We investigate a mail survey research issue that has received little attention in the literature: the timing of follow-up efforts. Our data indicate that there is no relationship between the number of elapsed days between waves and response rate; these findings are based on follow-up mailings sent to each of 20 different treatment groups, testing follow-up intervals ranging from three to 60 days. The implications of these findings are quite meaningful. When timeliness of mail survey responses is an important consideration, or when history and maturation biases are legitimate concerns, survey researchers should follow up sooner rather than later. A quick follow-up strategy will not jeopardize response rates.

Mail survey researchers have established strong support for the use of follow-up strategies to increase response rates (Kanuk and Berenson, 1975; Kephart and Bressler, 1958; Yammarino, Skinner, and Childers, 1991; Yu and Cooper, 1983). However, while the effectiveness of follow-up strategies has been established, the timing of the intervals between initial requests and follow-up methods has received only tangential attention. Therefore, the purpose of this article is to investigate a fundamental question regarding mail surveys that remains unanswered: does the timing of follow-up efforts influence response rates? By answering this question, researchers would either be able to enhance response rates by manipulating the timing of follow-up efforts, or if timing does not matter, increase the timeliness of their research by waiting only a short interval of time before mailing their follow-up instruments. To address this research question the article describes a multi-step process. First, it reviews the sparse literature on the effects of follow-up timing on response rates. Second, it presents an analysis of recently published studies that examined how follow-up timing was actually used and the resulting response rates. Third, it presents the results of an experiment designed to determine the response rate effects of varying the lengths of time between successive waves of a questionnaire. The next section is a discussion of the implications of potential future research in this area.

Background Literature Review

There are various rules of thumb for specifying the number of days between initial mailings and follow-up efforts. For example, Dillman’s (1978) Total Design Method consists of an initial request, a reminder postcard sent 1 week after the initial request, and two follow-ups with questionnaires sent 3 weeks and 7 weeks after the initial request. Another rule of thumb is that follow-up efforts should be used once the returns from the initial mailing have virtually stopped. None of these rules, however, are based on empirical findings.

Only four studies in the literature actually test the effect of the follow-up timing on response rates to mail surveys. First, Nichols and Meyer (1966) tested the effect of waves of reminder postcards on response rate. They found that shorter timing intervals influenced response rates. Although Nichols and Meyer’s findings of over 30 years ago may not be fully generalizable today, and recognizing that their study was limited to postcard reminders and to three time intervals between follow-ups, their findings do imply that the timing intervals between waves of mail surveys may influence response rates.

In a more recent study, Fern, Monroe, and Avila (1986) investigated the effects of a time delay between multiple requests to participate as a study respondent. They found some support for controlling the time interval between initial and
follow-up efforts for door-in-the-face requests; however, their analysis included not only surveys but other types of requests such as asking for money and requesting respondents to perform other tasks unrelated to survey participation.

Peterson, Albaum, and Kerin (1989) examined the difference between 5-day and 15-day intervals when administering their initial questionnaire and subsequent follow-ups. In general, there was no indication that either interval increased response rates over the other; however, this study compared only two time intervals of follow-up efforts (i.e., 5 days versus 15 days). Had data been analyzed for additional time periods, a clearer pattern of the effects of follow-up timing on response rates might have been established.

Finally, Foushee and McLellan (1990) tested the difference between 5-week and 9-week intervals between initial requests and duplicate questionnaires. They found that the timing of follow-up mailings did not significantly influence the overall response rates for the time periods tested. Like the aforementioned studies, the number of time periods tested was limited in Foushee and McLellan’s design (i.e., only two). In addition, their findings were confounded by the fact that their surveys were mailed to prospective respondents in nine different countries and they did not control for country or postal delivery differences when drawing their conclusions.

In conclusion, while rules of thumb exist for specifying the timing of mail survey follow-ups, empirical research focusing on this subject is sparse and does not show a consistent relationship between follow-up timing and response rates.

