# The Italian IPBS

## 1. Introduction

* What are pbs
* why they matter
* how they were studied
* what did they find
* How i will study them
* What i find

## 2. Theory

### 2.1 From Converse to Belief network analysis

* Summary of Converse
* Summary of Bouty and more recent works
* Shortcomings of their methods

### 2.2 Partial correlation networks

* Network approach to belief system (from Brandt to method)
* Findings of this literature
* Main advantages of this method

### 2.3 Research hypotheses

* introduce the Italian Case
* H1, constraint hypothesis
* H2, rival constraint hypothesis
* H3, heterogeneity hypothesis

## 

## 3. Method

### 3.1 Data and variables

Testing our research hypotheses requires data on a vast spectrum of socio-political attitudes. Accordingly, our analyses rely on wave five of ResPOnsE data, an Italian dataset endowed with a Rolling Cross Sectional [RCS] design (Vezzoni et al., 2020)[[1]](#footnote-1). The sample is obtained with quotas for the area of residence, gender, and age group, and it is gathered by an online panel from a commercial research institute (SWG SpA). Wave five was fielded between 20 October to 15 December 2022, through a multipurpose CAWI questionnaire. The other waves of this dataset mostly focus on the pandemic. However, the selected wave was fielded immediately after the elections and therefore included numerous variables tapping into symbolic and operational components of the Italian political belief system. ResPOnsE is composed of a core module and other thematic sections. The former section of the questionnaire was shown to 9273 individuals. A random sub-portion of the respondents compiled the political module, where most of the variables included in these analyses were placed. After list-wise deletion, we work with a sample of 1149 respondents. The final sample overrepresents males (639 respondents are males, 510 are women) and is skewed towards an older sociodemographic profile (the mean age in the sample is 53 years, against the national mean of 46.4[[2]](#footnote-2)).

Table 1: Label and Question of each attitudinal item

|  |  |  |
| --- | --- | --- |
| **Label** | **Question** | **Scale** |
| L\_R | Many people when talking about politics use the terms "left" and "right." Thinking about your political views, where do you stand? | 0 (Left)  10 (right) |
| PTV\_PD | [Among the various parties we have in Italy, each would like to have your vote in the future. Regardless of how you plan to vote in the next election,] how likely are you to vote for the Partito Democratico in the future? | 0 (Not likely)  10 (Very likely) |
| PTV\_FI | [...] how likely are you to vote for Forza Italia in the future? | 0 (Not likely)  10 (Very likely) |
| PTV\_L | [...] how likely are you to vote for Lega in the future? | 0 (Not likely)  10 (Very likely) |
| PTV\_M5S | [...] how likely are you to vote for the 5 Stars Movement in the future? | 0 (Not likely)  10 (Very likely) |
| PTV\_FDI | [...] how likely are you to vote for Fratelli d’Italia in the future? | 0 (Not likely)  10 (Very likely) |
| adopt | [On political issues people have different opinions. What is your level of agreement with the following statements? Do you strongly agree, somewhat agree, slightly agree, or strongly disagree?] Gay and lesbian couples should have the same right to adopt a child as heterosexual couples | 1 (Disagree)  4 (Agree) |
| abort\* | [...] Abortion must be made more difficult | 1 (Disagree)  4 (Agree) |
| eutha | [...] Euthanasia should be legal | 1 (Disagree)  4 (Agree) |
| marria | [...] Legalization of same-sex marriage is a good thing | 1 (Disagree)  4 (Agree) |
| redis | [Now we would like to know your opinion on some political issues. For each of the following statements, indicate your position on a scale ranging from 1=completely disagree, to 6=completely agree. If your opinion is roughly in the middle between the two, you may choose any other point on the scale.] It is necessary to reduce income differences between those with high incomes and those with low incomes. | 1 (Disagree)  6 (Agree) |
| flat\_t | [...] It is necessary to introduce a flat tax (fixed tax rate, regardless of income). | 1 (Disagree)  6 (Agree) |
| m\_wage | [...] A minimum hourly wage must be introduced by law. | 1 (Disagree)  6 (Agree) |
| cit\_in | [...] It is necessary to maintain a guaranteed citizenship income for those below the poverty line. | 1 (Disagree)  6 (Agree) |
| globa\* | [...] It is necessary to limit economic globalization. | 1 (Disagree)  6 (Agree) |
| immig | [...] It is necessary to give citizenship more easily to the children of legal immigrants born and raised in Italy. | 1 (Disagree)  6 (Agree) |
| big\_go | Some say taxes should be reduced even at the cost of reducing public services. Others say services should be expanded even at the cost of raising taxes. Where would you place your opinion on a scale of 1 to 7? | 1 (Lower taxes)  7 (Extend public services) |
| pub\_pri\* | Resources to counter the negative effects of unemployment are limited. In such a situation, do you think it is more effective to give subsidies to people in economic hardship or to help businesses that hire? Please indicate where you would place your opinion on a scale of 1 to 7. | 1 (give subsidies)  7 (help businesses) |
| ukrai\* | Thinking about the war in Ukraine, do you favor or oppose supplying arms to Ukraine | 1 (Favor)  4 (Oppose) |

