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# Correlates of Response Outcomes Among Organizational Key Informants

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*Response rate research among individual respondents is applied to key-informant methodology in organizational research. Five organizational samples (two industry-specific samples and three cross-industry samples) are examined to assess the extent to which research procedures, informant characteristics, and organizational characteristics affect response outcomes. Three response outcomes are of interest: response rates (proportion of sample participating), response speed (number of days to respond), and amount of missing data. Response rates in the five samples ranged from 19% to 71%. Research procedures are related to response outcomes, but the data are mostly suggestive and not conclusive with respect to the relationships of informant and organizational characteristics to response outcomes. Implications of these results for key-informant methodology are discussed.*

Survey response rates continue to be of great concern in many areas of applied psychology and sociology. Many valuable insights, summarized by Roth and BeVier (1998), about techniques for improving response rates can be gleaned from this research. The primary focus of these studies is on respondents reporting on their own attitudes, perceptions, opinions, and so forth. More recently, organizational research began relying heavily on key-informant methodology to derive an understanding of organizational functioning. Key informants are different from typical respondents to

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questionnaires. Informants are usually chosen because of their formal positions in the organization and their knowledge of the core issues in the study and, as such, are called on to make generalizations “about patterns of behavior, after summarizing either observed (actual) or expected (prescribed) organizational relations” (Seidler, 1974, p. 817). An implicit assumption in this research is that individual respondent dynamics can be applied in toto to informant response dynamics. This assumption, although credible, has not been empirically validated. This article focuses specifically on key-informant response dynamics.

Individual respondent research can be classified into two broad groups: studies that focus on research procedures and those that focus on respondent characteristics (Roth & BeVier, 1998). In addition to these factors, an issue particularly germane to informant research is the influence of organizational characteristics on response outcomes. Organizational characteristics are critical in informant research for several reasons. First, just as respondent research is furthered by examining respondent characteristics, informant research is furthered by examining organizational characteristics. Second, a clearer picture of response dynamics is derived from a simultaneous examination of individual and situational factors, that is, respondent and organizational characteristics. Third, the key-informant methodology is inextricably intertwined with organizational context, and significant methodological advancements must incorporate organizational factors. Thus, we investigate the relationship of organizational characteristics (as well as research procedures and informant characteristics) and response outcomes.

### **Key Informants and Organizational Research**

Organizational-level research relies heavily on informant data. Even archival data are reported by someone, and information on many variables (e.g., trust, power, commitment) is not available archivally (Kumar, Anderson, & Stern, 1993). Key informants are usually solicited for these softer variables not because they represent the organization in a statistical sense but because of their familiarity with the organization and their willingness to provide this information (Kumar et al., 1993). Informants thus provide information about the organization. Individual-level respondents, by contrast, describe their own feelings and opinions.

Most response rate research makes little distinction between respondents and informants (e.g., Roth & BeVier, 1998). The scant informant research typically concerns agreement among informants from the same organization (Kumar et al., 1993; Phillips, 1981). Because respondents and informants are not necessarily equivalent, it is important to examine response dynamics among informants distinctly from parallel dynamics among respondents.

This issue is critical for both theoretical and practical reasons. From a theoretical perspective, response dynamics among informants offer the potential to illuminate a variety of conceptual frameworks, including social exchange theory (Emerson, 1987; Kelley & Thibaut, 1978) and organizational influences on responses (Tomaskovic-Devey, Leiter, & Thompson, 1994). From a practical perspective, informant research enables the development of superior procedures for maximizing participation among those uniquely qualified to provide organizational data. In the following pages, we

outline significant outcomes in informant research and offer a conceptual explication of characteristics that predict these outcomes.

### Critical Response Outcomes

Response research typically concerns response rates, that is, the proportion of the sample returning completed questionnaires. A high response rate clearly furthers research interests—the sample is more likely to represent the population of interest, and the likelihood of systematic response biases is minimized. This issue is further underscored in key-informant research. Key informants are usually located among the higher echelons of the organizational hierarchy. The demands on their time, the conflicts with other organizational priorities, and the numerous calls for survey participation are likely to make them less responsive to requests to participate. Thus, the response rate is of substantial concern for key-informant research and is as critical as, if not more critical than in questionnaire research in general.

A related issue involves the time it takes respondents to return questionnaires, that is, response speed (e.g., Gray, 1957; Mansfield, 1948). Speedy returns are of the essence in probably all variations of survey research methodology. It is important to key-informant research because questionnaire responses are susceptible to temporal influences, such as changes in organizational structures, policies, and personnel over time. Speedy responses not only enhance the temporal relevance of data but also increase data homogeneity. Two informants reporting about yesterday are more likely to be reacting to similar phenomena than one responding about yesterday and the other about a year ago.

A third critical response outcome is the amount or percentage of missing data in informant research (e.g., McDaniel & Rao, 1980, 1981; Wynn & McDaniel, 1983). Missing-data research usually concerns the utility of techniques for dealing with this problem statistically, but very little research addresses potential correlates (individual and/or organizational) of missing data (for exceptions, see Goodman & Blum, 1996; Roth, Campion, & Jones, 1996). The least problematic cause of missing data is randomness (Little & Rubin, 1987), but other more troublesome patterns concern the complexity of a questionnaire or the difficulty of obtaining the requested information. Extraneous factors may also increase missing data (Switzer, Roth, & Switzer, 1998). For example, an informant may not have the qualifications or knowledge necessary to answer the questions, the informant's attitudes or perceptions may result in more missing data, or the organization's policies and practices may preclude reporting some information. Key-informant research often also solicits hard, factual information about the organization, information that is generally unavailable archivally and is often considered proprietary. Thus, missing data can be particularly problematic in informant research.

All three of these variables are critical for a reasonable database: A high response rate is essential if the data are to be representative, a high response rate obtained after a long time lag might render the research question obsolete or the answers noncomparable, and a high number of responses full of missing data erodes the value of the database. We incorporate all three elements into this study because different factors may affect these outcomes in different ways.

## Theoretical Foundations

### Research Procedures

Much respondent research implicitly or explicitly uses concepts from social exchange theory (e.g., Emerson, 1972, 1987; Kelley & Thibaut, 1978). Social exchange theory posits that behavior is the result of an interactive process between individuals. It is motivated by the potential psychological costs and returns associated with it (Greenberg, 1980). Social relationships are grounded in the idea of reciprocity: Resources, information, affection, favors, and so forth flow in both directions between the parties (Stolte, 1987).

Research procedures that effectively establish relationships between the researcher and the informant are likely to create a norm of reciprocity. Certain procedures enable the researcher to elaborate on the potential benefits of participation and highlight the advances, practicality, and utility of the information to be generated and disseminated. These procedures involve the informant in a relationship with the researcher. The informant is then more likely to comply with normative rules of social engagement. A reciprocal behavior (i.e., questionnaire completion) is more likely to follow in these circumstances. For example, reminders may increase responses because they are viewed as placing a “saddle of unmet social debt” (Cialdini, 1995, p. 261) on the informant, thereby inducing compliance. In fact, social exchange theory can account for the value of three of the four procedures (advance notice, mail follow-ups, and the salience of research questions) noted by Roth and BeVier (1998) as the most consistent predictors of response rates.

