# Methods for Social Network Analysis

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## ABSTRACT

SNA (social network analysis) is a strategy for investigating social structure through the use of network and graph theories. The social network perspective encompasses theories, models, and applications that are expressed in terms of relational concepts or processes' social network Along with growing interest and increased use of network analysis has come a consensus about the central principles underlying the network perspective. In addition to the use of relational concepts, we note the following as being important. Social Network Analysis (SNA) has received good attention in methodological approaches in the social sciences. Recent mathematical way and user's computer programmes for enhancing and measuring networks have led to significant advances in quantitative SNA. Amidst these developments, however, there have been calls for the revival of qualitative approaches to social networks, not necessarily to replace quantitative methods, but to complement them. Quantitative approaches map and measure networks by simplifying social relations into numerical data, where ties are either absent or present. Qualitative approaches, on the other hand, enable analysts to consider issue relating to the construction, reproduction, variability and dynamics of complex social ties.

**Keyword**- software network analysis, social sciences, construction

## INTRODUCTION

Social Network Analysis (SNA) has developed (i.e. the 'outsider' view of the network), and rather than 'individual attributes' (Burt 1978).
The interactional 'processes' which go generated The 'social network' at the focus of inquiry  these structures, and have to be understood consists of a set of actors and a set of relations for exploring the 'matter and perception of between them (Wasserman and Faust 1994).the network ( the 'insider' view of the Quantitatively-driven SNA generates numerical network SNA also holds particular interest data on social relations by using quantitative because of its specific history as an methods like surveys, and maps and measures structural properties of social networks using revealing quantitative techniques (Carrington et al. 2005) The issue combining quantitative and qualitative approach. To SNA is of particular interest unparticular interesting the wider context of debates over mixing methods in the social sciences This because some network analysts have argue not only that it is desirable to combine quantitative and qualitative methods, but that SNA represents a specific opportunity to many methods because of its dual interest in both the 'Structure' or 'form' of social relations interdisciplinary field. It developed both from basic mathematical advancements in sociometry and graph theory (Moreno 1934), and from early ethnographic studies of the structures of kinship and interpersonal relations carried out by anthropologists.SNA either requires data on the 'whole network', in which case boundaries of the population of interest must be drawn, or upon 'personal networks', where all the ties of an individual 'ego' are recorded along with the ties between their

'alters'. These are called 'ego- networks' (see Bott 1957; Mitchell 1969; Fischer 1982; Wellman 1990, for classic research examples) Qualitative SNA has tended to focus upon personal networks rather than whole network

