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ABSTRACT

This study examines the response rates for surveys used in organizational research. We analysed 1607 studies published in the years 2000 and 2005 in 17 refereed academic journals, and we identified 490 different studies that utilized surveys. We examined the response rates in these studies, which covered more than 100,000 organizations and 400,000 individual respondents. The average response rate for studies that utilized data collected from individuals was 52.7 percent with a standard deviation of 20.4, while the average response rate for studies that utilized data collected from organizations was 35.7 percent with a standard deviation of 18.8. Key insights from further analysis include relative stability in response rates in the past decade and higher response rates for journals published in the USA. The use of incentives was not found to be related to response rates and, for studies of organizations, the use of reminders was associated with lower response rates. Also, electronic data collection efforts (e.g. email, phone, web) resulted in response rates as high as or higher than traditional mail methodology. We discuss a number of implications and recommendations.

KEYWORDS

empirical studies ■ questionnaire ■ research methods ■
response rate ■ survey

The majority of empirical studies conducted within the managerial and behavioural sciences use quantitative methodology. The data collection tool

most frequently used for acquiring information is the questionnaire. Questionnaires can provide insight into individual perceptions and attitudes as well as organizational policies and practices. Moreover, given the strengths of questionnaires for assessing organizational concerns, observing trends and evaluating progress, it is not surprising that they are used extensively in organizational research (Kraut, 1996).

To conduct research and publish the results, scholars depend on the willingness of people to respond to these questionnaires. However, unless the questionnaire is coercively administered to the target population, a 100 percent response rate (RR) is rarely achieved (Rogelberg & Stanton, 2007). In fact, as Baruch noted in 1999, the average response rate for questionnaires used as the basis for published academic studies is significantly less than 100 percent and, even more troubling, from 1975 to 1995 declined from 64.4 percent to 48.4 percent. While we should not expect full response in studies where responding is voluntary (Demaio, 1980), scholars utilizing questionnaires aim to have as high as possible RR. Higher response rates lead to larger data samples and statistical power as well as smaller confidence intervals around sample statistics. Further, higher response rates tend toward findings that have greater credibility among key stakeholders (Rogelberg & Stanton, 2007). Thus, it is critical that academics study and understand response rate issues.

The purpose of this article is to examine response rates in organizational studies. We aim to provide a robust analysis based on substantial, updated evidence. Specifically, we assess the long-term trends in response rates as well as differentiate between studies of individuals and organizations. Using data from a wide and comprehensive sample, we systematically analyse the factors that are believed to influence response rates to surveys used in management and behavioural science research (e.g. use of incentives, method of distribution, etc.). In the following pages, we first review the RR literature. Next, we develop and test hypotheses regarding trends in RR. Finally, we offer recommendations for response rate analysis and reporting.

Response rate in academic studies

The level of RR is an important, sometimes crucial, factor in assessing the value of research findings. When responses are obtained from a non-random group that differs from the population in terms of the variables of interest, it is possible for such differences to cause distortion of the 'true' effects (Schalm & Kelloway, 2001). As an example, in a study of non-response bias, Rogelberg and colleagues found that non-respondents possessed greater

intentions to quit, lower levels of organizational commitment, job satisfaction and satisfaction with supervisors than respondents (Rogelberg et al., 2000). A high rate of non-response creates a heightened probability of statistical biases (Tomaskovic-Devey et al., 1994). Indeed, any level of non-response can, but need not, induce non-response bias in survey estimates (Groves, 2006). Consequently, clarity about what rate of non-response should be considered 'too high' is elusive (Rogelberg & Stanton, 2007).

Based on a meta-analysis, Cook et al. (2000) argue that response representativeness is more important than response rate in survey research. However, they note that response rate is important if it bears on representativeness. Further, some scholars have suggested that low response rate concerns can be mitigated, if not completely eliminated, by the use of specific tactics, including the 'drop-&-pick' mode (Ibeh et al., 2004) and dynamic web-based survey methods (Bonometti & Jun, 2006). However, given the lack of consensus around these alternative methodologies, RR remains a critical concern for organizational scholars who seek dependable, valid and reliable results (see Hair et al., 2007; Saunders et al., 2006).

In an influential article, Campion (1993) summarized the responsibility of reviewers and editors to ensure that published studies have adequate return rates, that authors have made reasonable efforts to increase return rates, that they address the influence of non-respondents, and that they do not contain any obvious biases. To this end, some scholars have suggested a minimal level for RR. However, these suggestions were based on assertions rather than data, and they lack consistency across the literature (Babbie, 1990; Dillman, 1978, 2000; Rea & Parker, 1992; Roth & BeVier, 1998, suggest 50% as the minimal level; Fowler, 1984, suggests 60%; and De Vaus, 1986, argues for 80%). Based on a somewhat limited sample, Baruch (1999) suggested specific norms for studies at the individual level and the organizational level. In the present article we seek to update and extend that work by analysing and summarizing a comprehensive range of academic studies in management and behavioural sciences journals, reporting the response rates, possible moderators, and trend analysis.

