

Putting Dillman's Survey Multiple Contacts to Test for International Business Research Data Collection Procedure Equivalence.

Abstract

Mail surveys represent a key method for accessing primary data in international business research. With a view to enhance the effectiveness of data collection procedures in empirical research, we systematically review and analyze 94 recent articles that were published in Journal of International Business Studies and employed mail surveys for primary data collection. Using Dillman's framework of multiple contacts, the review purposefully compares the recent studies on the data collection procedures with a special emphasis on the type of contact used. The analysis outlines the current research practices and provides suggestions and implications for future research.

Keywords: international mail survey, data collection procedure equivalence, international business research.

Introduction

A growing global economy has forced the demand for information about international markets by both academics and practitioners. However, gathering cross-cultural data is not an easy task and the problems with undertaking international research have long been acknowledged by researchers (Berry, 1969). While workable solutions have been offered in some areas (Jobber *et al.*, 1991; Harzing, 1997; Brock, 2003; Reynolds *et al.*, 2003), other issues still remain to be resolved (Kjeldgaard *et al.*, 2006; Yaprak, 2006; Hult *et al.*, 2008, Piekkari *et al.*, 2009). One of the issues that is still unresolved relates to data collection procedure equivalence which includes comparability with regards to research instrument equivalence (e.g. face-to-face interviews, mail surveys, etc), the sampling coverage and survey administration procedures (Craig and Douglas, 2005; Hult *et al.*, 2008).

This work aims to examine if and how international business (IB) report the mail survey administration procedures, mainly the contacts that are established with potential respondents for maximising response rate. By doing so, the study is structured as follows. First, it draws attention to the multiple-contacts for mail surveys proposed by Dillman (1978, 1999). Second it points out at the effectiveness of Dillman's framework, grounded in a social exchange perspective, to cross-cultural research. Third, it presents the analytical approach that was used to examine data on the mail survey administration procedures employed in studies that were published in the Journal of International Business Studies (JIBS) between 2000 and 2008. Fourth, it [focuses on the implications of the findings for IB research](#). Finally, it concludes.

Dillman's framework for mail survey data collection

Guided by social exchange theory, in the late 1970s, Don A. Dillman (1978) proposed a theoretical framework for mail survey data collection known in the literature as the Total Design Method (ToDM). According to social exchange theory (Blau, 1964; Homans, 1973) a questionnaire recipients are most likely to complete and return a questionnaire if they expect that the perceived benefits of doing so will outweigh the perceived costs (material and psychological) of responding. Consequently, the researcher (whether in international or/and domestic market) needs to minimise the expected costs and maximise the expected benefits of participation. Three elements are crucial for reinforcing this kind of behaviour: rewards, costs, and trust. In simple terms rewards are what one anticipates to gain from a particular activity, costs are what one gives up or spends to obtain the rewards, and trust is the expectation that in the long term the rewards of doing something will offset the costs (Dillman, 1978). The most important strength of the ToDM is a set of procedures for

increasing response rates¹. Among those procedures, which are of a great interest of this work, four carefully spaced mailings to potential respondents are proposed. These are:

1. A *questionnaire* mailing. This questionnaire is mailed in an envelope (approximately 15.5 x 21 cm), along with a stamped and addressed return envelope and a *detailed covering letter*.
2. A *postcard* is sent out to all potential respondents once week after mailing the questionnaire, thanking them for their co-operation and reminding those who have not yet responded that it is important to co-operate.
3. Two weeks later a *second copy of the questionnaire* is sent out to those who have not yet sent in the completed questionnaire, along with a *reminder letter* that their replies have not yet been received.
4. Four weeks later² a *third copy of the questionnaire* is mailed, this time by *certified mail* to emphasize the importance of the survey. A note is also added in this procedure to remind the potential respondents of the importance of their response for the success of the survey.

