



UNIVERSITÀ
DEGLI STUDI
DI MILANO



Overcoming the structuralist/individualist dichotomy

Inequality beliefs from a new network and comparative
perspective

Gonzalo Franetovic¹ & Arturo Bertero²

¹Ph.D. Student in Sociology
University of Milan

²Ph.D. Student in Political Science
University of Milan

Monday 12th December, 2022

Contents

- ① Introduction
- ② Theory
- ③ Methods
- ④ Results
- ⑤ Conclusions

Introduction

- **Inequality beliefs**
 - A socially bounded process; "a special case of causal inference, where people make sense of (observed) unequal outcomes by inferring the (unobserved) social forces that brought these about" (Mijs, 2018; p. 64).
- **Research question:**
 - How are inequality beliefs [IB] structured across contemporary societies?

Theory

- IB are generally studied with the **structuralist - individualist dichotomy** (Kluegel & Smith, 2017; Mijs, 2018).
- This distinction is derived from **factor analytic techniques**, which were found to systematically underestimate the number of latent factors, especially when highly correlated, with low N and with few indicators per factor (Ruscio and Roche, 2012; Keith et al., 2016; Crawford et al., 2010; Green et al., 2016).
- Exploratory Graph Analysis [**EGA**] (Golino & Epskamp, 2017) rejects the framework of latent variables positing that the number of factors is equal to the number of clusters (Golino et al., 2020) of a Gaussian Graphical Model [**GGM**] (Epskamp et al., 2018).
- To relax GGM's assumption of normality, the second hypothesis will be tested through a Mixed Graphical Model [**mgm**] (Haslbeck & Waldorp, 2015).
- Our work builds on recent studies conceptualizing **attitudes as networks** of causally interacting evaluative reactions (Dalege et al., 2016).

Methods

- **Data:** ISSP 2019 - Social Inequality Module, 27 countries (N=35242).
- **Research design:** the following procedure was applied to each country:
 - ① Fit EGA
 - ② Fit CFA
 - ③ Measures of fit
 - ④ Fit mgm
 - ⑤ Calculate centrality metrics

Methods

- **Methods:** Network measures

$$s_i = C_D^w(i) = \sum_j^N w_{ij}$$

Figure: Strength centrality

Methods

- Variables: Inequality beliefs battery

Q1. Please tick one box for each of these to show how important you think it is for getting ahead in life... (Please tick one box on each line)

	Essential	Very important	Fairly important	Not very important	Not important at all	Can't choose
a. <AHEAD1: ABCDE> ...how important is coming from a wealthy family?	1	2	3	4	5	8
b. <AHEAD2: ABDE>... how important is having well-educated parents?	1	2	3	4	5	8
c. <AHEAD3: ABDE>... how important is having a good education yourself?	1	2	3	4	5	8
d. <AHEAD6: ABDE>... how important is hard work?	1	2	3	4	5	8
e. <AHEAD7: ABCDE>... how important is knowing the right people?	1	2	3	4	5	8
f. <AHEAD8: ABDE>... how important is having political connections?	1	2	3	4	5	8
g. <AHEAD17: DE>...how important is giving bribes?	1	2	3	4	5	8
h. <AHEAD9: ABDE>... how important is a person's race?	1	2	3	4	5	8
i. <AHEAD10: ABDE>... how important is a person's religion?	1	2	3	4	5	8
j. <AHEAD12: ABDE>... how important is being born a man or a woman?	1	2	3	4	5	8

Methods

- **Hypotheses:**
 - **H1:** The inequality beliefs battery will show **more than two dimensions** in the majority of the ISSP countries.
 - **H2:** The items composing the individualist beliefs dimension will be more **central** in the attitude networks of countries characterized by high GINI.