Study One: Current Uses and Effects of Mail Survey Follow-up Timing

**Objective**

To build on our literature review, we conducted an exploratory analysis of recently published research. We investigated the
following questions: to what extent does the timing of follow-up efforts vary across recently published mail surveys? Are timing intervals related to total response rates? What rationale—if any—do researchers offer to justify their selection of timing intervals?

**Design**

A pool of 143 of the most recently published mail survey research articles was included in a classificatory analysis. Selected articles were published from 1990 to 1997 in one of the following four journals: *Journal of Business Research* (59 articles), *Journal of Marketing* (24), *Journal of the Academy of Marketing Science* (43), and *Journal of Marketing Research* (17). The breadth of these 143 studies was extensive—examining a wide range of samples, research topics, response incentives and appeals, questionnaire lengths and designs, methods of follow-up, and other project-specific differences. Members of the research team read the methodology sections of the articles and tallied relevant data regarding response rates, follow-up efforts, and wave timing to develop Figure 1. Figure 1 also shows 126 of the surveys involved industrial samples; only 17 involved consumer or household samples. Longitudinal studies were not included. A list of the specific articles selected is available from the authors.

Study One’s findings indicate considerable variation in the timing of follow-up efforts, with some researchers waiting as long as 90 days to follow up; however, no empirical support was found to justify the selection of one follow-up timing period over another. In addition, only four studies attempted to offer justification (these pointing to the recommendations offered by Dillman, 1978). Figure 1 provides an overview of these and other relevant findings summarized below:

- Researchers for at least 75 of the 143 studies were apparently concerned enough about response rates and potential for nonresponse bias to conduct and report some sort of follow-up effort. Many of the studies not reporting follow-up efforts did achieve comparable response rates by prenotifying respondents (see Conant et al. 1990). 1
- The most popular form of follow-up was to mail each respondent a second letter and duplicate questionnaire (n = 27).
- Every research team reporting follow-up intervals decided to wait at least a few days before initiating follow-up efforts, although the duration of the follow-up intervals varied substantially, ranging from 1 week to 90 days (median and mode = 14 days).
- Despite the variation in wave-timing intervals across studies, no significant relationship was found between survey response rates and the number of days between the initial mailing and the initial follow-up efforts (r = 0.04, ns, n = 33).

**Limitations**

Although relevant to the assessment of the status quo of wave-timing issues, Study One was not without limitations. The wide variety of the studies reviewed (all of which were conducted for other purposes), the incomplete reporting of follow-up efforts and wave timing, the limited number of selected journals examined, and the exclusion of unpublished commercial research efforts prevents Study One’s findings from being entirely conclusive, and therefore, not clearly generalizable.

**Study Two: The Experimental Investigation**

**Objective**

To complement the findings and offset the limitations of Study One, Study Two was initiated with the intent of experimentally controlling both internal and extraneous factors that might otherwise threaten the validity of the findings, while at the same time maintaining the realism of a field project. Within these design constraints, the research questions driving Study Two further examined those raised in Study One and provided additional evidence to answer our fundamental research question. Specifically, does the timing of follow-up efforts influence response rates? If so, what is the ideal timing of follow-up efforts?

**Design**

Three waves of duplicate questionnaires (with accompanying cover letters and postage-paid return envelopes) were sent to 1100 marketing executives and managers representing a geographic cross-section of the United States. These names and addresses were purchased from a professional list company that had recently cleaned the list (making non-deliverables a minor issue). The 4-page questionnaires asked respondents about their companies’ customer relations practices. Prior to the initial mailing, each prospective respondent was randomly assigned to one of 20 “mailing interval” groups, with mailing intervals divided into 3-day increments, ranging from 3 days to 60 days. Therefore, 55 prospective respondents (i.e., 1100/20) were assigned to the 3-day group, 55 to the 6-day group, 55 to the 9-day group, and so on. Each group was designated to receive two follow-up mailings, with the timing of the follow-ups to correspond to the group’s mailing interval. Consequently, the 3-day group was mailed a duplicate questionnaire 3 days after the initial questionnaire was mailed, followed by a third mailing three days after the second.

