Applied H.R.M. Research, 2004, Volume 9, Number 1, pages 13-26

Effects of Data Collection Method on Organizational Climate Survey Results

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Although the use of the Internet has dramatically increased the ease and speed of organizational climate survey administration, the issue of differential effects of the survey method must be addressed. A climate survey was administered to salaried employees in the same department of a large consumer products company. One group responded online and another responded on paper. Contrary to prior studies, survey method had a greater impact on item scores than job level, with online respondents rating items more positively. Trends in score changes from the department's previous survey administration also varied based on method; online respondents' ratings were more positive on eight of 14 items, whereas scores on three items declined for paper respondents.

Organizational surveys, widely used for data gathering purposes in companies of all sizes, are conducted in support of a variety of human resource-related functions (Kraut, 1996). Assessment and change are the overarching goals of any organizational survey. Human resource professionals may implement surveys to pinpoint areas of concern in an organization, measure long-term trends, monitor the impact of a variety of programs and organizational changes, solicit input for future decisions, or provide employees with a communication channel (Kraut, 1996). Specifically, an HR specialist might execute a survey to determine benefits preferences, customer satisfaction with services provided by a work group, positive and negative outcomes of a departmental reorganization, perceived usefulness of a newly implemented performance appraisal system, training and development needs of job incumbents, or employee opinions regarding the climate of a department or organization.

Traditionally, organizational surveys have been conducted using paper and pencil methods, which tend to demand sizeable amounts of resources in the form of both time and money. However, the process has been streamlined considerably with the advent of web-based surveys, which are associated with several advantages (Laughlin, 2002). Administration of a survey via the Internet or an organization's intranet is associated with greatly reduced cycle time and cost, due to the lack of any printing and mailing expenses or manual data entry. Additionally, data integrity is

improved through the elimination of human error during data entry. Scheduling of the survey is more flexible because it can be sent to hundreds of participants with the click of a mouse, rather than via a large mailing or an administration session during work hours. Survey status information such as response rates and demographics is available instantaneously and can be viewed in real-time as respondents submit completed surveys.

Web-based survey administration is rapidly on the rise, especially for the purpose of collecting employee opinions regarding organizational climate (Thompson, Surface, Martin, & Sanders, 2003). Organizational climate surveys are valuable tools used to measure the "pulse" of an organization, department, or work group. Giving employees a medium through which they may voice their concerns can aid management and HR professionals in implementing positive changes and improving employee productivity and satisfaction (Buckingham & Coffman, 1999).

Despite the increasing popularity of web-based climate surveys, little research has examined the differential effects of collecting survey data via the web as compared to more traditional methods (i.e., paper-based surveys). Long-standing survey research has demonstrated differential effects due to item wording, type of response scale, question order, etc. (Kraut, 1996). Hence, it is logical to expect that response medium could also have an impact on participants' responses. Survey practitioners and their organizational customers must be provided a clear understanding of the effect of data collection method on survey outcomes, thus begging the question: *Do climate surveys yield differential results based on data collection methodology?*

Factors Impacting Web-based Climate Survey Results

The limited existing research on survey method effects suggests that two primary factors lead to response differences between online and traditional administration modes: job level and anonymity perceptions.

Job Level

Because individuals in different occupational groups within an organization may have varying degrees of access to computers, the Internet, and the company's intranet (Stanton & Rogelberg, 2001), special caution must be taken when comparing survey results obtained through paper- and web-based methods. Variations in results obtained via different methods, rather than being caused by the method itself, might be attributed to the fact that survey response method differed based on an individual's job classification. For example, Yost and Homer (1998) found substantial differences between ratings made by those choosing to respond to an employee climate survey online and those opting for the paper version. However, the researchers suggested that differences were attributable to a self-selection bias. That is, employees who completed the survey online may have been more likely to be in job positions with greater resources, support, and computer access. In fact, when effects of job position were removed, almost all differences in ratings between survey methods disappeared; mean differences remained on only two out of 12

items. The authors concluded that, given these relatively minor differences, survey method appears to have only minimal effects on responding.

Similarly, Laughlin (2002) allowed participants to select their method of response. Results indicated that differences in ratings between online and paper survey participants resulted from differences inherent in hourly versus salaried employees, rather than survey method. Thus, job level must be measured and taken into consideration when drawing conclusions based on survey administration via different means.