Under social exchange approach, contacts that are different from previously used are generally more powerful than repetition of a previously used method. Individuals with whom the first contact was successful will not be subject to receiving a replacement questionnaire. As a result, the later contacts need to be varied in an effort to increase their effectiveness with nonrespondents. Therefore it is important, that each communication method differs from a previous one in order to convey a sense of appropriate renewal of an effort to communicate. Each of these delivery contacts, described above, builds upon past research (Dillman *et al.*, 1974, Heberlein and Baumgartner, 1978) showing that a distinctively different final contact improves response to mail surveys. In addition, it has been shown in the literature that multiple contacts have a significantly greater collective capability for influencing response rates than any other technique for increasing response to mail surveys (Scott, 1961; Linsky, 1975).

Taking into account the globalisation of markets, the surge of mail surveys techniques (Dillman, 1972; Dillman and Sangster, 1990), and the influence of sometimes conflicting pressures from groups with much influence over how surveys get done, Don A. Dillman (1999, 2000) modified the original ToDM in the late 1990s and called it the Tailored Design Method (TaDM). One of the new features³ of the TaDM is the change in the number of contacts. Here the use of *five* not *four* contacts are described. The new contact that was added to the existing contacts in ToDM, and described above, represents a *brief prenotice letter*. This is sent to potential respondents a few days prior to mailing the questionnaire as a special mail. It aims to signal that a questionnaire for an

¹ For other details of the ToDM and how they are integrated to make a holistic effect please see Dillman (1978).

² Or seven weeks after the first questionnaire was sent out.

³ For more please see Dillman (2000).

important survey will arrive in a few days and that the person's response would be greatly appreciated.

Dillman's intention in designing each aspect of the implementation system from prenotice letter to return envelopes was to create positive salience where each element of the process is noticeable but in a way that creates a positive impression and by that increases a sense of reward, diminishes perceived costs and at the same time creates trust. The overall impression that is established depends not only on individual contacts but also on the consistency amongst those contacts. Therefore, it is important that each contact should not be thought of as self-standing but as part of an overall implementation system for which a change in one part is likely to be unintended consequences for another. In addition none of these contacts talked above should be omitted because either the ToDM or the TaDM should be seen as a package of procedures which interact with each other to produce a maximum response rate.

The efficiency of Dillman's framework to cross-cultural research

Since the development of the ToDM technique its adaptation has lead to an increase in the number of mail surveys, which have become one of the most common forms for gathering data in the United States (Dillman, 1991). Because the ToDM was developed in the United States, Goyder (1982) points out that return rates on mail surveys would be lower in foreign cultures than in the United States due to higher legitimacy of surveying in American cultures (Ladd, 1980, p.374). However, this is no longer sufficient since there have been investigations carried out in Europe, Australia and Asia on whether the ToDM was a culture-bound survey methodology and proved otherwise. For example, Greatz (1985) assessed the feasibility of using the implementation procedures proposed by the ToDM in Australia. He found that multiple contacts with potential respondents yield to high response rates and good quality of data. His results were comparable with those obtained in the United States. De Leeuw and Hox (1988), however, analysed the efficiency of the personalisation of a covering letter and reminder by certified mail (i.e. response-increasing factors of the ToDM) on a sample of the Dutch population. They found that response-stimulating factors have a statistically significant effect on the number of completed questionnaires and data quality, and that response rates do not differ to any great extent from those in the USA either. Another study comparing the appropriateness of the ToDM (i.e. the usefulness of non-monetary incentives) in the Netherlands is that of Nederhof (1983). He shows that the use of an incentive positively influences the speed and quality of survey results. His results were also comparable with those in the American literature (Brennan, 1958; Watson, 1965), and at the same time indicating the cross-cultural effectiveness of the ToDM method initially developed in the United States. Rada (2000), on the other hand, examined the usefulness of Dillman's implementation procedures from

the TaDM on the response rate in Spain. He found that multiple contacts do indeed increase the number of returned questionnaires. He also pointed out that his results do not greatly differ from those obtained by other researchers on efficiency of the ToDM in countries such as the United States, and the Netherlands and Australia. In the study of a comparison of the viability the ToDM in Japan and the United States, Jussaume and Yamada (1990) showed that mail surveys are feasible research tool in Japan and potentially in other cultures where the majority of the intended universe is literate, can be sampled, and can be contacted through a dependable postal system (p.226). Their results also showed that the theoretical foundations of the ToDM is not culture bound to Western countries and that consideration to the theoretical base is the key to implementing the ToDM to foreign settings.