**Software application:**

- INSNA links to network analysis software packages
- UCINET: Network Analysis program. Available through: http://www.analytictech.com
- ANTHROPAC: Helps collect and analyze structured qualitative and quantitative data including free lists, pile sorts, triads, paired comparisons, and ratings. ANTHROPAC's analytical tools include techniques that are unique to Anthropology, such as consensus analyze, as well as standard multivariate tools such as multiple regression, factor analysis, cluster analysis, multidimensional scaling and correspondence analysis. In addition, the program provides a wide variety of data manipulation and transformation tools, plus a full-featured matrix algebra language.
- FATCAT:A different kind of network analysis program. FATCAT works with categorical who-to-whom matrices, in which we select a variable that describes nodes to determine the categories for rows () and another one to determine the categories for columns (whom).
- VISONE: Network visualization. http://www.visone.com
- PAJEK: Package for large network analysis
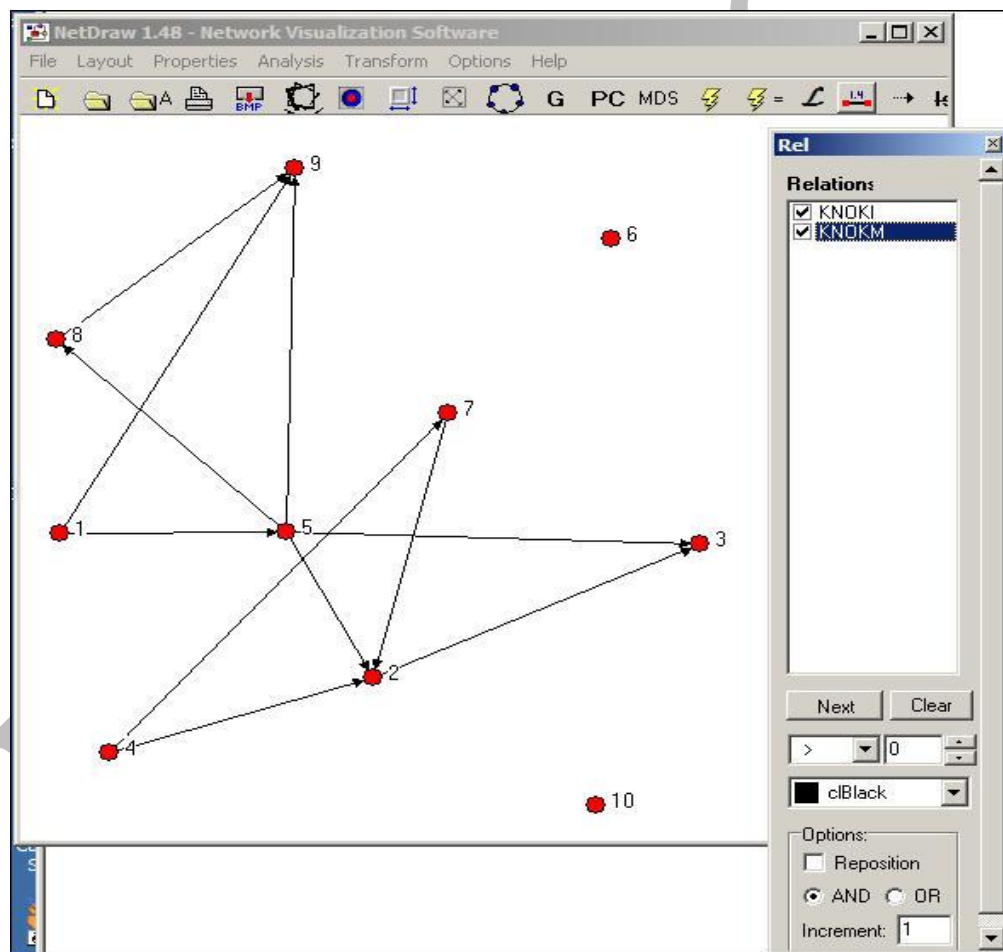


**Ucinet example of net draw for realtion view and insertion**
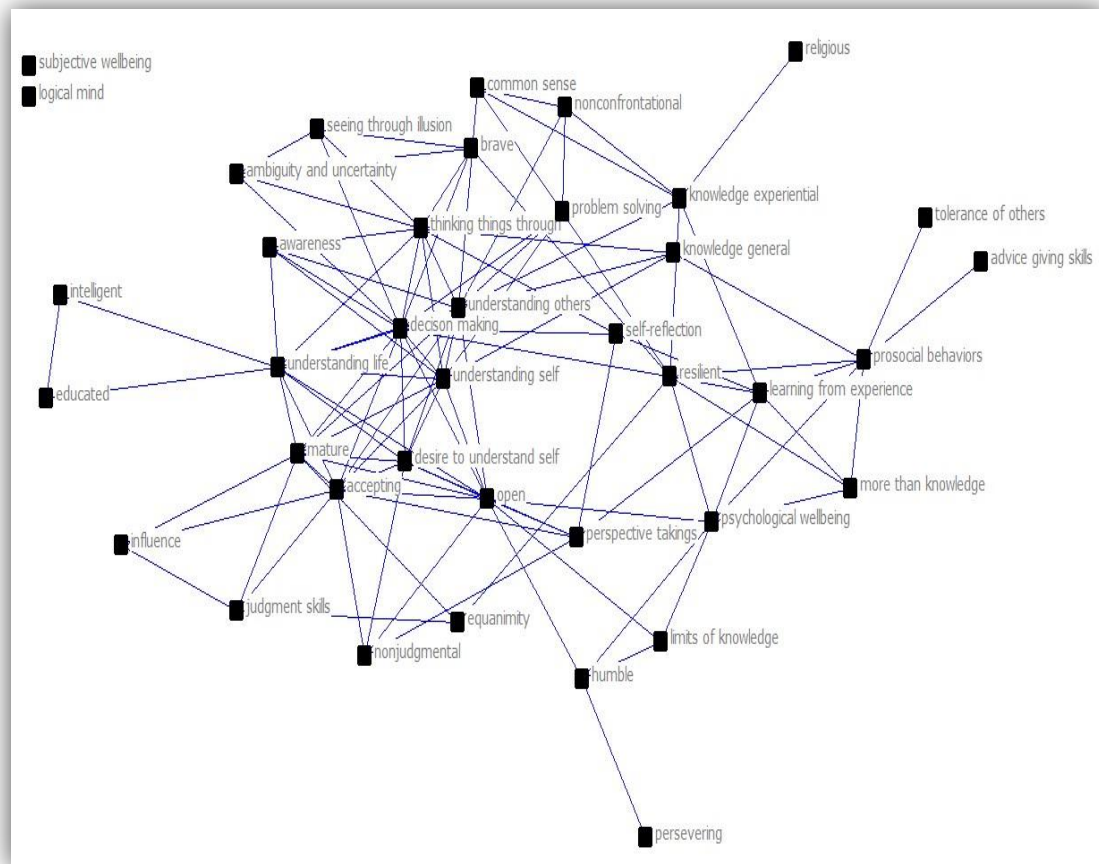
Relational graph drawn from UCINET and net draw on the wisdom nominee. Visual network maps, also called 'sociograms', can be produced by visualizing the data in the matrix. In contrast to qualitative SNA therefore, the visualization of the network usually takes place after the data collection stage rather than during it (although see Hogan etal. 2007 for an instance where participatory mapping is used during interview and then converted into a data matrix for quantitative analysis). o construct a class sociogram, ask each pupil to confidentially list two students to work with on an activity.  The topic does not matter; in most cases the social relationships will be relatively constant regardless of the activity. Make sure they put their own name on the top of the paper.