Anonymity Perceptions

Because the validity of data gathered from employee surveys is directly tied to participants' trust in the confidentiality of their responses (Kuhnert & McCauley, 1996), it is imperative that employees believe that their survey answers will remain anonymous and will not lead to retribution or negative outcomes. Organizational factors such as downsizing and mergers may add to respondents' reticence to answer survey items truthfully; therefore, the work environment and employee fears associated with it must be carefully considered when a survey method is selected. The increasing popularity of the Internet has raised public awareness of privacy issues, which could reduce participants' openness when they respond via web-based surveys (Graphic, Visualization, & Usability Center, 1998). In fact, employee survey respondents' confidentiality concerns relate to the ability of computers to track electronic transaction identifiers (Yost & Homer, 1998).

A positive response bias for respondents completing a survey over the telephone versus on paper has been found in previous research (Kraut, 1999; Kraut, Oltrogge, & Block, 1998). These studies used in-person telephone surveys in which participants were asked to verbally indicate their answers to an operator. This practice of requiring survey participants to verbalize their opinions to another human being may have been related to decreased confidence in the anonymity of the process. In fact, a comparison of IVR (interactive voice response) technology (in which respondents use a phone keypad to indicate their answers to items read by a prerecorded voice) and paper methods found few meaningful differences between methods (Church, 2001). However, the differences in results obtained from IVR and online surveys have not been examined.

In one of the only existing longitudinal studies comparing climate survey results across two survey methods (i.e., paper and online; Church, 2001), demographics (i.e., gender, education level, occupation type, organizational tenure, and age) contributed more unique variance than did method in determining item ratings and variability in the first of two administrations. However, survey method also had a significant impact on results, with paper respondents rating survey items higher on average and demonstrating less variability in item ratings than online respondents (Church, 2001). In a succeeding administration of similar (but not identical) items two years later, item differences reversed, and after accounting for demographic differences, the online group rated items more positively and showed less variability than the paper group. This shift may have been due to changes in items or the addition of an access code for online survey respondents in the second

administration; a list of codes had been sent to participants along with the link to the questionnaire, and they were required to select a code from the list in order to access the survey. Once a code had been used, participants who later accessed the survey could no longer select it. This methodology was implemented to limit the possibility that employees would respond to the survey more than once. Yet the unintended result of implementing such codes may have been to increase participants' suspicions of the traceability of the instrument, causing them to believe that their responses were not anonymous. In fact, the collection of unique identifiers affects the extent to which respondents trust the anonymity of research (Stanton, 1998), and this lack of a sense of anonymity may affect responding (Stanton & Rogelberg, 2001). Thus, it is difficult to draw firm conclusions regarding the differences in online and paper surveys based on Church's findings. Not only were alterations in survey items made between administrations, but also a significant modification was made to the administration protocol in the second online survey. The reason for the reversal of method effects between administrations is unclear.

An organizational group's level of experience with web-based surveys may directly relate to members' anonymity beliefs. Prior to completing an online climate survey for the first time, over half of the respondents in a government organization indicated that they had concerns regarding the confidentiality of their survey data (Thompson et al., 2003). However, after responding to the web-based questionnaire, employees' anonymity concerns appeared to be alleviated; very few participants indicated that they feared a lack of confidentiality once the survey process was complete. It is likely that once participants have experienced an online survey firsthand, and have observed that their responses did, in fact, remain anonymous, they have more confidence in the process and are comfortable responding in an honest and forthright manner.

Internet-based employment testing is growing rapidly, for reasons similar to those that explain the proliferation of online organizational surveys. Internet testing is faster and cheaper than more traditional testing methods, and provides more accurate scoring (Naglieri, Drasgow, Schmit, Handler, Prifitera, Margolis, & Velasquez, 2004). However, much like research in the organizational survey realm, few studies have compared Internet-based and paper-based employment tests. While a sizeable amount of evidence suggests the equivalence of computerized and paper formats of cognitive ability tests (see Mead & Drasgow, 1993), few studies have compared Internet testing with other formats. Researchers warn that reliability and validity of Internet versions of psychological and cognitive assessments must be demonstrated before testing can be transferred to the Web with the confidence that accurate results will be obtained (Naglieri et al., 2004). In fact, in the only existing study in which two groups of actual job applicants completed a selection test battery (personality measure, biodata questionnaire, and situational judgment test) via either the web or a paper questionnaire, online scores were lower on all measures (Ployhart, Weekley, Holtz, & Kemp, 2003). Scores on web-administered measures also showed more variance, were more normally distributed, and had higher internal consistency reliabilities than paper-based measures. The authors suggested that mistrust of the Internet may have accounted for study findings. Perhaps in the case of Internet-based testing, applicants fear that sophisticated technology will detect