Table 1 reports labels and survey questions of each attitudinal variable featured in the analyses. Symbolic components were surveyed with left-right self-placement and Propensity To Vote [PTV] items. The first item is the most established item investigating attachment to the left and right political labels, and it is often utilized as a proxy of political ideology. To refine the measurement of this multidimensional concept (Malka et al., 2019), we rely on a set of variables measuring respondents’ attachment to the most important Italian parties. The PTVs require respondents to abstract from the present, by indicating the likelihood they will vote for a given party in a generic and future election, regardless of their attachment to any other political formation. Hence, these items capture the electoral utility voters gain by casting a vote for a party (van der Eijk et al., 2006). Most of the selected variables are operational issues. We include four variables tapping into ethical issues. We include variables regarding adoptions by homosexual couples, abortion, euthanasia, and homosexual marriage, as they were all salient in recent years in the Italian context. Indeed, the recognition of homosexual couples in Italy was only obtained in 2016, with the Cirinnà law. Due to the heated political debate around it, the law finally excluded any reference to the adoption by same-sex couples (Di Nicola, 2016) leaving both the rightist and leftist Italian parties unsatisfied. Abortion has been allowed in Italy since 1978 (Caldwell, 1981), but the conspicuous number of abstentionist doctors often impedes the concrete availability of this right. Finally, euthanasia recently entered the Italian political arena, asthe *policy entrepreneur* Marco Cappato politicized the issue by assisting an Italian citizen willing to adopt such a practice (Vergallo, 2019). Finally, we include other variables that measure support for the main policy proposals of the most important Italian parties and towards issues that infrastructure the political competition globally. We study economic attitudes through four items. One insists on income redistribution, another on the preferred role of the government (interventionist versus liberal). The third one regards the desired policies to fight unemployment (subsidies to the people versus helping business), and the final one taps into attitudes towards globalization. We expect these attitudes to be prominent in the political belief system, as inequality is described as the main issue informing left-right self-placement (Bobbio, 1996). To enhance the validity of our operationalization of the Italian political belief system, we designed four survey questions dealing with the most important issues advocated by the biggest political parties. We included attitudes towards the *flat tax*, minimum wage, citizenship income, and immigration since -during the electoral campaign- they were respectively at the center of the political communication of the League, PD, and 5SM (Bertero & Scaduto, 2023). Lastly, we included an item regarding the war in Ukraine.