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1 While 68 of the reported studies did not report follow-up efforts, this does not necessarily mean follow-ups were not used. Conant, Smart, and Walker (1990) provide evidence that techniques used to increase mail survey response rates are often not reported in many of the top business journals. They suggest, for example, that researchers may have chosen not to report follow-up efforts or may have been asked during the journal review process to remove or shorten such descriptions.
Table 1. Response Frequencies Across Mailing Intervals (n = 20 × 55 = 1100)

<table>
<thead>
<tr>
<th>Mailing Interval: Days Between Mailings</th>
<th>1st Mailing</th>
<th>2nd Mailing</th>
<th>3rd Mailing</th>
<th>Total</th>
</tr>
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<td>2 (3.6%)</td>
<td>12 (21.8%)</td>
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<td>4 (7.3%)</td>
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</tr>
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<td>54</td>
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<td>2 (3.6%)</td>
<td>11 (20.0%)</td>
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<td>3 (5.5%)</td>
<td>14 (25.5%)</td>
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<td>4 (7.3%)</td>
<td>1 (1.8%)</td>
<td>8 (14.5%)</td>
</tr>
<tr>
<td>Totals</td>
<td>94 (8.5%)</td>
<td>71 (6.5%)</td>
<td>41 (3.7%)</td>
<td>206 (18.7%)</td>
</tr>
</tbody>
</table>

* Excludes Sundays.

mailing. Similarly, the 6-day group was sent a follow-up mailing 6 days after the initial mailing, and another follow-up 6 days after that. The pattern was repeated with all 20 groups, so that the follow-ups for the largest, 60-day, mailing interval group received follow-ups 60 and 120 days after the initial mailing.

Three additional design elements were incorporated to overcome some of the scope and methodological issues raised by previous research. First, the three waves of duplicate surveys were mailed to every potential respondent. The duplicate questionnaires provided respondents in the second and third waves the opportunity to respond without trying to find the original questionnaire. Otherwise, the longer the time between waves, the more likely respondents might have been to misplace or trash the original questionnaire. We did not want this factor to confound the results. Second, questionnaires were unobtrusively coded to ensure that a respondent did not respond twice and that responses were attributed to the proper wave. Third, to prevent seasonal biases from disproportionately affecting the response rates for any mailing interval group, the dates of the initial mailings were further randomized for each mailing interval group over a 7-month period. For example, some prospective respondents in the 3-day group received the initial mailing during the first month of the study period, while others in the same group received the initial mailing in the fourth or seventh months.

**Data Analysis and Findings**

Two hundred and six questionnaires were completed and returned, representing a modest 18.7% overall response rate. The respondents represented a wide spectrum of primarily service businesses, including 99 (48.1%) companies in finance, insurance, and real estate (2-digit SIC codes 60–65), 24 (11.7%) business service providers (SIC 73), 21 (10.2%) manufacturers (SIC 20–36), 17 (8.3%) professional service providers (SIC 80, 87), 12 (5.8%) wholesalers and retailers (SIC 50–59), and 33 other firms, mostly service organizations (SIC 15, 42–49, 70, 72, 89). Both small, medium, and large companies were represented: 30 (14.6%) employing fewer than 20 employees, 33 (16.1%) employing 500 or more, and the median employing 106. Further, the sampled organizations were evenly split between those who reported serving primarily industrial customers (49.7%) and those mostly serving individual consumers or households (50.3%).

The response frequencies for each mailing interval group are reported in Table 1 and shown in Figure 2. As one would expect, variation in total response frequencies did occur across mailing interval groups, ranging from 10.9% (39-day group) to 25.5% (57-day group). Figure 2 suggests that the variation was random, with no linear or curvilinear response patterns apparent. Additional analyses were performed to substantiate these visual observations.