Based on the above, the fact that methodological data obtained from different countries under similar conditions is comparable to those in the United States, suggests that the generalizability of findings may not necessary be limited to one nation or continent as claimed by Goyder (1982).

The analytical approach

To investigate “if” and “how” IB researchers report the mail survey administration procedures we carried out a comprehensive and systematic review of the content of JIBS between 2000 and 2008⁴. We choose JIBS for our review because it symbolises very highly ranked and the key international business specific journal. Even though, as pointed out by Platt (1996) and cited in Piekkari *et al.*, (2009), it cannot be presume that highly ranked journals contain a representative cross-section of publications, they do tell something about disciplinary standards and ideas (p.563).

Overall we reviewed 378 articles. Table 1 shows the categorisation of papers that we examined, by year (volume and issue). It can be seen that 177(47%) qualitative papers were published in JIBS in the period under investigation. However, for the purpose of this investigation we only examined 94 (25%) papers which used the mail survey procedure⁵ as a primary data collection method. This approach was undertaken in order to minimize research type confounds.

⁴ We are also currently reviewing Strategic Management Journal (SMJ) and Journal of International Marketing (JIM) to examine "if" and "how" international business report multiple contacts strategies for mail survey in comparison to international marketing and business strategy. Unfortunately, we could not include those results in this work, because the review of SMJ and JIM has not been completed before the submission of this paper.

⁵ However, in our study we include one study by Lazarova and Cerdin (2007), where they use the mail survey, for collecting data from North American companies, and the on-line survey, to gather data from French multinational companies, at the same time. According to authors, □the choice of survey medium was guided by organizational technical capabilities and preferences (p.410)□ and □has found no effects of the data collection medium on the response characteristics (p.410)□. Based on that we decided to categorise this paper under the mail survey group (see Table 1).

Table 1 here

Data collection

The data collection analysis consisted of two stages. In the first stage we categorised every one article⁶ published in JIBS throughout the period under investigation as the mail survey plus other method, the mail survey, and qualitative other methods (see Table 1). This identification was based on the method or methods used for data collection by authors in their papers. In the second stage, one of the authors coded the articles in search for the multi contact strategies developed by Dillman (1978, 1999, 2000) and discussed above. Confusions relating the coding process were resolved by discussions with other co-authors. Table 2 lists the 94 articles that we included in our analysis.

Table 2 here

Results

As indicated in Table 3, only 4 of the 94 articles under investigation referred to Dillman's ToDM and/or TaDM⁷. Of these four, Peng and York (2001, p.334) stated "Following the total design approach (Dillman, 1978), we first pretested a questionnaire with ten practitioners and then mailed the survey in two rounds"; Arino (2003, p.71) wrote "I attribute this rather high response rate⁸ to the care taken in identifying the target respondent and in the following-up process. For this, I followed the procedure that Dillman (1978) suggest, supplemented with phone calls"; Simonin (2004, p.415) said "The questionnaire design and the implementation and conduct of the survey were based on the total design method approach (Dillman, 1978)"; and Uhlenbruck (2004, p.114) indicated "The survey instrument was developed and administered following Dillman's 'Total Design Method'. However, none of the studies mentioned the actual mail survey administration procedures that were utilised to collect data.