### 3.2 Network estimation

We estimate Pairwaise Markov Random Fileds [PMRF], which are network models rendering survey variables as nodes connected by edges indicative of the unique variance shared between each pair of items (Lauritzen, 1996). These models differ in two substantial aspects from those applied in Belief Network Analysis, which are correlational networks. First, in correlational networks edges represent the absolute value of each correlation occurring between the selected survey items. This entails that edges are weighted, but not signed. Thus, these models are not able to capture the heterogeneities that may occur between belief systems of different population strata. Second, many of the modeled edges are likely to be spurious, as pairwise correlations do not take into account the role of any possible confounding factor. PMRFs ensure higher model parsimony, as edges are obtained by estimating the relationship between each pair of beliefs, after controlling for every other node in the network.

Drawing from the literature on political belief systems (Brandt et al., n.d.; Brandt & Sleegers, 2021)we apply Gaussian Graphical Models [GGM] (Epskamp et al., 2018). In a GGM, edges represent regularized partial correlations. Indeed, correlations are labeled as *partial* because of the control for the effect of every node. Moreover, they are *regularized* because GGM involves statistical regularization techniques. We implement the following steps to fit the GGM models. First, we compute a matrix of correlation coefficients between survey items. Following past research, we calculated Pearson correlations for continuous variables and polyserial correlations for ordinal and continuous variables (Boutyline & Vaisey, 2017); we treated variables with seven or fewer responses as ordinal and ten points-scaled variables as continous (Brandt et al., n.d.). Second, as GGM assumes multivariate normality (Epskamp et al., 2018), we implement nonparanormal transformations of each variable (Keskintürk, 2022b, 2022a).

Third, we obtain partial correlations by inverting the variance–covariance matrix of the selected variables (Epskamp et al., 2018). With this step we are able to isolate the portion of unique variance shared by each pair of beliefs, as partial correlations are computed taking into account the control for each node in the network. Fourth, we adopt regularization techniques to exclude weaker edges from the model, increasing the parsimony of the model (Dalege et al., 2017). The regularization technique of choice is a variant of the least absolute shrinkage and selection operator (Tibshirani, 1996) called graphical LASSO, which directly penalizes elements of the inverse variance-covariance matrix (Friedman et al., 2008). The graphical LASSO relies on a tuning parameter that regulates the level of edge shrinkage (Epskamp et al., 2018). The appropriate value is found by minimizing the Extended Bayesian Information Criteria (Chen & Chen, 2008). This procedure was extensively validated in dedicated studies (Epskamp et al., 2018; Epskamp & Fried, 2018; Foygel & Drton, 2010).

### 3.3 Measuring Constraint

In correlational networks, the constraint of a political belief system is measured as the absolute value of the mean of all network edges (Boutyline & Vaisey, 2017; Converse, 2006; Keskintürk, 2022b, 2022a). To our knowledge, no empirical contribution of applied a measure of constraint to a partial correlation network. However, in PMRF model many studies examined network connectivity

### 3.4 Capturing differences in belief systems

### 3.5 Robustness check

## 4. Results

Figure 1: Average political belief system of the full sample

Figure 2: Constraint by levels of political interest and education

Figure 3: Political belief system of different voters

Figure 4: Heterogeneity of political belief systems of different voters

## 5. Discussion

* Summary of results
* Should we move away from cor networks?
* How big are the differences between belief systems?
* Do belief systems differ the most according to left/right or according to voting behavior?

## 5. Conclusion

* Strength
* Limitation

## 6. References

1. The potential of the RCS design was not exploited in this work. The final sample is obtained by merging the responses of all individuals who participated in the data collection. This is methodologically feasible due to the random assignment of respondents to the day of completion, which assures time is a random variable (for a thorough discussion of this survey design see Vezzoni et al., 2020). [↑](#footnote-ref-1)
2. Source: <https://www.statista.com/statistics/569187/average-age-of-the-population-in-italy-by-region/#:~:text=The%20population%20of%20Italy%20is,significantly%20depending%20on%20the%20region>. [↑](#footnote-ref-2)