

# Analyzing the evolution of the European Parliament Social Network

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# Introduction

## The European Parliament



We are analyzing a dataset of European Parliament members.  
Our dataset is a list of ammendments.

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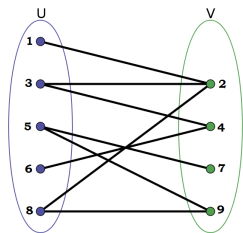
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A bipartite graph:



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- Edges: 2 MEPs are connected if they amended the same document

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Analysis of the EP has to take into account the committees, as they are important units for how work in the EP is distributed

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We will try to analyze changes in the operations of these committees as well

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All of these are helpful in understanding the processes regarding proposals and how they evolve into enacted laws.

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- Centrality of groups/MEPs
- Cohesion of the network

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- Betweenness centrality

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$$\text{cohesion} = \frac{\# \text{edges}}{\binom{n}{2}}$$

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- Biggest component vs the whole graph

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- The more a party is willing to cooperate with outside MEPs the more its centralities will be.
- If one party has an interest in a particular topic, pushing its agenda will make it more central and cohesive
- If a topic deeply divides the European Parliament then one would expect the centrality indexes of groups to dwindle

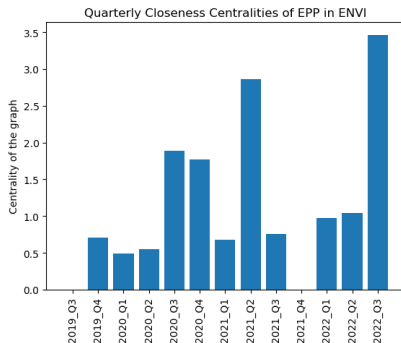
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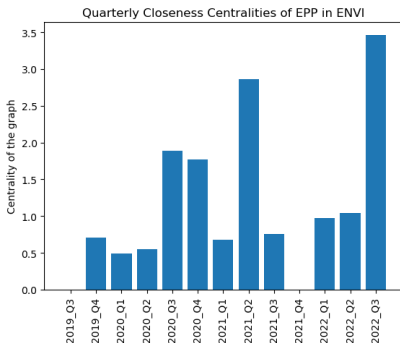
Closeness of EPP party in ENVI:



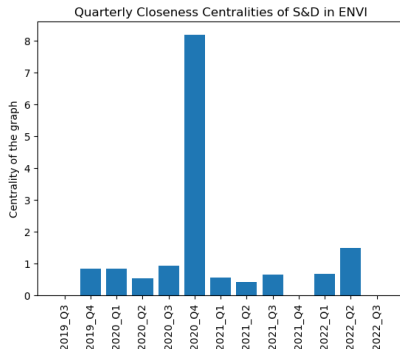
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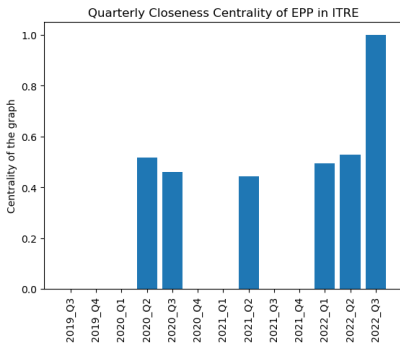
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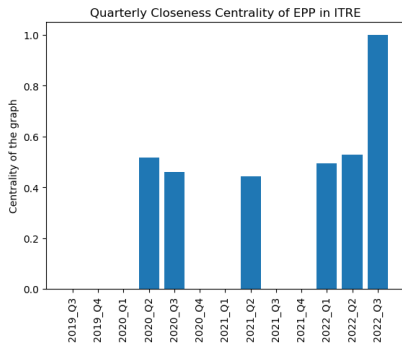
Closeness of EPP party in ITRE  
greatest component:



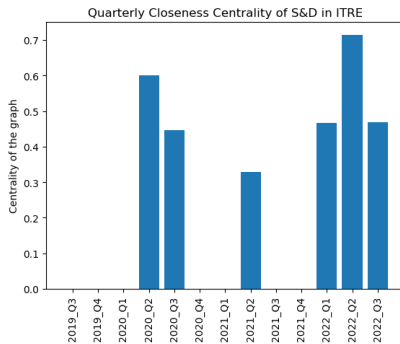
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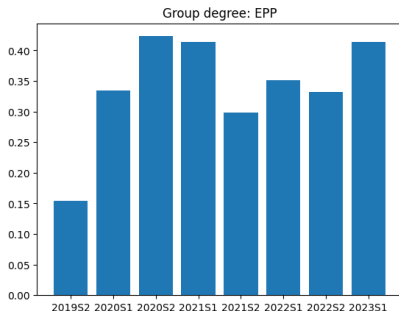
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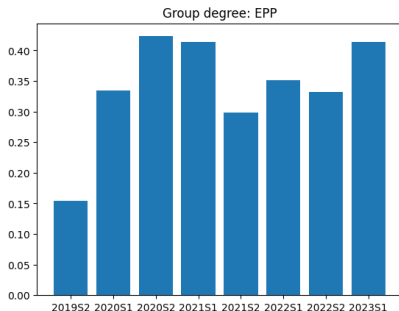
Degree centrality of EPP in the largest component:



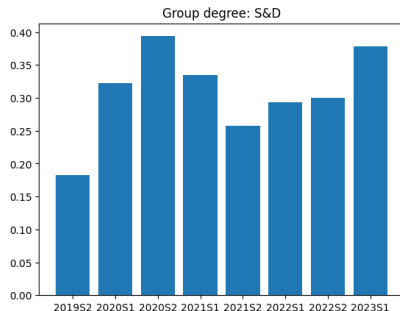
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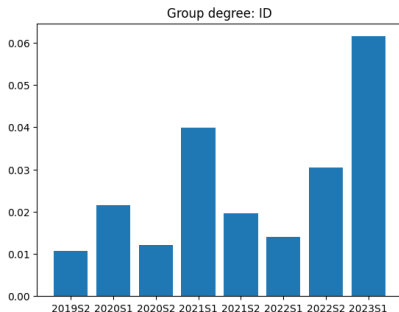
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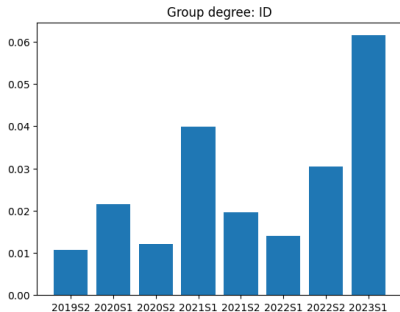
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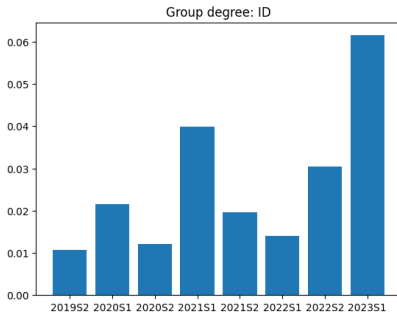
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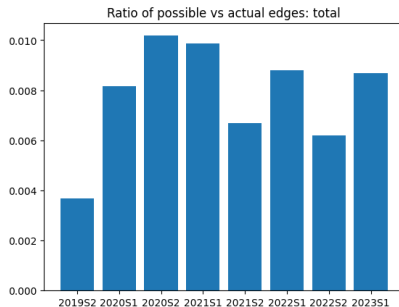
General results: cohesion decreased across the board, with some exceptions.