First, a routine chi-square test of independence found no
statistically significant relationship between mailing intervals and whether or not subjects responded to the survey (chi-square = 12.9, df = 19, p = 0.842). Additional chi-square tests also found no significant relationships when the 20 mailing interval groups were collapsed to 10 (chi-square = 4.8, df = 9, p = 0.851), and then to 5 (chi-square = 2.0, df = 4, p = 0.737).

Second, four regression models were developed by regressing the number of responses generated by the mailings on mailing intervals and selected transformations (shown in Table 2). While simple regression (Model A) was included to check for the existence of linear response patterns, the transformations (Models B, C, and D) explored the possibility of nonlinear response patterns. Very little variance was "explained" by any of the models and no statistically significant relationships were found. Hence the regression analyses reinforced the chi-square analyses: there is no evidence to suggest a relationship between mailing intervals and response rates. Although it is clear that follow-up, duplicate questionnaires do increase response rates, apparently there is no response rate benefit in researchers' attempts to time the mailing of such follow-ups.

**Discussion**

The temptation may be to discount the meaningfulness of statistically insignificant findings. However, in this particular study, the clear absence of any response patterns is quite meaningful. What it indicates is that when improving response rate is the goal, there is no empirical justification for the heuristics mail survey researchers use to determine the timing of follow-up efforts. Sending out follow-up surveys quickly is likely to result in the same response rate as waiting a few weeks or a couple of months. Therefore, if researchers are
interested in getting timely results as quickly as possible, or when there is concern that temporal considerations (e.g., involving respondent maturation processes, seasonal changes, or isolated historical environmental events) may introduce response biases, follow-up efforts should be made immediately and without fear of jeopardizing response rates.

Limitations

Study Two was not without limitations. Most notably, the findings of one project cannot be generalized to every research situation. We concentrated on industrial respondents. Future research is needed to investigate the issue of mail survey follow-up timing efforts in consumer populations. Second, the response rate was lower than anticipated, potentially because the surveys were addressed to marketing managers rather than customer service managers, sales managers, or other representatives who might have been in charge of customer relationship-building programs. Future research should aim to remedy this limitation as well.

Summary and Conclusions

A multi-step process, including an extensive literature review, a classificatory analysis of recently published studies, and a controlled field experiment was undertaken to investigate the relationship between mail survey response rates and the timing of follow-up efforts. Each step of the process, by itself, does not fully answer the questions regarding the influence of the timing of follow-up efforts on response rates; however, taken together, they provide considerable insight. In particular, very little support for a relationship between wave timing and response rates was found in the literature and no empirical support was established.

The findings of both Study One and Two are in sharp contrast to many researchers’ practice of waiting a couple of weeks or longer before initiating follow-up efforts. The contrast begs the question: is there any rationale for delaying the timing of follow-up efforts? There are at least four possibilities (however unscientific and indefensible) that future studies might explore:

- Researchers may avoid mixing mail survey waves to trim the printing and postage costs associated with sending follow-ups to sample members who have already responded.
- Researchers may be waiting until they can accurately gauge the response rate to the initial wave before deciding whether and how aggressively to pursue follow-up efforts.
- Researchers may need lead time of several days or weeks for research assistants to prepare follow-up mailings.
- Researchers may opt for longer follow-up periods to avoid the appearance of pressuring participants to respond before they have had sufficient time to reply to the initial wave. Such a concern might be most relevant when prospective respondents represent a small population in which every response is crucial, or when respondents are to be surveyed frequently (e.g., consumer panels).

Indeed, alternative rationale for delaying follow-up efforts may exist, and in some instances be justified. These possibilities suggest that future research should examine the influence of the trade-offs researchers make in administering mail surveys.

References


