



RATIONALE FOR STUDY

1. The number of digital science libraries on the internet is growing rapidly.
2. An important subset aims to make cutting-edge science education materials available.
3. Are materials more likely to be diffused through digital rather than paper-based libraries?
4. Few digital libraries use evaluation techniques.
5. Literature suggests that diffusion of teaching materials is a social not a technological process. Social strategies are required to broaden the diffusion.

PURPOSE OF TRAILS

We investigate the effects of TRAILS a web-based, interactive, peer-reviewed library of teaching and learning materials. The purpose of TRAILS is three-fold:

1. To expose faculty members to a wide range of cutting-edge ideas and innovative teaching techniques; and
2. To disseminate cutting edge instructional materials and strategies to a more diverse group of faculty and schools.
3. To increase the size and scope of a scholarship of teaching and learning network through mobilizing new adherents.

DIFFUSION OF INNOVATION STUDY

QUESTION

How can more sociologists become engaged in teaching and learning pedagogy?

ANSWERS

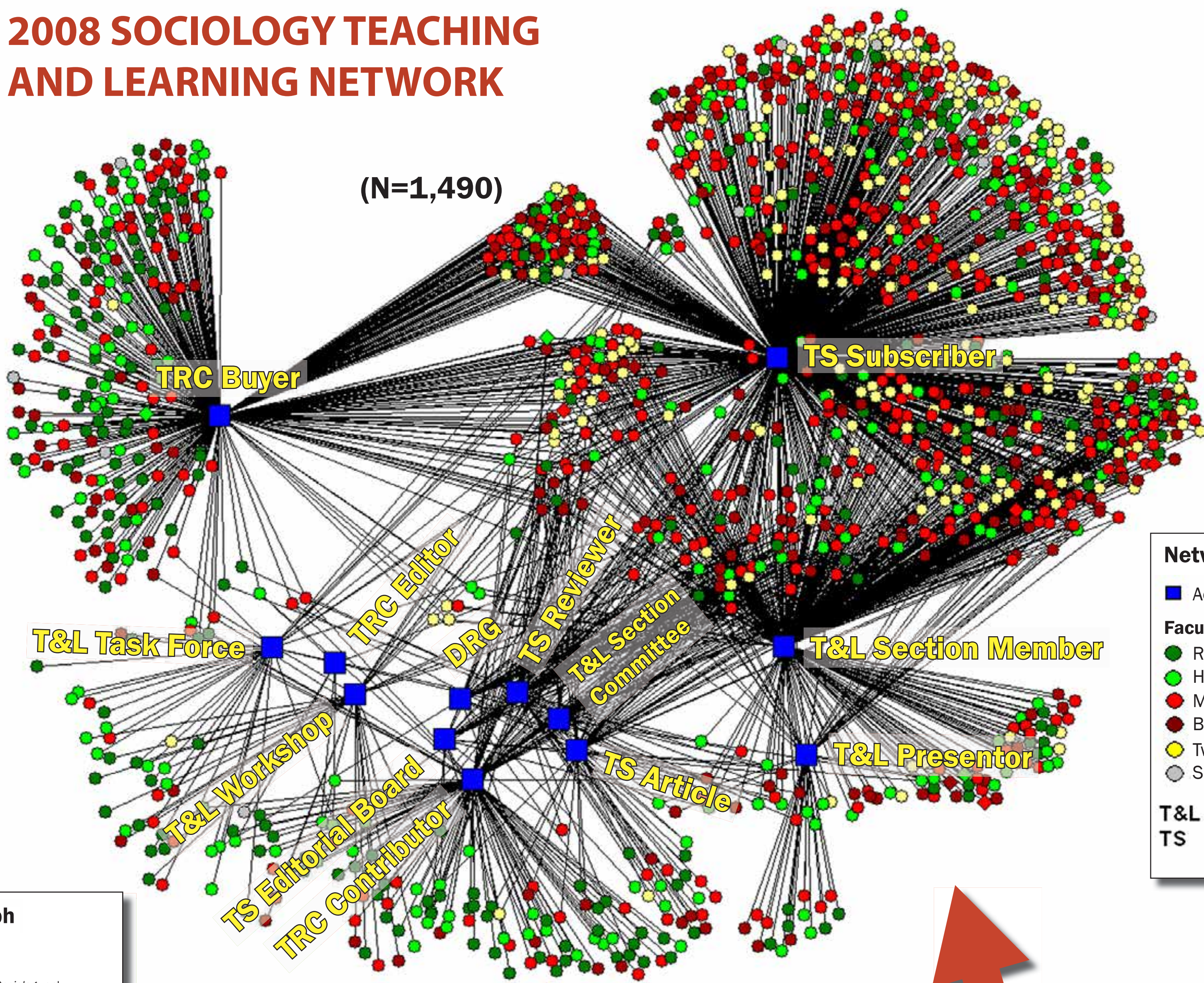
Need to increase the number of TRAILS users and widen the scope of institutions.