Based on our above findings, for further analysis we decided to exclude those four articles to examine if and how researchers in international business report the mail survey administration procedures. The results form the main portion of Table 3. It can be seen from this table that only 29 (32%) out of 90 mail survey studies reported data collection procedures of any kind, and that the highest annual percentage of reporting such procedures was in 2003 (60%). However, there are no statistically significant differences in the reporting of any multi contact strategies across years.

⁶ Excluding editorials, commentaries, notes and award winning.

⁷ We hope these findings will change after the completion of the full data analysis. See footnote 4.

Based on our findings, it looks like the most common procedures utilized by authors are follow-ups (14%) and covering letters (12%), and the least common techniques are pre-notice letters (2%) and pre-notice cards (2%). In addition, the findings indicate that statistically significant results were only found for reporting follow-ups across years.

Diagnostics of the examined sample indicate that 33 of the papers (35%) used a pilot study to pre-test the mail questionnaire and that 63 studies (67%) developed the questionnaire in more than one language. The average response rate was 30%. Studies that examined one country were the most frequent (44 studies, 47%).

Table 3 here

Implications of IB research

The findings of this study in relation to if and how researchers in international business report the mail survey administration procedures are concerning. Without the establishment of data collection procedure equivalence, an issue recently pointed out by Hult *et al.*, (2008), the reliability and validity of findings are called to question. To minimise those threats it is therefore essential to ensure comparable data collection procedures. While ensuring consistency in data collection methods may seem straightforward, cross-cultural differences might explain the variations (Craig and Douglas, 2000; Hult *et al.*, 2008). However, those disparities could be overcome if, for example, researchers become more thorough in reporting and explaining how and why a particular strategy (or strategies) was used to gather data.

Conclusions

In a period when IB researchers are confronted with a trend of increasing unwillingness of the general public to participate in the mail survey research, the success of postal surveys remains conditional upon the implementation of proven strategies for stimulating response (e.g., Dillman, 1978; Heberlein and Baumgartner, 1978).

The objective of this study was to investigate if and how researchers in IB report the mail survey administration procedures. Despite the existence of either the ToDM or TaDM, researchers have not been inspired to adopt or/and report those techniques adequately in their cross-cultural research. In general, we found that inadequate emphasis on data collection procedures was placed in all examined studies in JIBS between 2000 and 2008. In order to advance in this field a greater attention needs to be focused on the equivalence of such procedures.

Our hope is that this research note will bring to an end continuance of this neglect. Especially, it will increase researchers', editors' and reviewers' awareness of the importance of an adequate reporting of the mail survey administration procedures for data collection equivalence.

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Table 1 Categorisation of Articles with Regards to Data Collection Methods in JIBS, 2000 - 2008.

