

Identifying Perceived Experts in an Online Community of Practice

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Motivation

- Online communities of practice have emerged as a medium for the development and sharing of knowledge among professionals ¹
- Previous research suggests that a motivation for participation in such online communities is the potential to enhance one's expert status ²
 - Expert status: peers' subjective perceptions of an individual's prestige or honor relative to others (vs. objective measures of skills or knowledge) ³
- What factors contribute to the construction of expert status in online communities of practice?

¹ Bos, et al, 2007; Johnson, 2001; Sherer, et al., 2003; Zhang & Watts, 2008 ² Butler, et al., 2008; Lampel & Bhalla, 2007; Milinski, et al., 2002; Sharratt & Usoro, 2003; Wasko & Faraj, 2005; Wasko, et al., 2009; Willer, 2009 ³ Blau, 1964; Weber, 1968

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: ¹
 - *Specific* characteristics - relevant to specific tasks
 - *Diffuse* characteristics - relevant to general aptitude
- Context of the community determines the salience of particular characteristics ²
 - Without face-to-face communication, diffuse characteristics may be less salient ³

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 ¹
- One benefit may be enhanced social status ²

Hypotheses

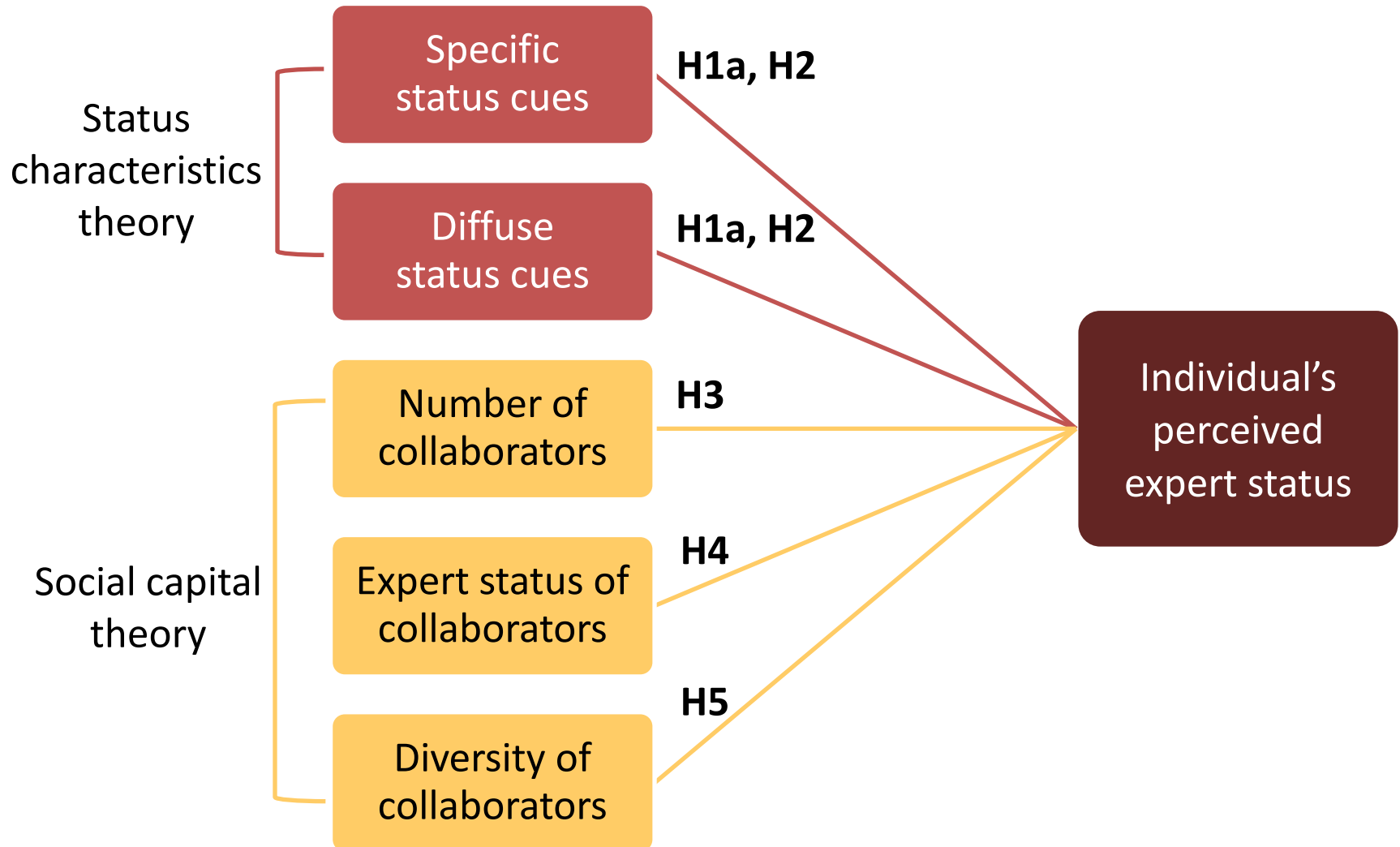
H3: Online community members with *more collaborators* will have higher expert status than members with fewer collaborators ³

