

Network analysis as a tool for process evaluation

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Summary

Network analysis is a powerful and insightful research method that permits the visual mapping and quantification of relationships in interactive social systems. However, though network analysis is commonly used in an array of fields such as epidemiology, information science, and organizational studies, up until now it has not been commonly applied to energy efficiency evaluation. In this poster, the authors present network analysis as a tool for energy efficiency process evaluation, using two recently implemented projects as illustrations.

In the first example, the authors show how network analysis was used to assess the efficacy of communication flows for an alliance whose main operational purpose is to promote outreach and the dissemination of information related to improving HVAC energy efficiency in a Western U.S. state. In this example, quantitative network metrics illustrate the flow of communications both within the alliance's many committees, as well as outside the alliance to non-affiliated institutions and organizations.

In the second example, the authors show how network analysis was used to evaluate the efficacy of communication and outreach efforts for a community-wide energy efficiency program in a Midwestern U.S. state. In this example, graphical network representations illustrate the flow of communication from the program's promoters outward to key community institutions and organizations. Additionally, the graphics provide insight into which individual promoters are key to the programs efforts.

In addition to these two examples, the authors present a conceptual overview of network analysis along with methodological considerations. Possible applications of network analysis to energy efficiency process evaluations, including examples of the different types of research questions that can be answered using network analysis, are presented. Finally, strengths and limitations related to network analysis methods are also provided.