Write up this data as a chart. Different-sized circles, as in the diagram, give visual impact to these relationships and make it easy to discern the various degrees of popularity. This can be done either on a computer, or by hand tracing. Arrows indicate who is choosing who.
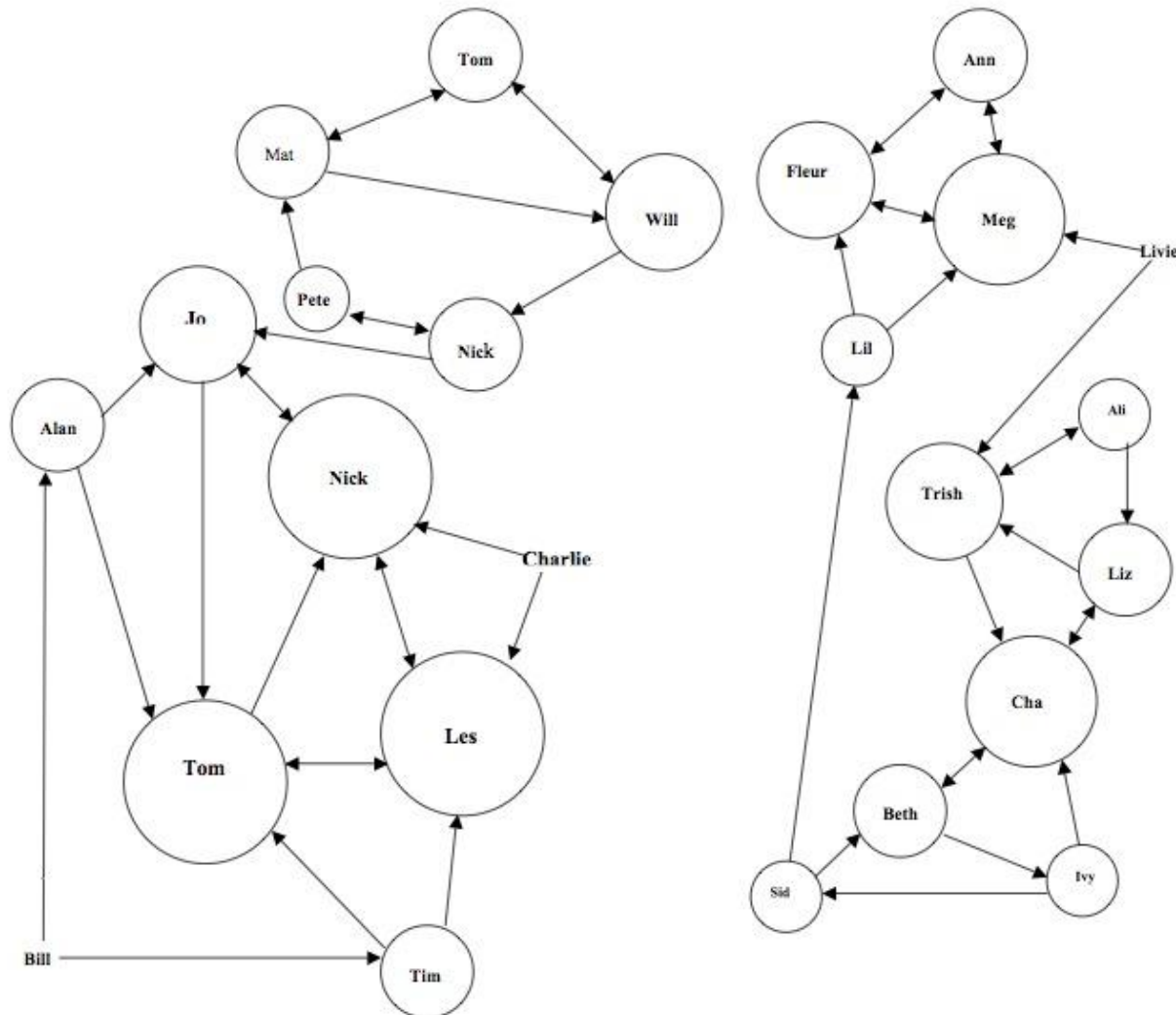
One of the alerts a teacher gets from this is that there are both boys and girls – the isolates – who no one has chosen or who have only been chosen by another isolate. While it is wise to have a certain degree of philosophical skepticism in making initial assumptions about isolation, they are a cause for concern.