H4: Online community members with *higher-status collaborators* will have higher expert status than a member with lower-status collaborators ⁴

H5: Online community members with *more institutionally diverse collaborators* will have higher expert status than members with less institutionally diverse collaborators ⁵

¹ Bourdieu, 1985; Lin, 2001; Putnam, 1995 ² Borgatti, et al., 1998; Ganley & Lampe, 2009; Kilduff & Krackhardt, 1994; Mehra, et al., 2006; Nahapiet & Ghoshal, 1998 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



Method

Sample: nanoHUB

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

The screenshot displays the nanoHUB.org website interface. At the top left is the logo "nanoHUB.org an NCN project" with the tagline "ONLINE SIMULATION AND MORE FOR NANOTECHNOLOGY". A search bar and "Login" and "Register" buttons are on the top right. A navigation menu includes "Home", "My HUB", "Resources", "Members", "Explore", "About", and "Support". A breadcrumb trail reads "You are here: Resources > Tools > ABACUS - Assembly of Basic Applications for ... > About".

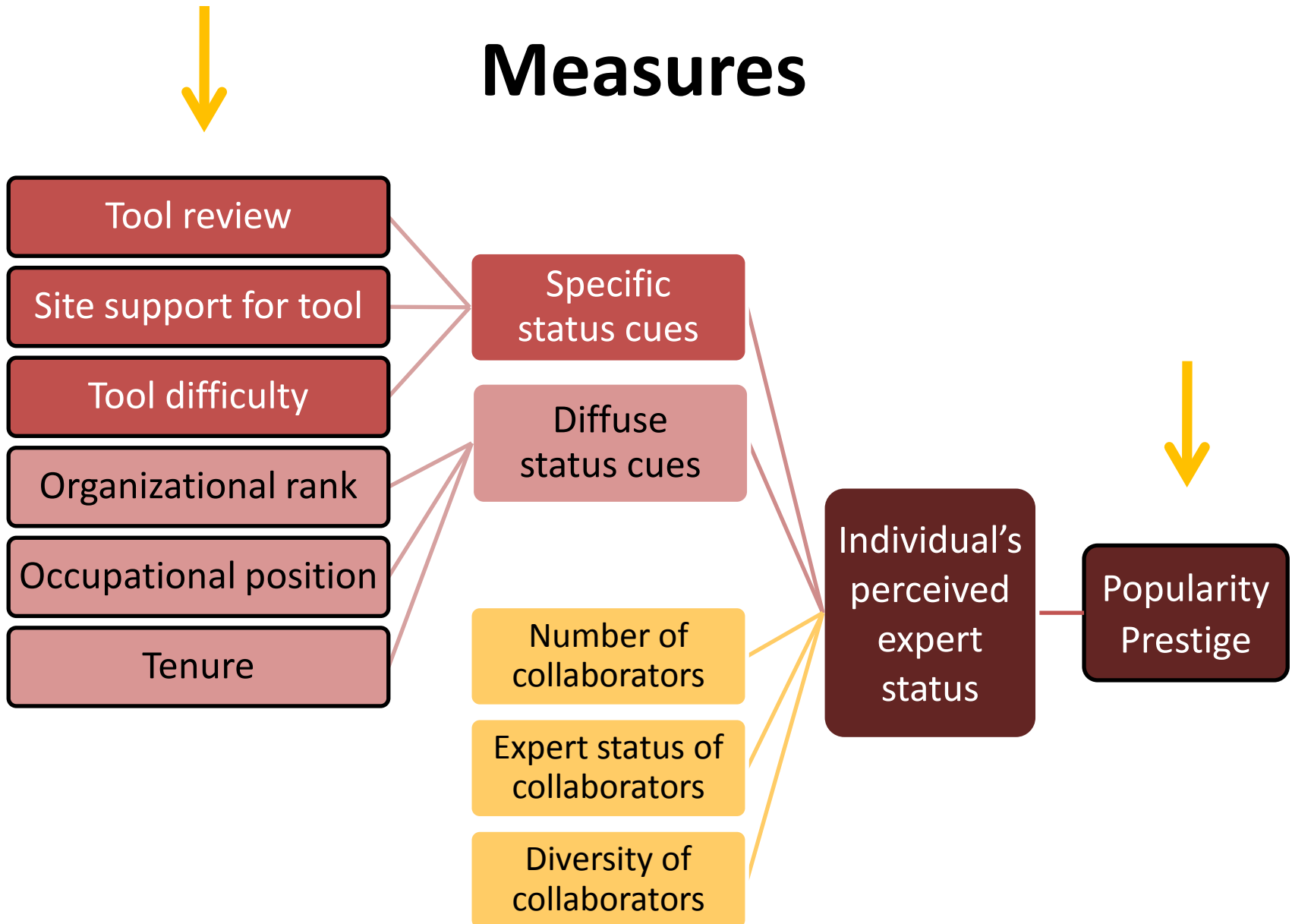
The main content area features the title "ABACUS - Assembly of Basic Applications for Coordinated Understanding of Semiconductors" and a "Launch Tool" button. Below the title, it lists authors: "By 1. Purdue University; 2. Arizona State University;" and a description: "One-stop-shop for teaching semiconductor device education".