Results

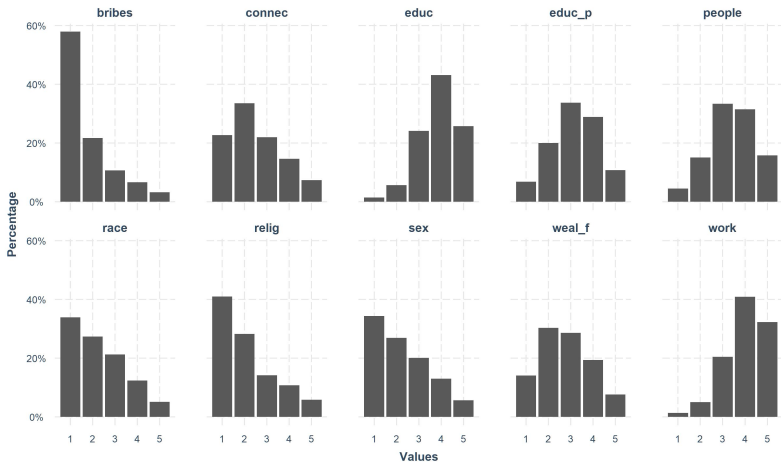


Figure: Inequality beliefs aggregate distribution

One country example: Italy

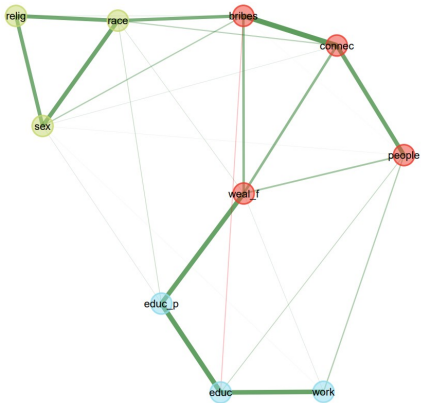


Figure: EGA

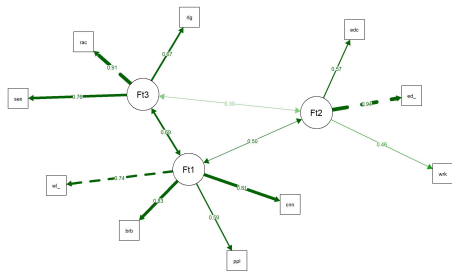
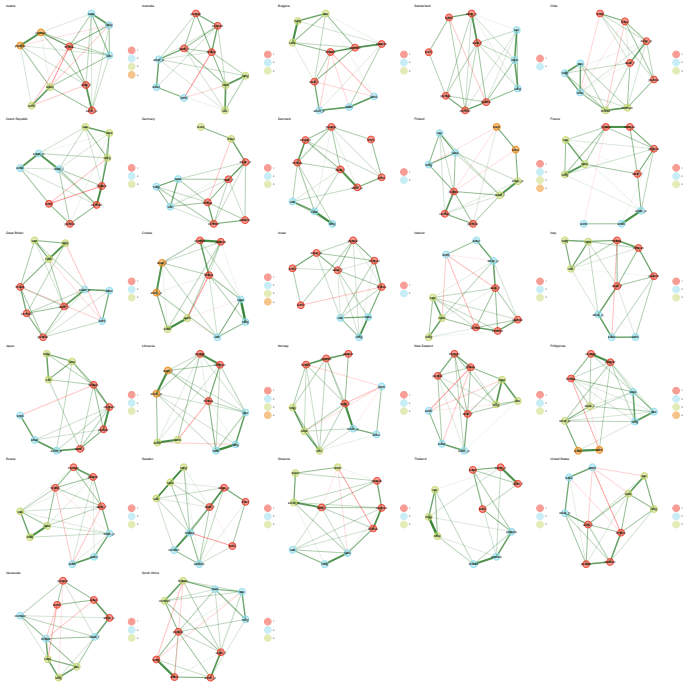


