

**THE FACULTY YOU DON'T KNOW:  
CHARACTERISTICS OF FACULTY SURVEY NONRESPONSE**

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**RESEARCH QUESTIONS**

Using a survey database of over 27,000 records gathered by the Collaborative on Academic Careers in Higher Education (COACHE), I explored the nature of survey nonresponse among college faculty. I asked:

- (1) Do college faculty who respond to organizational surveys differ in their demographic, professional, and institutional characteristics from faculty who do not respond?
- (2) What are the institutional characteristics that predict organizational rates of faculty survey nonresponse?

The answers shed light on the scope of limitations to survey research on college faculty. Altogether, are we wrong about what we think we know about faculty, and if so, how wrong?

**REVIEW OF LITERATURE**

Over the past 30 years, college and university leaders have increasingly come to rely on surveys of students, staff, and faculty to inform improvements to their institutions' policies and practices (Cote, Frinnell & Tompkins, 1986; Grosset, 1995; Schiltz, 1988). Higher education researchers, too, rely heavily on survey tools; in one recent year, 55% of articles published in one prominent journal depended on survey methodology (Barge & Gehlbach, 2012). However, evidence abounds of a concomitant increase in nonresponse in surveys both of college populations and the general population (de Leeuw & de Heer, 2002; Jones, 1996; Kim, Gershenson, Glaser, & Smith, 2011; Porter & Whitcomb, 2005). Yet, despite the rising difficulty in reaching study subjects, less than one third of studies consider the potential impact of nonresponse bias on reported outcomes (Rogelberg & Stanton, 2007). In the words of some researchers, "survey nonresponse is a rather neglected stepchild in organizational behavior research" (Spitzmüller et al., 2006, p. 19).

Practitioners and researchers neglect nonresponse at their own risk because the bias that it introduces undermines the aims of gathering survey data in the first place. A number of statistical adjustments for nonresponse (e.g., weighting) are available, but these do not necessarily solve the problem of nonrandom missing data, a persistent confound when individuals actively choose not to respond to a survey for reasons related to the survey topic (Rogelberg & Stanton, 2007).

Recently, specialists in this domain have cataloged the tools researchers can use to identify differences between nonrespondents and respondents (Rogelberg & Luong, 1998; Rogelberg & Stanton, 2007). Across the public opinion and survey research domains, the people more likely to respond to surveys are, generally, female, white, older, married, higher earning, better educated and relatively new to their organizations (Groves, Cialdini, & Couper, 1992; Rogelberg & Luong, 1998). Examined under the lens of organizational citizenship behavior, respondents are also more conscientious, more satisfied with their jobs, have more organizational commitment and more favorable opinions of their organizations (Hoffman, Blair, Meriac, & Woehr, 2007; Ilies, Fulmer, Spitzmüller, & Johnson, 2009; LePine, Erez, & Johnson, 2002; Rogelberg, Luong, Sederburg & Cristol, 2000; Rogelberg et al., 2003; Taris & Schreurs, 2007).

Yet, little is known today about the substantial proportion of college faculty who do not respond to surveys of workplace climate and job satisfaction and whether their non-participation creates a bias that threatens the reliability, validity, and generalizability of the results. Findings from existing literature do not necessarily apply perfectly to the faculty context. After all, Rogelberg and Luong (1998) insisted that each survey and every data sample are in some regards unique, and others recommended that response rates and the effectiveness of techniques to increase them vary across different kinds of groups. In other words, context matters, and we know from sound research that the faculty context is, indeed, special (e.g., Blackburn & Lawrence, 1995; Finkelstein, Seal, & Schuster, 1998; O'Meara, Terosky, & Neumann, 2008; Schuster & Finkelstein, 2006). The status, experiences, and settings of faculty differ from those of the populations that have so far been the subjects of most survey nonresponse research, such as the general populace in their homes (Brennan & Hoek, 1992), students in classrooms (Rogelberg et al., 2003; Spitzmüller et al., 2006; Spitzmüller et al., 2007), nursing or firefighter trainees (Barr, Spitzmüller, & Stuebing, 2008; Spitzmüller et al., 2007), and employees of various organizations (Rogelberg et al., 2000; Youssefnia, 2001). The academic workplace differs due to its governance, organization, constraints, treatment of leadership, ambiguous and diverse goals, highly professionalized employees, unclear technologies, and "fluid participation with amateur decision makers who wander in and out" of decision processes (Baldrige, Curtis, Ecker, & Riley, 1978, p. 9; Birnbaum, 1988).

