RESPONSE RATES IN BUSINESS AND MANAGEMENT RESEARCH: AN OVERVIEW OF CURRENT PRACTICE AND SUGGESTIONS FOR FUTURE DIRECTIONS

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Introduction

Survey methods are widely used in business and management research. Their advantages are well known; they can reach a large number of the target population at relatively low cost in money, time and effort. Their disadvantages are also well known and well documented. One of their key disadvantages, examined in this paper, is the low response rates (henceforth RR). Our review of the burgeoning literature on the use of survey methods in business and management research reveals that the issue of RR is a contentious one (Malhotra and Grover 1998; Roth and BeVier, 1998; Baruch, 1999; Rungtusanatham et al., 2003; Baruch and Holom, 2008). On the one hand, RR is an important dimension in the assessment of the soundness of a study using a survey method. A recent survey of editors of journals across the social sciences field revealed that about 90% of editors reported that RR is somewhat or very important criteria in publication decision[i] (Carley-Baxter et al., 2013). It is "often taken to be the primary measure of quality when assessing the validity of survey data or comparing different surveys" (Skalland, 2011:89). A low RR "can be a serious threat to the quality of data" (Schoeni et al., 2013:77) and could seriously impair the validity and generalizability of the findings (Kellerman and Herold, 2001).

On the other hand, despite the voluminous literature on the subject, there are no fixed rules or 'formulas' to determine the acceptability of RR, and there are no clear boundaries between what is considered acceptable and unacceptable RR. As noted by Cummings et al. (2001) "no gold standard" for an acceptable RR exists in the literature. So, much depends upon one's interpretation of what is an acceptable or not an acceptable RR. Without a "golden" rule or

benchmark, authors often sandbag their obtained RR by citing published research that obtained similar or lower RR (Roth and BeVier, 1998). Statements such as "this RR is considered to be acceptable." "our RR is acceptable in this field/region/sector.." are commonly used. Given the wide range of reported RR in previous studies, this selective approach provides a wide enough range to justify, or question, most RRs (see Roth and BeVier, 1998 for a discussion of this issue).

In this paper we aim to achieve three objectives. Given the evidence that RR has declined over the past few decades, one of the objectives of the paper is to help authors improve their RR. We do this by examining the effectiveness of the extensive array of techniques presumed to reduce attrition and improve RR. Specifically, we examine the link between the use of the enhancing practices and actual reported levels of RR in business and management research. The second objective is to provide a critical appraisal of RR in business and management research. We report on the extent to which best practices and guidelines in designing surveys and reporting RR are followed in practice.

The third objective of the study is to provide some thresholds for RR in business and management studies. We aim to provide informed guidance, not a strict set of targets or percentage cut off points. We believe that providing specific RR targets is neither desirable nor necessary. We aim to provide authors, reviewers, editors and the business management scholarly community with some baselines to evaluate the adequacy and acceptability of RR based on what has been published in recent years. We do so by reviewing 1093 survey based papers recently published in a representative sample of business and management journals. We argue that given the lack of consensus on what is and what is not an acceptable RR, reported rates in published work is a good, perhaps the only, place to start. The analysis takes into considerations the well documented variability in RR across national and regional contexts, level of analysis, type and category of respondents, and management sub-disciplines.

Response Rates: A brief review of the literature

A response rate is typically calculated as (a hundred times) the number of questionnaires returned to the number of questionnaires sent out. As a rule of thumb, the higher the RR the

better; high RR provides confidence in the representativeness of the data, and dampens concerns over non-response bias. In contrast, low RR can induce bias (Rogelberg and Stanton, 2007), and can have serious effects on the sample representativeness, external validity of the research and thereby the generalizability of the results to the whole population. External validity examines "whether or not an observed causal relationship should be generalized to and across different measures, persons, settings, and times" (Calder et al., 1982:240).

The extensive literature on RR has examined various strategies to improve RR (Porter, 2004; Anseel, 2010), including use of incentives (Everett et al., 1997; Cobanoglu and Cobanoglu, 2003; Goeritz, 2006; Porter and Whitcomb, 2003), design of survey questionnaires (Heerwegh, 2005), and methods of survey delivery (Dillman, 2009). The literature covers the broad management field (Baruch and Holtom, 1998; Baruch, 1999), as well as specific sub fields such organizational behaviour & human resource management (OB&HRM) (Roth and BeVier, 1998), and innovation research (Sauermann and Roach, 2013). Overall, the literature on RR in business and management research has focused on two key issues; (i) acceptable levels of RR in published research and (ii) strategies to improve RR. In the following section we discuss these two issues in more detail.

Is there an acceptable RR?

Our review of the literature reveals that there is no agreed upon minimum RR. Baruch and Holom (2008) reported that RR in business and management research could be anywhere between 50% and 80%, with an overall average of 55.6% (Baruch, 1999). Goyder (1985) reported that the acceptable range could vary between 30% and 70%. Malhotra and Grover (1998) argued that a RR below 20% is very undesirable. Similarly, textbooks and method texts suggestions vary wildly from 50% (Cycyota and Harrison, 2006; Rea and Parker, 1992), 60% (Fowler, 1984), to 80% (De Vaus, 1986). To address this issue some academic outlets in other disciplines state the minimum accepted RR as a guideline for potential authors and reviewers. For instance the Journal of American Medical Association clearly state that survey studies should "have sufficient response rates (generally at least 60%)". However, overall, as a survey of journal editors by Carley-Baxter et al. (2013) reveals, editors tend to use unwritten "rule of thumb" to judge RR resulting in "widely varying response rates (16 to 91 percent)". In brief, to date there is no consensus on what is an acceptable RR.