Key-informant research can easily incorporate advance notice, mail follow-up, and salient research questions. Social exchange theory also highlights the importance of the quality of these procedures in response induction, a factor that has yet to be addressed. The quality of the initial contact with informants could vary within and across studies, as could the quality of follow-up work during and after questionnaire administration. These variations in quality affect the nature of the social exchange, and these are likely to have a significant impact on response outcomes.

***Quality of the initial contact.*** The initial contact with the informant essentially sets the stage for the study: It highlights the value of the study to informants, it conveys the time demands necessitated by the study, and it solicits cooperation. In many instances, researchers simply use a cover letter accompanying the survey to induce participation, but in other instances, considerable effort is devoted to discussing the project (typically through telephone contact) with potential informants prior to survey administration. The opportunity to speak with the informant increases the likelihood of reciprocity in two ways. First, personal contact ensures the researcher that research purposes and other important information actually reach informants, something that is not guaranteed with mail-based contact. Transactional exchanges are more likely under such circumstances. Establishing an exchange relationship should also diminish the percentage of missing data in returned questionnaires because the researcher can establish whether the informant has the knowledge or available information to complete questionnaire sections. Moreover, because participants in social exchanges are often concerned with equity (Stolte, 1987), an informant who expects useful information in

return for participation or who buys in to the study is less likely to return a questionnaire full of missing data.

**Quality of reminders.** Qualitative (Harvey, 1987) and quantitative (Yammarino, Skinner, & Childers, 1991) reviews of the response rate literature confirm that persistent reminders improve response rates. A series of follow-up written reminders (i.e., letters and/or postcards) improve response rates (e.g., Kanuk & Berenson, 1975; Martin, Duncan, & Sawyer, 1984), but telephone reminders may be even more effective (Eckland, 1965; Pressley & Dunn, 1985; Roscoe, Lang, & Sheth, 1975). Research procedures can include or exclude reminders per se, and the quality of the reminders can vary. Extrapolating from social exchange arguments, reminders should improve response rate, and telephone reminders should elicit superior response outcomes compared to voice mail or secretarial messages or compared to mail reminders only.

**Reminder timeliness.** Another factor that can vary across studies and informants is the timeliness of the reminder. The frequency and timeliness of interactions in social exchange increase the probability of a transaction (Cook, 1987; Emerson, 1972). There is probably an ideal time lag between survey receipt and a reminder. As an extreme, reminders made a year after initial survey mailing are unlikely to be fruitful. It is reasonable to expect instead that reminders closer to survey receipt are more effective in enhancing response outcomes than those that are further away temporally.

In short, the quality of research procedures may vary in terms of the quality of the initial contact, the quality of reminders, and the timeliness of reminders. When these factors are of high quality, we expect better response outcomes.

### **Characteristics of Individuals and Organizations**

Tomaskovic-Devey et al. (1994) extended procedural explanations for response patterns from respondents to informants. The authors hypothesized that an informant's decision to respond to an organizational survey involves a consideration of three general processes: authority, capacity, and motivation. Informants must have the authority, either through formal position power or informal latitude, to complete an organizational questionnaire. They must have the capacity to respond. Individual (e.g., knowledge level) and organizational characteristics (e.g., size and information-sharing practices) can facilitate or limit response probability (Tomaskovic-Devey et al., 1994). Capacity affects the decision to respond; it can also affect the compilation of the required information and survey completion time. The third factor is the individual or organizational motivation to disclose organizational information. The authors found several organizational characteristics (e.g., firm size and the degree of regulation) to be significant predictors of response rates. This study extends knowledge about informant research, but it is limited because of its exclusive focus on response rates as the outcome and organizational characteristics as predictors. A simultaneous examination of both individual and organizational representations of authority, capacity, and motivation is more useful for maximum value.

**Individual characteristics.** Several studies investigated the effects of demographic characteristics on the probability of response among respondents (Dalecki, Ilvento, &

Moore, 1988; Green, 1991; Green & Kvidahl, 1989; Jay, Liang, Liu, & Sugisawa, 1993; Kaldenberg, Koenig, & Becker, 1994; Pavalko & Lutterman, 1973). In an informant study, individual characteristics representing greater authority, capacity to respond, or motivation should be more significant predictors than demographics. The informant's age and organizational tenure can reflect formal or informal authority in the organization and may also indicate knowledge of relevant issues, that is, an individual's capacity to respond. Education level, the number of certifications held, position in the organization, the level of the unit (e.g., plant level or corporate level) in which the informant is employed (unit level), and the functional breadth (responsibility or knowledge of several functional areas) of informants are also factors that relate to authority, capacity, and/or motivation. For example, informants at higher levels in the organizations are more likely to have the authority or personal freedom to respond to questionnaire, whereas those with higher education levels, more certifications, and more functional breadth may have a base of information at their disposal that may result in missing-data reduction. Although it is difficult to tie organizational nonresponse theory to gender, we include this variable because women are more likely to participate in both phases of longitudinal research (Goodman & Blum, 1996), and it is otherwise such a central factor in much research.

Tomaskovic-Devey et al. (1994) argued that completing a survey (and completing it well) was not a task generally covered in an informant's job description. The completion decision, therefore, is extrarole, and individuals whose identities and values are more closely tied to the organizations are more likely to take the time to respond, especially when the research issues are expected to benefit the organization (Tomaskovic-Devey et al., 1994). Because key informants are often promised detailed feedback from researchers, those who identify with their jobs and organizations may view survey response as a way to benefit the organization. The issue of whether organizationally relevant attitudes predict response outcomes is thus critical, but the literature generally ignores the issue (Roth & BeVier, 1998). Two widely studied organizational attitudes—job satisfaction and organizational commitment—should relate to the response outcomes of speed and quality because they are consistently related to extrarole behaviors (e.g., Randall, Fedor, & Longenecker, 1990).

***Organizational characteristics.*** We draw from Tomaskovic-Devey et al. (1994) in identifying potential predictors. In particular, complexity, information dissemination, and routinized behavioral patterns are apt to enhance or erode the probability of survey response by the affecting capacity and motivation to respond.