This unique combination of qualities suggests an unusual industry where institutional and departmental variables demarcate faculty behaviors and attitudes as much or more than demographic variables. Yet, any speculation about nonresponse bias among faculty is just that until gaps in the literature are filled. Until more studies of faculty survey nonresponse emerge, findings from the nonresponse literature cast doubt on the validity and generalizability of the data relied upon by researchers and practitioners to inform our understanding of the academy.

## RESEARCH DESIGN

### Data Source, Instrumentation, and Administration

I relied on data from the 2011-12 administration of the Faculty Job Satisfaction Survey administered by the Collaborative on Academic Careers in Higher Education (COACHE), a research program based at the Harvard Graduate School of Education. In that year, the institutional sample included 69 four-year colleges and universities (see Tables 1 and 2). Faculty were considered eligible if they: were employed full-time; were tenured or were untenured and on the tenure-track; had been employed at the institution for at least 10 months upon launch of the survey; were not in their terminal year after being denied tenure; were not in a senior administrative position; and were not designated as clinical faculty. The institution-provided database included demographic and professional data for each record; this database, combined with the survey results, included a number of variables of interest in seeking the answers to my research questions.

### Dependent and Independent Variables

**Dependent variable.** All tenure-stream faculty who participated in the 2011-12 cycle of the COACHE survey have a binary *response status*: respondent or nonrespondent. Then, for each institution in the COACHE data set, I calculated a *response rate* from that institution's respondents divided by its total number of records in the file.

**Independent variables.** This descriptive analysis examined similarities and differences in response status across variables—demographic groups, professional characteristics, and types of colleges and universities—identified in prior research to account for variations in faculty behaviors and attitudes (e.g., Antonio, Astin, & Cress, 2000; Vogelgesang, Denson, & Jayakumar, 2010). The variables of interest in this study included individual-level characteristics: gender, race/ethnicity, U.S. citizenship status, length of employment and years since appointment, tenure status, rank, and discipline, which was examined under COACHE's twelve "academic areas," Biglan's model, and Holland's academic environments (Biglan, 1973; Holland, 1997; Smart & Elton, 1982). Other variables were defined by the characteristics of the institutions where faculty work: control, Carnegie's Basic Classification, Carnegie's Undergraduate Instructional Program, degree of urbanization, enrollment (size), average faculty salary, six-year baccalaureate graduation rate (signifying institutional performance and prestige), and a dichotomous indicator of survey response confidentiality.

### Data Analysis

This study's analyses describe the characteristics of faculty in the survey population and examine observed rates of response and nonresponse. Chi-square tests compared the proportions of respondents and nonrespondents between categorical independent variables. Two symmetric measures, phi ( $\phi$ ) and Cramér's  $V$ , quantified the strength of the relationships in these crosstabulations. In t-test analyses of independent group means, I rely on Cohen's  $d$  to describe the magnitude of difference between means. To identify the organizational

characteristics that predict institutional rates of faculty survey nonresponse, I used a simple, bivariate correlation to confirm that the hypothesized variables did, in fact, correlate with the dependent variable. I then used an ordinary least squares (OLS) regression. The items were loaded into the regression model in a single block.

## **FINDINGS**

### **Demographic, professional, and institutional characteristics of nonresponse**

With respect to their individual-level characteristics (Table 3), nonrespondent faculty are more likely to be male; non-white (especially African-American, and Asian or Asian-American); non-U.S. citizens; and from the “hard,” “investigative,” and “enterprising” disciplines. Nonrespondents are also more likely to be tenured; employed at their institutions about two years longer than respondents; and in their current rank for nearly three years longer than respondents. The time-in-rank variable, in fact, is the largest difference I found between respondents and nonrespondents, and is most material for associate professors at that rank for six years or longer.