| Year (Volume) | Issue | Mail survey plus other method ¹ | Mail survey | Qualitative other methods ² | Total qualitative | Total per issue | Total per year(%) ³ |
|---------------|-------|--|-------------|--|-------------------|-----------------|--------------------------------|
| 2000(31) | 4 | 2 | 2 | 2 | 6 | 12 | 41(24.39) |
| | 3 | 1 | 1 | 1 | 3 | 9 | |
| | 2 | 2 | 2 | 0 | 4 | 9 | |
| | 1 | 2 | 5 | 0 | 7 | 11 | |
| 2001(32) | 4 | 1 | 2 | 0 | 3 | 12 | 45(35.56) |
| | 3 | 1 | 5 | 0 | 6 | 13 | |
| | 2 | 1 | 4 | 1 | 6 | 10 | |
| | 1 | 0 | 5 | 0 | 5 | 10 | |
| 2002(33) | 4 | 1 | 3 | 0 | 4 | 9 | 43(32.46) |
| | 3 | 1 | 3 | 2 | 6 | 13 | |
| | 2 | 0 | 5 | 2 | 7 | 10 | |
| | 1 | 1 | 3 | 0 | 4 | 11 | |
| 2003(34) | 6 | 3 | 1 | 0 | 4 | 4 | 37(13.51) |
| | 5 | 0 | 2 | 0 | 2 | 5 | |
| | 4 | 1 | 0 | 0 | 1 | 6 | |
| | 3 | 3 | 1 | 0 | 4 | 6 | |
| | 2 | 0 | 0 | 0 | 0 | 9 | |
| | 1 | 1 | 2 | 0 | 3 | 7 | |
| 2004(35) | 6 | 0 | 1 | 0 | 1 | 4 | 23(39.13) |
| | 5 | 1 | 1 | 3 | 5 | 5 | |
| | 4 | 0 | 2 | 0 | 2 | 3 | |
| | 3 | 0 | 2 | 0 | 2 | 3 | |
| | 2 | 0 | 3 | 0 | 3 | 4 | |
| | 1 | 1 | 0 | 0 | 1 | 4 | |
| 2005(36) | 6 | 0 | 1 | 1 | 2 | 7 | 33(15.15) |
| | 5 | 1 | 1 | 0 | 2 | 5 | |
| | 4 | 0 | 1 | 1 | 2 | 6 | |
| | 3 | 1 | 1 | 1 | 3 | 6 | |
| | 2 | 1 | 1 | 1 | 3 | 5 | |
| | 1 | 0 | 0 | 2 | 2 | 4 | |
| 2006(37) | 6 | 1 | 3 | 0 | 4 | 8 | 42(23.81) |
| | 5 | 2 | 1 | 1 | 4 | 8 | |
| | 4 | 0 | 1 | 1 | 2 | 7 | |
| | 3 | 0 | 1 | 0 | 1 | 6 | |
| | 2 | 1 | 2 | 0 | 3 | 6 | |
| | 1 | 0 | 2 | 3 | 5 | 7 | |

*Notes:*¹ By other method we mean, for example, interviews and/or secondary data.² Any other qualitative methods rather than the mail survey (e.g. case study, experiments).³ To enhance readability we are only reporting percentages of articles with the mail survey in total per year.

Table 1 Continued.

| Year (Volume) | Issue | Mail survey plus other method ¹ | Mail survey | Qualitative other methods ² | Total qualitative | Total per issue | Total per year (%) ³ |
|------------------------------|-------|--|-------------|--|-------------------|-----------------|---------------------------------|
| 2007(38) | 7 | 0 | 1 | 0 | 1 | 7 | 52(25.00) |
| | 6 | 0 | 3 | 2 | 5 | 10 | |
| | 5 | 1 | 3 | 2 | 6 | 9 | |
| | 4 | 0 | 1 | 0 | 1 | 4 | |
| | 3 | 1 | 3* | 0 | 4 | 7 | |
| | 2 | 2 | 1 | 0 | 3 | 7 | |
| | 1 | 0 | 1 | 3 | 4 | 8 | |
| 2008(39) | 8 | 0 | 3 | 1 | 4 | 7 | 62(17.74) |
| | 7 | 1 | 3 | 0 | 4 | 7 | |
| | 6 | 2 | 0 | 3 | 5 | 8 | |
| | 5 | 2 | 1 | 2 | 5 | 8 | |
| | 4 | 1 | 1 | 1 | 3 | 8 | |
| | 3 | 2 | 0 | 2 | 4 | 9 | |
| | 2 | 0 | 1 | 1 | 2 | 8 | |
| | 1 | 1 | 2 | 1 | 4 | 7 | |
| Grand Total (%) ⁴ | | 43(11.38) | 94(24.88) | 40(10.58) | 177(46.82) | 378 | |

Notes:

¹ By other method we mean, for example, interviews and/or secondary data.

² Any other qualitative methods rather than the mail survey (e.g. case study, experiments).

³ To enhance readability we are only reporting percentages of articles with the mail survey in total per year.

⁴ The percentage is reported for the total period of 2000-2008.

* See footnote 5.