Reasons for not responding

Given the wide agreement that high response rates are useful, why do scholars struggle to attain them? The two principal reasons for not responding are failure to deliver the questionnaires to the target population (e.g. wrong address, absent from work) and the reluctance of people to respond (Baruch, 1999). Thorough preparation (e.g. obtaining updated addresses or ensuring attendance when distributing them in person) will substantially

reduce the impact of the first factor, though rarely eliminate it completely. Dealing with the reluctance of respondents to complete and return the questionnaire is more challenging. To better understand some of the specific challenges, a recent issue of *Organizational Research Methods* (2007, Volume 10, Number 2) addressed the topic of organizational survey non-response. One issue that was not explicitly addressed was over-surveying.

Over-surveying in a growing number of areas means that employees are flooded with questionnaires (Weiner & Dalessio, 2006). The result is a large number of target individuals or firms who are fatigued and therefore refuse to respond to non-essential questionnaires. At the organizational level, Fenton-O'Creevy (1996) examined reasons for non-response in a study that yielded a 33 percent RR. A random sample of non-respondents reported various reasons for not responding: too busy (28%), not considered relevant (14%), address unavailable to return the questionnaire (12%), and cases when it was company policy not to complete surveys (22%). The remaining 24 percent did not state clear reasons. Obviously, all of these reasons are problematic, but the formal policies against responding represent a genuine threat to survey-based organizational research.

Reporting

While RR alone is not a proxy for study quality, it is one indicator editors use in determining the potential contribution of a study (Campion, 1993). In the case where scholars have concerns about their work not being published because of a low RR, they may choose not to report their RR in an attempt to hide the issue from reviewers and editors. Alternatively, there may be procedural problems that prevent accurate calculation of the RR. In either case, this issue needs to be addressed. Editors and reviewers simply should not overlook this issue (Campion, 1993; Sullivan et al., 2006).

Another issue in reporting is the distinction between total returned versus usable questionnaires. When there is a difference, researchers should utilize the number of usable questionnaires as the numerator in calculating RR rather than trying to camouflage the actual RR (Baruch, 1999). Also, authors should clearly indicate whether the questionnaires are 'administered' (i.e. the demands of the situation cause respondents to feel compelled to respond rather than doing so voluntarily). Such studies have been excluded from the present study because they represent a confounding of this research which is focused on RR in the general case – voluntary response – and would bias upward the average RR.

A surprisingly large number of studies do not report RR. This was previously highlighted as a clear case of poor practice by both Baruch (1999)

and Roth and BeVier (1998). A poor level of reporting on non-response, and in particular about representativeness of surveys, was also reported elsewhere (Werner et al., 2007).

Hypotheses development

RR trend across time

In this study, the basic and most important research question is the following: what are the trends in RR across time and journals? Prior work has identified a general decrease in the level of RR over time. Examining US national surveys, Steeh (1981) found a decreasing response rate between the 1950s and the 1970s for a specific population survey. Baruch (1999) clearly identified continuation of the trend in organizational studies. Cychota and Harrison (2006) document a decline in RR among surveys targeted at executives. Rogelberg and Stanton (2007) identify a number of factors that may contribute to further decline in individual response rates. These factors include survey saturation due to increasing popularity of opinion polls, emergence of additional survey administration businesses and managerial interest in making data-driven decisions. While at some point in time a 'steady state' or asymptote may be reached, we hypothesize that:

Hypothesis 1: The average response rate in organizational research studies will continue to decline with time.

Impact of the journal esteem

One way to develop a benchmark for the field is to examine what has been published in academic journals in the past. To create a database for benchmarking the RR issue, it is necessary to examine whether there is any congruence among leading journals, as well as whether the level of RR in non-leading journals is lower than that in leading journals. Rynes (2006) emphasized the need for editorial teams to uphold scientific standards. In survey-based studies, one way to reduce the probability of sampling errors is to obtain a high RR (Groves, 1989; Mitchell, 1985). Because RR may impact the validity of a study, RR should be one of the factors taken into consideration when referees and editors decide to accept or reject a paper (Campion, 1993). Given that in general the strongest research will be published in the strongest journals, we hypothesize that:

Hypothesis 2: The average response rate in leading organizational research journals will be higher than that in second-tier journals.

Impact of the journal location

Previous research has identified a number of cross-cultural characteristics that can influence RR. For example, Harzing (2000) found that individuals were more likely to respond to a questionnaire if they were from a low average power distance country (Hofstede, 1980). Given the relatively low power distance score for the USA (40) compared to the world average (55), we would expect higher response rates in the USA. Also, survey response rates tend to be higher when conducted in the researchers' home country than when they are conducted abroad (Jobber & Saunders, 1988). Given that the USA has more management scholars than any other nation, that the majority conduct US-based research, and that US-based journals publish more US-based research than non-US research, it is likely that US response rates will exceed non-US response rates. Further, while many US-based journals are seeking to increase the amount of qualitative research they publish (Gephart, 2004; Suddaby, 2006), there continues to be a stronger emphasis on empirical approaches in the USA than outside the USA. Thus, we believe:

Hypothesis 3: The average response rate in US-based management journals will be higher than that in non-US journals.