Figure: CFA



H1: Dimensions

Table: Number of clusters by country

2 clusters			3 clusters			4 clusters		
1	DK	Denmark	1	AU	Australia	1	AT	Austria
2	IL	Israel	2	BG	Bulgaria	2	HR	Croatia
3	CH	Switzerland	3	CL	Chile	3	FI	Finland
			4	CZ	Czech Republic	4	LT	Lithuania
			5	FR	France	5	PH	Philippines
			6	DE	Germany			
			7	GB	Great Britain			
			8	IS	Iceland			
			9	IT	Italy			
			10	JP	Japan			
			11	NZ	New Zealand			
			12	NO	Norway			
			13	RU	Russia			
			14	SI	Slovenia			
			15	ZA	South Africa			
			16	SE	Sweden			
			17	TH	Thailand			
			18	US	United States			
			19	VE	Venezuela			

H1: Dimensions

	Country	CFA (EGA)		EFA (2-factors)	
		CFI	RMSEA	CFI	RMSEA
1	Australia	0.97	0.09	0.80	0.18
2	Austria	0.95	0.12	0.76	0.19
3	Bulgaria	0.97	0.13	0.73	0.23
4	Chile	0.97	0.12	0.89	0.13
5	Croatia	0.98	0.14	0.72	0.27
6	Czech.Republic	0.97	0.13	0.83	0.18
7	Denmark	0.96	0.10	0.85	0.14
8	Finland	0.98	0.06	0.79	0.17
9	France	0.98	0.08	0.79	0.20
10	Germany	0.96	0.10	0.85	0.14
11	Great.Britain	0.96	0.11	0.84	0.16
12	Iceland	0.96	0.09	0.84	0.13
13	Israel	0.95	0.09	0.88	0.11
14	Italy	0.96	0.13	0.81	0.18
15	Japan	0.98	0.12	0.81	0.21
16	Lithuania	0.98	0.12	0.75	0.24
17	New.Zealand	0.96	0.10	0.81	0.16
18	Norway	0.96	0.10	0.81	0.16
19	Philippines	0.99	0.08	0.78	0.18
20	Russia	0.94	0.13	0.67	0.21
21	Slovenia	0.94	0.12	0.79	0.16
22	South.Africa	0.91	0.17	0.84	0.15
23	Sweden	0.98	0.08	0.84	0.17
24	Switzerland	0.95	0.09	0.84	0.13
25	Thailand	0.98	0.10	0.73	0.21
26	United.States	0.93	0.13	0.80	0.17
27	Venezuela	0.91	0.12	0.90	0.11

H2: Centrality - GINI

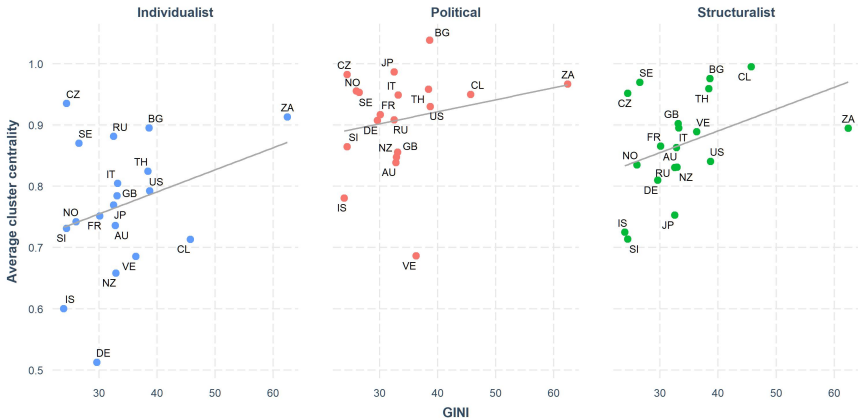


Figure: Average cluster centrality of inequality beliefs across contemporary societies (with 3 clusters), by GINI

