A Bayesian approach for measuring Euroscepticism in EU member states

Opinion polls regularly ask citizens what they think of their country's EU membership, yet it can be difficult to compare these responses across countries and over time. Drawing on new research, **Michele Scotto di Vettimo** *presents a Bayesian approach for solving this problem.*

Public attitudes towards EU integration have now become central to the understanding of what is being decided at the European level, as well as to national level party strategies. But how do we actually measure such attitudes? The academic literature on EU support has come up with various solutions to this problem, but these approaches often fall short of producing measures that are satisfying from both an empirical and theoretical perspective.

For instance, it is possible to use the various cross-national surveys asking different questions related to EU support. These questions have an equivalent wording across countries and are asked at more or less the same point in time. However, relatively few questions are available for long time periods and most items have experienced changes in the question wording that hamper their comparability over time. Additionally, each question might be understood differently in each EU member state and, as the 'benchmark theory' of EU support maintains, respondents' answers are strongly affected by their national context.

Scholars have therefore started to look at ways of combining the information from multiple survey questions, with the assumption that variations in the responses to available questions reflect something more general than attitudes towards the particular item asked. In a new study, I propose a Bayesian approach to item response theory to uncover latent support for European integration starting from the observed responses to various questions that tap into different aspects of EU support.

Put simply, I treat support for European integration as a latent 'attribute' that respondents possess. Now, imagine we want to measure respondents' support for the EU by asking them a few questions related to different aspects of EU support, more or less as if we would like to capture their mathematical knowledge by asking questions about algebra and so on. We know that the probability that they will answer in a pro-European way is determined by three factors.

Firstly, the higher the individual's support for the EU, the more likely they are to give a pro-EU answer to the question asked. Secondly, each question has intrinsic difficulty. For instance, we would expect it to be more 'difficult' to answer in a pro-European way a question asking whether the EU should become a federation rather than a question asking whether more EU action is needed on matters related to development cooperation. Finally, changes in the respondent's support for Europe affect the likelihood of answering in a pro-European way, but the effect of these changes is not constant across all questions. For example, some questions are more indicative of the underlying latent support (a property called 'discrimination'), whereas others are weakly reflective of latent support.

In an ideal situation, by knowing each question's difficulty (point 2 above) and discrimination (point 3), and the distribution of EU support in the population (point 1), it should be possible to predict the percentage of pro-European responses to a specific question asked at a given point in time. Yet, we find ourselves precisely in the opposite situation. In fact, survey data tells us only what the true number of pro-European responses to a specific question is.

A Bayesian approach

To solve this problem, a Bayesian approach can be used to proceed 'backwards' and determine the most likely values of the question's difficulty and discrimination, and therefore the level of EU support given the observed response patterns. More technically, Bayesian item response theory starts from some prior information about the probability distribution of these unknown quantities, then looks at the observed survey responses and estimates the probability that the data could be generated by a process with a given combination of these unknown quantities. In this application, the core 'quantity' I am interested in is the latent level of support, and this approach is used to calculate the most likely value of support starting from the observed response patterns to selected questions.