Table 2 Articles included in the study.

| Author(s) & Year | No of Authors | Volume (Issue) |
|------------------------------------|---------------|----------------|
| Lee <i>et al.</i> , (2000) | 3 | 31(4) |
| Anakwe <i>et al.</i> , (2000) | 3 | 31(4) |
| Athanassiou and Nigh (2000) | 2 | 31(3) |
| Thomas and Mueller (2000) | 2 | 31(2) |
| Griffith <i>et al.</i> ,(2000) | 3 | 31(2) |
| Brouthers <i>et al.</i> , (2000) | 3 | 31(1) |
| Balabanis (2000) | 1 | 31(1) |
| Harzing (2000) | 1 | 31(1) |
| Neelankavil <i>et al.</i> , (2000) | 3 | 31(1) |
| Feinberg (2000) | 1 | 31(1) |
| Filatotchev <i>et al.</i> , (2001) | 4 | 32(4) |
| Marshall and Boush (2001) | 2 | 32(4) |
| Christmann and Taylor (2001) | 2 | 32(3) |
| Newburry (2001) | 1 | 32(3) |
| Begley and Tan (2001) | 2 | 32(3) |
| Miller and Gomez-Mejia (2001) | 2 | 32(3) |
| Griffith and Harvey (2001) | 2 | 32(3) |
| Laroche <i>et al.</i> , (2001) | 4 | 32(2) |
| Peng and York (2001) | 2 | 32(2) |
| Mayer (2001) | 1 | 32(2) |
| Jun <i>et al.</i> ,(2001) | 3 | 32(2) |
| Luo <i>et al.</i> ,(2001) | 3 | 32(1) |
| Fey and Bjorkman (2001) | 2 | 32(1) |
| Lau and Ngo (2001) | 2 | 32(1) |
| Balabanis <i>et al.</i> , (2001) | 4 | 32(1) |
| Brouthers and Brouthers (2001) | 2 | 32(1) |
| Brouthers and Xu (2002) | 2 | 33(4) |
| Skarmeas <i>et al.</i> , (2002) | 3 | 33(4) |
| Hofsted <i>et al.</i> ,(2002) | 17 | 33(4) |
| Makino <i>et al.</i> ,(2002) | 3 | 33(3) |
| Evans and Mavondo (2002) | 2 | 33(3) |
| Cadogan <i>et al.</i> ,(2002) | 3 | 33(3) |
| Brouther (2002) | 1 | 33(2) |
| Arramilli <i>et al.</i> ,(2002) | 3 | 33(2) |
| Thomas and Au (2002) | 2 | 33(2) |
| Klein (2002) | 1 | 33(2) |
| Huang and Vliert (2002) | 2 | 33(2) |
| Olsen and Olsson (2002) | 2 | 33(1) |
| Luo (2002) | 1 | 33(1) |
| Edwards <i>et al.</i> ,(2002) | 3 | 33(1) |
| Hewett <i>et al.</i> ,(2003) | 3 | 34(6) |
| Benito <i>et al.</i> ,(2003) | 3 | 34(5) |
| Brown <i>et al.</i> ,(2003) | 3 | 34(5) |
| Law <i>et al.</i> ,(2003) | 3 | 34(3) |
| Van de Vliert (2003) | 1 | 34(1) |
| Arino (2003) | 1 | 34(1) |

Note:

n = 94

* See footnote 5.