"faking," and are therefore more honest than they are when completing paper measures (McFarland & Ryan, 2000). In fact, Ployhart et al. found that test scores of online applicants were similar to incumbents' scores while paper applicants' were not; in normal circumstances incumbents respond more honestly than applicants. Perhaps anonymity concerns elicited in the employment selection context are favorable in that they reduce socially desirable responding and provide more accurate measures of applicant personality. Data obtained on selection measures are usually objectively verifiable which means that fakers can be "caught." On the other hand, anonymity concerns in the organizational survey context may have quite different effects. One's personal opinions are not verifiable and therefore anonymity concerns may actually increase socially desirable responding.

Goals of this Study

Researchers agree that additional research is needed to make definitive conclusions regarding the effects of data collection method on survey results (e.g., Church, 2001; Thompson et al., 2003) to continue online employee surveys with the confidence that valid data will be obtained. The implementation of different methodologies with the same items should be examined. In the present study, salaried employees in the same department of an organization completed an identical survey on paper or via the company intranet. Because all participants surveyed were salaried (rather than both hourly and salaried, as in previous research), job level differences were not predicted. However, we sought to further examine the effects of job level in conjunction with response method by making finer position status distinctions than had been possible in prior studies. In addition, because employees were participating in an online survey for the first time, we expected to find differences in scores by administration mode. Finally, results were compared against survey data from a previous telephone survey to further examine the effects of transitioning to an online survey.

Method

Participants

Participants in the present study were 211 employees representing the same department in a large Midwestern consumer products company. The department provides diverse services including finance, customer service, and marketing. Department employees are salaried and are divided into two categories of job status: Professional/Managerial (38% of sample) and Individual Contributor/Supervisor (62% of sample). The Professional/Managerial group is comprised of senior-level managers and skilled professionals. Sample job titles for this group include: Planning Director, Field Operations Manager, and Project Manager. The associated level of responsibility and accountability is greater than it is for the Individual Contributor/Supervisor group, which is made up of first level supervisors and administrative staff. This group of employees is comprised of positions such as Senior Analyst, Guest Services Supervisor, and Secretary. At a minimum, all

participants had a high school education, which is a basic requirement for employment in the organization.

Measures

The data for this study were collected during the bi-annual administration of a climate survey, composed of 14 items scored on a five-point response scale ("Strongly Disagree" – "Strongly Agree"). Items questioned employees about such aspects of the work environment as development opportunities, communication, performance feedback, recognition, and overall satisfaction. An additional item asked for a participant's job level (Professional/Managerial or Individual Contributor/Supervisor).

Procedure

For the present administration, participants did not have a choice of survey medium; rather, employees who were equipped with personal computers at work completed the survey online, while those without computers completed it on a pre-printed scan form. Participants in previous method studies have been allowed to select whether they would take an online or a paper survey (e.g., Church, 2001; Laughlin, 2001). While assigning survey method based on computer access precludes random assignment, it is a more realistic sampling method for most organizations, as typically it is not economically feasible or pragmatic for companies to allow respondents to select their own survey modality.

Online surveys were completed via the organization's internal web site (i.e., intranet) by 136 respondents (a 95% response rate). Participants were sent an email inviting them to respond to the survey and providing a link for survey access. Once individuals clicked on the link, they read survey instructions and the following statement regarding anonymity:

> ***Your responses to this questionnaire will remain anonymous.*** *All completed surveys will be analyzed by an outsourced vendor, {Vendor Name}, and then summarized by human resources professionals at {Organization Name}. Department management will receive only summarized results, and will not have access to completed survey questionnaires.*

Participants were asked to create their own unique User ID to access the survey, which could be any combination of ten letters and numbers. Once they created a User ID, they were presented with instructions and survey items. After completing all survey items, they clicked a "submit" button to finalize their responses.