Three broad groups of organizational characteristics can affect these elements—organizational demographics, organizational structure, and organizational values. With respect to organizational demographics, larger and older organizations are typically more complex, with knowledge of organizational issues and functions diffused throughout the system. Thus, organizational size and age may be associated with a lower probability of return, longer response times, and more item nonresponse because of the difficulty of collecting and reporting information. In terms of organizational structure, Tomaskovic-Devey et al. (1994) argued that organizations with rigid, formalized, and bureaucratic structures are less likely to respond to surveys because these structures limit identification with the firm, promote work rules, and discourage individual empowerment. Unionization, number of hierarchical levels, and span of

control are potential proxies for work rigidity and bureaucracy. Organizational values can be inferred from various organizational practices. Information collection and sharing practices reflect the organization's value system to some extent and thus should affect capacity and motivation (Tomaskovic-Devey et al., 1994). Organizations using internal surveys are arguably more open to sharing organizational information than other companies. Average pay provides an approximation of the organization's general perspective on human resources—higher paying employers are more likely to value human resources.

**Summary.** Drawing on social exchange and organizational nonresponse perspectives, we examine the impact of research procedures (quality and timeliness of reminder and quality of initial contact), informant characteristics, and organizational characteristics on three response outcomes: response rate, response speed, and missing data. We incorporate many of the procedural elements found by Roth and BeVier (1998) to increase response rates. This allows us to maximize returns and reduce response bias. Thus, this study is designed to validate individual respondent research among organizational key informants, to explore informant and organizational predictors of response outcomes, and to extend response rate research in general. The issues are examined across five separate data sets, enabling a broad organizational-level assessment of key-informant response outcomes.

## Method

Five separate data sets were used in the study. These data sets are described below. For ease of comparisons across data sets, Table 1 summarizes the research procedures across the samples, and Table 2 summarizes the information obtained in each study. Descriptive information on all variables in each sample is contained in Table 3.

### Sample 1: Trucking

The sample for this study consisted of trucking companies listed in the *TTS Blue Book of Trucking Companies* (Transportation Technical Services, 1993) (which includes information that trucking companies must file with the Interstate Commerce Commission) that had at least 30 employees in the 1991, 1992, or 1993 calendar year and that were listed in the most recent version of the book (i.e., 1993). Of the companies, 1,072 met all relevant criteria and constituted the final population for the study.

The most senior human resource manager in each company was the target informant. A 24-page questionnaire focusing on human resource practices, business strategy, informant attitudes, and outcome variables was mailed to informants, following the procedure outlined in Table 1. In line with previous response rate reviews (Harvey, 1987; Roth & BeVier, 1998; Yammarino et al., 1991), the methodology entailed standardizing response-enhancing techniques across informants. These included personalized cover letter, letter prenotification, statement of research importance, promise of detailed feedback, personalized mailing label, university affiliation, research sponsorship, prepaid reply envelope, first-class mail, telephone prenotification, use of ID number, reminder phone call, reminder letter, and reminder postcard. That is, many steps were taken to enhance response rates (particularly due to questionnaire length),



*Table 1*  
Summary of Research Procedures

<i>Procedure</i>	<i>Trucking</i>	<i>ACPA</i>	<i>ACA-1</i>	<i>ACA-2</i>	<i>SBP</i>
Prenotification (time frame prior to survey mailing)					
Telephone contact with company to determine appropriate key respondent (in months)	1	None <sup>a</sup>	None <sup>b</sup>	None <sup>b</sup>	Varied <sup>c</sup>
Letter (in weeks)	2	2	2	2	None
Telephone contact with respondent (in days)	1	1	1	1	None
Questionnaire mailed (with personalized cover letter, statement of research importance, promise of detailed feedback, confidential ID number, personalized mailing label, university affiliation, research sponsorship, prepaid reply envelope, and first-class mail)					
Postnotification (time frame after survey mailing)					
Telephone reminder (minimal message, detailed message, or direct contact) (in weeks)	2	4 to 7	3 to 6	2	2 to 6
Letter reminder (in months)	1	1 to 8	1 to 2	1 to 2	None
Postcard reminder (in months)	2	None	None	None	None

*Note.* ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay.

a. Contacts identified through ACPA.

b. Contacts identified from ACA directory.

c. Volunteers solicited through ads.

but the steps were constant across informants. These procedures yielded a total of 379 completed surveys, a 36% (379 out of 1,072) response rate.

**Outcome measures.** Three outcome variables were of interest. Return was simply whether a completed questionnaire was returned (1 = yes, 0 = no). Return days counted the business days between mailing the questionnaire and receiving a completed return. Missing-data percentage was computed as the percentage of missing responses relative to the total possible responses. Return was examined for all 1,072 cases, whereas return days and missing-data percentage were examined among informants only.

**Predictors: Research procedures.** Only one research procedure varied across informants, that is, the quality of the reminder phone call. Reminder quality was coded 0 if minimal contact information (name, affiliation, telephone number) could be left in a message, 1 if a detailed secretarial or voice mail message could be left, and 2 if direct phone contact could be made with the informant.

**Predictors: Organizational characteristics.** Predictor information was obtained from the survey and the *Blue Book*. Organizational age was the log of 1994 minus the company's founding year (*Blue Book*). Organizational size was the log of the number of people employed by the company (survey). Unionization was coded 1 if any of the company's drivers were covered by collective-bargaining agreements and 0 otherwise (survey). Survey experience was measured on a 7-point scale concerning the propor-

Table 2  
Summary of Information Available in the Data Sets

Information	Sample				
	Trucking <sup>a</sup>	ACPA	ACA-1	ACA-2	SBP
Sample characteristics					
Final sample size	1,072	202	240	512	182
Number of responses	379	141	43	112	97
Response rate (in percentages)	36	71	19	23	53
Survey length (in pages)	24	44	24	24	28
Outcome measures					
Return	X	X	X	X	X
Return days	X	X	X	X	X
Missing-data percentage	X	X	X	X	X
Predictors: research procedures					
Reminder quality	X		X	X	
Reminder timeliness		X	X		X
Initial contact quality			X	X	
Predictors: organizational characteristics					
Log organizational age	X	X	X	X	X
Log organizational size	X	X	X	X	X
Unionization	X	X	X	X	X
Survey experience	X	X	X	X	X
Hierarchical levels	X	X	X	X	X
Span of control	X	X	X	X	X
Average pay	X	X	X	X	X
Government			X	X	X
Predictors: informant characteristics					
Age	X	X			
Gender	X	X	X	X	X
Tenure	X	X			
Education	X	X			
Certifications	X	X	X	X	
Job satisfaction	X	X			
Organizational commitment	X	X			
Unit level			X	X	
Organizational level			X	X	X
Functional breadth			X	X	X

Note. ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay.

a. In addition, archival measures of average haul, average load, number of drivers, number of trucks owned, operating expenses, total assets, net profit margin, operating ratio, and return on equity were available from the *Blue Book*.

tion of drivers currently involved in a survey feedback program (survey). Hierarchical levels were measured as the number of hierarchical levels in the organization, counting from the top executive or CEO to the lowest level employee (survey). Span of control was the number of drivers reporting to each first-line supervisor or dispatcher (survey). Average pay was the mean of two items comparing the organization's pay rates to (a) other companies in the trucking industry and (b) the local labor market (survey). Each item had five response options ranging from 1 (*ours are much lower*) to 5 (*ours are much higher*). Information on these variables was available for informants only. Addi-