Strategies to reduce nonresponse rates in surveys

The bulk of the RR literature deals with strategies to improve RR. Many of the RR enhancing strategies are based on Dillman's approach, commonly known as total design method (ToDM) (Dillman, 1974, 1991; Dillman and Groves, 2011). Dillman methods deal with survey administration techniques and data-collection procedures. Basically, the Dillman approach is based on some basic data collection procedures that are believed to entice respondents to fill out and return the survey by making the survey process respondent friendly. The procedures include communicating with potential respondents over four or five key stages. The process starts with sending a personalized advance-notice letter, before sending the survey package which includes a questionnaire, a cover letter, clear instructions on how to fill out the survey, and a stamped return envelope, followed by a postcard reminding those who have not responded and thanking those who have, followed, if necessary, by another survey wave targeting those who have not yet responded, followed by a final reminder.

The Dillman approach is reported to lead to higher RR (De Leeuw and Hox, 1988; Childlow et al., 2015). Chidlow et al., (2015) reported that a utilization of Dillman's procedure can increase RR by 13.7 percentage points. For instance, personalization of cover letters are linked with high RR (Chidlow et al., 2015; Duncan, 1979), raising RR to up to nine percentage points (Martin, Duncan, Powers, and Sawyer, 1989). The evidence on pre-notification and follow-ups is mixed (Helakorpi et al., 2015). Several studies reported that sending advance notice, or pre-notification, increases RR (Houston and Ford, 1976; Duncan, 1979; Heberlein and Baumgartner, 1978; Martin, et al., 1989; Bruvold et al.,1990). The reported increase could vary from around seven percentage points (Fox et al., 1988) to 17.6 percentage points (Yammarino et al., 1991). Chidlow et al. (2015) reported that pre-notice letters had the highest impact on RR increasing it by 7.4 percentage points. However, several recent studies reported that pre-notification does not lead to higher RR (Hammink et al., 2010; Xie and Ho, 2013). Similar to pre-notification, while a number of studies reported a positive association between follow-ups and RR[ii] (Duncan, 1979; Kanuk and Berenson, 1975; Salant and Dillman, 1994), others (c.f. Chidlow et al., 2015) reported a negative association between use of follow-ups and RR.

Additional RR enhancing methods include the use of incentives, sponsors, and anonymity of respondents. Incentives are expected to lead to higher RR (Ansee et al., 2010; Baruch and Holtom, 2008; Biner, 1988; Fan and Yan, 2010; Kanuk and Berenson, 1975; Roth and BeVier, 1998; Laguilles et al., , 2011; Laurie and Lynn, 2009). Everett et al. (1997) reported that a use of $1 incentive increased the RR by 18 percentage points over the control group where incentives were not used. Similarly, Hopkins and Gullickson (1993) reported a 19 percentage points increase in RR by a use of $1 incentive (see also Church, 1993; Yammarino et al., 1991). In contrast, some scholars cautioned that financial incentives could have the opposite effect. Sauermann and Roach (2013: 275) advocate that financial incentives "may undermine actors' intrinsic or social motivations to engage in a task, potentially resulting in a negative net effect". They argue that this effect occurs when "individuals feel that incentives are controlling, if pay is interpreted as a sign that the task cannot be "fun", or if pay leads actors to focus their cost–benefits analysis narrowly on financial aspects". Use of sponsors such as university, government and research centre is reported to enhance RR (Nitecki, 1978; Bruvold et al., 1990; Fox et al., 1988; Greer and Lohtia, 1994). Similarly, anonymity and confidentiality are associated with higher RR (Yammarino et al., 1991). In this study we examine the effectiveness of these RR enhancing strategies by examining their link with reported RRs in business and management research.

Data Collection

To make our sample representative of business and management research, we did not confine our search to high impact journals or a specific sub-discipline. Our sample includes 13 carefully selected key business and management journals, namely Academy of Management Journal (AMJ), Administrative Science Quarterly (ASQ), British Journal of Management (BJM), Human Relations, Human Resource Management Journal (HRMJ), International Journal of Human resource Management (IJHRM), International Marketing Management (IMM), Journal of International Business Studies (JIBS), Journal of Marketing (JM), Journal of Marketing Management (JMM), Journal of Organizational Behavior (JOB), Journal of Retailing (JR) and Journal of World Business (JWB). We included both high impact journals and journals classified as 3* according to Association of Business Schools (ABS) to identify variation between and within the so-called top tier and second tier journals. Also, our sample includes both general business and management journals (BJM, AMJ, ASQ, and Human Relations) and specialized disciplinary journals namely, OB&HRM (HRMJ, JOB, and

IJHRM), international business (IB) (JIBS and JWB), and marketing (JM, JMM, IMM and JR). Although our database does not include finance and accounting, operation management and information systems journals, we believe studies in such sub-disciplines are captured in our general management journals. Given the internationalisation of business management research, we included IB journals to capture variation in RR across countries.

In order to ensure that the findings capture current practices, we restricted our search to recent publications. The time frame for this study includes papers published between 2009 and 2013. We believe a five year time frame is appropriate to capture current practices.

A longer time frame would enable us to observe RR patters over time but would also distract from the main focus of our analysis. To address this issue, we collected further data from BJM from 1990 (first issue) to 1995. In so doing we were able to gain an insight, albeit limited, into the pattern of RR overtime without deviating from the main objective of this study.

We hand searched every issue of each journal in our sample. We did not limit our search to abstracts or keywords. Our pilot search revealed that a significant proportion of papers do not mention the research method in the abstract and or the key words. We developed a protocol for data collection based on an extensive review of RR literature discussed above. The initial protocol was refined after it was first piloted with a sample of papers from selected journals. For instance, demographic data (e.g. institution name and country of origin) of non-corresponding authors were not always available and therefore we confined our data to first named authors.