Need to broaden participation in the teaching and learning network.

To overcome the problem, social interventions are needed.

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2008 SOCIOLOGY TEACHING AND LEARNING NETWORK



WHAT IS TRAILS?

TRAILS is an online, modular (by topic and type of teaching tool) and searchable database that reflects a major innovation in the creation and dissemination of peer-reviewed teaching resources. Users can upload or download materials.



TWO METHODS

(1) Analysis of teaching and learning network using UCINET software and (2) Two sets of multivariate regression analyses to analyze characteristics of subscribers to the TRC materials and then to TRAILS, and binomial regression to analyze membership in 13 teaching and learning activities that characterize the network.

DATA

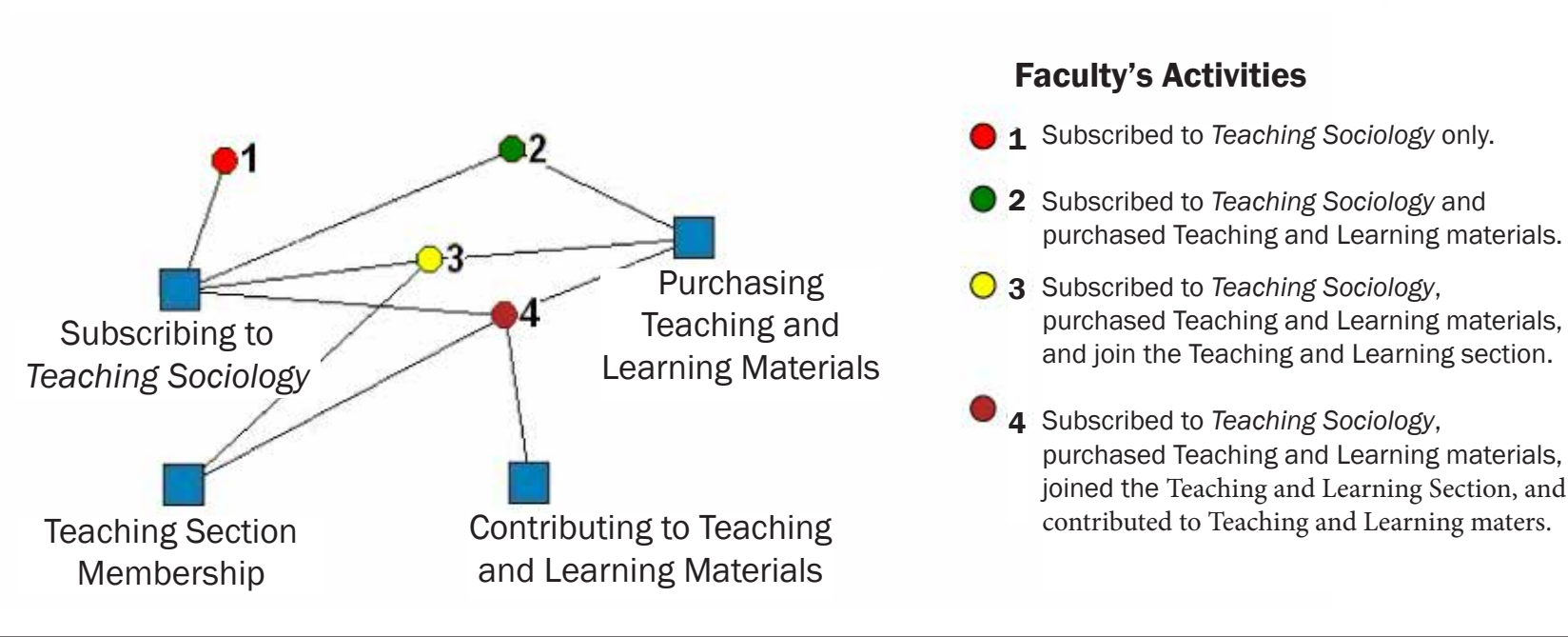
We relied on unobtrusive methods. We constructed a database for 2008 containing demographic and employment information about full-time, U.S. faculty users and the non-users of the paper-based teaching and learning materials. We constructed a similar database for 2010 and 2011 after the launch of TRAILS.