Table 3  
Descriptive Statistics for All Study Variables

Predictor	Sample									
	Trucking		ACPA		ACA-1		ACA-2		SBP	
	M	SD	M	SD	M	SD	M	SD	M	SD
Response outcomes										
Return	0.36	0.48	0.71	0.46	0.19	0.40	0.23	0.42	0.53	0.50
Return days	21.91	16.37	48.51	24.71	41.85	22.81	41.15	26.73	51.69	37.90
Missing-data percentage	0.10	0.12	0.07	0.05	0.11	0.12	0.11	0.09	0.16	0.09
Research procedures										
Reminder quality	2.05	0.79	NA	NA	1.96	0.63	0.73	0.74	NA	NA
Reminder timeliness	NA	NA	57.80	10.07	1.38	0.90	NA	NA	20.16	20.90
Initial contact quality	NA	NA	NA	NA	1.31	0.65	0.84	0.62	NA	NA
Organizational characteristics										
Log organizational age	3.52	0.94	3.31	0.66	3.69	0.94	3.48	0.98	2.43	1.25
Log organizational size	4.84	1.26	3.20	0.62	6.73	1.76	7.15	1.49	6.27	1.52
Unionization	0.19	0.38	0.26	0.44	0.39	0.49	0.24	0.43	1.15	0.60
Survey experience	2.12	1.73	2.36	2.03	3.28	2.21	3.67	2.28	4.40	2.40
Hierarchical levels	5.39	3.32	5.49	1.95	6.28	3.93	7.18	7.24	4.82	2.01
Span of control	127.90	489.80	10.49	5.65	14.65	18.78	13.40	12.02	20.92	16.53
Average pay	3.37	0.73	3.19	0.79	3.40	0.57	3.29	0.63	3.67	0.73
Government	NA	NA	NA	NA	0.04	0.20	0.05	0.23	NA	NA
Informant characteristics										
Age	45.67	9.79	46.14	8.50	NA	NA	NA	NA	NA	NA
Gender	0.16	0.36	0.01	0.08	0.56	0.48	0.36	0.48	0.49	0.41
Tenure	10.49	9.07	17.06	10.45	NA	NA	NA	NA	NA	NA
Education	3.55	1.10	3.34	1.10	NA	NA	NA	NA	NA	NA
Certifications	0.10	0.39	1.21	0.41	0.34	0.54	0.25	0.47	NA	NA
Job satisfaction	6.09	0.99	6.16	0.77	NA	NA	NA	NA	NA	NA
Organizational commitment	5.90	0.98	6.07	0.70	NA	NA	NA	NA	NA	NA
Unit level	NA	NA	NA	NA	3.80	0.42	3.54	0.77	NA	NA
Organizational level	NA	NA	NA	NA	3.65	0.91	2.90	0.98	1.28	0.74
Functional breadth	NA	NA	NA	NA	1.84	0.81	2.11	0.89	2.14	0.91
Archival measures										
Average haul	5.77	0.97	NA	NA	NA	NA	NA	NA	NA	NA
Average load	2.62	0.88	NA	NA	NA	NA	NA	NA	NA	NA
Number of drivers	4.57	1.40	NA	NA	NA	NA	NA	NA	NA	NA
Number of trucks owned	2.52	1.44	NA	NA	NA	NA	NA	NA	NA	NA
Operating expenses	9.74	1.27	NA	NA	NA	NA	NA	NA	NA	NA
Total assets	8.80	1.43	NA	NA	NA	NA	NA	NA	NA	NA
Net profit margin	3.14	7.73	NA	NA	NA	NA	NA	NA	NA	NA
Operating ratio	95.86	5.30	NA	NA	NA	NA	NA	NA	NA	NA
Return on equity	13.30	161.90	NA	NA	NA	NA	NA	NA	NA	NA

Note. ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay. NA = not available.

tional information was obtained from the *Blue Book* about average haul, average load, number of drivers, number of trucks owned, operating expenses, total assets, net profit margin, operating ratio, and return on equity. These are structural and effectiveness characteristics of the companies in the population. Log transformations of these measures were used when appropriate.

**Predictors: Informant characteristics.** Age, gender, and tenure were reported directly by informants. Education was the informant's level of formal education, varying from 1 (*some high school*) to 6 (*graduate degree*). Certifications were measured as the number of professional certifications held by the informant. Job satisfaction was measured through a three-item scale from Cammann, Fichman, Jenkins, and Klesh (1983). Organizational commitment was measured with the short form of the Organizational Commitment Questionnaire (Mowday, Porter, & Steers, 1982).

### Sample 2: American Concrete Pipe Association

The population consisted of the membership of the American Concrete Pipe Association (ACPA) in the United States and Canada. At the time of the study, ACPA had about 65 member companies representing more than 200 different plants manufacturing concrete pipe and products. To be included, plants had to be currently manufacturing concrete pipe or other concrete products. In all, 202 plants met this criterion. Prior to data collection, extensive contacts were made with corporate personnel and the plant managers in the population by mail, by phone, and on occasion, in person. Each plant manager was mailed a 44-page survey dealing with total quality, human resource management, production and operations, and effectiveness issues. The plant manager was instructed to complete the survey himself or herself and/or to have the most knowledgeable people in the plant complete relevant sections. Procedural specifics for Sample 2 are also shown in Table 1. Completed responses were obtained from 141 plant managers, representing a 71% (141 out of 202) response rate.

**Measures.** The operationalizations of the outcome variables, research procedures, organizational characteristics, and informant characteristics for this sample paralleled those in the trucking sample (see Table 2), with two exceptions. First, in terms of research procedures, all potential informants were contacted by telephone for reminders, making reminder quality a constant. An alternative measure—reminder timeliness—was available instead. On average, informants were contacted about 2 months after the survey was mailed, but the standard deviation of reminder timeliness was 10.07 business days. Thus, reminder timeliness was included in the analysis instead of reminder quality. It was coded as the reverse of the date of the reminder call minus the date of the survey mailing. Higher values on this measure indicate more timely reminders. Second, counterparts of the *Blue Book* measures of organizational characteristics were not available for this study.

### Sample 3: American Compensation Association-1

The population was the membership of the American Compensation Association (ACA). A systematic sampling procedure with a random start was used to select 240 informants from the ACA membership directory. To be included, the informants' organizations had to have a compensation plan for an identifiable group of operating employees. Potential informants who were members of consulting firms, research firms, or who for other reasons had no operating employees were replaced in the sample with eligible informants. A 24-page questionnaire was mailed to the top compensation or human resource manager in each company. The primary focus of the questionnaire was the compensation system for operating employees. The procedures used for

this study are shown in Table 1. In all, 43 usable responses were obtained, yielding a 19% (43 out of 240) response rate.