| Author(s) & Year | No of authors | Volume (Issue) |
|--|---------------|----------------|
| Jensen and Szulanski (2004) | 2 | 35(6) |
| Simonin (2004) | 1 | 35(5) |
| Fu <i>et al.</i> , (2004) | 15 | 35(4) |
| Chen <i>et al.</i> , (2004) | 3 | 35(4) |
| Choi and Beamish (2004) | 2 | 35(3) |
| Shay and Baack (2004) | | 35(3) |
| Uhlenbruck (2004) | 1 | 35(2) |
| Knight and Cavusgil (2004) | 2 | 35(2) |
| Luo and Park (2004) | 2 | 35(2) |
| Venaik <i>et al.</i> , (2005) | 3 | 36(6) |
| Faff and Marshall (2005) | 2 | 36(5) |
| Samiee <i>et al.</i> , (2005) | 3 | 36(4) |
| Griffith and Mayers (2005) | 2 | 36(3) |
| Luo (2005) | 1 | 36(2) |
| Waldman <i>et al.</i> , (2006) | 36 | 37(6) |
| Husted and Allen (2006) | 2 | 37(6) |
| Christmann and Taylor (2006) | 2 | 37(6) |
| Chetty <i>et al.</i> , (2006) | 3 | 37(5) |
| Lee, C. <i>et al.</i> , (2006) | 4 | 37(4) |
| Barry and Kearney (2006) | 2 | 37(3) |
| Dow (2006) | 1 | 37(2) |
| Pellegrini and Scandura (2006) | 2 | 37(2) |
| Newburry and Yakova (2006) | 2 | 37(1) |
| Tregaskis and Brewster (2006) | 2 | 37(1) |
| Barkema and Drogendijk (2007) | 2 | 38(7) |
| Luo (2007) | 1 | 38(6) |
| Takeuchi <i>et al.</i> , (2007) | 4 | 38(6) |
| Dikova and Witteloostuijn (2007) | 2 | 38(6) |
| Pappu <i>et al.</i> , (2007) | 3 | 38(5) |
| Broderick <i>et al.</i> , (2007) | 3 | 38(5) |
| Johnston and Menguc (2007) | 2 | 38(5) |
| Yiu <i>et al.</i> , (2007) | 3 | 38(4) |
| Verleghe (2007) | 1 | 38(3) |
| Ellis (2007) | 1 | 38(3) |
| Lazarova and Cerdin (2007)* | 2 | 38(3) |
| Zheng <i>et al.</i> , (2007) | 4 | 38(2) |
| Shin <i>et al.</i> , (2007) | 3 | 38(1) |
| Brock <i>et al.</i> , (2008) | 5 | 39(8) |
| Hirst <i>et al.</i> , (2008) | 7 | 39(8) |
| Carraher <i>et al.</i> , (2008) | 3 | 39(8) |
| Petersen <i>et al.</i> , (2008) | 3 | 39(7) |
| Speck and Roy (2008) | 2 | 39(7) |
| Filatotchev <i>et al.</i> , (2008) | 3 | 39(7) |
| Newburry <i>et al.</i> , (2008) | 3 | 39(5) |
| Luk <i>et al.</i> , (2008) | 6 | 39(4) |
| Lages <i>et al.</i> , (2008) | 3 | 39(2) |
| Wasti and Wasti (2008) | 2 | 39(1) |
| Fenton-O'Creevy <i>et al.</i> , (2008) | 3 | 39(1) |

Table 3 Reporting of data collection procedure by year¹.