Metadata includes "Version 1.0.6 - published on 12 Jan 2010", "DOI: 10254/nanohub-r5065.7 cite this", and a note "This tool is closed source." with a link to "View All Supporting Documents".

A right-hand sidebar shows a "10.0 RANKING" badge, "Intermediate-Expert" level, "NCN Supported" status, and usage statistics: "2480 user(s), detailed usage", "528 user(s) in 51 class(es)", "1 Citation(s)", "4 questions (Ask a question)", "1 review(s) (Review this)", and "1 wish(es) (Add a new wish)". A "Share" button with social media icons is also present.

At the bottom, a horizontal menu contains "About", "Usage", "Citations", "Questions", "Reviews", "Wish List", "Versions", and "Supporting Docs". A "SEE ALSO" section recommends "Semiconductor Device Education Material".

Measures



Results & Conclusions

Results: Hierarchical Regression Analysis

Variables		Model 4
Control variable	Tool count (log)	.27***
Specific status cues	Tool review	.13***
	Site support for tool	-.03
	Tool difficulty	-.14**
Diffuse status cues	Organizational rank	.02
	Occupational position	.11*
	Tenure	.08
Collaborator variables	Collaborator count	.27***
	Collaborator expert status	.39***
	Collaborator diversity	.14**
R²		.73
F-change		44.42***
d.f.		10,162

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

Results

H1a	The higher the value of members' <i>specific</i> status cues, the higher the members' expert status	PARTIALLY SUPPORTED
H1b	The higher the value of members' <i>diffuse</i> status cues, the higher the members' expert status	PARTIALLY SUPPORTED
H2	<i>Specific</i> status cues will be stronger predictors of members' expert status than <i>diffuse</i> status cues	PARTIALLY SUPPORTED
H3	Members with <i>more collaborators</i> will have higher expert status than those with fewer collaborators	SUPPORTED
H4	Members with <i>higher-status collaborators</i> will have higher expert status than those with lower-status collaborators	SUPPORTED
H5	Members with <i>more institutionally diverse collaborators</i> will have higher expert status than those with less institutionally diverse collaborators	SUPPORTED

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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