Paper surveys were completed by 75 participants (a 91% response rate) and administered by a representative of the Human Resources Department. Respondents received the statement of anonymity and instructions identical to those received by web users (with the exception of the User ID information) and completed all items on pre-printed scan forms by filling in the bubbles that corresponded to their answers. After completing surveys, employees placed them in individual letter-sized envelopes. Next, they sealed the envelopes and left them in a larger mailing envelope, which was sent to an external vendor for data analysis.

The department examined in this study has a decade-long history of survey administration, and employees complete the same survey items every two years. The survey prior to the one described here was administered via telephone, with a response rate of 95%. In order to respond to the telephone survey, participants called a toll-free number, and were guided through an automated system in which they keyed in their responses to survey items. Data from the previous survey administration were obtained for the purpose of conducting cross-year comparisons.

Results

Survey items displayed extremely high scale reliability ($\alpha = .95$). Thus, to examine overall method effects across all variables, a composite score was calculated by averaging each participant's responses to all 14 items. In addition, the variance in item ratings was computed for each participant.

Table 1
Composite Item Means and Variances by Response Type

	N	Item Means			Item Variances		
		M	SD	F	M	SD	F
Job Level							
Professional/Managerial	80	4.20	.75	.33	.40	.37	.43
Individual Contributor/Supervisor	131	3.86	.76		.47	.42	
Survey Method							
Online	136	4.17	.69	4.67*	.40	.36	3.86*
Paper	75	3.67	.86		.53	.45	

* $p \leq .05$

Examination of Study Questions

It was expected that survey responses would vary by administration mode, and the effects of job level were explored. To examine whether scale means and variability differed on the basis of job level or survey method, 2 (Paper, Web) X 2 (Managerial/Professional, Individual Contributor/Supervisor) analyses of variance (ANOVAs) were conducted on both composite scores and average variances (see Table 1). Interaction terms for both analyses were nonsignificant. Although

professional/managerial employees showed higher composite scores (M = 4.20, SD = .75) than individual contributors/supervisors (M = 3.86, SD = .79), this difference was also nonsignificant ($F(1, 207) = .33$, *ns*, $\eta^2 = .00$). Similarly, the difference in item variances between the two groups was not significant.

However, survey method had a significant impact on scores, with online survey respondents reporting higher composite scores (M = 4.17; SD = .69) than respondents who completed the paper survey (M = 3.67; SD = .86) ($F(1, 208) = 4.67$, $p<.05$, $\eta^2 = .02$). In addition, item variances differed significantly by method ($F(1, 208) = 3.86$, $p=.05$, $\eta^2 = .02$). More specifically, paper responses (M = .53) showed more variability than online responses (M = .40). A 2 X 2 ANOVA defining number of skipped items as the dependent variable revealed that neither job level nor method had a significant impact on skipped items.

Because the organization examines survey scores at the individual item level to assist departments in prioritizing issues for follow-up and action planning, individual items were tested for method effects. A 2 (Paper, Web) X 2 (Managerial/Professional, Individual Contributor/Supervisor) ANOVA was conducted on each of the 14 individual items. Five of the 14 survey items showed a main effect of method; online administration elicited significantly higher scores on items relating to feedback, resources, recognition, development, and department improvements ($p<.05$ for all items). Only one item (i.e., Quality of coworkers) showed a difference by job level, with the professional/managerial group rating the item higher than the individual contributor group. The method X job type interaction was not significant for any items.

Comparison of Present and Previous Survey Results

When HR professionals assist organizational workgroups with follow-up and action planning based on the results of a climate survey, they often examine changes in scores from the department's prior survey. Such trends in responding can help pinpoint specific aspects of the work environment that have improved based on positive organizational changes or to alert management to negative trends (e.g., a declining level of teamwork among employees) that should be addressed. Hence, examining the conclusions drawn based on a comparison of current and previous results allowed an additional analysis of method effects.

Because survey responses in the organization are truly anonymous and are not connected to individual names, data from the previous administration (which was conducted via telephone for all respondents) were available to the researchers only at the item level, not at the participant level (i.e., for each item, a count of the number of participants who assigned a "1," "2," etc. was accessible, but a listing of all item scores for each participant was not). This precluded composite score and job level comparisons; all comparisons were made at the item level.