Sample

> We identified and collected data from 1093 papers. We used a survey protocol that included all relevant variables to collect data. As depicted in Table 1, the sample is fairly evenly distributed across the years – with the lowest number of papers in 2009 (198 papers) and the highest in 2012 (228 papers). Data were analysed using SPSS. One way-analysis of variance (one-way ANOVA) test was used to determine whether there are differences between the various groups and strategy enhancing techniques in relation to reported RR. A significance level of 5 percent is used.[iii]

To see whether RR practices have changed over time, we compared our results with survey papers published in BJM between 1990 and 1995. A comparison of papers published in BJM

during the 1990-1995 and 2009 -2013 periods reveals no significant differences in the use of enhancing strategies. None of the papers reported the use of Dillman during the 1990-1995 period compared to two papers during the 2009-2013 period. Also, the percentage of papers that did not report RR is nearly identical – 28.5% for the 1990-1995 period compared with 29% for the 2009-2013 period. This said, given the enhanced international profile of BJM, the percentage of papers written by UK based authors decreased from 80% during the 1990-1995 period to just over 50% during the 2009-2013 period. Surprisingly perhaps, the average RR increased from 37.66 (with a standard deviation (SD) of 27.182) during the 2009-2013 period to 42.17 (SD=25.702) during the 1990=1995 period.

INSERT TABLE 1 HERE

As shown in Table 2, IJHRM and IMM top the list in terms of number of papers using survey methods. We identified 326 and 208 papers published in IJHRM and IMM respectively. The so-called 'top tier' journals published the lowest number of papers using survey methods. We identified 19 papers in AMJ and only eight papers in ASQ during the study period.

The number of papers using survey methods varies significantly across disciplines. We identified 446 papers in OB&HRM journals, 353 papers in marketing journals, 134 papers in IB, and 160 papers in general management journals.

As shown in Table 3, publications of survey based papers are dominated by authors from a small number of countries. The top 10 countries where the first author is located account for 811 papers accounting for nearly three quarters (74.2 %) of the total papers in the database. First authors from the USA and the UK account for over a third of the papers. Interestingly, Taiwan is ranked third in terms of papers published using a survey method, accounting for 6.5 % of total papers.

INSERT TABLES 2 AND 3 HERE

Response rates across countries and regions

The overall RR in our sample is 44.71 (SD =22.80). RR ranged from 1% to 100%. The median was 40% and the mode was 50%. The results depicted in Table 4a reveal that studies relying on respondents from the USA, China, UK, Taiwan and Australia top the list with 158, 92, 69, 61 and 35 papers respectively. Studies using respondents from India, Greece, China, Norway and Korea reported the highest RR with average percentages of 58.72, 56.93, 54.77, 53.38 and 50.74 respectively. This is surprising given the often reported difficulties in getting individuals to respond to questionnaires in some of these countries. Studies using respondents from Brazil, Ireland, Spain, Hong Kong and Australia reported the lowest RR- 29.18, 30.29, 30.99, 32.94, and 34.54 percent respectively.

To obtain a broader overview of RR across countries, we grouped countries into 11 geographical regions (see Table 4b). The one-way ANOVA analysis shows no statistically significant differences in reported RR between the regions (F=1.285, p-val=0.216). This is an interesting result given the widespread belief that RR varies significantly across countries (c.f. Harzing, 1997; Harzing, 2000). One must caution against survival bias here. Our sample only includes papers that made it through the review process where authors were able to obtain an "acceptable" RR.

Based on the origin of respondents, mean RR was highest in Africa (Mean = 57.70), followed by the Middle East (mean = 54.30), and India and Pakistan (mean = 52.68) respectively. These three regions are followed by Northern and central Europe (mean = 48.02) and Nordic countries (mean = 47.24). Researchers using respondents from Asia Pacific countries reported a higher RR (mean = 45.58) than those using respondents from North America (mean = 45.16), Australia/New Zealand (mean =43.52), Southern Europe (mean = 41.73), and UK/Ireland (mean = 40.55). Research conducted in South America reported the lowest average RR (mean = 32.36).

INSERT TABLES 4a, and b HERE

Response rate by survey type, target respondents, and level of analysis

Survey type: Over half of the studies (57%) used mail surveys, followed by personal and online surveys accounting for 12% and 10 % respectively. Surprisingly, the one-way ANOVA results show no statistically significance difference between the various survey

types (F=0.531, p=0.853). Looking at average RR, studies where questionnaires were delivered personally by the research team reported the highest RR (mean = 59.36), followed by studies using postal mail (43.09). Conducting surveys online, via email or by phone obtained the lowest average RR- 39.45, 37.92, and 37.34 respectively.

Types of respondents: Nearly half of the studies used managers (48%), followed by employees (29%). The one-way ANOVA results reveal significant differences in RR between the different types of respondents (F=11.799, p-val=0.000). Studies that used supervisors obtained the highest RR (mean=76.76), followed by studies using sales representatives (mean = 61.41), and expats (mean =57.80). Studies that used board of directors (mean = 44.35), managers (mean = 37.54) and customers (mean = 34.93) obtained lower RR. While studies that used union members reported the lowest RR (mean = 19.23).

Level of analysis: Over half of the studies (56%) were conducted at the organisational level. Individual level surveys accounted for 36% of the studies. A relatively small number of studies (5%) were conducted at the team level. The one-way ANOVA results show a statistically significant difference in RR between the three levels of analysis (F=12.727, p-val=0.000). In particular, RR decreases as studies move from individual (mean =52.47), to teams (mean = 47.04) to organisational (mean = 39.22) levels of analysis.