Considering institution-level characteristics (Table 4), I found that nonrespondents were more likely to work at institutions that were: urban, public, doctoral universities, programmatically-focused and –dominant, promising less confidentiality to respondents, larger by .10 standard deviations (1,019 students), reporting lower graduation rates by just .05 standard deviations, and reporting higher average salaries by .13 standard deviations. Institutional response rates (Table 5) were likely to be lower at institutions that were public; more urban; larger; receiving raw survey data; and reporting lower graduation rates.

### **Institutional Predictors of Response Rates**

The variables in the regression analysis (Table 6) accounted for 40% of the variation in faculty survey response rates among the institutions in this sample. After controlling for other variables, the analysis shows that institutional response rates are .29 standard deviations lower at city/suburban institutions than at town/rural institutions. No other variables in the model are significant at the  $p < .05$  level.

## **DISCUSSION**

Among many findings, one key theme emerges from the individual-level descriptions of faculty nonrespondents: many of the faculty groups who are the greatest target of interest in national, state, and institutional policies today—faculty of color, foreign-born faculty, faculty with the longest institutional memories, long-term associate professors, scientists and engineers—are also the least likely to participate in surveys of workplace attitudes. Campus

leaders must be more creative and determined to elicit higher rates of survey response from these subgroups.

Location in a city or suburb versus a town or rural area prevailed as the strongest predictor of institutional response rate. These results are consistent with prior research (e.g., Olson & Witt, 2011; Steeh, 1981; Steeh, Kirgis, Cannon, & DeWitt, 2001), but degree of urbanization could be a proxy for other mediating factors. Couper and Groves (1996), for example, found that differences in response rates by urbanicity and population density were largely explained by variables such as household structure, race, age of household members, presence of children, and the socioeconomic attributes of households—a series of variables not readily available in college and university databases of their faculty. Alternatively, campuses that are more urban could be populated by professors who are experiencing higher levels of overload, a stressor variable that has shown a direct relationship with survey nonresponse (Barr et al., 2008).

Several large-scale studies in college settings seek to dispel concerns about nonresponse bias by employing weighting techniques derived from variations in response rates along multiple demographic and institutional classes (e.g., Chen & Sarraf, 2007; DeAngelo et al., 2008; Hurtado et al., 2012). This study suggested how vast the number of variations—ergo, possible weighting combinations—could be. In fact, it is impossible to identify and measure all of the variables related to nonresponse, and an increasing body of evidence concludes that bias in a survey's demographic variables does not significantly predict bias in its substantive variables (Oh & Scheuren, 1983; Peytcheva & Groves, 2009).

My study, then, supports Pike (2007), who recommended that weights not be used reflexively, but selectively on specific survey dimensions or constructs known conclusively to differ on both demographic and substantive variables—and even then, after careful consideration of the tradeoff between bias and precision. This study also demonstrated the necessity of robust population data in understanding the extent and potential impact of nonresponse in organizational surveys of faculty. Ultimately, the results suggest a survivorship bias in the survey data that academic leaders rely on to make decisions. Presidents, provosts, deans, and chairs should be attentive to the muted voices of faculty who consistently withdraw from opportunities to make their institutions better. These findings are not an entreaty to give up on surveys, but to use them among the several tools in the administrator's toolbox.

**APPENDIX A: TABLES**

Table 1. Characteristics of the four-year, not-for-profit sector of postsecondary education in the United States and the institutional sample from the 2011-12 Faculty Job Satisfaction Survey administered by the Collaborative on Academic Careers in Higher Education.

	<i>U.S. four-year, not-for-profit institutions<sup>1</sup></i>		<i>COACHE sample<sup>2</sup></i>	
	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>
<i>Total institutions</i>	<i>1,610</i>	<i>100%</i>	<i>69</i>	<i>100%</i>
<i>Carnegie Classification: Basic</i>				
Research universities (DRU, H, VH)	286	18%	21	30%
Master's colleges and universities (S, M, L)	654	41%	25	36%
Baccalaureate colleges (A&S, Diverse, Assoc)	670	42%	23	33%
<i>Fiduciary control</i>				
Public	586	36%	56	81%
Private, not-for-profit	1,024	64%	13	19%

Sources: <sup>1</sup> Carnegie Foundation for the Advancement of Teaching ([www.carnegiefoundation.org](http://www.carnegiefoundation.org)). Does not include specialized or tribal institutions. <sup>2</sup> COACHE Faculty Job Satisfaction Survey data set, 2011-12

Table 2. Characteristics of full-time, tenure-stream faculty in the four-year, not-for-profit sector of postsecondary education in the United States and the institutional sample from the 2011-12 Faculty Job Satisfaction Survey administered by the Collaborative on Academic Careers in Higher Education.