Impact of the type of respondent

As Cycyota and Harrison (2002) found, the occupational level of the sample may influence an individual's propensity to respond. Specifically, Cycyota and Harrison (2002) found that the normal tactics used to influence response rates among the general public or employee populations do not apply equally at the executive level. In studies of organizational-level phenomena, researchers who approach top managers to obtain data may face lower response rates than their colleagues who study non-executive employees. Moreover, some researchers have found that companies have explicit policies against providing company-level data to external parties (Fenton-O'Creevy, 1996). For these reasons, we hypothesize that:

Hypothesis 4: The average response rate from individuals will be higher than the response rate from representatives of organizations.

Incentives and reminders

Over the years, many scholars have experimented with ways of increasing RR (Roth & BeVier, 1998). Many of these studies document the effectiveness of

Dillman's (1978) total design method (now called the 'tailored design method'; Dillman, 2000). In one examination, the content of the study was found to be the most important factor in stimulating response rates, followed by sponsorship of the study and postage paid reply envelopes (Greer et al., 2000). Personalization, pre-paid or promised incentives, monetary and non-monetary rewards have also been found to increase response rates (Rose et al., 2007; Yu & Cooper, 1983). In another study, Jobber and O'Reilly (1998) confirm the effectiveness of monetary incentives, the use of return stamps, and the guarantee of anonymity as ways to improve standard mail survey rates, especially when sensitive information is requested. Still, the literature is not clear about the impact of different techniques on RR – especially when data are being sought from different populations. In their study of response rate at the executive level, Cycyota and Harrison (2002) tested the impact of incentives (gifts), advance notice, follow-up, and personalization, as well as possible moderation of organizational size, and found that none of the conventional response rate enhancement techniques were effective. A meta-analysis of top manager RR also by Cycyota and Harrison (2006) confirmed that these four typical manipulations are not effective with executive populations. However, topic salience, consent pre-screening, and social network approaches all show promise as methods for increasing response rate. In sum, the literature suggests differential effectiveness for traditional RR enhancement techniques depending on the target. On the basis of the large body of published research on incentives and reminders, we hypothesize the following:

Hypothesis 5: The use of incentives and reminders will result in a higher response rate in studies of individuals than in studies of organizations.

Method

The data for this study were obtained by systematically analysing all articles published in 17 refereed management and behavioural sciences journals – 12 first-tier journals and five second-tier journals. This bifurcation was made by consulting the ISI and SSCI rankings, among others (see JIMS, 1994; Pierce & Garven, 1995; Trieschmann et al., 2000). We also sought a mix of US and non-US as well as balance between micro (e.g. *Journal of Applied Psychology*) and macro (e.g. *Strategic Management Journal*) journals. Following is the list of first-tier and then second-tier journals.

First tier

1. *Academy of Management Journal* (AMJ)
2. *Administrative Science Quarterly* (ASQ)
3. *Human Relations* (HR)
4. *Human Resource Management* (HRM)
5. *Journal of Applied Psychology* (JAP)
6. *Journal of International Business Studies* (JIBS)
7. *Journal of Management Studies* (JMS)
8. *Journal of Vocational Behavior* (JVB)
9. *Organization Studies* (OrSt)
10. *Organizational Behavior and Human Decision Processes* (OBHDP)
11. *Personnel Psychology* (PP)
12. *Strategic Management Journal* (SMJ)

Second tier

1. *Career Development International* (CDI)
2. *International Journal of Manpower* (IJM)
3. *Journal of Managerial Psychology* (JMP)
4. *Personnel Review* (PR)
5. *Work and Occupation* (WaO)

The results of this analysis will be compared with the results of Baruch (1999), who used the following five journals:

1. *Academy of Management Journal* (AMJ)
2. *Human Relations* (HR)
3. *Journal of Applied Psychology* (JAP)
4. *Journal of International Business Studies* (JIBS)
5. *Organizational Behavior and Human Decision Processes* (OBHDP)

The distributions of the RR were analysed as well as other characteristics of the studies. For each of these journals, two complete volumes were examined (2000 and 2005). This extends by a full decade the work of Baruch (1999) who studied RR in 1975, 1985 and 1995 and, thus, provides a three decade-long period for trend analysis. The 'Methods' section of each individual article was investigated. Articles that reported use of a voluntary response survey were included. Articles that indicated the questionnaires were 'administered' (i.e. people were compelled to complete them) were excluded (a total of 42 articles across both years). In all, 490 out of the total

1607 papers (30%) published fit the established criteria for inclusion. However, 27 failed to mention the actual response rate or sufficient data for us to compute it, leaving 463 cases for analysis. While those not reporting are a small minority of studies (5.5%), we note that allowing authors to neglect mentioning the response rate is a serious oversight on the part of reviewers and editors.

