
CHRIS DUFFY, Dalhousie University

Shapley–Shubik Power Index as a Model for Spread of Influence in a Network

The Shapley–Shubik power index provides a model to measure voter power in democratic institutions. Intuitively, voters who make up a larger majority each hold less relative power than those who make up a slim majority. This index has been used to study a variety of democratic institutions, including proposed amendments to the Canadian Constitution. Using power index we study the spread of power and influence in a network. We find that both network topology and initial distribution of voting position impact long-term behaviour of the system. For particular families of graphs we observe a connection with the cellular automata.