Effectiveness of response rates enhancing strategies

In this section we analyse the effectiveness of RR enhancing strategies discussed above. We do so by examining the link between reported RRs and use of particular strategies as reported in Table 5.

Only a very small number of papers (43 papers (5%)) reported that they used Dillman approach to entice respondents to participate in the study. The one –way ANOVA analysis shows no statistically significant differences between papers that reported to use Dillman and those that did not (F=0.949, p-val=0.330). The average reported RR in papers that reported to use Dillman is actually lower than those that did not; 40.58 percent compared to 44.69 percent respectively. These results must be considered with caution however. It is plausible that studies that did not report the use of Dillman may also have used the approach without reporting it. This may be the case for studies obtaining higher than average RR and therefore did not need to justify it by citing Dillman. Relatedly, studies that obtained a lower than

average RR might have wanted to defend the process through which the survey was administered by citing Dillman.

The results show that a number of enhancing strategies reported lower RR. Non-sponsored studies obtained a statistically higher RR than those that were not sponsored (F=3.827, p-val=0.022; means 45.11 and 37.25 respectively). Similarly, studies that used follow-ups reported significantly lower RR than those that did not (F= 2.956, p-val=0.032; means 44.07 and 44.92 respectively). Also, studies that did not use incentives to entice respondents to fill out questionnaires reported significantly higher RR than those that did not (F=11.715, p-val=0.000, means 45.66 and 44.77 respectively).

In contrast, studies using three of the enhancing strategies reported higher RR. The results reveal that studies that pre-notified respondents obtained statistically higher RR than those that did not (F=2.626, p-val=0.073, means 46.02 and 43.93 respectively). Also, studies that used anonymous respondents reported significantly higher RR than those that used named or identifiable respondents (F=21.815, p-val=0.000, means 48.30 and 37.07 respectively). Finally, studies that used multiple waves report statically higher RR[iv], albeit weak, than those that did not (F=2.144, p-val=0.093; means 43.94, 49.36 and 52.48 for one wave, two waves and three or more waves).[v]

Although the results indicate that studies that used some of the RR enhancing strategies reported lower RR than those that did not, this does not suggest that the strategies are not effective. These results do not and should not be taken to indicate that the use of the three enhancing strategies lead to lower RR. As noted above, our results suffer from survival bias because they do not include unpublished studies. Thus, the evidence on the effectiveness of RR enhancing strategies is inconclusive and there is insufficient endorsement to draw definitive conclusions. Given the difficulty in interpreting our results, we call for further investigations to understand why some of the enhancing strategies are negatively associated with average reported RR. Ideally, future studies should include both published and unpublished papers.

INSERT TABLE 5 HERE

RR across disciplines and journal ranking

We classified the journals in our sample into four subject categories: General, Marketing, International Business (IB), and OB&HRM. As shown in Table 6, there are statistically significant differences between the four subject categories (F=36.425, p-val=0.000). Papers published in HRM journals reported the highest RR (mean =52.52, SD =24.437) while papers in marketing journals reported the lowest (mean=34.66, SD=21.289). This is perhaps because, as noted above, it is more likely to obtain high RR from supervisors and employees than from customers. Two third (66.2 %) of the papers in our sample were published in ABS 3* journals. As depicted in Table 6 top tier journals publish studies with higher RR than lower tier journals (F=17.404, p-val=0.000; means 50.01 and 42.36 respectively).

A critical appraisal of reporting procedures and utility of RR

One of the basic tenets of survey methods is full disclosure of the research design and sampling procedures. Scholars have an obligation to describe their sampling procedures in adequate details so their results can be judged and permit future replications of the study. Our analysis of the papers in our sample reveals that for a significant proportion of the studies reporting procedures are totally inadequate for judging the utility of reported RRs. We found a prevalent disregard for response and nonresponse bias and sampling errors. Remarkably, none of the reviewed journals has put out its standards and procedures regarding the calculation of RR and reporting of sampling procedures in published papers. Out of the 1193 papers reviewed, 263 (23%) failed to state their RR or to provide sufficient information to enable the authors of this paper to calculate the RR.

Similarly, there is a lack of information about the sampling procedures particularly how the sample was drawn from the population which makes it difficult to infer findings back to the population. About 23% of the reviewed papers failed to provide a sample size and nearly 40% failed to provide information about the population size. There is abundant variation among scholars in reporting the number of responses returned and valid responses. Nearly 40% of the papers failed to report the number of responses discarded/used and 11.3% failed to report the number of responses returned.

While we recognize that there is a lack of consensus on how sample size should be calculated, we argue that the steps and procedures used to arrive at the target sample should always be reported. There should be an expectation that authors should provide sufficient

information about the eligible and ineligible study population, how they were identified and contacted, sampling procedures, and the participation and declining rates. Researchers should also check for differences between early, late and non-respondents (Wellman et al., 1980; Green, 1991; Paganini-Hill et al., 1993). By so doing, editors, reviewers and readers will be able to make an informed judgment about the adequacy of the sampling procedures and the acceptability of the reported RR. Therefore, we urge journal editors to develop and publish a check list of standard disclosure procedures that scholars should adhere to. The standards should compel authors to report accurately and in appropriate details the procedures used for determining their sampling procedures, characteristics of their participants, usability of responses to allow sufficient consideration of the study validity.