The following information, which was presented in most cases, was gathered: actual response rate, number of questionnaires distributed, returned, usable (if not all were usable), type of population (e.g. rank & file/clerical, professionals, managers, or top managers), size and sector of the relevant organization or industry, use of incentives and follow-up to improve RR, and country of study. To assess inter-rater reliability, we calculated Cohen's kappa ($\kappa = .88$). There was almost perfect agreement on items that could be unambiguously assessed (e.g. the explicit mention of incentives). However, it was relatively more difficult to assess whether a questionnaire was 'administered' given the wide variation in language used to describe data collection efforts. Hence, there was lower initial agreement on this factor. After discussion, all discrepancies were resolved for 100 percent final agreement.

To differentiate between studies of individuals and studies of organizations, we looked at the primary unit of analysis. If researchers sought information from individuals to better understand the attitudes and behaviours of individuals, then it was coded as individual-level research. If researchers sought information from representatives of organizations to examine organization-level phenomena, it was coded as organization-level research. Because this information was typically solicited from top executives, we also included studies that focused exclusively on executives from across a wide variety of organizations due to the substantial similarity in the characteristics of the intended respondents.

When more than one study was reported in an article, these were treated separately. To ensure that there were no anomalies in the years that were selected (2000 and 2005), we analysed a sample of the journals in 1999 and 2006. Extensive analysis revealed no systematic differences in terms of response rate, whether considered in the aggregate or by level (i.e. individual or organization).

Results

The findings presented in Table 1 are a summary of the detailed tables compiled as the foundation of our analysis. The full set of tables containing

Table 1 Number of studies analysed from selected journals

| <i>Journal</i> | <i>Year</i> | | <i>Total</i> |
|----------------|-------------|------|--------------|
| | 2000 | 2005 | |
| AMJ | 37 | 31 | 68 |
| ASQ | 6 | 8 | 14 |
| CDI | 9 | 14 | 23 |
| HR | 27 | 12 | 39 |
| HRM | 7 | 8 | 15 |
| IJM | 11 | 15 | 26 |
| JAP | 24 | 48 | 72 |
| JIBS | 18 | 10 | 28 |
| JMP | 22 | 7 | 29 |
| JMS | 14 | 15 | 29 |
| JVB | 15 | 22 | 37 |
| OBHDP | 5 | 6 | 11 |
| OrSt | 3 | 10 | 13 |
| PP | 6 | 3 | 9 |
| PR | 13 | 21 | 34 |
| SMJ | 18 | 18 | 36 |
| WaO | 6 | 1 | 7 |
| Total | 241 | 249 | 490 |

the information is too extensive for inclusion here. It was, however, subject to the scrutiny of the review process and can be provided with the full list of sources to any interested scholar who contacts the author by e-mail (y.baruch@uea.ac.uk).

Overall response rate

As can be seen in Table 2, for the 152 studies that utilized data collected from individuals published in 2000, the average RR was 52.6 percent with a standard deviation of 19.7. In 2005, among the 157 studies at the individual level, the average RR was 52.7 percent with a standard deviation of 21.2. For the 61 studies that utilized data collected from organizations published in 2000 and the 56 published in 2005, the average RR was 36.2 percent (SD = 19.6) and 35.0 percent (18.2), respectively.

For purposes of comparison with Baruch's (1999) results for articles published in 1995, we looked at the aggregate RR for 2000 and 2005 (see Table 3). Of the 463 studies published in 2000 and 2005, the average RR

Table 2 Overall response rates

| Year | Level | N | Min | Max | Mean | SD |
|------|----------------------|------------------|------|------|------|------|
| 2000 | Individual | 152 | 12.7 | 93.0 | 52.6 | 19.7 |
| 2000 | Organization | 61 | 13.6 | 94.0 | 36.2 | 19.6 |
| 2000 | Overall ^a | 226 ^b | 12.7 | 94.0 | 48.4 | 21.1 |
| 2005 | Individual | 157 | 3.0 | 91.2 | 52.7 | 21.2 |
| 2005 | Organization | 56 | 10.0 | 91.0 | 35.0 | 18.2 |
| 2005 | Overall ^a | 237 ^b | 3.0 | 92.2 | 48.3 | 22.2 |

^a The overall analysis also includes a few studies in each year that were conducted at levels other than the individual or firm (e.g. alliance/joint venture, business unit, group).

^b Some studies fail to report response rate, thus the overall number included in the response rate analysis is somewhat less than the total number of studies examined (2000: 15, 2005: 12).