	<i>U.S. four-year, not-for-profit institutions<sup>1</sup></i>		<i>COACHE sample<sup>2</sup></i>	
	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>
<i>Total faculty</i>	<i>338,957</i>	<i>100%</i>	<i>27,661</i>	<i>100%</i>
<i>Carnegie Classification: Basic</i>				
Research universities (DRU, H, VH)	185,395	55%	18,475	67%
Master's colleges and universities (S, M, L)	108,917	32%	6,472	23%
Baccalaureate colleges (A&S, Diverse, Assoc)	44,645	13%	2,714	10%
<i>Fiduciary control</i>				
Public	225,240	66%	23,160	84%
Private, not-for-profit	113,717	34%	4,501	16%

SOURCES: <sup>1</sup> U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2009-10, Data Center (<http://nces.ed.gov/ipeds/datacenter>). Does not include specialized or tribal institutions.

<sup>2</sup> COACHE Faculty Job Satisfaction Survey data set, 2011-12

Table 3. Demographic and institutional characteristics of COACHE survey respondents and nonrespondents.

	Total	Response Status		Significance & effect size
		Respondents	Non-respondents	
<i>Race</i>	27,148	14,206	12,942	*** $V = .09$
White (non-Hispanic)	79%	82%	75%	
Asian, Asian-American, Pac. Isl.	12%	10%	13%	
Black or African-American	6%	5%	8%	
Hispanic or Latino	3%	3%	3%	
American Indian or Native Alaskan	0.5%	0.7%	0.3%	
<i>Gender</i>	27,661	14,531	13,130	*** $\phi = .08$
Male	64%	60%	68%	
Female	36%	40%	32%	
<i>Citizenship status</i>	27,276	14,456	12,820	*** $V = .09$
U.S. Citizen	86%	89%	83%	
Resident Alien	12%	9%	15%	
Non-Resident Alien	1.8%	1.5%	2.1%	
<i>Tenure status</i>	27,661	14,531	13,130	*** $\phi = -.03$
Pre-tenure	28%	29%	27%	
Tenured	72%	71%	73%	
<i>Rank</i>	27,341		12,962	*** $V = .04$
		14,379		
Assistant Professor	26%	27%	24%	
Associate Professor	36%	35%	37%	
Professor (or "Full Professor")	39%	38%	40%	
<i>Years since appointment to current rank</i>				
N	27,159	14,480	12,679	*** $d = .35$
Missing %	1.8%			
Mean	8.8	7.5	10.4	
Standard Dev.	8.6	7.7	9.3	
<i>Years since hire</i>				
N	25,889	13,699	12,190	*** $d = .18$
Missing %	6.4%			
Mean	13.5	12.6	14.5	
Standard Dev.	10.9	10.4	11.3	