To determine the effects of method on item scores, the pattern of responses across years was examined. A pair of one-way ANOVAs comparing previous and current scores was computed for each item; one ANOVA compared the online group's scores to all previous (phone) scores, and the other examined the paper group's scores to all prior scores (see Table 2). For the paper group, current scores

were significantly lower ($p < .01$) than previous scores on three items: resources ($\eta^2 = .04$), co-worker commitment ($\eta^2 = .08$), and development ($\eta^2 = .02$). For the web group, scores on eight items were significantly higher on the current survey: manager support ($\eta^2 = .01$; $p = .05$); skill utilization ($\eta^2 = .02$; $p < .05$); work contribution ($\eta^2 = .08$; $p < .01$); feedback ($\eta^2 = .1$; $p < .01$); valuing opinions ($\eta^2 = .02$; $p < .01$); recognition ($\eta^2 = .03$; $p < .01$); coworker trust ($\eta^2 = .1$; $p < .01$); and overall satisfaction ($\eta^2 = .02$; $p < .01$). Thus, dissimilar trends in changes of item scores were displayed by the web and paper groups. Online surveys were associated with more positive results for almost all items, whereas paper participants displayed a decline in a few items.

Discussion

The purpose of the present study was to extend previous research on the effects of data collection method on climate survey results. It was expected that responses would vary by administration mode. In addition, finer distinctions between job levels were examined [i.e., salaried employees at different levels in the organization were compared, rather than simply comparing hourly and salaried personnel as had been done in previous research (e.g., Laughlin, 2002)]. Although no differences between job levels existed, many significant distinctions between results obtained by paper as compared to online surveys were found. The discovery of such differences should alert HR professionals and organizational decision-makers to possible consequences of abruptly replacing paper surveys with online methods. Study findings will be reviewed, followed by possible explanations, and practical implications.

Table 2
Survey Item Score Differences between Previous and Current Administration

Survey Item	Paper (current) *N*=75		*F* (paper vs. phone)	Phone (previous) *N*=216		*F* (web vs. phone)	Web (current) *N*=136	
	M	*SD*		*M*	*SD*		*M*	*SD*
Work contribution	4.05	0.99	3.19	3.81	1.03	32.06**	4.39	0.76
Manager support	3.51	1.17	2.49	3.76	1.18	3.88*	3.99	0.95
Feedback	3.73	1.16	0.09	3.68	1.36	38.30**	4.48	0.80
Coworker commitment	3.69	1.01	12.44**	4.14	0.91	3.64	4.32	0.81
Valuing opinions	3.51	1.23	2.07	3.74	1.20	7.15**	4.07	0.97
Recognition	3.50	1.20	0.97	3.67	1.33	10.48**	4.09	0.93
Coworker trust	3.72	1.01	1.82	3.49	1.32	36.00**	4.27	0.90
Skill utilization	3.65	1.13	2.14	3.86	0.98	5.43*	4.10	0.88
Overall satisfaction	3.85	0.94	0.33	3.92	0.87	8.54**	4.19	0.82
Resources	3.75	1.11	10.90**	4.16	0.86	0.01	4.15	1.01
Development	3.46	1.10	9.12**	3.92	1.13	2.80	4.11	0.95

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

Study Findings

Participants in the present study who completed the survey instrument online rated items more positively than those who took it via paper, indicating that method had a significant effect on responses to survey items. Because all employees completed the survey via telephone during the previous administration, the researchers were able to examine whether it was the case that paper surveys resulted in a significant decrease in scores over time or that online surveys produced a significant increase in scores. In other words, examining past data all obtained via the same method (i.e., phone) allowed a more thorough understanding of the differential effects of online and paper survey methods. Score changes from the previous department survey showed a completely different pattern for the two groups. Contrary to assertions that survey methods do not significantly influence responses (Stanton & Rogelberg, 2002), the present study exhibits item changes that would lead a practitioner to believe that the climates of the two groups are quite dissimilar. Based on survey data, on one hand it appears that employees who took the paper survey believed that the climate in the department had worsened in the areas of coworker commitment, development, and resources. On the other hand, employees completing the online survey reported that nine facets of climate had improved. The question of whether these changes in climate actually occurred, or if they were biased by administration mode, remains to be answered. It is possible that findings indicate true differences between the respondents, but another plausible explanation is that the two methods are nonequivalent in some way. Perhaps findings were a result of anonymity concerns or novelty of the situation.