| | $\chi^2_{(sig)}$ | Categories | 2000 <i>n=10</i> | 2001 <i>n=16</i> | 2002 <i>n=14</i> | 2003 <i>n=6</i> | 2004 <i>n=9</i> | 2005 <i>n=5</i> | 2006 <i>n=10</i> | 2007 <i>n=13</i> | 2008 <i>n=11</i> | Total ² <i>n=94</i> |
|---------------------------------|------------------|--------------------------|----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------------------|
| Dillman's ToDM ³ | 12.4(0.14) | Reported Not reported | 0 10 | 1(6.25) 15(93.75) | 0 14 | 1(16.67) 5(83.33) | 2(22.22) 7(77.78) | 0 5 | 0 10 | 0 13 | 0 11 | 4(4.26) 90(95.74) |
| | | | <i>n=10</i> | <i>n=15</i> | <i>n=14</i> | <i>n=5</i> | <i>n=7</i> | <i>n=5</i> | <i>n=10</i> | <i>n=13</i> | <i>n=11</i> | Total ⁴ <i>n=90</i> |
| Any multi contacts ⁵ | 3.71(0.88) | Reported Not reported | 3(30.00) 7(70.00) | 3(20.00) 12(80.00) | 5(35.71) 9(64.29) | 3(60.00) 2(40.00) | 3(42.86) 4(57.14) | 1(20.00) 4(80.00) | 3(30.00) 7(70.00) | 4(30.77) 9(69.23) | 4(36.36) 7(63.64) | 29(32.22) 61(67.78) |
| Pre-notice Letter | 4.31(0.83) | Reported Not reported | 0 10 | 1(6.67) 14(93.33) | 1(7.14) 13(92.86) | 0 5 | 0 7 | 0 5 | 0 10 | 0 13 | 0 11 | 2(2.22) 88(97.78) |
| Pre-notice Card | 4.31(0.83) | Reported Not reported | 0 10 | 1(6.67) 14(93.33) | 1(7.14) 13(92.86) | 0 5 | 0 7 | 0 5 | 0 10 | 0 13 | 0 11 | 2(2.22) 88(97.78) |
| Pre-contact by phone | 7.25(0.51) | Reported Not reported | 0 10 | 0 15 | 0 14 | 0 5 | 1(14.29) 6(85.71) | 0 5 | 1(10.00) 9(90.00) | 0 13 | 1(10.00) 9(90.00) | 3(3.33) 87(96.67) |
| Covering Letter | 6.90(0.55) | Reported Not reported | 3(30.00) 7(70.00) | 0 15 | 2(14.29) 12(85.71) | 1(20.00) 5(80.00) | 0 7 | 1(20.00) 4(80.00) | 1(10.00) 9(90.00) | 2(15.38) 11(84.62) | 1(9.09) 10(90.91) | 11(12.22) 79(87.78) |
| Follow-ups | 13.07(0.10)* | Reported Not reported | 1(10.00) 9(90.00) | 1(6.67) 14(93.33) | 1(7.14) 13(92.86) | 2(40.00) 3(60.00) | 2(28.57) 5(71.43) | 0 5 | 1(10.00) 9(90.00) | 3(23.08) 10(76.92) | 1(9.09) 10(90.91) | 13(14.44) 77(85.56) |
| Follow-ups by phone | 3.56(0.90) | Reported Not reported | 0 10 | 1(6.67) 14(93.33) | 1(7.14) 13(92.86) | 0 5 | 0 7 | 0 5 | 1(10.00) 9(90.00) | 0 13 | 1(9.09) 10(90.91) | 4(4.44) 86(95.56) |
| Reminder | 9.61(0.30) | Reported Not reported | 1(10.00) 9(90.00) | 0 15 | 2(14.29) 12(85.71) | 1(20.00) 4(80.00) | 0 7 | 0 5 | 0 10 | 0 13 | 0 11 | 4(4.44) 86(95.56) |
| Return envelopes | 10.08(0.26) | Reported Not reported | 1(10.00) 9(90.00) | 0 15 | 0 14 | 1(20.00) 4(80.00) | 1(11.11) 6(85.71) | 0 5 | 0 10 | 0 13 | 2(18.18) 9(81.82) | 5(5.56) 85(94.44) |
| Incentives ⁶ | 4.46(0.81) | Reported Not reported | 0 10 | 1(6.67) 14(93.33) | 0 14 | 0 5 | 0 7 | 0 5 | 1(10.00) 9(90.00) | 1(7.69) 12(92.31) | 0 11 | 3(3.33) 87(96.67) |

Notes:¹ Table adopted from Hult *et al.*, (2008). For better readability we do not report percentages for zeros.² *n* = 94 for all papers under investigation.³ Dillman's ToDM (and TaDM) mentioned but steps are not implemented for data collection procedure.⁴ *n* = 91 for papers excluding those that mention ToDM and TaDM.⁵ Here we refer to contacts that were made with potential respondents by authors without referring to Dillman's ToDM or/and TaDM.⁶ Both monetary and non-monetary.* $\alpha = 0.10$.