The research procedures used in Sample 3 were not as comprehensive as those for Samples 1 and 2. The similarities and differences in procedures and measures are described below.

**Outcome measures.** The same three outcome measures—return, return days, and missing-data percentage—were used for Sample 3.

**Predictors: Research procedures.** Three procedural measures were available in this data set. First, there were variations in the quality of the initial telephone contact with informants. Initial contact quality was coded 0 if the informant could not be reached by telephone despite repeated attempts or if it was possible to leave only a name and phone number. For other informants (coded 1), it was possible to leave a detailed voice mail or secretarial message. Finally, the research team was able to reach some informants by telephone and explain the study in detail (coded 2). Reminder timeliness for this study was operationalized as a telephone reminder 3 weeks (coded 3), 4 weeks (coded 2), 5 weeks (coded 1), or more than 5 weeks (coded 0) after the initial survey mailing. Reminder quality was operationalized as described in Sample 1.

**Predictors: Organizational characteristics.** Measures of organizational characteristics were obtained to parallel those described for Sample 1 (organizational age, organizational size, unionization, survey experience, hierarchical levels, span of control, and average pay). In addition, a measure from the ACA directory described whether the informant's employer was a government agency. Government agencies may exhibit different characteristics than private agencies. Governmental agencies are generally hierarchical and bureaucratic, which may hinder positive response outcomes, but governmental organizations are subject to more extensive informational reporting and sharing requirements, factors that may facilitate response. Government was coded 1 if the informant's organization was a government agency and 0 if not.

**Predictors: Informant characteristics.** In addition to gender, age, tenure, education, and certifications (in which the operationalizations paralleled those reported for Sample 1), the ACA directory contained several pieces of information that could be used to compare responders with nonresponders. Unit level was the type of organizational unit that employed the informant (plant/branch = 1, regional headquarters = 2, subsidiary/divisional headquarters = 3, corporate headquarters = 4). Organizational level described the informant's level in the company (1 = nonexempt staff, 2 = professional exempt staff, 3 = supervisory management, 4 = middle management or above). Functional breadth was coded 1 if the informant handled employee compensation or employee benefits, 2 if the informant handled employee compensation and employee benefits, and 3 if the informant handled a variety of human resource functions.

#### Sample 4: ACA-2

**Participants.** As with Sample 3, the population for Sample 4 was the ACA membership. A systematic sampling procedure with a random start was used to select 512

potential informants. Inclusion criteria mirrored those in Sample 3, and potential informants were again the top compensation or human resource managers in the organizations in the sample. A 24-page questionnaire, identical to that used in Sample 3, was mailed to informants. In this sample, 112 usable responses were returned for a response rate of 23% (112 out of 512). There were no overlapping organizations or informants in Samples 3 and 4.

**Measures.** Measures for Sample 4 were identical to those for Sample 3, with one exception—reminder timeliness. For Sample 4, all nonresponders were reminded 15 days subsequent to the initial survey mailing. Thus, this measure was a constant and was not included in the analysis for Sample 4.

### Sample 5: Skill-Based Pay

This was a specialized sample focusing on companies using skill-based pay (SBP) as their primary compensation system for operating employees. A list of SBP users was developed through academic and professional contacts and through solicitations placed in three consecutive issues of the ACA monthly newsletter. An organization had to use SBP as the compensation plan for at least some of its employees to be eligible for inclusion. In all, 182 SBP users were identified. A 28-page questionnaire was mailed to potential informants, that is, top human resource or compensation managers of these organizations. Usable responses were obtained from 97 facilities, for a response rate of 53% (97 out of 182).

**Measures.** Research procedures and measures corresponded to those used in Samples 3 and 4, with the following exceptions. Reminder timeliness was the only variable research procedure available in this data set. This measure was coded as the reverse of the date of the reminder call minus the date when the survey was mailed. High values thus reflect more timely reminders. The only informant characteristics on which information was available (from the ACA membership directory) were gender, organizational level, and functional breadth. Because this was primarily a volunteer population, the ACA directory did not include information on all participating organizations.

### Analytic Approach

Response dynamics were examined within and across samples. First, in a descriptive context, we make a series of intersample observations concerning response predictors and outcomes. These are necessarily limited by differences in procedures, operationalizations, and availability of variables across samples, but these are interesting points of departure. Next, we examine intrasample correlations between the sets of independent (research procedures, organizational and informant characteristics) and criterion variables. Third, we examine bivariate and multivariate tests of predicted relationships across samples. Data sets are merged, and correlations between predictors and outcomes are examined using all available pairwise cases. This is followed by a series of multiple regressions assessing the predictive ability of research procedures, organizational characteristics, and informant characteristics in more fully specified models.

## Results

### Descriptive Intersample Observations

Intersample assessments are difficult to summarize statistically but are nevertheless useful. Samples 1 and 2 were single-industry studies (trucking and ACPA) that addressed significant industry issues, and Sample 5 focused on a salient issue, the use of SBP, across industries. By contrast, Samples 3 and 4 (ACA-1 and ACA-2) were cross-industry studies addressing general compensation issues. Prior research suggests that response outcomes would be superior in Samples 1, 2, and 5, in which research salience was high, compared to Samples 3 and 4. The results show this to be the case (Table 3) despite the fact that similar, extensive, and empirically sound procedures were used in all five samples. Sample 2 (ACPA) had the highest response rates, followed by SBP, trucking, ACA-2, and ACA-1, in that order.

In our data sets, the extensiveness of research procedures tended to coincide with the salience of the research question. Preparatory and reminder work was generally of higher quality in the trucking and ACPA samples than in the ACA samples. For example, in Sample 2, the research team typically had extensive personal contacts with both corporate and plant personnel and visited several plants and corporate offices, and the survey was always preceded by at least extensive telephone conversations between the research team and plant personnel. In ACA-1 and to some extent in ACA-2, on the other hand, potential informants often had at best a brief phone message before they got the survey. The covariation of research procedures and research salience makes it impossible to isolate the unique contribution of either to response outcomes across studies. Within the sample, of course, the response dynamics should be unaffected by these procedural differences across samples.

In terms of return days, Table 3 shows that the quickest returns occurred in Sample 1 (trucking), and the slowest occurred in Sample 5 (SBP). Sample 5 also had the highest proportion of missing-data percentage, perhaps because of the difficulty in answering some of the questions. It is interesting to note that Sample 2, with the longest survey, had the highest response rate but the second slowest response time. On average, it took informants almost 7 weeks to return the survey, although a large proportion did return it.

### Intrasample Results

Data on intrasample predictors of response outcomes are shown in Tables 4 and 5. In these tables, each data set is analyzed separately. Table 4 contains intrasample results for research procedures and organizational characteristics (including the *Blue Book* variables in Sample 1), and Table 5 has parallel information for informant characteristics. Intercorrelations between the predictors are not shown for clarity and because these substantive relationships are immaterial to response outcomes (these are available from the authors on request).

