

Social Network Analysis of an Agricultural Leadership Program

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Introduction

- Social networks are structures of individuals (nodes) and their relationships (ties) (Li, 2013).
- Leadership must address relationships.
- Leadership development programs (LDPs) may increase their networks (Van de Valk & Conostas, 2011).

Conceptual Framework

- Structural approach to study interactions among social actors in a network (Freeman, 2004).
- Two fundamental approaches to network analysis: whole-network and personal/ego network analysis.
 - This research is whole-network analysis and explores the ties among all pairs of nodes.

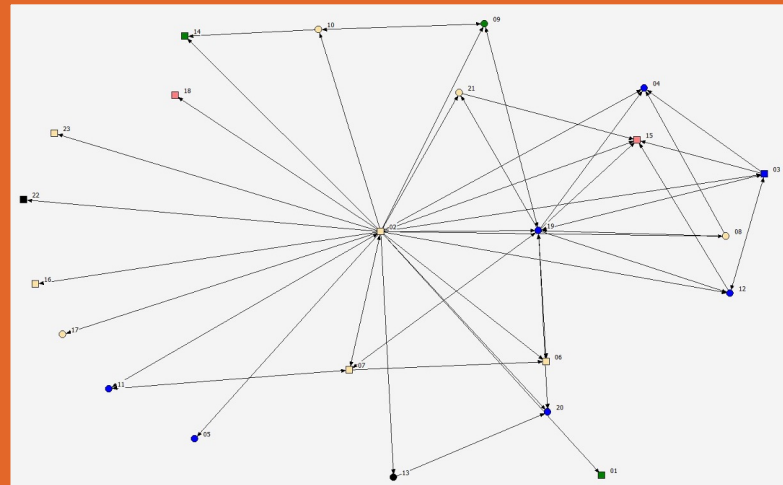
Methodology

- Characterize the structure of the network by understanding the ties within the cohort.
- Administered reflective-pre and post surveys to participants.
- Five-point scale
 - Indicators: never, once or twice a year, once or twice a month, at least weekly, and daily
- UCINET was used for analysis
 - Data was visualized using NetDraw

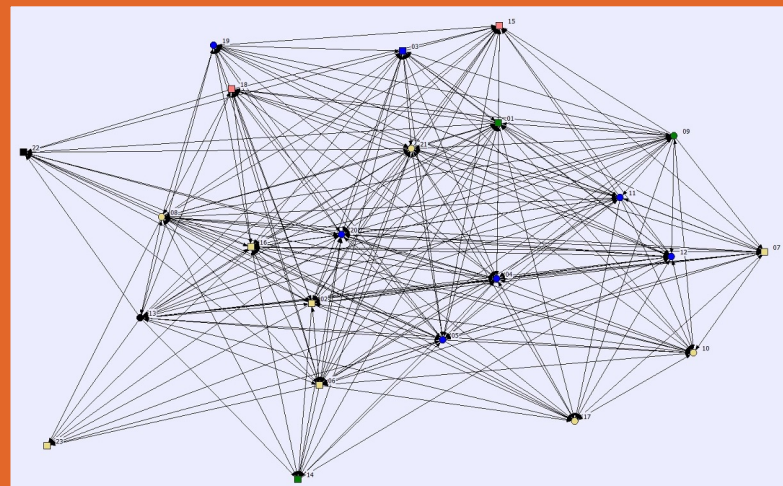
Whole Network Measures Pre- vs. Post-Program

Whole Network Measures	Pre-Program	Post-Program
Number of ties	52	329
Average Degree	2.261	14.304
Density	0.103	0.650
Connectedness	0.439	0.870
Degree of Centralization	0.909	0.190

Reflective-Pre-Program Network



Post-Program Network



Results/Findings

- Resource Education & Agricultural Leadership (REAL) Oregon program
- 23 leaders from five agricultural industries
 - Nine from production agriculture
 - Three from forestry
 - Two from transportation
 - Seven from agricultural support
 - Two from education
 - Twelve females and eleven males
 - Ages ranged from 28 to 60 years old

Conclusions

- Cohesiveness of the class increased
- Centralization of the network decreased
 - Connections were more evenly distributed across pairs of nodes.

Implications/Recommendations

- Implications:
 - LDP cohort networks can increase cohesiveness over the course of the program.
 - Information and resources can be shared more quickly in a decentralized network.
- Recommendations
 - Research should look to establish casual inference between network change and program participation.
 - This study should be replicated with additional classes and programs.
 - A qualitative inquiry may find insight into the nature of relationships developed through these programs.

References

- Freeman, L. C. (2004). The development of social network analysis: A study in the sociology of science. Empirical Press.
- Li, M. (2013). Social network and social capital in leadership and management research: A review of causal methods. *The Leadership Quarterly*, 24(5), 638-665. <https://doi.org/10.1016/j.leaqua.2013.04.005>
- Van De Valk, L. J. & Conostas, M. A. (2011). A methodological review of research on leadership development and social capital: Is there a cause and effect relationship? *Adult Education Quarterly* 61(1), 73-90. <https://doi.org/10.1177/0741713610380443>