Identifying Perceived Experts in an Online Community of Practice

Amanda M. Beacom,1 Young Ji Kim,1 Jaclyn L. Selby,1
Matthew S. Weber,2 & Peter R. Monge1

1 Annenberg School for Communication & Journalism, University of Southern California
2 Fuqua School of Business, Duke University

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Motivation

• Online communities of practice have emerged as a medium for the development and sharing of knowledge among professionals.

• Previous research suggests that a motivation for participation in such online communities is the potential to enhance one’s expert status.

  – Expert status: peers’ subjective perceptions of an individual’s prestige or honor relative to others (vs. objective measures of skills or knowledge).

➢ What factors contribute to the construction of expert status in online communities of practice?

Theory & Hypotheses
Status Characteristics Theory: 
Explaining How Individual Attributes Affect Expert Status

Theoretical Propositions
• People use 2 types of attributes to form status perceptions about others: 
  – *Specific* characteristics - relevant to specific tasks 
  – *Diffuse* characteristics - relevant to general aptitude 
• Context of the community determines the salience of particular characteristics 
  – Without face-to-face communication, diffuse characteristics may be less salient

Hypotheses
H1a: The higher the value of online community members’ *specific* status cues, the higher the members’ expert status
H1b: The higher the value of online community members’ *diffuse* status cues, the higher the members’ expert status
H2: *Specific* status cues will be stronger positive predictors of online community members’ expert status than *diffuse* status cues

Social Capital Theory:
Explaining How Relationships Affect Expert Status

Theoretical Propositions

• Social relationships = capital that confers benefits to individuals

• One benefit may be enhanced social status

Hypotheses

H3: Online community members with more collaborators will have higher expert status than members with fewer collaborators

H4: Online community members with higher-status collaborators will have higher expert status than a member with lower-status collaborators

H5: Online community members with more institutionally diverse collaborators will have higher expert status than members with less institutionally diverse collaborators

1 Bourdieu, 1985; Lin, 2001; Putnam, 1995
3 Podolny, 2001; Wasserman & Faust, 1994; Zhang, et al., 2007
4 Kilduff & Krackhardt, 1994; Podolny, 1994, 2001; Podolny & Phillips, 1996; Stewart, 2005
5 Burt, 1992; Cummings, 2004; Jones, et al., 2008
Research Framework

Status characteristics theory
- Specific status cues (H1a, H2)
- Diffuse status cues (H1a, H2)

Social capital theory
- Number of collaborators (H3)
- Expert status of collaborators (H4)
- Diversity of collaborators (H5)

Individual’s perceived expert status
Method
Sample: nanoHUB

- An online community for nanotechnology scientists
- 173 tool authors, 134 tools

ABACUS - Assembly of Basic Applications for Coordinated Understanding of Semiconductors

By
1. Purdue University; 2. Arizona State University;

One-stop-shop for teaching semiconductor device education
Measures

THEORY & HYPOTHESES

Specific status cues
- Tool review
- Site support for tool
- Tool difficulty
- Organizational rank
- Occupational position
- Tenure

Diffuse status cues
- Number of collaborators
- Expert status of collaborators
- Diversity of collaborators

Individual’s perceived expert status

Popularity
- Prestige
Results & Conclusions
### Results: Hierarchical Regression Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control variable</strong></td>
<td>Tool count (log)</td>
</tr>
<tr>
<td><strong>Specific status cues</strong></td>
<td>Tool review</td>
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<tr>
<td></td>
<td>Site support for tool</td>
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<td>Tenure</td>
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<tr>
<td><strong>Collaborator variables</strong></td>
<td>Collaborator count</td>
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<tr>
<td></td>
<td>Collaborator expert status</td>
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<td></td>
<td>Collaborator diversity</td>
</tr>
</tbody>
</table>

| $R^2$                      | .73           |
| F-change                   | 44.42***      |
| d.f.                       | 10,162        |

* $p < .05$. ** $p < .01$. *** $p < .001$. Standardized coefficients reported.
**Results**

<table>
<thead>
<tr>
<th>H1a</th>
<th>The higher the value of members’ <em>specific</em> status cues, the higher the members’ expert status</th>
<th>PARTIALLY SUPPORTED</th>
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</thead>
<tbody>
<tr>
<td>H1b</td>
<td>The higher the value of members’ <em>diffuse</em> status cues, the higher the members’ expert status</td>
<td>PARTIALLY SUPPORTED</td>
</tr>
<tr>
<td>H2</td>
<td><em>Specific</em> status cues will be stronger predictors of members’ expert status than <em>diffuse</em> status cues</td>
<td>PARTIALLY SUPPORTED</td>
</tr>
<tr>
<td>H3</td>
<td>Members with <em>more collaborators</em> will have higher expert status than those with fewer collaborators</td>
<td>SUPPORTED</td>
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</table>
Conclusions

• Members of online communities of practice acquire expert status through 2 mechanisms:
  – Others’ perceptions of their personal attributes
  – The benefits they accrue from relationships with others

• Relational ties may exert greater influence on perceived expert status than individual attributes
Thank you

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ascnetworksnetwork.org

The Science of Networks in Communities (SONIC) – Northwestern University
sonic.northwestern.edu

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