Table 3 Overall response rate trends

| Year | 1975 ^a | 1985 ^a | 1995 ^a | 2000 | 2005 |
|----------|-------------------|-------------------|-------------------|------|------|
| RR: Mean | 64.4 | 55.7 | 48.4 | 48.4 | 48.3 |
| SD | 16.8 | 19.4 | 22.5 | 21.1 | 22.2 |
| Median | 66 | 54 | 52 | 47 | 46 |

^a Taken from Baruch (1999) for comparison purposes.

was 48.3 percent with a standard deviation of 21.6 – results that are virtually indistinguishable from those observed by Baruch (1999) in 1995 (48.4% with a standard deviation of 22.5). Of note, however, is the fact that the median has declined slightly year over year since 1975. Also, it is relevant to mention that the five journals assessed from 1975 to 1995 represent a subset of the 17 journals analysed in 2000 and 2005.

Whereas Baruch (1999) pointed out a clear trend of decline in RR through the years, in examining published articles in 2000 and 2005, we find evidence that RR has stabilized (see Figure 1). Further, as can be seen in Table 4, a *t*-test of the RR means for 2000 and 2005 reveal no significant differences. Thus, Hypothesis 1 is not supported; RR appears to have stabilized in the decade subsequent to the past thorough examination (Baruch, 1999).

As can be seen in Table 5, there is considerable variance in RR across the various journals. Some of the differences are likely due to the fact that

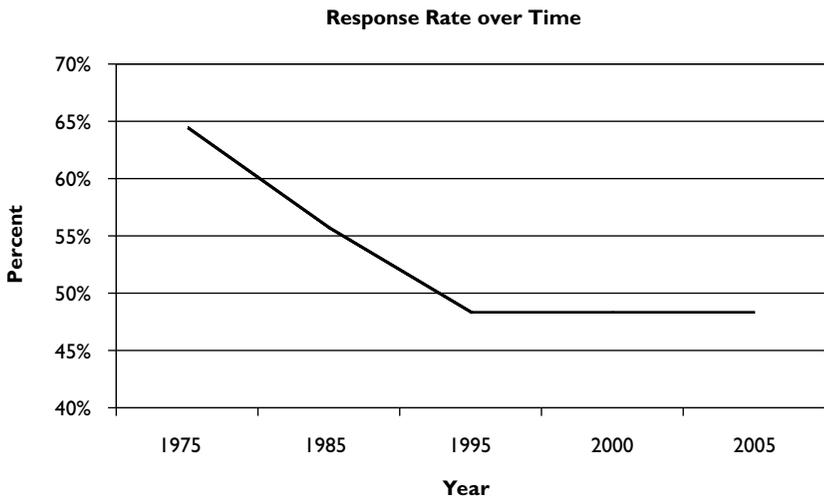


Figure 1 Overall Response Rate over Time

they report more studies conducted at the organizational level (e.g. JIBS, SMJ, HRM) where it is typical to have lower RR (Cycyota & Harrison, 2006). As regards the five journals present in both this study and Baruch (1999), there are a number that have experienced declining RR (e.g. AMJ, HR, OBHDP) and others that have registered increasing RR (e.g. JAP, JIBS).

In examining Hypothesis 2, we find no systematic difference between top-tier journals and second-tier journals in terms of RR. The mean RR for top journals is 48.2 percent and the mean for second-tier journals is 48.8 percent (see Table 4) – a difference that is not statistically significant.

There is a statistically significant difference in RR between US-based journals and non-US-based journals. The US journals average RR was 49.9 percent whereas the non-US journals average RR was 45.8 percent ($p < .05$). Thus, Hypothesis 3 is supported.

We see a clear picture emerging after separating studies conducted at the individual level (e.g. employees, managers, general population) from studies conducted at the organizational level (i.e. when the respondents are top executives representing the organization). For studies conducted at the individual level, the average RR was 52.7 percent, with standard deviation of 20.4 whereas for the organizational level the average RR was 35.7 percent with a standard deviation of 18.8. This difference is statistically significant ($p < .001$). Hence, Hypothesis 4 is supported.

As can be observed in Table 4, overall incentives are not associated with higher RR and reminders are associated with lower RR. In studies conducted

Table 4 t-test comparisons

| Overall analysis | N | Mean | SD | Std. Error Mean | t-test |
|-----------------------------|-----|------|------|-----------------|------------|
| 2000 | 226 | 48.4 | 21.1 | 1.4 | NS |
| 2005 | 237 | 48.3 | 22.2 | 1.4 | |
| Top journals | 353 | 48.2 | 22.0 | 1.2 | NS |
| Others | 110 | 48.8 | 20.4 | 1.9 | |
| US journals | 287 | 49.9 | 22.1 | 1.3 | $p < .05$ |
| Others | 176 | 45.8 | 20.6 | 1.5 | |
| Individuals | 309 | 52.7 | 20.4 | 1.2 | $p < .001$ |
| Organizations | 117 | 35.7 | 18.8 | 1.7 | |
| Reminder | 75 | 41.5 | 22.5 | 2.6 | $p < .05$ |
| No reminder | 215 | 48.1 | 20.9 | 1.4 | |
| Incentive | 48 | 47.5 | 18.8 | 2.7 | NS |
| No incentive | 211 | 45.8 | 21.9 | 1.5 | |
| Individual-level analysis | | | | | |
| Reminder | 39 | 51.2 | 23.6 | 3.8 | NS |
| No reminder | 145 | 52.3 | 19.8 | 1.6 | |
| Incentive | 33 | 50.2 | 16.0 | 2.8 | NS |
| No incentive | 133 | 51.1 | 21.7 | 1.9 | |
| Organization-level analysis | | | | | |
| Reminder | 31 | 29.2 | 12.2 | 2.2 | $p < .05$ |
| No reminder | 62 | 36.8 | 19.3 | 2.5 | |
| Incentive | 14 | 39.4 | 22.4 | 6.0 | NS |
| No incentive | 68 | 34.1 | 17.5 | 2.1 | |