**Research procedures.** Reminder quality had a significant positive relationship with return and return days and was unrelated to missing-data percentage in all cases, that is, in Samples 1, 3, and 4. Higher quality reminders yield more responses but with greater delay.

Reminder timeliness was positively related to return and negatively related to return days in Samples 2 and 3. Sample 5 showed the same pattern, except that the correlation with return, although moderate ( $r = .24$ ), was not significant (probably because the  $n$  was low). Thus, timely reminders are associated with higher and faster responses.

The third procedural variable, contact quality, had only one significant relationship—with return in Sample 3. The third response outcome, missing-data percentage, was unrelated to all research procedures.

**Organizational characteristics.** Sample 1 was the only one to show systematic relationships with organizational characteristics. Return days was related to the log of organizational age and size and to survey experience (older and larger organizations and organizations with less survey experience took longer). Missing-data percentage was related to hierarchical levels and unionization (hierarchical and nonunionized organizations had more missing data). These results are also supported by the archival measures available in Sample 1, with responses from larger companies (larger average haul, more trucks owned) showing a higher missing-data percentage.

Samples 2, 3, and 5 had only one (just slightly more than would be expected by chance) significant correlation each between organizational characteristics and response outcomes, and Sample 4 showed none. These results lend little support to the conclusion that organizational characteristics are substantial predictors of response rates, although structural characteristics may reflect different response tendencies.

**Informant characteristics.** The results were somewhat different in terms of informant characteristics (Table 5). In Sample 1, education was positively related to return days; in Sample 2, certifications and job satisfaction were positively related to return days; in Sample 3, organizational level and functional breadth were negatively related to return days, and unit level was positively related to missing-data percentage; Samples 4 and 5 had no significant relationships of informant characteristics with response outcomes. Overall, these results suggest that there may be some tendency for higher level informants to take longer to complete surveys.

## Combined Analyses

**All available data correlations.** The first step in these analyses was to merge all data points from all samples. Bivariate correlations were then calculated between each predictor and each criterion variable. The result is a correlation matrix using all possible pairwise data for each predictor-outcome dyad. Although there are minor operationalization differences across studies, this approach maximizes statistical power for each pairwise analysis. The operationalization of reminder timeliness varied substantially across Samples 2, 3, and 5. Because Samples 2 and 5 made finer distinctions than did Sample 3, timeliness data from Samples 2 and 5 were collapsed into categories paralleling those used in Sample 3. This allows for pooling across the three samples. The correlation results are shown in the first three columns of Table 6.

Consistent with the intrasample results, correlations between return and reminder quality ( $r = .20, p < .01, n = 1,201$ ), initial contact quality ( $r = .29, p < .01, n = 224$ ), and reminder timeliness ( $r = .34, p < .01, n = 399$ ) were significant. Return days were posi-

(text continues on p. 342)



*Table 4*  
Correlations of Research Procedures and Organizational Characteristics With Response Outcomes Across Samples

<i>Predictor</i>	<i>Trucking</i>			<i>ACPA</i>			<i>ACA-1</i>			<i>ACA-2</i>			<i>SBP</i>		
	<i>Return</i>	<i>Return Day</i>	<i>Missing-Data %</i>	<i>Return</i>	<i>Return Day</i>	<i>Missing-Data %</i>	<i>Return</i>	<i>Return Day</i>	<i>Missing-Data %</i>	<i>Return</i>	<i>Return Day</i>	<i>Missing-Data %</i>	<i>Return</i>	<i>Return Day</i>	<i>Missing-Data %</i>
<b>Research procedures</b>															
Reminder quality	.27**	.23**	.11	NA	NA	NA	.23**	.29*	.15	.28**	.29**	-.04	NA	NA	NA
<i>n</i>	871	168	160				199	38	38	460	79	74			
Reminder timeliness	NA	NA	NA	.20**	-.24*	.04	.19**	-.85**	.09	NA	NA	NA	.24	-.81**	.04
<i>n</i>				175	87	113	199	38	38				25	25	25
Initial contact quality	NA	NA	NA	NA	NA	NA	.18**	.03	.05	.07	-.10	-.08	NA	NA	NA
<i>n</i>							220	40		495	114	109			
<b>Organizational characteristics</b>															
Log organizational age	NA	.13*	.00	NA	.02	.08	NA	.21	-.33*	NA	-.07	.00	NA	-.09	-.02
<i>n</i>		373	375		111	136		38	39		96	96		83	91
Log organizational size	NA	.10*	-.07	NA	.05	-.13	NA	.14	-.22	NA	.17	.09	NA	-.02	.21*
<i>n</i>		373	375		115	141		39	39		107	107		86	96
Unionization	NA	-.07	-.11*	NA	-.04	.06	NA	.20	-.02	NA	-.04	-.07	NA	-.10	-.21
<i>n</i>		359	361		115	141		40	41		102	102		80	87
Survey experience	NA	-.13*	.06	NA	-.23*	-.12	NA	-.09	-.02	NA	-.08	-.05	NA	.19	.02
<i>n</i>		349	351		109	135		38	39		102	102		82	92
Hierarchical levels	NA	-.04	.15**	NA	-.13	-.10	NA	-.03	-.19	NA	-.02	.07	NA	-.03	.15
<i>n</i>		334	334		115	134		38	39		102	102		85	94
Span of control	NA	-.04	.06	NA	-.16	.14	NA	.18	-.11	NA	.15	-.06	NA	.13	-.08
<i>n</i>		336	336		115	134		36	37		89	89		83	91
Average pay	NA	-.06	-.06	NA	.05	-.08	NA	.12	.03	NA	-.02	-.03	NA	.09	-.14
<i>n</i>		353	353		107	129		41	41		109	109		87	87
Government	NA	NA	NA	NA	NA	NA	.01	-.24	-.04	.01	-.04	.17	NA	NA	NA
<i>n</i>							117	20	20	324	69	64			

Archival measures															
Average haul	-.01	.03	.19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	670	253	244												
Average load	.07	.09	-.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	675	255	246												
Number of drivers	-.06	.01	-.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	621	229	222												
Number of trucks owned	-.06	-.12	.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	248	82	81												
Operating expenses	-.06	.02	.19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	761	277	268												
Total assets	-.04	.07	.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>	754	274	265												
Net profit margin	-.02	.05	.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note. ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay. NA = not available.