INSERT TABLE 6 HERE

DISCUSION

The results of our study of RR lead to a number of interesting contributions and implications for authors, reviewers and editors of business and management journals. These contributions provide illuminating insights into both the practice of survey research and the process and output of scholarly survey research publication. The remainder of this paper is dedicated to the discussion of these issues as well as the suggestion of additional work that could add further value.

Our research was inspired by the desire to supply those undertaking, those appraising and those publishing with guidelines regarding RR adequacy and appropriateness. This ambitious aim has (in turn) motivated us, driven us, infuriated us, and ultimately defeated us. A simple percentage of an appropriate RR is (ironically) inappropriate. Our results indicate that within the broad area of business and management research considerable variation in practice exists and while this does not preclude a (somewhat arbitrary) selection of a single RR percentage that is universally applicable, doing so seems unwise. In contrast, after much considered reflection and discussions with journal editors, we believe that within sub-disciplines general RR guidelines are more approximate *as long as* those applying such suggestions do so in a considered fashion. In top tier journals, in HRM and General Management a RR above 50% should be considered ‘good’ while in Marketing and IB a response rate of over 35% should be similarly considered ‘good’. However, such RR percentages must not be considered a ‘threshold’ but rather a midpoint within a zone of tolerance that stretches both above and

(more importantly) below. As such, authors, reviewers and editors will need to reflect on the specifics of each survey to gauge RR appropriateness. For example, based on our finding, a multi-wave HRM study of employees that pre-notifies respondents should expect a RR considerably above 50%. In contrast, a study of customers across countries is likely to attract a RR well below 35%. In this regard, it seems that reviewers considering RR levels need to reflect on the idiosyncrasies of each survey and flexibly apply editorial guidelines that reflect factors contributing to reduce *or* raise expected RR. It is hoped that our 35% and 50% general guides provide an appropriate RR target for researchers who should explicitly defend their achieved RR.

We must note here that considering RR in isolation may not be sufficient to judge the validity and quality of the study[vi]. As noted in an Editorial of the *Australian and New Zealand Journal of Public Health* (Morton et al., 2012) standalone RR "should never have been accepted as a suitable single proxy measure for all measures of study validity". Indeed, the presumption that higher RR always equates to higher study validity has been frequently challenged (Chen et al., 2015). This body of literature advocates, rightly in our opinion, that depending on the theme of the study, sampling procedures, and characteristics of respondents, studies with low RR may be only marginally less accurate than those with higher RR (c.f. Holbrook et al., 2007) and under certain circumstances studies with low RR may actually yield more accurate results than studies with higher RR (c.f. Visser et al., 1996). For instance a study that captures employees or customers' behaviour during or soon after an event may yield more accurate results that studies that obtain higher RR but are carried out long after the event. Similarly, regardless of RR, studies that survey board directors and top management team members may produce better results about how corporate strategies are developed than studies that survey middle managers.

Our study also generates some interesting insights into the effectiveness of various techniques to improve RR. While our study compares RRs that are reported following the application of various techniques against those studies which do not report using such techniques, we have no way of knowing if technique used is not-reported or what RR would be without it. In addition, our study suffers from survival bias as it only considering studies that made it through the review process. However, the results of our analysis strongly suggest that certain techniques are associated with higher RR while others are associated with lower RR. Three issues in particular stand out as worthy of application. First, the use of multiple waves of

administration appears to significantly increase RR. Second, pre-notification improves RR achieved – studies that pre-notified respondents obtained statistically higher RR than those that did not. Third, unsurprisingly perhaps, ensuring anonymity of respondents is positively associated with higher RR. As such, it seems sensible to recommend that authors use multiple waves, pre-notify respondents and ensure their anonymity whenever possible and appropriate.

Interestingly, follow-ups, use of incentives, and sponsorship do not seem to improve RR – suggesting that scholars devote their attention to other ways of enhancing RR. The final insights into technique application and RR centre on the use of the Dillman method. Personally, we find the suggestions of Dillman to be sensible, logical and good practice. However, our results suggest that authors seem to be citing Dillman as defence against poor RR rather than as shorthand for explaining their design rigour.

Our third set of insights reflects our desire to appraise critically RR issues in business and management research. Within this broad field of research there is considerable variation in the focus and nature of survey research. HRM and general management scholars focus much of their efforts on managers and employees while marketers devote themselves much more to the study of customers. This seems to be reflected in the typical RR achieved in such sub-discipline – IB and marketing averaging RR of around 35% while HRM and general management typically achieve 50%. Regardless of sub-disciplinary differences, there is evidence of very good practice in all areas. However, there is also considerable evidence of (at best) poor and (at worse) deficient practices. While this issue was more evident in 3* ABS journals, examples were also found in 4* ABS journals. During data collection some papers' lack of detail was astounding. Frequently, we found missing RRs, unclear methods, undescribed populations, unidentified respondents and a myriad of unreported important details. This suggests that either the author(s) failed to report sufficient details of their work or reviewers/editors requested their removal. Either case is unacceptable. Authors have a duty to ensure that subsequent analysis of their work is informed by clear reporting of design, method, and outcomes. Reviewers and editors have a similar duty to maintain transparent reporting and standards. As a profession, it could be argued that authors, reviewers and editors seem to be (collectively) too lax in enforcing these standards.

Our study has several limitations. The study only examines whether RR enhancing strategies have an impact on RR. It does not provide an explanation for the results. Future research should examine why and how, and the extent to which, the various enhancing strategies influence RR. Furthermore, the use of reported RR in published work provides some limitations. It excludes work that was submitted to journals but did not make it through the peer review process. Future research that investigates submitted work and not only published work would provide a more comprehensive assessment of RR in business and management research. The final issue we note centres on representativeness. Although our focus on English-language journals explains an over-representation of English speaking countries such as the USA, Canada, UK, and Australia, a number of countries and continents appear to be under- or over-represented. Researchers from the two continents of Africa and South America are almost entirely absent in the journals we studies. This either suggests that scholars from these countries publish elsewhere, focus on other issues or find publishing at this level challenging. In contrast, some countries, such as Taiwan, are hugely over-represented.

