

Network Analysis of Parliamentary Voting: Uncovering Coalition Dynamics in the Polish Sejm

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Abstract

This talk introduces a novel approach to analyzing voting behavior and coalition structures in parliamentary systems through the use of complex network analysis techniques. A network representation of parliamentary voting will be constructed, where nodes represent members of parliament, and weighted edges capture the similarity in their voting patterns over time. By applying community detection methods, emergent coalition structures will be identified directly from voting behavior, without relying on prior knowledge of party affiliations. The internal structure and cohesiveness of these communities will be further analyzed using core-periphery measures.

The method will be applied to data from Sejm, the lower house of the Polish parliament. The heterogeneity of both the ruling coalition and the opposition and their changes over time will be studied. Quantitative metrics for party polarization, coalition cohesiveness, and government stability based on topological features of the voting network will be introduced. Our findings reveal increasing polarization between government and opposition blocs, while also uncover nuanced dynamics within coalitions, such as the shifting positions of parties following internal splits.

Keywords

Opinion dynamics, Social network analysis, Community detection, Voting dynamics

Current status of the research is: Work-in-progress