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

Table 5  
Correlations of Informant Characteristics With Response Outcomes Across Samples

Predictor	Trucking			ACPA			ACA-1			ACA-2			SBP		
	Return	Return Day	Missing-Data %	Return	Return Day	Missing-Data %	Return	Return Day	Missing-Data %	Return	Return Day	Missing-Data %	Return	Return Day	Missing-Data %
Informant characteristics															
Age	NA	-.04	.01	NA	.01	.04	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>		369	369		112	137									
Gender	NA	-.03	.01	NA	NA	.12	.06	.06	.12	.12*	-.06	-.14	.03	-.13	.02
<i>n</i>		370	369			133	220	40	41	495	114	109	185	90	94
Tenure	NA	-.08	-.04	NA	-.01	-.03	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>		342	342		113	138									
Education	NA	.11*	.04	NA	-.01	-.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>		370	370		113	138									
Certifications	NA	-.04	.03	NA	.22*	-.09	-.06	.24	-.14	.10	.09	-.16	NA	NA	NA
<i>n</i>		375	375		110	133	119	20	20	346	72	68			
Job satisfaction	NA	.06	.01	NA	.23*	-.07	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>		367	367		114	139									
Organizational commitment	NA	.03	-.02	NA	.17	-.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
<i>n</i>		365	367		114	139									
Unit level	NA	NA	NA	NA	NA	NA	.15	.22	.37*	-.01	-.11	.09	NA	NA	NA
<i>n</i>							106	20	20	297	61	57			
Organizational level	NA	NA	NA	NA	NA	NA	-.18	-.31*	.11	-.04	-.07	-.06	-.01	.03	.07
<i>n</i>							113	20	20	305	68	63	150	81	82
Functional breadth	NA	NA	NA	NA	NA	NA	.07	-.33*	-.01	-.01	-.07	-.17	-.02	-.03	-.23*
<i>n</i>							118	20	20	339	71	66	142	78	81

Note. ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay. NA = not available.

\* $p < .05$ .

Table 6  
Pooled Correlations and Regression Results Across Samples

Predictor	Regression								
	Pooled Correlation			Trucking Sample		Combined ACPA and SBP Sample		Combined ACA-1 and ACA-2 Sample	
	Return	Missing-Day	Missing-Data %	Return	Missing-Day	Return	Missing-Day	Return	Missing-Day
Sample dummy variable						.22	.65**	-.30**	-.32**
Research procedures									
Reminder quality	.20**	.24**	-.03	.05	.07			.15	-.13
<i>n</i>	1,201	285	290						
Reminder timeliness	.34**	-.29**	-.27**			-.78**	-.22*		
<i>n</i>	399	150	146						
Initial contact quality	.29**	-.16*	-.02					-.09	-.13
<i>n</i>	224	154	150						
Organizational characteristics									
Log organizational age	NA	.10**	-.06	.19*	.20*	.06	-.09	.00	-.04
<i>n</i>		701	737						
Log organizational size	NA	.11**	.11**	.11	.04	.08	.17	.28**	.13
<i>n</i>		720	758						
Unionization	NA	.14**	.08*	-.02	-.04	.03	.18	.22*	-.01
<i>n</i>		696	732						
Survey experience	NA	-.15**	-.16**	-.06	.07	-.19*	.06	-.25*	-.14
<i>n</i>		680	719						
Hierarchical levels	NA	-.03	.07	.02	-.10	-.06	-.27**	-.08	-.20
<i>n</i>		674	703						
Span of control	NA	-.09*	-.01	-.11	-.11	.05	-.02	.18	-.08
<i>n</i>		659	687						
Average pay	NA	.05	.00	.00	.03	.08	-.27**	.03	.02
<i>n</i>		697	719						
Government	.01	-.08	.12						
<i>n</i>	441	89	84						
Informant characteristics									
Age	NA	.01	.01	.02	.03				
<i>n</i>		481	506						
Gender	-.18**	-.04	.02	.03	.09			-.08	-.37**
<i>n</i>	900	614	746						
Tenure	NA	.02	-.06	-.05	-.19*				
<i>n</i>		455	480						
Education	NA	.13**	.02	.02	-.21*				
<i>n</i>		483	508						
Certifications	.10**	.14**	-.06	-.03	-.04				
<i>n</i>	465	577	596						
Job satisfaction	NA	.10*	.00	-.04	.12				
<i>n</i>		481	506						
Organizational commitment	NA	.09*	-.03	.01	-.14				
<i>n</i>		479	506						
Unit level	.01	-.06	.13						
<i>n</i>	403	81	77						
Organizational level	-.26**	-.17*	-.24**						
<i>n</i>	568	169	165						
Functional breadth	.02	-.12	-.16*						
<i>n</i>	599	169	167						
<i>R</i> <sup>2</sup>				.05	.19*	.55**	.41**	.32**	.23*
<i>N</i>				115	125	90	90	89	89

Note. ACPA = American Concrete Pipe Association. ACA = American Compensation Association. SBP = skill-based pay. NA = not available. Standardized regressions are shown. Although gender was measured in the ACPA and SBP samples, all respondents in the analysis sample were male.

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

tively associated with reminder quality ( $r = .24, p < .01, n = 285$ ) and negatively associated with reminder timeliness ( $r = -.29, p < .01, n = 150$ ) and initial contact quality ( $r = -.16, p < .05, n = 154$ ). Only reminder timeliness was significantly (negatively) related to missing-data percentage ( $r = -.27, p < .01, n = 146$ ).

A stronger pattern was also evident for organizational and informant characteristics. Informants from older ( $r = .10, p < .01, n = 701$ ), larger ( $r = .11, p < .01, n = 720$ ), and unionized ( $r = .14, p < .01, n = 696$ ) organizations took longer to respond, whereas informants from organizations with more survey experience ( $r = -.15, p < .01, n = 680$ ) and wider spans of control ( $r = -.09, p < .05, n = 659$ ) took fewer days to respond. More missing data were present in questionnaires returned from larger ( $r = .11, p < .01, n = 758$ ) and unionized ( $r = .08, p < .05, n = 732$ ) organizations and from those with less survey experience ( $r = -.16, p < .01, n = 719$ ).

Among informant characteristics, female informants ( $r = -.18, p < .01, n = 900$ ), those with more certifications ( $r = .10, p < .05, n = 465$ ), and informants at lower organizational levels ( $r = -.26, p < .01, n = 568$ ) were more likely to return completed questionnaires. Education level ( $r = .13, p < .01, n = 483$ ), certifications ( $r = .14, p < .01, n = 577$ ), job satisfaction ( $r = .10, p < .05, n = 481$ ), and organizational commitment ( $r = .09, p < .05, n = 479$ ) were associated with longer response times. Informants from higher organizational levels responded more quickly ( $r = .17, p < .05, n = 169$ ). Only organizational level ( $r = -.24, p < .01, n = 165$ ) and functional breadth ( $r = -.16, p < .05, n = 167$ ) were related to missing-data percentage.