The data source is the ASA's membership database that contains demographic, educational, and labor market characteristics of ASA members along with their dues, journals, and section memberships. Employing institutions were categorized according to 2005 Carnegie classification. Missing information was obtained through web searches by looking up faculty's CVs, faculty's bios on departments' web pages.

TRAILS USERS

- TRAILS users have the same characteristics as the users of paper-based syllabi sets.
- Users tend to be recent PhD graduates, women, and faculty employed on non-research I institutions.
- Prior participation in the teaching and learning network has been crucial to the early adoption of TRAILS.

How to Read the Teaching and Learning Network Graph



GRADUATE STUDENTS: THE NEXT GENERATION OF PARTICIPANTS

- Graduate students are significantly more likely to subscribe if at least one faculty in the department subscribes.
- Like faculty, student subscribers tend to be women and come from non-Research I universities.
- Students subscribers are highly interested in teaching and learning.

TEACHING AND LEARNING NETWORK

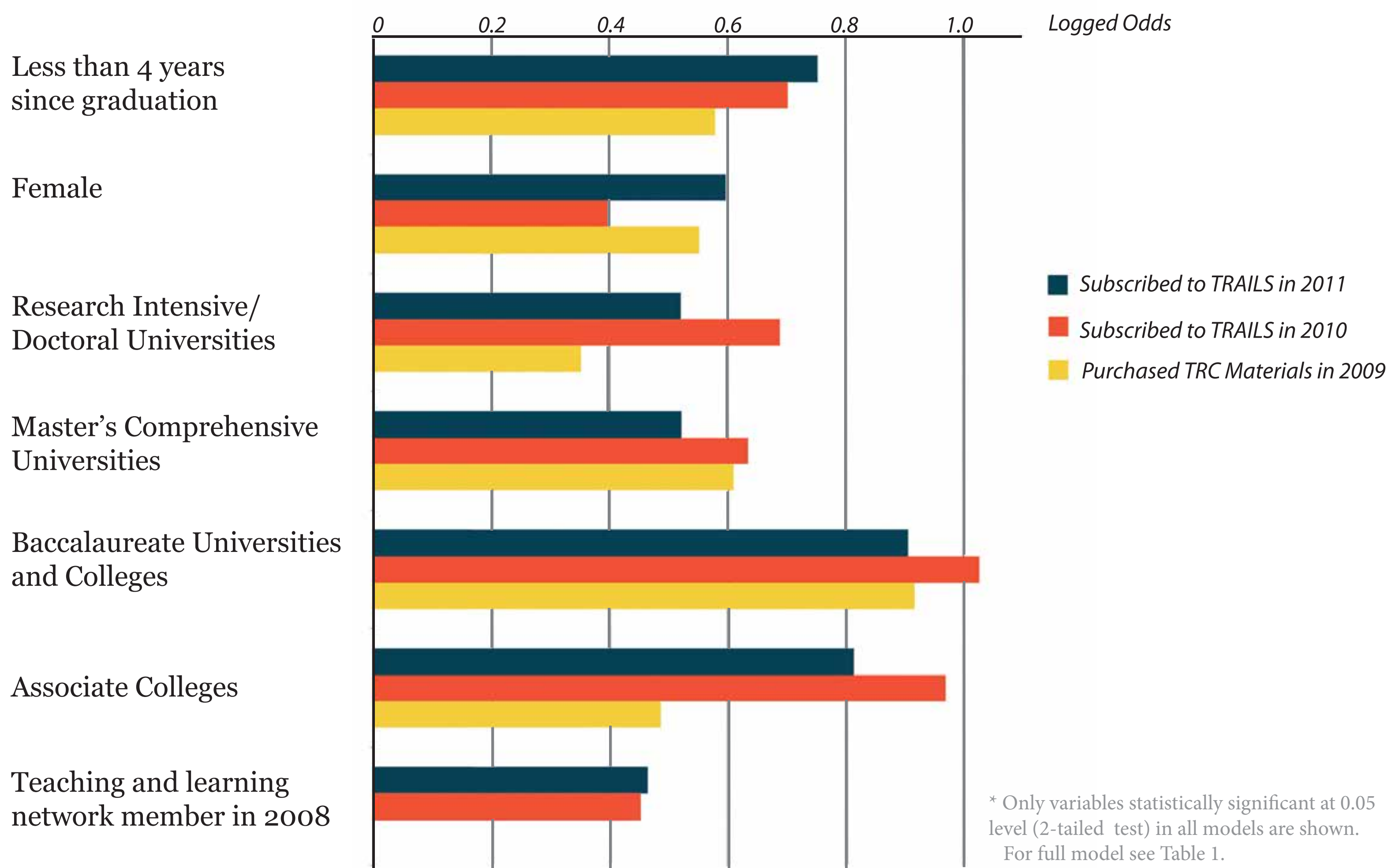
- Loosely connected, but highly centralized network.
- Most members are users of teaching and learning materials.
- The network and its center are dominated by faculty from master's and baccalaureate institutions.
- The network's structure and composition have not changed since TRAILS launch.

