

Assignment #8 (Introduction to Network Statistics)

This assignment digs into a classroom of 29 seventh graders in Victoria Australia. Students nominated three classmates based on three types of relationships: “who do you get on with,” “who are your best friends,” and “who would you prefer to work with.” This was collected by Vickers and Chan (1981) and indexed here: <https://manliodedomenico.com/data.php>.

Vickers, M., & Chan, S. (1981). Representing classroom social structure. *Victoria Institute of Secondary Education, Melbourne*.

Data note: Data for this assignment is stored in `vickers_class.Rdata`. There are eight files in this object (four igraph network objects (.g) and four statnet network objects (.n) of the same four classroom networks). The `best.n/g` is the class best friends network, the `work.n/g` is the preferred work with network, the `geton.n/g` is the get on with network and `gender.n/g` is the one-mode projection of the co-gender network.

This assignment seeks to better understand the relationship between **friendship** and **work** in this classroom.

1. Basic Description

Offer a basic picture of these the friendship and work networks:

- a. Plot the networks.
- b. Do they differ between each other in terms of relevant network factors?
- c. Do they differ exhibit properties of small world networks when compared to random?

2. QAP Correlation

Are the two networks correlated with one another? Interpret.

3. QAP Logistic Regression

Does friendship affect preferred work relationships in this classroom? Does gender play a role? Interpret.