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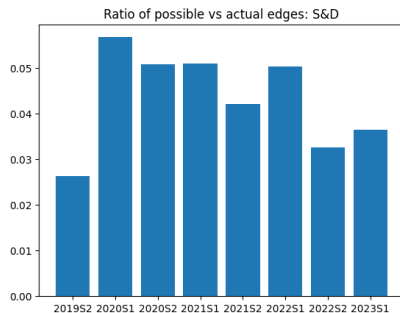
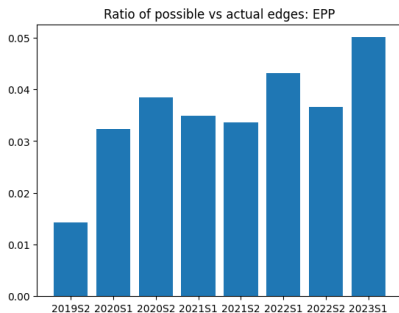


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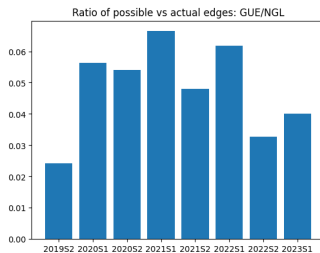
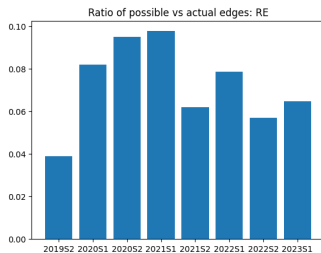


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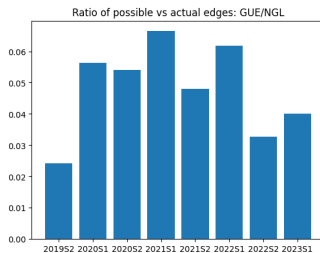
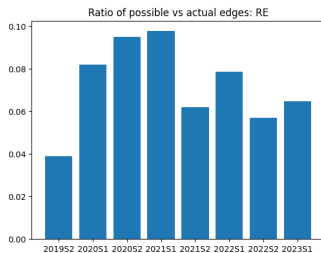
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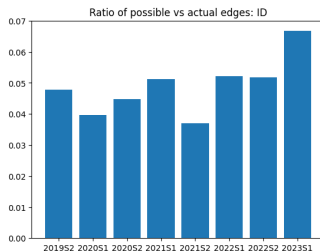
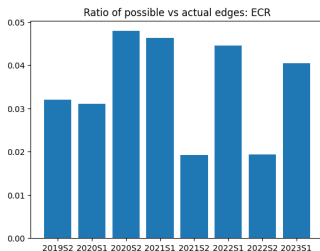
We see a notable decrease over time

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The cohesion of ECR and ID (both right-wing parties)

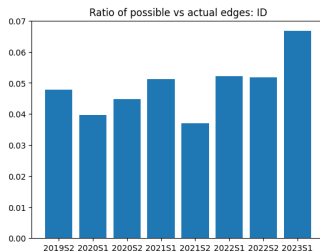
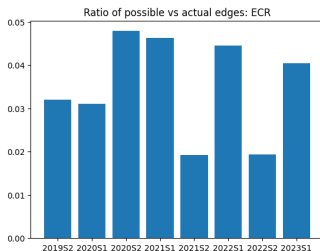
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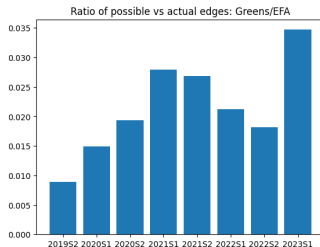
We mostly see stagnation

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The cohesion of the Greens (left-leaning 'green' party)

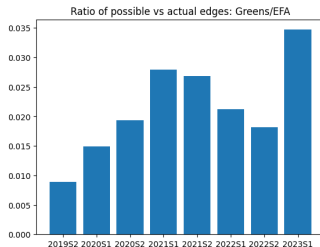
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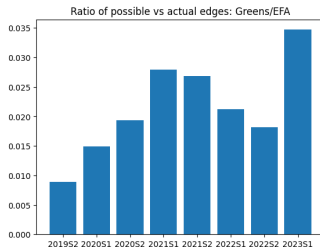
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This one shows no clear trends, and the spike in the last semester is mysterious and unexplained



# Cohesion conclusions

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The overall cohesion of the network is decreasing

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The future of the EP is probably going to be decided by a right-wing coalition

Thanks for watching