Table 3 continued

	Total	Response Status		Significance & effect size
		Respondents	Non-respondents	
<i>Rank, by median year since appointment</i>				
Assistant Professor	6,982	3,944	3,038	*** $\phi = .07$
3 or fewer years	55%	58%	52%	
4 or more years	45%	42%	48%	
Associate Professor	9,374	4,937	4,437	*** $\phi = .20$
5 or fewer years	51%	60%	40%	
6 or more years	49%	40%	60%	
Professor (or "Full Professor")	10,484	5,448	5,036	*** $\phi = .15$
11 or fewer years	51%	58%	43%	
12 or more years	49%	42%	57%	
<i>Academic area</i>	26,810	14,087	12,723	*** $V = .10$
Humanities	13%	14%	12%	
Social Sciences	13%	15%	12%	
Physical Sciences	6%	6%	6%	
Biological Sciences	5%	5%	4%	
Visual & Performing Arts	6%	6%	7%	
Engineering/Comp Sci/Math/Stats	14%	13%	16%	
Health & Human Ecology	3%	4%	3%	
Agriculture/Nat Res/Env Sci	5%	5%	5%	
Business	7%	6%	7%	
Education	6%	7%	5%	
Med. Schools & Health Professions	16%	14%	18%	
Other Professions	5%	6%	5%	
<i>Biglan classification</i>	15,583	8,287	7,296	*** $V = .09$
Hard/Pure/Life	22%	20%	24%	
Hard/Pure/Nonlife	11%	11%	10%	
Soft/Pure/Life	15%	16%	13%	
Soft/Pure/Nonlife	22%	23%	21%	
Hard/Applied/Life	6%	6%	5%	
Hard/Applied/Nonlife	13%	11%	15%	
Soft/Applied/Life	10%	11%	9%	
Soft/Applied/Nonlife	2%	2%	2%	



Table 3 continued

	Total	Response Status		Significance & effect size
		Respondents	Non-respondents	
<i>Biglan pairs</i>	<i>15,583</i>	<i>8,287</i>	<i>7,296</i>	
Hard/Soft				*** $\phi = .07$
Hard	51%	48%	55%	
Soft	49%	52%	45%	
Life/Nonlife				$\phi = -.01$
Life	52%	52%	52%	
Nonlife	48%	48%	48%	
Pure/Applied				* $\phi = -.02$
Pure	70%	71%	69%	
Applied	30%	29%	31%	
<i>Holland classification</i>	<i>19,831</i>	<i>10,465</i>	<i>9,366</i>	*** $V = .06$
Investigative	41%	39%	42%	
Artistic	22%	22%	21%	
Social	23%	25%	21%	
Enterprising	15%	14%	16%	

Source: Analyses of COACHE:12

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Note:* Correlation coefficients are measured by phi ( $\phi$ ) for 2x2 crosstabulations and by Cramér's  $V$  for larger or asymmetric tables. For t-tests of independent group means, Cohen's  $d$  measures the magnitude of group differences.

Table 4. Institution-level characteristics of COACHE:12 survey respondents and nonrespondents.

Variable	Total	Response Status		Significance & effect size
		Respondents	Non- respondents	
<i>Degree of urbanization</i>	27,661	14,531	13,130	*** $V = .10$
City	60%	57%	63%	
Suburb	17%	15%	18%	
Town	18%	21%	15%	
Rural	6%	7%	4%	
<i>Control</i>	27,661	14,531	13,130	*** $\phi = .02$
Public	84%	83%	85%	
Private	16%	17%	15%	
<i>Carnegie classification (basic)</i>	27,661	14,531	13,130	*** $V = .05$
Doctoral	67%	65%	68%	
Masters	23%	23%	23%	
Baccalaureate	10%	11%	8%	
<i>Carnegie classification by control</i>				
<i>Public</i>	23,160	12,044	11,116	$V = .00$
Doctoral	66%	66%	66%	
Masters	27%	27%	27%	
Baccalaureate	7%	7%	7%	
<i>Private</i>	4,501	2,487	2,014	*** $V = .20$
Doctoral	70%	61%	80%	
Masters	5%	6%	4%	
Baccalaureate	25%	32%	16%	
<i>Carnegie undergraduate program by control</i>				
<i>Public</i>	22,420	11,646	10,774	*** $V = .04$
Balanced	39%	41%	37%	
Dominant A&S or professional	57%	56%	59%	
Focused A&S or professional	4%	3%	4%	
<i>Private</i>	4,501	2,487	2,014	*** $V = .19$
Balanced	75%	67%	84%	
Dominant A&S or professional	6%	7%	4%	
Focused A&S or professional	20%	26%	12%	