Isolates can lack the social skills to make friendly overtures to their peers, and because of this inability, they will tend to be unhappy. This unhappiness will not just shut down academic learning, which is serious enough; it could also lead disruptive behavior for case in a worse-case scenario to self harm or suicide. Then when the sociogram establishes isolates, it is the teacher's responsibility to react.

**Girls and boys separation**

Another alert is the clear division between the boys and the girls. Is this is what is wanted? Obviously it is a co-ed School so what does that imply? Is it an example of what Chris calls the gap between the espoused theory and the theory in action? Is the espoused theory that boys and girls are better off in a school where the genders are mixed? If so this shows that the theory in practice is not so.
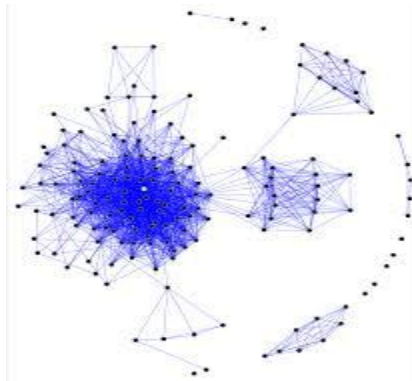
## Check out the group dynamics

There are several quite tight groups which may well merit some degree of philosophical grasp.

Are these groups "cliques" only interested in being exclusive, maintaining boundaries to keep their exclusivity, or worse still being antagonistic toward others?

Who is the go to girl in the classroom? In a sociogram she would have by far the greatest number of arrows seeking her out. Yet beneath the radar her influence could be self serve, her ability to put down others sophisticated.

## CONCLUSION

We can use these technologies in our project also by using ANTHROPAC we can fetch multiple data with their details. SNA (SOCIAL NETWORK ANALYSIS) is a key factor for analyzing the user and their information that technology is using by many organization like face book, MySpace, twitter etc. In our project we can use that technology .we can make graph for users. This kind of technology helps us to facilitate the user interaction with the real world entity and provide optimum solutions to our problem with real users.

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**Web resources:**
- SIENA (Snijders 2001) webpage: http://stat.gamma.rug.nl/siena.html
- International Network for Social Network Analysis (INSNA) webpage: http://www.insna.org/
- http://www.6seconds.org/
- http://www.analytictech.com/