References

Anseel, F., Lievens, F., Schollaert, E., Choragwicka, B., (2010). "Response rates in organizational science 1995–2008: a meta-analytic review and guidelines for survey researchers". *Journal of Business and Psychology*, 25 (3), pp.335–349.

Baruch, Y. (1999). "Response rate in academic studies-A comparative analysis". *Human relations, 52*(4), pp.421-438.

Baruch, Y., and Holtom, B. C. (2008). "Survey response rate levels and trends in organizational research". *Human Relations,* 61(8), pp.1139-1160.

Biner, P. M. (1988). "Effects of cover letter appeal and monetary incentives on survey response: A reactance theory application". *Basic and Applied Social Psychology,* 9, pp.99-106.

Bruvold, N. T., Comer, J. M., and Rospert, A. M. (1990). "Interactive effects of major response facilitators". *Decision Sciences,* 21, pp.551-562.

Calder, B. J., Phillips, L. W., and Tybout, A. M. (1982). "The concept of external validity", *Journal of Consumer Research*, pp.240-244.

Carley-Baxter, L. R., Hill, C. A., Roe, D. J., Twiddy, S. E., Baxter, R. K., and Ruppenkamp, J. (2013). "Does Response Rate Matter? Journal Editors Use of Survey Quality Measures in Manuscript Publication Decisions", *Survey Practice*, *2*(7).

Chidlow, A., Ghauri, P. N., Yeniyurt, S., and Cavusgil, S. T. (2015). "Establishing rigor in mail-survey procedures in international business research". *Journal of World Business*.

Church, A. H. (1993). "Estimating the effect of incentives on mail survey response rates: A meta-analysis". *Public Opinion Quarterly,* 57, pp. 62-79.

Cobanoglu, C., and Cobanoglu, N. (2003). "The effect of incentives in web surveys: application and ethical considerations". *International Journal of Market Research*, 45 (4), pp.475–488.

Cummings, S. M., Savitz, L. A., and Konrad, T. R. (2001). "Reported response rates to mailed physician questionnaires". *Health services research, 35*(6), pp.13-47.

Cycyota, C. S., and Harrison, D. A. (2006). "What (not) to expect when surveying executives a meta-analysis of top manager response rates and techniques over time". *Organizational Research Methods,* 9(2), pp.133-160.

De Leeuw, E. D., and Hox, J. J. (1988). "The effects of response-stimulating factors on response rates and data quality in mail surveys". *Journal of Official Statistics, 4*(3), pp.2414249.

De Vaus, D. A. (1986). *Surveys in social research.* London: George, Allen and Unwin.

Dillman, D. A. (1991). "The design and administration of mail surveys". *Annual Review of Sociology*, pp.225-249.

Dillman, D. A., Christenson, J. A., Carpenter, E. H., and Brooks, R. M. (1974). "Increasing mail questionnaire response: a four state comparison". *American Sociological Review*, pp.744-756.

Dillman, D., and Groves, B. (2011). "Internet, mail and Mixed-Mode Surveys: The Tailored Design Method 3 rd ed.". *Survey Research*, 34(833), 635.

Duncan, W. J. (1979). "Mail questionnaires in survey research: A review of response inducement techniques", *Journal of Management,* 5, pp. 39-55.

Everett, S. A., Price, J. H., Bedell, A. W., and Telljohann, S. K. (1997). "The effect of a monetary incentive in increasing the return rate of a survey to family physicians", *Evaluation and the Health Professions,* 20(2), pp.207-214.

Fan, W., and Yan, Z. (2010). "Factors affecting response rates of the web survey: A systematic review". *Computers in Human Behavior, 26*(2), pp.132-139.

Fowler, F. F. (1984). *Survey research methods.* Beverly Hills: Sage.