TRAILS Subscriptions by 2011 ASA Graduate Student Members

| | Total N | Subscribed to TRAILS |
|---|-----------|----------------------|
| Gender | | |
| Women | 2,335 | 5.0% |
| Men | 1,441 | 3.1% |
| Chi-Square | 7.73** | |
| Type of School | | |
| Research I University | 2,814 | 3.7% |
| Other Type of School | 962 | 6.0% |
| Chi-Square | 9.51** | |
| Subscription to Teaching Sociology | | |
| Subscribed | 301 | 17.9% |
| Not Subscribed | 3,475 | 3.1% |
| Chi-Square | 148.41*** | |
| Teaching and Learning Section Membership | | |
| Section Member | 184 | 22.3% |
| Not a Member | 3,592 | 3.4% |
| Chi-Square | 152.49*** | |

***p<0.001; **p<0.01.

Figure 1. Logged Odds of the Teaching and Learning Material Usage by Faculty in 2008, 2010, and 2011 for Selected Variables*



SOCIAL INTERVENTIONS PROPOSED TO NSF

1. Recruit faculty from **Research I** institutions to submit teaching and learning materials to TRAILS.
2. Provide resources for faculty from teaching institutions to **work together** with faculty from research-extensive institutions to create synthetic teaching materials.
3. Encourage faculty in **HBCUs** and **HSIs** to engage in the teaching and learning network through Department Affiliates.
4. Create a mentoring program for **graduate students** interested in teaching.
5. Facilitate **interaction** between TRAILS subscribers.

PROPOSED EVALUATIONS

All of these interventions will be evaluated before and after, through the use of unobtrusive data to answer whether the scope of diffusion broadens.

Which of these interventions appear to be successful?

Faculty and Graduate Student Use of TRAILS in 2011

| Number of Faculty Subscribed to TRAILS in a Department | Total Number of Departments | At Least One Graduate Student Subscribed |
|--|-----------------------------|--|
| None | 144 | 27.8% |
| One or More | 129 | 70.4% |
| Chi-Square | | 4.78* |

* p<0.05