Table 4 continued

Variable	Total	Response Status		Significance & effect size
		Respondents	Non-respondents	
<i>Confidentiality of identifiable data by control</i>				
<i>Public</i>	23,160	12,044	11,116	$\phi = .01$
Disclosed to institution	77%	77%	78%	
Secured by COACHE	23%	23%	22%	
<i>Private</i>	4,501	2,487	2,014	*** $\phi = .17$
Disclosed to institution	65%	58%	74%	
Secured by COACHE	35%	42%	26%	
<i>Enrollment, undergraduate and graduate</i>				
N	27,661	14,531	13,130	*** $d = .10$
Mean	20,418	19,934	20,953	
Standard Dev.	10,712	10,979	10,382	
<i>Salary (\$), avg across FT instructional ranks</i>				
N	27,661	14,531	13,130	*** $d = .13$
Mean	84,448	83,607	85,378	
Standard Dev.	13,649	13,458	13,798	
<i>Graduation rate (%)</i>				
N	27,661	14,531	13,130	*** $d = .05$
Mean	65.4	65.8	64.9	
Standard Dev.	17.2	16.9	17.5	

Source: Analyses of COACHE:12.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

*Note:* Correlation coefficients are measured by phi ( $\phi$ ) for 2x2 crosstabulations and by Cramér's  $V$  for larger or asymmetric tables. For t-tests of independent group means, Cohen's  $d$  measures the magnitude of group differences.

Table 5. Institutional response rates (z-score) on COACHE:12 by categorical and continuous institution-level variables.

Categorical variables	Response rate (z-score)			F	df	sig.
	N	Mean	SD			
<i>Total</i>	69					
<i>Degree of urbanization</i>				3.95	3	.012 *
City	31	-.29	.928			
Suburb	11	-.31	1.107			
Town	16	.30	.552			
Rural	11	.70 <sup>a</sup>	1.218			
<i>Control</i>				.47	67	.000 ***
Public	56	-.23	.893			
Private	13	1.00	.818			
<i>Carnegie classification</i>				2.31	2	.108
Doctoral	21	-.23	.710			
Masters	26	-.12	.956			
Baccalaureate	22	.36	1.208			
<i>Carnegie undergraduate program</i>				4.10	2	.021 *
Balanced	23	.05	.717			
Dominant A&S or professional	28	-.29 <sup>b</sup>	.983			
Focused A&S or professional	12	.68	1.337			
<i>Confidentiality of identifiable data</i>				.23	67	.003 **
Disclosed to institution	51	-.21	.958			
Secured by COACHE	18	.60	.892			
Continuous variables	N	r	r <sup>2</sup>			sig.
<i>Enrollment, undergraduate and graduate</i>	69	-.34	.11			.005 **
<i>Salary (\$), avg across FT instructional ranks</i>	69	-.05	.00			.667
<i>Graduation rate</i>	69	.44	.19			.000 ***

Source: Analyses of COACHE:12.

\* p<.05; \*\* p<.01; \*\*\* p<.001. <sup>a</sup> compared to City; <sup>b</sup> compared to Focused.

Note: Overall, unstandardized institutional response rate mean = .56, SE = .015, SD = .127. r = Pearson's correlation coefficient.

Table 6. Summary of intercorrelations and linear regression analysis for institutional characteristics predicting standardized survey response rates (n = 69)

Variable	Correlation coefficients						Regression analysis			
	1	2	3	4	5	6	B	SE B	β	sig.
1 Confidentiality of survey data	--	.47***	.07	-.04	.31**	.36**	.45	.24	.20	.07 <sup>†</sup>
2 Control		--	.01	-.29*	.59***	.49***	.49	.38	.19	.20
3 Degree of urbanization			--	.43***	-.09	-.37**	-.59	.23	-.29	.01*
4 Enrollment size				--	.11	-.34**	-.18	.13	-.18	.16
5 Graduation rate					--	.44***	.25	.13	.25	.06 <sup>†</sup>

Source: Analyses of COACHE:12.

Note: <sup>†</sup>p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. Confidentiality of survey data: 1 = Secured by COACHE, 0 = Disclosed to institution. Control: 1 = Private non-profit, 0 = Public. Degree of urbanization: 1 = City/Suburb, 0 = Town/Rural. Variable 6 represents response rate. Correlations reported are Pearson's *r*. Regression analysis  $R^2 = .44$ , adjusted  $R^2 = .40$ .

**APPENDIX B: REFERENCES**

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