Possible Causes of Method Effects

The department surveyed in this research had not previously been exposed to online surveys. Although the organization attempted to ensure participants of their anonymity through verbiage included with the survey, anecdotal evidence (i.e., comments made by department employees to survey administrators and the department's employee survey team) suggests that respondents had concerns about the confidentiality of the process. Employee opinion research indicates that for employees who have never utilized online surveys, their greatest area of concern regarding an initial web-based survey is anonymity of responses (Thompson et al., 2003; Yost & Homer, 1998). Therefore, employees may artificially inflate scores to avoid the retribution they fear will be associated with low ratings.

Apart from anonymity concerns, the mere novelty of the data collection method may also have had a biasing effect on responses. Similar to the "Hawthorne effect," in which employees' job performance improves as a result of novel treatment associated with an intervention rather than due to the intervention itself, survey respondents may have answered items more positively as a result of the novelty of the situation. The department described here had never administered online surveys in the past, and some members of the online group were aware that others were completing the questionnaire on paper.

Practical Implications of Findings

Although the present findings do not allow for definitive conclusions regarding the cause of differential survey results (e.g., anonymity concerns, first time use), results do raise a red flag against making a methodology change in an organization without first examining potential consequences. Most organizations that transition from one survey method to another do so in one step. A survey is conducted using the original method for all employees, and the next is administered one or two years later via the new method; thus, researchers are prevented from observing differences. The present organizational data are uniquely valuable in that they present a view of a department undergoing a gradual transition in survey methods, allowing the opportunity to examine how method effects operate.

In the organization described here, findings permitted HR professionals to proceed with caution when making inferences about the true nature of the department's climate or making recommendations for survey follow-up. HR professionals in organizations that make an immediate method change would not have the luxury of comparing results obtained via different means. In other words, if extreme climate differences are observed between the two administrations, it can never be determined whether those differences are true climate changes, or simply a product of the shift in administration method. If organizational decisions are made based on such data, the effects could be extremely costly and have unintended negative consequences in the organization. The purpose of climate surveys is to allow employees a "voice" and a communication channel to management; that voice remains unheard when survey follow-up is based on a misguided diagnosis of climate.

Study Limitations

One limitation of this research was the lack of random assignment in determining response method for survey participants. It is possible that employees who have computer access and those who do not may have different perspectives on their department, thus prompting dissimilar views of its climate. However, employees in both groups represented all possible job functions. And, because no major organizational or personnel changes had occurred in the department since the previous survey, such changes could not explain varying perceptions of changes in climate. Finally, unlike previous research, analyses included no hourly employees and focused on only salaried personnel. Within these salaried employees, no differences in responding existed based on job level.

An additional limitation was that previous survey results were not available at the individual level. The ability to compare respondents' scores on the present survey to their previous scores, as well as the ability to examine job level differences, would add strength to the present findings. However, because these data were collected in an organization and participants were guaranteed confidentiality, maintaining the anonymity of responses is of the utmost importance in upholding the integrity of the organization's survey process. A process that allows individual-level data to be identified compromises this anonymity.

Finally, we were not able to question respondents about their perceptions of anonymity when taking the survey, so a causal relationship between anonymity perceptions and responses cannot be determined. Effects of confidentiality beliefs must be examined in future research.

Conclusions and Future Research

Regardless of the true reason for differences in administration methods, the present study suggests that practitioners should proceed with care when administering surveys over the web. It should not be assumed that "all methods are created equal" when interpreting results obtained from different methods, as administration modes may have non-equivalent effects. For the group surveyed in this particular study, researchers will continue to monitor paper/online differences over future survey administrations. It is possible that method effects will disappear as employees observe that data actually remain anonymous, and they do not suffer repercussions for their responses.

Survey practitioners should be cautious when implementing an online employee survey program for the first time. Rather than going directly online in a historically paper or phone department or organization, HR professionals should "test the water" and determine whether an online survey will accurately gauge the climate. This testing could be accomplished through a gradual transition to online surveying like the one described in this research, or through pre-administration questionnaires, focus groups, or interviews assessing the level of acceptance and concern among employees.