H2: Centrality - GINI

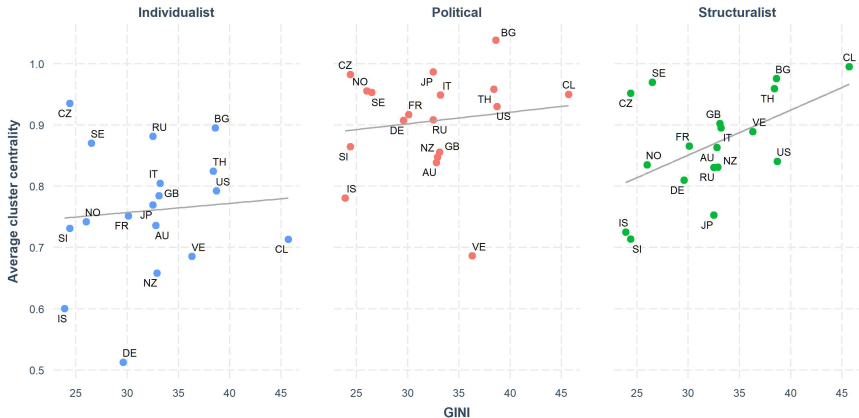


Figure: Average cluster centrality of inequality beliefs across contemporary societies (with 3 clusters), by GINI. Without ZA.

Conclusions

- Inequality beliefs are structured in **more than two clusters** in the vast majority of contemporary societies.
- Contrary to our expectations, the **average centrality of the individualist cluster was not significantly higher** in countries characterized by high GINI, as the structuralist one.
- Future studies can incorporate the **political cluster of inequality beliefs** in two directions:
 - ① **Within societies**, to investigate which population segments are more likely to endorse it.
 - ② **Between societies**, to understand its relative weights in different contemporary societies.

Bibliography

Crawford, A. V., Green, S. B., Levy, R., Lo, W. J., Scott, L., Svetina, D., & Thompson, M. S. (2010). Evaluation of parallel analysis methods for determining the number of factors. *Educational and Psychological Measurement*, 70(6), 885-901.

Dalege, J., Borsboom, D., Van Harreveld, F., Van den Berg, H., Conner, M., & Van der Maas, H. L. (2016). Toward a formalized account of attitudes: The Causal Attitude Network (CAN) model. *Psychological review*, 123(1), 2.

Epskamp, S., Waldorp, L., Möttus, R., & Borsboom, D. (2018) The Gaussian Graphical Model in Cross-Sectional and Time-Series Data, *Multivariate Behavioral Research*, 53:4, 453-480, DOI: 10.1080/00273171.2018.1454823

Golino, H. F., & Epskamp, S. (2017). Exploratory graph analysis: A new approach for estimating the number of dimensions in psychological research. *PLoS one*, 12(6), e0174035.

Golino, H., Shi, D., Christensen, A. P., Garrido, L. E., Nieto, M. D., Sadana, R., ... & Martinez-Molina, A. (2020). Investigating the performance of exploratory graph analysis and traditional techniques to identify the number of latent factors: A simulation and tutorial. *Psychological Methods*, 25(3), 292.

Green, S. B., Redell, N., Thompson, M. S., & Levy, R. (2016). Accuracy of revised and traditional parallel analyses for assessing dimensionality with binary data. *Educational and Psychological Measurement*, 76(1), 5-21.

Haslbeck, J., & Waldorp, L. J. (2015). mgm: Estimating time-varying mixed graphical models in high-dimensional data. *arXiv preprint arXiv:1510.06871*.

Kluegel, J. R., & Smith, E. R. (2017). *Beliefs about inequality: Americans' views of what is and what ought to be*. Routledge.

Keith, T. Z., Caemmerer, J. M., & Reynolds, M. R. (2016). Comparison of methods for factor extraction for cognitive test-like data: Which overfactor, which underfactor?. *Intelligence*, 54, 37-54.

Mijs, J. J. B. Inequality Is a Problem of Inference: How People Solve the Social Puzzle of Unequal Outcomes. *Soc* 8, 64 (2018).

Ruscio, J., & Roche, B. (2012). Determining the number of factors to retain in an exploratory factor analysis using comparison data of known factorial structure. *Psychological assessment*, 24(2), 282.