**Multivariate analyses.** We also examined the effects of predictor sets simultaneously. In essence, we conducted three ministudies. For the first equation, reminder quality, organizational characteristics, and informant characteristics were examined within the trucking sample. For the second equation, the ACPA and SBP samples were combined to examine the effects of organizational characteristics and reminder timeliness on response outcomes. For the third equation, the ACA-1 and ACA-2 samples were combined to examine the effects of reminder quality and initial contact quality in the context of organizational characteristics and gender. Samples were combined because listwise sample sizes were quite small when the sets of predictors were examined simultaneously. For Equations 2 and 3, variables not shared between the two samples were dropped. To capture sample differences that might confound the results, we included a dichotomously coded control variable when samples were combined (ACPA = 0, SBP = 1, and ACA-1 = 0, ACA-2 = 1, for Equations 2 and 3, respectively).

These results are shown in the right part of Table 6. Reminder timeliness was the only consistent procedural predictor of response outcomes (in Equation 2), being related to shorter response times ( $\beta = -.78, p < .01$ ) and less missing data ( $\beta = -.22, p < .05$ ). Across the three equations, organizational and informant characteristics were, at best, sporadic predictors, no doubt in part due to the use of several predictors with relatively small sample sizes. The most consistent pattern of significant results tends to mirror the pooled correlation results. Better response outcomes are more often found in smaller and younger organizations and in those with more survey experience.

## Discussion

This study points to some interesting dynamics with respect to response rates among organizational key informants. It shows that reasonable response rates can be

achieved among these informants even when quite lengthy questionnaires are involved; it shows that many of the factors that increase the rate, speed, and quality of responses among individual respondents may also be useful among organizational key informants; it shows that certain research procedures may serve response-enhancing functions; and it shows that characteristics of informants and of the organizations to which they belong have some effect on response outcomes. Furthermore, it shows the validity of social exchange and organizational survey nonresponse perspectives in understanding key-informant response dynamics. These issues are discussed below.

We achieved response rates ranging from 19% to 71% among our samples of key informants. Across the five samples, response probability mirrors differences between samples in (a) the extensiveness of preparatory work and (b) the centrality of the research question to informants. Response outcomes were more favorable when the research question was more salient and/or research procedures were of higher quality (Trucking, ACPA, and SBP). A timely research question, high-quality preparatory work, and a closely developed relationship with informants can result in very high response rates, even with prohibitively long questionnaires (ACPA). In the SBP sample, research procedures were less rigorous, but a motivated sample with a pressing interest in the topic resulted in a very high response rate. By contrast, more general research questions and less rigorous procedures were associated with lower response rates in the ACA samples.

The intrasample analyses constitute a significant extension of response rate research. In the past, a major focus has been the existence of initial and/or reminder contacts. Our results show that the quality and timeliness of reminders, not just their mere existence, result in better response outcomes. In addition, the quality of the initial contact bears on the probability of return (ACA-1). These findings support the social exchange view in that the greater the personal contact with informants, the higher the level of responsibility experienced by them. At a practical level, the results provide impetus for more thorough preparatory and follow-up practices when conducting key-informant research—such practices may improve sample representativeness and increase the power and sensitivity of statistical procedures.

Although our response rates do not appear particularly exceptional (e.g., 36% in trucking), they are more impressive when the length of the questionnaire is considered. Most prior research distinguishes short questionnaires from long questionnaires in terms of 1 versus 4 pages (e.g., Roznowski & Bean, 1990), but our shortest questionnaire was 24 pages long! We did well probably because we followed well-established procedures (detailed in the Method section) and examined issues of particular interest to informants. In addition to the use of these procedures, this study suggests that further gains accrue when the quality of these research procedures is good. The quality of reminders was consistently associated with return and return days, whereas the timeliness of reminders enhanced both response rates and speed. Timeliness was the only research procedure to predict response outcomes strongly in the multivariate analyses. These results reinforce social exchange ideas; that is, contact intensifies the perception of social debt. The quality of the contact during preparatory and follow-up work cements social exchange, increasing the likelihood and quality of participation in research.

Our results with regard to informant characteristics were weak and provided, at best, mixed support for organizational survey nonresponse theory (Tomaskovic-Devey et al., 1994). We expected informants with more authority, capacity, and moti-

vation to respond to do so, do so more quickly, and do so with less missing data. Our proxies for these variables yielded few significant results: Informants with more functional breadth (or job scope) returned questionnaires more quickly (in ACA-1) and with less missing data (in SBP). These findings are consistent with Tomaskovic-Devey et al.'s (1994) theory. When we pooled data across samples, however, organizational level strongly predicted all three response outcomes: Informants at lower organizational levels were more likely to return questionnaires, did so faster, and with less missing data. Informants at lower organizational levels probably have less authority in the organization (a contradiction of Tomaskovic-Devey et al.'s prediction), but they may also have more time and motivation to complete questionnaires. Alternatively, our findings may be confounded due to the lower research salience in the ACA sample. Contrary to our expectation that organizational attitudes predict prosocial behaviors, job satisfaction and organizational commitment were only inconsistently related to response speed and quality. Perhaps survey participation is not always considered desirable extrarole behavior by organizations.

Organizational predictors of response outcomes were weaker in intrasample analyses than in pooled analyses. Consistent with organizational nonresponse theory (Tomaskovic-Devey et al., 1994), informants in older, larger, and unionized organizations (in which information may be more difficult to compile and rules may be more rigid) took longer to return completed questionnaires, and more missing data occurred in questionnaires from larger and unionized organizations. In addition, experience with organizational surveys (an indication of information-sharing practices) was associated with shorter response times and less missing data. Support for the organizational nonresponse perspective from our analyses is tentative because of our data limitations; nevertheless, these initial findings are intriguing and merit further examination.

As with most research, this study has limitations: Many research procedures were held constant within and across samples, many predictors could be analyzed only among informants and not among noninformants, archival data covered only a limited number of variables, the questionnaires were long, and pooled analyses were somewhat limited. Beyond this, some of our operationalization and scaling decisions may be open to question. For instance, reminder quality and initial contact quality were treated as interval scales, a decision that should be examined systematically in the future. In addition, we relied on proxies (e.g., age, tenure, organizational level) for authority, capacity, and motivation when assessing predictions from organizational nonresponse theory. The correspondence between constitutive and operational definitions is thus less than perfect. Our examination was limited to organizational key informants, but the issues must be addressed for other informant groups as well. These kinds of factors provide boundaries within which the substantive results should be evaluated; they also define areas for future research.

Counteracting these limitations is the fact that this study used five samples, varied several research procedures, incorporated intraindustry and interindustry samples, and achieved varying levels of success in terms of response outcomes. The results for research procedures (initial contact quality and reminder quality) were generally strong and consistent. They represent substantial extensions for response rate research.

In sum, these results offer support for the social exchange perspective by demonstrating that higher quality contact with key informants is associated with better

response outcomes. They provide support, albeit sporadic, for the organizational survey nonresponse perspective as well. They demonstrate that established research procedures could be used to garner favorable response outcomes among organizational key informants, just as they do with individual respondents.

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