Fox, R. J., Crask, M. R., and Kim, J. (1988). "Mail survey response rate: A meta-analysis of selected techniques for inducing response". *Public Opinion Quarterly,* 52, pp.467-491.
Gerald Albaum. (1987). "Do Source and Anonymity Affect Mail Survey Results?" . *Academy of Marketing Science*, 15, pp.74–81
Goeritz, A., (2006). "Incentives in web studies: methodological issues and a review". *International Journal of Internet Science,* 1 (1), pp.58–70.
Goyder, J. (1985). "Nonresponse effects on relationships between variables". *Public Opinion Quarterly*, 40, pp.360-369.
Green, K. E. (1991). "Reluctant respondents: differences between early, late, and nonresponders to a mail survey". *The Journal of Experimental Education*,*59*(3), 268-276.
Greer, T. V., and Lohtia, R. (1994). "Effects of source and paper color on response rates in mail surveys". *Industrial Marketing Management*, 23(1), pp.47-54.
Hammink, A., Giesen, P., and Wensing, M. (2010). "Pre-notification did not increase response rate in addition to follow-up: a randomized trial". *Journal of Clinical Epidemiology*, 63, pp.1276–1278
Harzing, A. W. (1997). "Response rates in international mail surveys: results of a 22-country study", *International Business Review*, 6(6), pp.641-665.
Harzing, A. W. (2000). "Cross-national industrial mail surveys: why do response rates differ between countries?", *Industrial Marketing Management*, 29(3), pp.243-254.
Heberlein, T. A., and Baumgartner, R. (1978). "Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature", *American Sociological Review*, pp.447-462.
Heerwegh, D., (2005). "Effects of personal salutations in invitations to participate in a web survey", *Public Opinion Quarterly*, 69 (4), pp.588–598.
Helakorpi, S., Mäkelä, P., Holstila, A., Uutela, A., and Vartiainen, E. (2015). "Can the accuracy of health behaviour surveys be improved by non-response follow-ups?", *The European Journal of Public Health*, *25*(3), pp. 487-490.
Holbrook A, Krosnick J, Pfent A. (2007). The causes and consequences of response rates in surveys by the news media and government contractor survey research firms. *In:* Lepkowski JM, Tucker NC, Brick JM, De Leeuw ED, Japec L, Lavrakas PJ, **et al**, *editors. Advances in Telephone Survey Methodology. New York (NY): Wiley.*
Hopkins, K. D., and Gullickson, A. R. (1993). "Response rates in survey research: A meta-analysis of the effects of monetary gratuities". *Journal of Experimental Education*, 61, pp.52-62.
Houston, M. J., and Ford, N. M. (1976). "Broadening the scope of methodological research on mail surveys", *Journal of Marketing Research*, pp.397-403.
Kanuk, L., and Berenson, C. (1975). "Mail surveys and response rates: A literature review". *Journal of Marketing Research,* 12, pp.440-453.
Kellerman, S. E. and Herold, J. (2001). "Physician response to surveys: A review of the literature". *American Journal of Preventive Medicine*, 20(1), pp. 61-67.
Laguilles, J. S.,Williams, E. A. and Saunders, D. B. (2011). "Can lottery incentives boost web survey response rates? Findings from four experiments", *Research in Higher Education*, *52*(5), pp.537-553.
Laurie. H. and Lynn. P. (2009). "The use of respondent incentives on longitudinal surveys". In *Methodology of longitudinal surveys*, ed. Lynn Peter , 205–34. Chichester, UK: John Wiley & Sons.
Malhotra, M. K. and Grover, V. (1998). "An assessment of survey research in POM: from constructs to theory", *Journal of Operations Management*, *16*(4), pp.407-425.

Martin, W. S., Duncan, W. J., Powers, T. L., and Sawyer, J. C. (1989). "Costs and benefits of selected response inducement techniques in mail survey research". *Journal of Business Research,* 19, pp.67-79.
Morton, S., Bandara, D. K., Robinson, E. M. and Carr, P. E. A. (2012). "In the 21st Century, what is an acceptable response rate?". *Australian and New Zealand Journal of Public Health*, *36*(2), 106-108.
Nitecki, Danuta A. (1978). "Effects of Sponsorship and Nonmonetary Incentive on Response Rate", *Journalism Quarterly,* 55, pp.581-583.
Paganini-Hill, A., Hsu, G., Chao, A. and Ross, R. K. (1993). "Comparison of early and late respondents to a postal health survey questionnaire". *Epidemiology*,*4*(4), pp. 375-379.
Porter, S. and Whitcomb, M., (2003). "The impact of lottery incentives on student survey response rates", *Research in Higher Education,* 44 (4), pp.389–407.
Porter, S. R., and Whitcomb, M. E. (2005). "Non-response in student surveys: The role of demographics, engagement and personality", *Research in Higher Education,* 46(2), pp.127-152.
Porter, S., (2004). "Raising response rates: what works?", *New Directions for Institutional Research,* 121, pp.5–21.
Rea, L. M. and Parker, R. A. (1992). *Designing and conducting survey research: A comprehensive guide.* San Francisco: Jossey- Bass.
Rogelberg, S. and Stanton, J. (2007). "Understanding and dealing with organizational survey nonresponse", *Organizational Research Methods,* 10, pp.195–209.
Roth, P., and BeVier, C. (1998). "Response rates in HRM/OB survey research: norms and correlates, 1990–1994", *Journal of Management*, 24 (1), pp.97–118.
Rungtusanatham, M. J., Choi, T. Y., Hollingworth, D. G., Wu, Z. and Forza, C. (2003). "Survey research in operations management: historical analyses", *Journal of Operations Management*, 21(4), pp.475-488.
Salant, P. and Dillman, D. A. (1994). *How to conduct your own survey.* New York: Wiley & Sons.
Sauermann, H. and Roach, M. (2013). "Increasing web survey response rates in innovation research: An experimental study of static and dynamic contact design features". *Research Policy*, *42*(1), pp.273-286.
Schoeni, R. F., Stafford, F., McGonagle, K. A. and Andreski, P. (2013). "Response rates in national panel surveys". *The Annals of the American Academy of Political and Social Science*, 645(1), pp. 60-87.
Skalland, B. (2011). "An alternative to the response rate for measuring a survey's realization of the target population". *Public Opinion Quarterly*, 75(1), pp. 89-98.
Visser, P.S., Krosnick, J.A., Marquette, J., *and* Curtin, M. (1996). "Mail surveys for election forecasting? An evaluation of the Colombia Dispatch Poll". *Public Opinion Quarterly. 60, pp.* 181–227.
Wellman, J. D., Hawk, E. G., Roggenbuck, J. W., and Buhyoff, G. J. (1980). "Mailed questionnaire surveys and the reluctant respondent: an empirical examination of differences between early and late respondents". *Journal of Leisure Research*, 12(2), pp.164-172.
Xie, Y. and Ho, S. C. (2013). "Prenotification had no additional effect on the response rate and survey quality: a randomized trial", *Journal of Clinical Epidemiology*, 66(12), pp.1422-1426.
Yammarino, F. J., Skinner, S. J., and Childers, T. L. (1991). "Understanding mail survey response behaviour". *Public Opinion Quarterly,* 55, pp.613-629.