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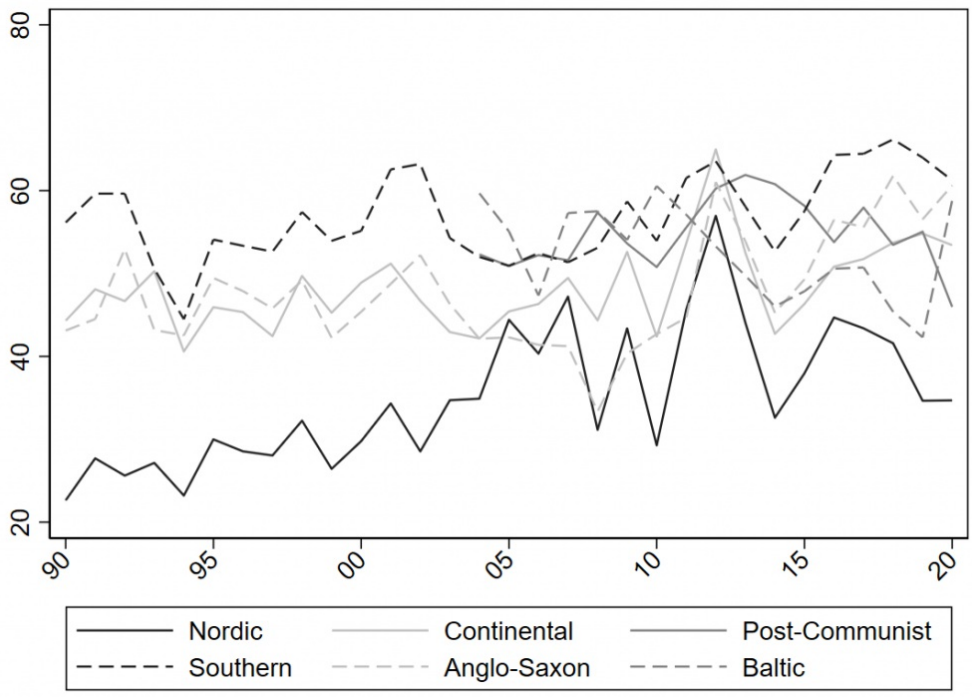
The estimation produces annual measures of EU support for all EU member states and the EU as a whole from 1973 (or from when Eurobarometer data is available) to 2020. The series can be interactively browsed here. Though the core contribution of my study is mostly methodological (i.e., to present and validate a measurement technique that could better accommodate the conceptual properties of EU support), another substantive contribution brought by this estimation technique is the measurement of policy-specific support for EU integration.

The EU landscape is characterised by the lack of long trends of public preferences towards integration in specific policy fields. Nonetheless, there are different indicators, asked with varying regularity, measuring support for specific EU decision or policy initiatives. Though these items, on their own, offer only issue-specific information about public preferences for EU integration in a specific area, they can be grouped into policy areas and used in a Bayesian item response theory model to produce estimates of public support for EU integration in that area.

To the extent that it is possible to identify an appropriate set of indicators, this solution can be applied to various policy areas, and it can be used to learn more about cross-national dynamics of EU support in specific domains. For instance, it has been shown that EU support is inversely related to public spending on social protection, as citizens see EU integration as a threat to a powerful welfare state. With the proposed strategy, we can assess whether this dynamic is also visible with regard to aggregate preferences for EU integration in social affairs more specifically.

Figure 1 plots the average support for six groups of countries reflecting an adaptation of Esping-Andersen welfare models to EU-28 countries. Despite some signs of convergence in recent years, the difference between countries with comparatively higher levels of transfers and equity like the Nordic ones and Southern, Baltic and Post-Communist countries is particularly suggestive, as the pattern is in line both with the literature on the relation between EU support and welfare policies and with the implications of the benchmark theory of EU support. I also explore the cross-country differences with regard to support for EU integration in asylum and immigration policies, fiscal and economic matters, and market and consumer policies. All trends can be visualised at this link.

Figure 1: Support for EU integration in social affairs by type of welfare model



***Note*: For more information, see the author's accompanying paper at European Union Politics**

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To conclude, I show that the use of a Bayesian item response theory approach represents a valuable contribution to the study of population-level support for the EU. This methodology can easily accommodate the interruptions in a specific data series and starts from a grounding in an individual-level model of response.

Additionally, this methodological novelty comes with empirical gains. The approach frees the researcher from over reliance on a narrow set of existing single-question indicators which may or may not fit well with the analysis at hand, and may sometimes not even be available for a specific task. In this respect, it has clear potential to help researchers address the lack of policy-specific measures of EU support starting from aggregate-level data.

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Note: This article gives the views of the author, not the position of EUROPP – European Politics and Policy or the London School of Economics. Featured image credit: CC-BY-4.0: © European Union 2020 – Source: EP

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