at the individual level, there are no significant differences in RR for those studies reporting the use of incentives or reminders. Interestingly, however, while incentives are not statistically significantly different for studies conducted at the organizational level, reminders are associated with a significantly *lower* RR ($p < .05$). In sum, we find no support for Hypothesis 5.

Post-hoc analysis revealed insights into additional factors that may influence RR. First, as can be seen in Table 6, there is wide variation in RR related to the method used for distributing the survey. Surveys that are completed in person or on a drop-in basis have a higher RR (62.4%) than internal mail (55.5%) or regular mail (44.7%) – by far the modal form of distribution. Second, though the number of studies is still relatively small, it

Table 5 RR across the journals

| <i>Journal</i> | <i>N</i> | <i>Present study</i> | | <i>Baruch (1999)</i> | |
|----------------|----------|----------------------|-----------|----------------------|-----------|
| | | <i>RR</i> | <i>SD</i> | <i>RR</i> | <i>SD</i> |
| AMJ | 66 | 48.8 | 21.5 | 58.0 | 20.3 |
| ASQ | 14 | 61.0 | 23.0 | | |
| CDI | 22 | 44.7 | 22.3 | | |
| HR | 36 | 44.1 | 22.4 | 54.1 | 18.5 |
| HRM | 15 | 33.3 | 18.3 | | |
| IJM | 22 | 43.8 | 18.7 | | |
| JAP | 72 | 58.7 | 23.0 | 56.7 | 18.8 |
| JIBS | 24 | 32.3 | 17.5 | 32.2 | 21.9 |
| JMP | 27 | 53.0 | 19.8 | | |
| JMS | 25 | 40.1 | 17.6 | | |
| JVB | 36 | 53.7 | 18.2 | | |
| OBHDP | 10 | 46.3 | 27.3 | 63.9 | 20.0 |
| OrSt | 12 | 41.4 | 15.9 | | |
| PP | 9 | 50.6 | 21.6 | | |
| PR | 32 | 49.7 | 22.1 | | |
| SMJ | 34 | 44.1 | 17.7 | | |
| WaO | 7 | 57.9 | 7.3 | | |

is clear that web, email and phone-based data-collection methods can achieve RR that are nearly as good if not better than traditional mail surveys. Third, as is apparent in Table 7, there are variations in RR by the industry being studied. The highest average RR were found in the service sector (62.1%) and the lowest in the studies where various sectors were included or where researchers did not report the sector (46.2%).

The total reported number of participants in these studies was just over 100,000 organizations and 400,000 individuals. Although the majority of authors reported response rate, it is still a disturbing phenomenon to realize that many scholars withheld these data and that reviewers and editors occasionally permit it.

Discussion

Altogether 463 different studies using questionnaires, for which the RR was reported, were examined. They were published in 17 refereed journals in the years 2000 and 2005. Across these two years, the average response rate for

Table 6 Response rate by distribution method

| <i>Method</i> | <i>N</i> | <i>Min</i> | <i>Max</i> | <i>Mean</i> | <i>SD</i> |
|-------------------|----------|------------|------------|-------------|-----------|
| Mail | 309 | 19.7 | 94.0 | 44.7 | 21.8 |
| Internal mail | 79 | 3.0 | 92.2 | 55.5 | 18.3 |
| In person/drop in | 31 | 30.0 | 83.0 | 62.4 | 16.9 |
| Email | 11 | 23.7 | 89.0 | 54.7 | 23.9 |
| Phone | 10 | 10.0 | 86.2 | 49.1 | 24.1 |
| Web | 6 | 10.6 | 69.5 | 38.9 | 15.1 |

Table 7 Response rate by industry sector

| <i>Method</i> | <i>N</i> | <i>Min</i> | <i>Max</i> | <i>Mean</i> | <i>SD</i> |
|------------------------|----------|------------|------------|-------------|-----------|
| Production | 48 | 14.4 | 91.2 | 50.3 | 22.2 |
| Financial services | 23 | 16.0 | 90.0 | 57.0 | 21.7 |
| Health care | 21 | 17.4 | 94.0 | 53.8 | 20.0 |
| Public/state | 21 | 27.0 | 82.8 | 54.5 | 16.7 |
| Education | 15 | 10.0 | 84.0 | 49.0 | 24.1 |
| Service | 10 | 19.6 | 89.0 | 62.1 | 24.8 |
| Various or unspecified | 325 | 3.0 | 93.0 | 46.2 | 21.4 |

studies at the individual level was 52.7 percent, while the average response rate for studies at the organizational level was 37.2 percent.