Table 1. Published papers using survey method: 2009-2013

Year	2009	2010	2011	2012	2013	Total
Number of papers	198	219	225	228	223	1093
Percentage	18.1	20	20.5	20.8	20.4	100

Table 2. Survey papers and journals

Journal	Number of papers (Percentages)	Journal	Number of papers (Percentages)
AMJ	19 (1.7)	JIBS	41(3.7)
ASQ	8 (.7)	JM	60 (5.5)
BJM	51 (4.7)	JMM	57 (5.2)
HRJ	82 (7.5)	JOB	80 (7.3)
HRMJ	40 (3.7)	JR	28 (2.6)
IJHRM	326 (29.8)	JWB	93 (8.5)
IMM	208 (19)	Total	1093

Table 3. Survey papers by first author's country of affiliation – top 10 countries

Country	**Number of papers (Percentages)**
USA	264 (24.4)
UK	137 (12.5)
Taiwan	71 (6.5)
Spain	46 (4.2)
Netherland	43 (3.9)
Hong Kong	43 (3.9)
Germany	48 (4.4)
China	43 (3.9)
Canada	36 (3.3)
Australia	80 (7.2)
Total	*811 (74.2)*

Table 4a. Response rates and country of origin of respondents: Top 20 countries

Country	**Average RR**	**Number of papers (Rank by number of papers)**	Std Deviation	**Country**	**Average RR**	**Number of papers (Rank by number of papers)**	Std Deviation
India	58.72	18 (10)	28.387	Canada	42.35	23 (9)	28.791
Greece	56.93	9 (14)	20.281	N.Zealand	41.05	11 (12)	27.179
China	54.77	92 (2)	26.097	UK	38.19	69 (3)	22.690
Norway	53.38	8 (16)	15.656	Various	36.61	8 (17)	23.156
Korea	50.74	14 (11)	27.344	Finland	36.51	9 (13)	9.764
Italy	49.64	9 (15)	30.165	Australia	34.54	35 (5)	19.111
Netherland	49.41	29 (7)	23.082	Hong Kong	32.94	7 (18)	13.307
USA	46.03	158 (1)	25.125	Spain	30.99	34 (6)	20.320
Taiwan	45.13	61 (4)	25.803	Ireland	30.29	7 (19)	16.866
Germany	42.96	26 (8)	24.755	Brazil	29.18	6 (20)	17.782

Table 4b. Response rates per geographical regions

Region	**Average RR**	Number of papers (Rank by number of papers)	Std Deviation
Africa	57.70	4 (11)	18.832
Middle East	54.30	26 (8)	25.446
India/Pakistan	52.68	21(9)	26.047
Northern Europe	48.02	71(4)	25.140
Nordic countries	47.24	29 (7)	24.070
Asia Pacific	45.58	192 (1)	25.378
North America	45.16	184 (2)	26.027
Australia/New Zealand	43.52	46 (6)	23.364
Southern Europe	41.73	63 (5)	24.953
UK & Ireland	40.55	77(3)	22.991
South America	32.36	9 (10)	27.948
Mean square	774.766		
F	1.285		
Sig	.216		

N.b. The number of papers does not add up to 1093 because of missing data and/or unclassified papers.

Table 5. Enhancing strategies and actual RR

	N		Mean	Std Deviation	Mean Square	F	Sig.
Dillman	Yes	43	40.58	24.686	580.063	.949	.330
	No	778	44.69	25.461			
Sponsored	Yes	57	37.25	21.364	2317.19	3.827	.022
	No	757	45.11	24.844			
Pre-notification	Yes	220	46.02	24.546	1584.937	2.626	.073
	No	544	43.93	24.819			
Follow up	Yes	210	44.07	25.387	1778.376	2.956	.032
	No	543	44.92	24.531			
Anonymous	Yes	421	48.30	24.489	12448.784	21.815	.000
	No	201	37.07	23.900			
Incentives	Yes	57	44.77	22.820	6951.922	11.715	.000
	No	699	45.66	24.987			
Number of waves	One wave	701	43.94	24.752	1305.874	2.144	.093
	Two waves	100	49.36	24.041			
	Three or more	21	52.48	25.336			

Table 6 RR Across Disciplines and Journal Ranking

Subjects & journals ranking	N	Mean	Std. Deviation	Std. Error	Mean Square	F	Sig.
General	118	51.80	25.868	2.381	19799.551	36.425	.000
HRM	341	52.52	24.437	1.323	543.567		
Marketing	265	34.66	21.289	1.308			
International Business	106	37.26	21.382	2.077			
ABS 3	569	42.36	23.928	1.003	10466.023	17.404	.000
ABS 4	261	50.01	25.774	1.595			

Endnotes

[i] Surprisingly 11% of editors from statistical journals reported that RR is not at all important in publication decision.

[ii] Helakorpi et al., (2014) reported that the final response rate rose from 57% to 71 when the postal questionnaire was followed by telephone follow-up. Similarly, the meta-analysis of Yammarino, et al. (1991) reported that follow ups could increase RR by up to 18%.

[iii] In addition to one-way ANOVA tests we conducted one-way multivariate analysis of variance (one-way MANOVA) to determine whether there are any differences between the various enhancing strategies and RR. The results were not significantly different. Given the world limit we are not able to add the one-way MANOVA results but they are available from authors upon request.

[iv] The One-way-MANOVA results show a statically significant results (F=4.339, p.=0.38).

[vi] We than a reviewer for bringing this to our attention.