The Strength of Weak Ties Among Alabama Row-Crop Stakeholders

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Abstract

There has been little research applying social network theory to agricultural technology adoption. The *Future of Farming* seeks to understand how information is shared among Alabama row-crop farmers and other stakeholders through a five-year, transdisciplinary, co-development of knowledge study that examines climate adaptation techniques (Prasad 2020-2026). The project facilitates regional engagement meetings to achieve this purpose. A social network analysis of the meetings was undertaken using the Strength of Weak Ties theory to demonstrate how participation in the *Future of Farming* affects information dissemination. These data will contribute toward the creation of co-produced materials designed to help Alabama row-crop farmers improve their climate resiliency.

Objective

To investigate the level of participation in the *Future of Farming* engagement meetings and illustrate the distribution of knowledge during the events.

Strength of Weak Ties

- Stronger the connection between two people, the more likely their social networks overlap.
  - Overlapping connections can serve as a source of new knowledge.
  - Applied to the relationships developed through participation in the *Future of Farming* project.

Methods

- Participants: Stakeholder attendance at the *Future of Farming* regional engagement meetings.
- Meetings are video-recorded and transcribed.
- Stakeholders are evaluated on their level of engagement during the meetings using the Participation Scoring Rubric (Table 1).
- Social Network Map (Figure 1) developed in R using the Participation Scoring Rubric.

0.2	The individual attends the event but does not participate
0.4	The individual attends but with minimal participation (answers direct questions or only speaks when spoken to)
0.6	The individual attends with lots of participation
0.8	The event was hosted by the individual at their farm or another location
1.0	The individual facilitated the event

Table 1. Participants are evaluated on their participation using the participant scoring rubric.

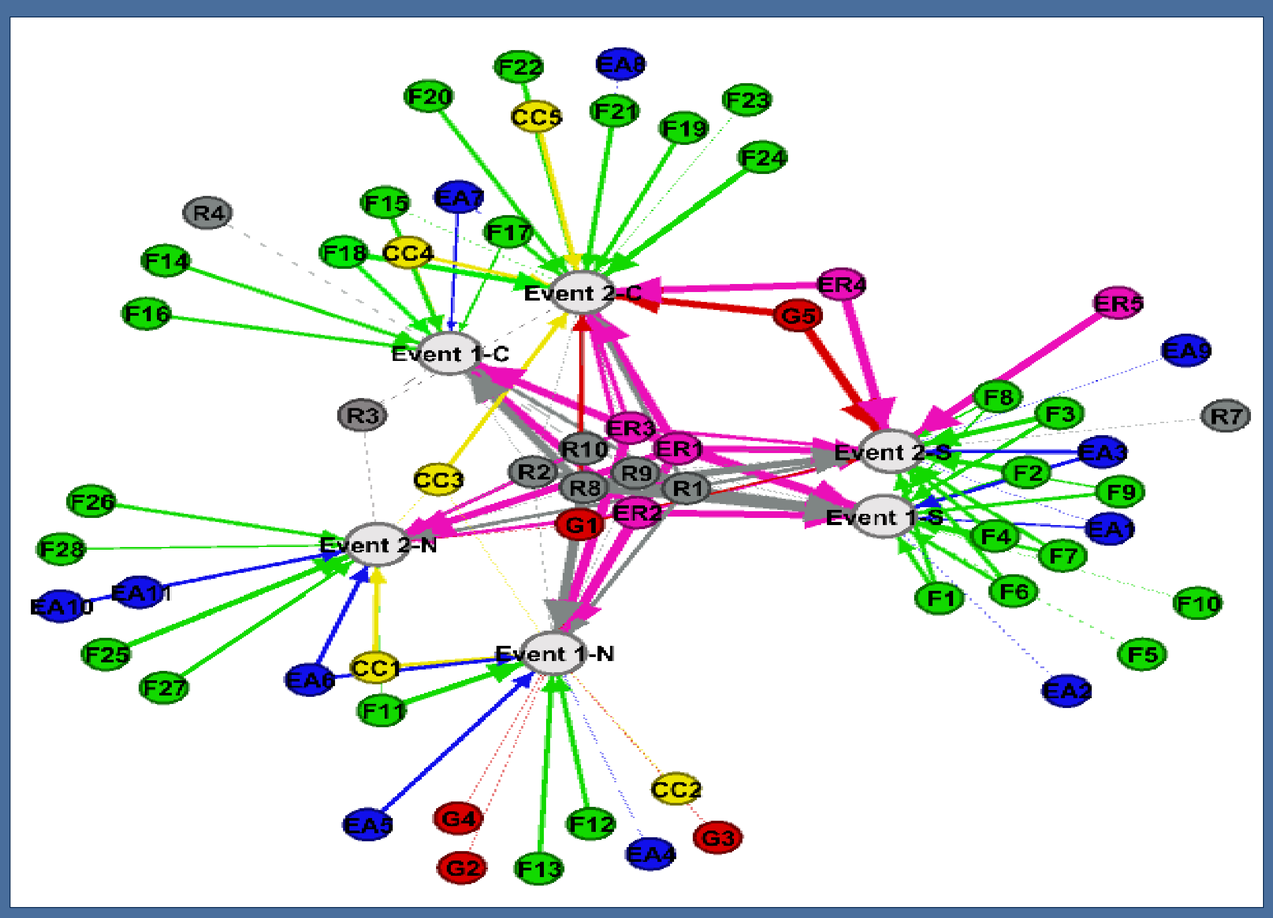

Figure 1. Social Network Map of the *Future of Farming* project between June 2020 and March 2021 (Year 1).

Event Name	Date of Event	Number of Attendees	Average Participation Score of Stakeholders
Event 1-South	September 2020	21	0.600
Event 1-North	December 2020	21	0.505
Event 1-Central	December 2020	17	0.565
Event 2-Central	February 2021	28	0.515
Event 2-South	March 2021	23	0.591
Event 2-North	March 2021	20	0.440

Table 2. The *Future of Farming* event list, number of stakeholders in attendance, and the average stakeholder participation score at each event.

Conclusions

- The *Future of Farming* aims to examine the adoption of climate adaption technologies through the co-development of knowledge.
- Atmospheres of collaboration with farmers and stakeholders lead to a more successful diffusion of information.
- Row-Crop farmers and stakeholders are more inclined to engage when their networks are actively involved in the discussions.

Future Application

- Social network analysis will continue throughout the duration of the *Future of Farming.*
- Understanding the flow of information will allow the *Future of Farming* team to better co-develop knowledge between the participants.
- As the *Future of Farming* contributes, the team expects to see more farmers achieving centrality.

Figure 2. Robinette recording Farmer 13 as they explain their growing process at Event 1-North.

Figure 3. Farmers at Event 2-Central participating in the regional engagement meeting.

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