Thesis

Professional social capital and graduate training of future scientists at the U.S. universities

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Study Summary

- Importance: Lack of literature on relationship of graduate training and acquired professional social capital.

Goal: Assess whether I/UCRC training impacts professional social capital.
Main IVs: type of graduate training & experiences (I/UCRC vs. non-I/UCRC)
Main DVs:
  - Professional Social Capital (STHC)
  - Satisfaction
  - International students’ intentions to stay in the U.S.
Population: PhD students at the research-intensive universities.
Sample:
  - 100 from I/UCRCs
  - 100 from corresponding Science & Engineering departments
  - Target universities with multiple I/UCRCs to minimize IRB transactions.
Hypothesis

• H1: Graduate students trained in CRCs will demonstrate a higher level of professional social capital than graduate students trained in non-CRC arrangements.

• H2: Graduate students trained in CRCs will report higher rates of the following types of experiences: working in teams; working with professionals from other disciplines; working with individuals from other institutions; working with individuals from other sectors; working collaboratively with other scientists.

• H3: Graduate students trained in CRCs will demonstrate a higher level of satisfaction than graduate students trained in non-CRC arrangements.
Questions

• Q1: To what extent do team, multidisciplinary, cross-institution, cross sector and collaborative experiences mediate the effect of CRC vs. non-CRC training on various social capital outcomes?

• Q2: Mediation

• Q3: To what extent does national status (U.S. citizen vs. non-citizen) moderate the impact of CRC vs. non-CRC training on various social capital and satisfaction outcomes?

• Q4: Do international students’ intentions on to live and work in the U.S. after their graduation predicted by the type of training they receive (CRC vs. non-CRC)?
Professional Social Capital

Social capital measures:

- Social Network Analysis of ego-centric professional students’ networks:
  - Bonding and bridging ties.
  - Utilized and available networks’ size and diversity.
- Psycho-social measure of trust, norms and values (“gluing” mechanism of social capital).
- Bibliometric measures of collaboration (crude traditional measure of authoriships).

First Step: identify whether these measures capture social capital as one concept or its particular facets.
Summary of Social Capital’s components, measures and measurement outcomes

Social Capital

- Bonding and Bridging Network connections
- Linking mechanism: trust, norms and values
- Crude traditional measure

Measure

- SNA
- Ego-centric networks
- Position Generator
- Name generator
- Likert-type scale
- Bibliometrics

Outcomes/criteria

- Utilized and Available bonding and bridging network
- Size
- Diversity
- Availability of trust
- Shared norms and values
- Utilized connections

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IUCRC Evaluation Team
Steps

- Universities: North Carolina State University (6), Ohio State (7), Arizona State (5), Univ. of Arizona (4), Virginia Tech (7), Univ. of Florida (5), Texas A&M (4)
- As a result, sites, not whole centers, provide sample’s respondents.

1. Acquire students’ contact information. More challenging for control group:
   a. Request students’ contacts from center director/department head
   b. Research university/center web site
2. Request an official email from NSF to students.
3. Request help from local evaluator (if needed).
4. Email link to the survey to the sample students.
Thank you.