Because their initial experience with online surveys largely predicts employees' willingness to participate in the future (Thompson et al., 2003), methods of ensuring anonymity and a positive survey experience should be determined. How can practitioners instill confidence in survey respondents that their responses are truly anonymous? Conveying anonymity through pre-survey communication is one potential method of doing so. In Thompson et al.'s study, the authors developed an introductory pre-survey module to assure respondents of their anonymity, which may have alleviated anonymity concerns. Also, the effects of survey methods associated with varying degrees of anonymity must be examined. In general, researchers must identify the psychological processes underlying survey responses when anonymity is a concern. The specific impacts of anonymity perceptions, such as motivation to respond and level of candor, must be investigated.

Although previous research has found that survey respondents tend to prefer the online survey method, a significant number still prefer more traditional methods other than online (Thompson et al., 2003; Yost & Homer, 1998). Given the increased utilization of online methods in organizations, the true effects of survey methodology must be determined through additional research and replications of previous studies. Research in this area is still too undeveloped to definitively dismiss administration method as a variable that impacts survey results.

References

Buckingham, M., & Coffman, C. (1999*). First, break all the rules: What the world's greatest managers do differently.* Simon & Schuster: New York.

Church, A. H. (2001). Is there a method to our madness? The impact of data collection methodology on organizational survey results. *Personnel Psychology, 54*, 937-969.

Graphic, Visualization, & Usability Center. (1998). *10th WWW User Survey* [Online]. Available: http://www.cc.gatech.edu/gvu/user_surveys/survey-1998-10/

Kraut, A. I. (1996). *Organizational surveys: Tools for assessment and change*. Jossey-Bass Publishers: San Francisco.

Kraut AI. (1999, April). *Want favorable replies? Just call! Telephone versus self-administered surveys*. Poster presented at the Annual Conference of the Society for Industrial and Organizational Psychology, Atlanta, GA.

Kraut A. I., Oltrogge C. G., Block C. J. (1998, April). *Written versus telephone surveys of employees: Are the data really comparable?* Poster presented at the Annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX.

Kuhnert, K., & McCauley, D. P. (1996). Applying alternative survey methods. In A. I. Kraut (Ed.), *Organizational surveys: Tools for assessment and change* (pp. 233-254). Jossey-Bass Publishers: San Francisco.

Laughlin, B. D. (2002). *Assessment of the psychometric characteristics of an employee opinion survey and the use of web versus paper survey dissemination methodologies at a fortune 500 company*. Unpublished Doctoral Dissertation. Wichita State University.

Mead A.D., Drasgow F. (1993). Equivalence of computerized and paper-and-pencil cognitive ability tests: A meta-analysis. *Psychological Bulletin, 114,* 449-458.

McFarland, L. A., & Ryan, A. M. (2000). Variance in faking across non-cognitive measures. *Journal of Applied Psychology, 85,* 812-821.

Naglieri, J. A., Drasgow, F., Schmit, M., Handler, L., Prifitera, A., Margolis, A., & Velasquez, R. (2004). Psychological testing on the Internet. *American Psychologist, 59,* 150-162.

Ployhart, R. E., Weekley, J. A., Holtz, B. C., Kemp, C. (2003). Web-based and paper-and-pencil testing of applicants in a proctored setting: Are personality, biodata, and situational judgment tests comparable? *Personnel Psychology, 56,* 733-753.

Stanton, J. M. (1998) An empirical assessment of data collection using the Internet. *Personnel Psychology, 51,* 709-725.

Stanton, J. M. & Rogelberg, S. G. (2002). Beyond online surveys: Internet research opportunities for industrial-organizational psychology. In Steven G. Rogelberg (Ed). *Handbook of research methods in industrial and organizational psychology*. Blackwell Publishers: Malden, MA.

Thompson, L. F., Surface, E. A., Martin, D. L., & Sanders, M. G. (2003). From paper to pixels: Moving personnel surveys to the Web. *Personnel Psychology, 56*, 197-227.

Yost, P. R., & Homer, L.E. (1998, April). *Electronic versus paper surveys: Does the medium affect the response?* Paper presented at the annual meeting of the Society for Industrial and Organizational Psychology, Dallas, TX.