



Class project step 3- subgroups

Deadline 25th may



Sub group detection: purpose and interpretation of results

The results of subgroup detection can be interpreted in a variety of ways

1) Distinguish the individual actors who belong to subgroup (insiders, members) and who doesn't (outsiders, non-members)

- What are their characteristics? are subgroup members more similar to each other with regard to some attribute than to outsiders? For instance are they raised in Lisbon vs. raised in other cities of the country? Which is their nationality? are they the worst/best students?
- to what degree do members of different cliques (or clique overlap cluster) vary in attributes such as age, level of social support, geographic distance? (You can also use the information you get from other sources (knowledge of the field through observation etc)
- **The same for those who are not in cliques.** What characterises them? What attributes characterise them?

Sub group detection: purpose and interpretation of results

2) Distinguish the subgroups

- The objective is to analyse the subgroups in themselves : how many are they ? Which is their dimension? How to they differ from each others ? What are the behaviours, attitudes, beliefs , culture of the group ?
- The analysis of subgroups complements that analysis obtained through centrality measures
 - Do given subgroups join the most central actors with other more central actors or are they in separate subgroups? Do the most central actor mix with others?

Sub group detection: purpose and interpretation of results

3) Use the information from subgroups to describe the network as a whole

- The objective is to detect fragmentation of the network into different subgroups, and the degree of overlap between subgroups
 - is the network ONE cohesive “subgroup” i.e. Do subgroups members overlap a lot?
 - Or is the network fragmented in two or more subgroups (that do not share subgroups)?
 - what may the effect of this subgroup’s pattern on , for instance, the capacity of the network to innovate, or to behave in a coordinated manners (cooperate)as a whole?

TO DO :Subgroups- Component

- By measuring the components you get information to describe the network as a whole
- Find number and dimension of components
- Use symmetric (weak components) or asymmetric (strong components) data depending on what makes sense and does not alter the meaning of the relation
 - Always inform whether you are using weak or strong components

TO DO : Subgroups - Cliques detection

- Identify the number and size of cliques as well as the clusters of clique overlap obtained from the hierarchical clustering given in UCINET outputs in each of the matrix of your study
- Network>subgroups>cliques : identify
 - # of cliques; their dimension (approximate – a majority of cliques size 3, 4, 5 ...) ;
 - # of clusters of clique overlap ?
- Who is gathered in the same clusters? On what basis do you differentiate clusters amongst themselves? E.g. nationality, participation in some ISEG groups, performance, place of living.
- What are the main differences among the different matrices?

TO DO : Sub groups : Characterise the individual actors in⁷ the clusters

Characterise the individual actors in the clusters

A- Those who are in cluster with strong overlap

- How are they characterised ? Based on centrality measure or a variety of attributes of interest
- You can also use the information you get from other sources (knowledge of the field through observation etc)

B- Those who are not in clusters?

- What characterises them? (Based on centrality measures ex: they may have low degree but high betweenness)
- What attributes characterise them (are they the poorest/richest, the oldest/youngest, the worst/best students?)

TO DO : Homophily among attribute based subgroups

- Use two of the attributes to characterise the tendency to homophily in one matrix pertaining to social behaviour and one matrix pertaining to professional behaviour
- Use the E-I index measure
- What homophily levels do you find and how can you explain them based on what you know, from life experience, about these groups?

TO DO General question integrating the 3 levels of analysis

- What do you think of this group of students? Will they keep together after the university is over? Who might have an important role in keeping the group together? Why?
- You should use information from the 3 levels of analysis, individual, subgroup and whole network

Deadline – 25th may

- Hand-in and submit by e-mail up to the 25th may
- Also hand in the original questionnaires

Informal presentations ; 22nd may

- I will give instructions - in Aquila friday- , but the idea is for us all to grasp the differences and curiosities of the networks among each degree. For the presentation you just need to copy/paste the work done so far for the class project and explain it
- We may need to extend the class up half an hour
- In exchange the class of the 17th will be for you to ask me information/get help in case of need for the class project