We believe that the stabilization of RR as found in the test of Hypothesis 1 is a positive sign for management and behavioural science research. At least from the journals we have studied the average aggregate RR seems to have levelled out at about 50 percent. It should be noted that the RR is just one element to consider in evaluating the quality of empirical studies. More important still is that the respondents be representative of the population being studied – that they are not systematically different in any meaningful way from the overall group. In general, higher response rates will lead to a higher probability of a sample being representative of a population.

Interestingly, there were no significant differences between top-tier journals and second-tier journals (Hypothesis 2). Because Baruch (1999) only examined top-tier journals, we have no basis for trend comparisons. One reason for the similarity in RR across journals may be that this is a relatively objective factor that can be used in the review process among many others

that may be more subjective. Thus, while an acceptable RR may be required for publishing research across a wide variety of journals, distinct elements differentiate top-tier journals from other journals (e.g. significant theoretical advances, unexpected findings; Davis, 1971)

As anticipated in Hypothesis 3, significant differences between US and non-US journals were observed, with US-based journals having a higher RR. This may suggest differences in the methodologies or approaches being followed by the researchers submitting to these journals, differences in the populations being studied, or differences in editorial norms or expectations. This research does not address these questions; however, other research has (Baruch, 2001). Further, the degree to which this difference in RR may be associated with non-response bias is unknown. Hence, while the observed difference is relatively large and is statistically significant, the practical impact of this difference is less clear.

For research being conducted at the organization level or top-executive level, there is clear evidence that studies with lower response rates may still be published. This appears to be a tacit recognition of the increased difficulty in obtaining responses from this population. Moreover, it points to the need to provide supplemental analysis to confirm that the respondents are in fact representative of the population (Werner et al., 2007). We note also that the response rates reported here are substantially similar to those reported by Cycyota and Harrison (2006) in their meta-analysis of top-executive studies.

Like Cycyota and Harrison (2006), we failed to observe anticipated effects for the use of structural aspects of survey administration – incentives and reminders. The only statistically significant effect observed was counter to prior findings and theory. Specifically, we found that the use of reminders in studies conducted at the organizational level of analysis was associated with lower response rates – not higher as expected. While our methodology does not allow us to test why this is the case, we speculate that it may be that researchers who observe a low initial response rate to a survey may redouble their efforts to increase it and one of the most likely tactics to use is reminders.

We were surprised to find so many studies in well regarded journals that failed to report even the most basic information about their samples and responses. Clearly this is a significant limitation on generalizability.

Recommendations to scholars

On the basis of this research, we offer a few guidelines for scholars conducting studies that use questionnaires. The first guideline resulting from the study is a possible benchmark for RR in academic studies in the behavioural

sciences. As suggested previously, it seems that the norm should be within one SD of the average. From the present analysis it is clear that studies conducted at the organizational level seeking responses from organizational representatives or top executives are likely to experience lower RR. Recently published research suggests a benchmark of approximately 35–40 percent. At the individual level, RR averaged around 50 percent. For either level, any deviation from these benchmarks, especially downwards, should be explained. Moreover, scholars should provide analysis examining whether the respondents are different from the non-respondents in ways that might threaten the generalizability of the study (Rogelberg & Stanton, 2007).

Next, when authors prepare a manuscript, they should make it clear to the reader if the questionnaire was ‘administered’ (i.e. recipients filled it in as part of their job, role, studies, etc.). In this case, the proportion of usable questionnaires and of possible refusals should be indicated, but not labelled ‘Response Rate’. In cases where responses were truly voluntary, we submit that the following checklist may be useful for editors and reviewers in considering manuscripts submitted for publication (see Table 8).

Table 8 Response rate review checklist

-
- ✓ Information about the sample
 - How many people was the questionnaire sent to?
 - How was it distributed? (e.g. traditional mail, internal mail, email, web, in person)
 - Was it sent to people who volunteered for the study (prior consent)?
 - ✓ Questionnaires returned
 - How many questionnaires were returned?
 - Of those that were returned, how many were usable?
 - Was there a typical reason for receiving unusable questionnaires? If so, explain.
 - ✓ If several populations are involved (e.g. rank and file vs managers), was there a difference in the RR across the populations?
 - ✓ What response facilitation approaches were used by the researcher to increase RR (e.g. pre-notification, publicity, incentives, reminders, survey feedback)?
 - ✓ If the RR is an extreme case, either below or above acceptable norms, the researcher(s) should briefly explain the reason for such a deviation.^{a,b}
 - ✓ Conduct and report non-response bias tests (e.g. archival analysis, wave analysis, interest-level analysis, active non-response analysis).
-

^a We suggest that an RR exceeding the boundaries of one standard deviation should be discussed. If it is above, was it really voluntary for the respondents to reply and what are the possible explanations (e.g. use of specific approach in design or an effective promotion)? If below, why is it still justifiable to use the sample (e.g. population is difficult to access, strong evidence that many questionnaires have not reached the target population)?

