	0.165**	0.225**	0.126**	0.126**	0.171**	0.218**	0.346**	0.324**	0.233**	0.459**	0.475**

** Correlation is significant at the 0.01 level (2-tailed).

Ghana

	Churches	Army	The press	Television	Unions	Police	Courts	Centralgovt	Pol_Parties	Parliament	Civil_service	Universities	MajorComp	Banks	Environorgs	Womenorgs
Churches	1															
Army	0.179**															
The press	0.210**	0.385**														
Television	0.236**	0.333**	0.558**													
Unions	0.121**	0.386**	0.355**	0.364**												
Police	0.202**	0.391**	0.409**	0.317**	0.385**											
Courts	0.211**	0.329**	0.416**	0.356**	0.328**	0.617**										
Centralgovt	0.164**	0.301**	0.328**	0.329**	0.311**	0.432**	0.493**									
Pol_Parties	0.157**	0.257**	0.302**	0.268**	0.293**	0.357**	0.356**	0.411**								
Parliament	0.172**	0.236**	0.347**	0.296**	0.281**	0.360**	0.390**	0.487**	0.528**							
Civil_service	0.171**	0.334**	0.348**	0.340**	0.388**	0.385**	0.375**	0.412**	0.394**	0.510**						
Universities	0.194**	0.284**	0.226**	0.295**	0.221**	0.295**	0.299**	0.275**	0.214**	0.302**	0.386**					
MajorComp	0.220**	0.286**	0.263**	0.276**	0.299**	0.340**	0.313**	0.339**	0.311**	0.376**	0.442**	0.499**				
Banks	0.172**	0.280**	0.233**	0.268**	0.248**	0.306**	0.308**	0.326**	0.247**	0.321**	0.334**	0.478**	0.558**			
Environorgs	0.149**	0.303**	0.260**	0.288**	0.409**	0.275**	0.260**	0.305**	0.284**	0.334**	0.408**	0.337**	0.494**	0.430**		
Womenorgs	0.210**	0.284**	0.214**	0.251**	0.292**	0.248**	0.235**	0.293**	0.232**	0.292**	0.375**	0.314**	0.401**	0.359**	0.560**	
Charities	0.169**	0.225**	0.176**	0.231**	0.287**	0.244**	0.226**	0.302**	0.176**	0.260**	0.354**	0.312**	0.388**	0.355**	0.534**	0.574**

** Correlation is significant at the 00.01 level (2-tailed)0.

* Correlation is significant at the 00.05 level (2-tailed)0.

Nigeria

	Churches	Army	The press	Television	Unions	Police	Courts	Centralgovt	Pol_Parties	Parliament	Civil_service	Universities	MajorComp	Banks	Environorgs	Womenorgs
Churches	1															
Army	0.319**															
The press	0.265**	0.465**														
Television	0.214**	0.345**	0.564**													
Unions	0.161**	0.354**	0.390**	0.383**												
Police	0.094**	0.258**	0.306**	0.284**	0.385**											
Courts	0.183**	0.331**	0.411**	0.353**	0.453**	0.495**										
Centralgovt	0.068**	0.235**	0.307**	0.291**	0.403**	0.454**	0.544**									
Pol_Parties	0.093**	0.181**	0.265**	0.261**	0.325**	0.426**	0.427**	0.567**								
Parliament	0.057*	0.246**	0.298**	0.301**	0.393**	0.438**	0.487**	0.627**	0.574**							
Civil_service	0.183**	0.313**	0.379**	0.366**	0.353**	0.283**	0.391**	0.360**	0.365**	0.450**						
Universities	0.162**	0.272**	0.379**	0.386**	0.254**	0.187**	0.333**	0.241**	0.262**	0.266**	0.541**					
MajorComp	0.222**	0.303**	0.357**	0.341**	0.315**	0.232**	0.358**	0.280**	0.301**	0.315**	0.512**	0.580**				
Banks	0.264**	0.315**	0.365**	0.370**	0.316**	0.204**	0.384**	0.269**	0.271**	0.278**	0.450**	0.553**	0.614**			
Environorgs	0.223**	0.321**	0.361**	0.335**	0.357**	0.244**	0.365**	0.222**	0.273**	0.298**	0.442**	0.427**	0.481**	0.525**		
Womenorgs	0.245**	0.307**	0.325**	0.275**	0.281**	0.173**	0.303**	0.173**	0.203**	0.232**	0.389**	0.365**	0.398**	0.394**	0.578**	
Charities	0.197**	0.304**	0.353**	0.327**	0.334**	0.210**	0.365**	0.216**	0.195**	0.277**	0.405**	0.394**	0.412**	0.388**	0.506**	0.584**

** Correlation is significant at the 00.01 level (2-tailed)0.

* Correlation is significant at the 00.05 level (2-tailed)0.