^b As an example, when Tsui et al. (1995) had 90 percent and 95 percent RR they indicated it is an excellent RR but did not try to explain the unique circumstances or possible reasons for such a result.

Limitations

There are a number of possible reasons for the null results regarding incentives. The first is that the design of the study may have lacked power to detect the relationship of interest. A second reason for the lack of supportive results could be limitations in years and journals selected for analysis. A third reason may be that our coding procedures may have been ineffective at capturing what scholars actually did in collecting their data. Perhaps given the accumulated support for using the core elements of Dillman's methods (2000), researchers consider the use of such techniques the common baseline and simply fail to report what they assume is standard practice. One way to rectify this in the future might be to establish standard procedures and expect researchers to report any variations from them (Cycyota & Harrison, 2006).

It is also important to note that we did not examine all years since 1995. Instead, we sampled the period, examining 2000 and 2005. To assess whether the years analysed were different from other possible years of study, we examined a sub-sample of the top-tier journals that predominantly publish studies based on data collected from individuals or organizations or both in 1999 and 2006. Extensive analysis revealed no statistically significant differences in RR in the aggregate across years, with data collected from individuals or organizations, or within journals across years. Thus, while we cannot assert that we have consistent coverage over the entire time period, this test provides evidence that the sample fairly reflects the general case.

Conclusion

Having examined the levels and trends of response rate in management studies, we conclude with a few recommendations for future response rate analysis and reporting. First, notwithstanding the possibility raised in this study that incentives and reminders may not increase RR, we believe researchers should consistently follow well-documented response facilitation approaches (i.e. pre-notify participants, publicize the survey, design the survey carefully, manage survey length, provide ample response opportunities, monitor survey response, establish survey importance, foster survey commitment and provide survey feedback; Rogelberg & Stanton, 2007). Second, researchers should report in the 'Methods' section of their manuscripts the response facilitation activities and their results. Third, because response rates are just one indicator of sample quality, researchers should next conduct and report on non-response bias impact assessments (e.g. archival analysis, resurvey non-respondents, comparison of late respondents to early respondents, interest-level analysis, active non-response analysis via interviews, worst-case resistance, benchmarking analysis, and replication; Allen et al.,

2007; Rogelberg & Stanton, 2007; Viswervan et al., 1993) – regardless of how low or high the actual response rate is. A recent study by Werner et al. (2007) found that less than one-third of survey studies include non-response analysis. One such earlier study (Macek & Miles, 1975) found that respondents had a higher IQ level than non-respondents. Future research may examine a wider set of variables, for example, level of agreeableness or pro-social behaviour. While none of the above approaches is sufficient on its own to overcome concerns about non-response bias, using multiple approaches to amass convergent evidence for external validity will strengthen confidence in the study.

As populations change (e.g. Baby-boomers retire and younger, more technologically adept workers take their place) and technology evolves, we believe that electronic surveys (e.g. email or web) will become much more prevalent (Porter, 2004; Porter & Whitcomb, 2006; Simsek & Veiga, 2001). The results reported in this analysis suggest improvement over earlier generations of electronic studies. Whereas Mavis and Brocato (1998) found that response rates for email surveys were consistently lower than hard-copy mailed surveys, we found more recent data indicate that at least among those studies published the rates for such surveys are as high if not higher than traditional mail surveys. Of course, the most important factor in any survey administration strategy will be careful analysis of the population being studied. To complement individual, organizational or industry-specific analysis, researchers should also be aware of state-of-the-art techniques for best reaching their intended respondents. As one example, insights from a recent meta-analysis should be followed by those seeking data from executive populations (i.e. establishing a relationship between the researcher and respondent by appealing to a specific interest, obtaining agreement to participate in advance, or using a pre-existing social network; Cychota & Harrison, 2006). As another example, for company-sponsored employee surveys, recent research suggests monetary incentives may increase response rate and that the size of the incentive may not matter (Rose et al., 2007).

Finally, we believe that as researchers learn to collaborate actively with leaders to study their organizations, the researchers will also gain insight into the contextual factors that will increase the probability of obtaining a high response rate from the individuals within that organization. Many of those inhibiting factors are beyond the control of the researcher; thus, without the assistance of managers, response rates could be negatively affected, resulting in potentially biased data. In other words, these cooperative activities form the foundation of knowledge and trust that will facilitate effective organizational research (Hinkin et al., 2007). We hope in the future to see improved levels of such collaboration and mutual support between the academic and practitioner communities, and as a result, improvement in the quality of the data collected.

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