

A TOUCH OF REALITY: THE TIME AND NON-LABOR FINANCIAL COSTS OF MAIL SURVEYS

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ABSTRACT

An important issue in mail surveys is the response rate. An influential guide for planning and conducting mail surveys to obtain response rates as high as 75 percent is Don Dillman's (1978) *Mail and Telephone Surveys: The Total Design Method*. While effective, the procedures he describes are surprisingly demanding both in terms of time and labor. During the course of a regional mail survey on agricultural biotechnology, detailed records of the time and non-labor financial costs of using his procedures were compiled. They are categorized in this paper into fifteen different phases, and the time and non-labor costs of each phase are listed. The total time taken for the survey was approximately 300 hours at a total cost of close to \$10,500. Following all but the final step of Dillman's (1978) procedures resulted in a lower than expected response rate of 33 percent. We attribute this to possible antipathy stemming from of an excessively surveyed sample of farmers. Supporting this view is a response rate of 49 percent from the organic farmers in our sample—a group that has not been as extensively surveyed.

INTRODUCTION

A critical aspect of collecting valid data using mail surveys is the response rate. Surveys with response rates in the low 20 percent range are not uncommon (Chiu & Brennan 1990). Such a low response rate means that over 70 percent of the sample did not complete and return the questionnaire. It also means that any generalization to a population based on the analysis of the data from such a sample is suspect.

In order to enhance their response rate, many researchers have used *Mail and Telephone Surveys: The Total Design Method* (Dillman 1978) as a guide for the mail survey procedures. Dillman (1978 viii) argued that with his procedures, "... a response rate of nearly 75 percent can be attained consistently in mail surveys of the general public," a rate that is substantially higher than the response rates generally obtained with mail questionnaires. In his discussion, he provided both practical and theoretical justifications for the procedures he had found to be productive in terms of response rates. When using Dillman's (1978) procedures in several mailed surveys, one of the authors of this paper had been struck by the number of tasks, the amount of time, and the amount of non-labor financial costs entailed in mailing the surveys to potential respondents. While Dillman (1978) had briefly commented on the time and financial resources his procedures implied, he provided little detail. Clearly time and money are critical issues in terms of the selection and implementation of research methodology.

As part of the research activities investigating the social, economic, and ethical aspects of agricultural biotechnology, a questionnaire was mailed to a randomly selected sample of agricultural farmers in five Midwestern states—Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin—and to a sample of certified organic farmers in those same five states.¹ During the mail-out process, detailed records of the time and financial costs involved were compiled. This paper provides a summary of those records.

TIME AND NON-LABOR FINANCIAL COSTS

Presented in Table 1 is a summary of the activities, time, and non-labor financial costs involved in mailing the survey following Dillman's (1978) procedures. For purposes of description, the activities involved have been categorized into fifteen phases, with the tasks of each phase listed in chronological order. Under the heading, "Time," the approximate number of hours each task entailed is listed. The approximate cost in dollars of each task is listed under the heading, "Non-Labor Financial Costs." No labor costs are included and the time and financial costs of the development of the questionnaire are excluded.

Before detailing the costs, it is important to note Dillman (1978) emphasized every effort be made to personalize the process. To that end, he suggested all correspondence be addressed to a specific individual, that a researcher sign all correspondence with a hard point pen (so the potential respondent could actually feel the signature), and that stamps (as opposed to bulk mail-

Table 1 - Approximate Time and Non-Labor Financial Costs of Mail Survey

Phases	Time	Non-Labor Financial Costs
Phase One		
Purchase Sample List (2,550)	Minimal	\$1,250.00
Phase Two		
Personalize Sample List		
1) Long-distance phone calls	20 Hours	\$20.00
2) Internet search	10 Hours	None
Phase Three		
Create Mailing List		
1) Convert sample lists to mailing list	40 Hours	None
Phase Four		
Create Introductory Postcards		
1) Compose introductory postcards	Minimal	None
2) Purchase/Print 3,000 postcards	Minimal	\$210.00 (7 cents per card)
Phase Five		
Mail Introductory Postcards		
1) Purchase labels	Minimal	\$50.00
2) Create mailing labels for postcards	Minimal	None
3) Sign all postcards	9 Hours	None
4) Apply mailing labels to initial postcards	14 Hours	None
5) Mail 2,500 initial postcards	Minimal	\$530.00 (21 cents per card)
Phase Six		
Format and Print 6,000 Questionnaires	Minimal	\$2,460.00 (41 cents per survey)
Phase Seven		
Format and Print Survey Envelopes		
1) 3,000 (9 by 12)	Minimal	\$560.00
2) 3,000 (7.5 by 10.5)	Minimal	\$630.00
Phase Eight		
Compose and Reproduce Cover Letters		
1) Purchase 5,500 letterhead sheets	Minimal	\$450.00
2) Compose letter	Minimal	None
3) Merge 2,500 cover letters with mailing list and reproduce	Minimal	\$130.00
4) Sign 2,500 cover letters	13 Hours	None
Phase Nine		
Mail Questionnaires		
1) Purchase 2,700 stamps	Minimal	\$1,620.00 (60 cents per stamp)
2) Apply stamps to 2,700 envelopes	9 Hours	None
3) Number questionnaires	5 Hours	None
4) Apply mailing labels to 2,700 envelopes	13 Hours	None
5) Stuffing envelopes	23 Hours	None
6) Checking and sealing envelopes	14 Hours	None
7) Mail questionnaires	Minimal	None

ing) be used to mail the questionnaires.

Phase One—Purchase Sample List

The first phase involved the purchase of a sample of producers randomly selected from agricultural producers in each of the five states included in the study. The list for the states was purchased from a private business that specializes in selling survey sample lists. A total of 2,550 names were purchased. The cost was \$1,250.00.

In addition to the purchase of the list of producers, the names of all 196 certified organic farmers in the five state region were obtained free from Northern Plains Sustainable Agricultural Systems. The time needed to obtain both sets of names was minimal.

Phase Two—Personalize Sample List

The second phase entailed personalizing the sample list, a task that involved replacing the name of the farm or corporation with the name of the individual owner's name(s). This task was accomplished using two tactics—phone calls to the individual involved and Internet searches. The time taken for the former was 20 hours at a cost of \$20.00. The Internet search took ten hours. Switchback.com and reversephonedirectory.com are two websites found to be useful in obtaining potential respondent mailing information.

Phase Three—Create Mailing List

The third phase involved converting the sample list into a mailing list. This conversion involved using the information obtained to personalize the sample list to modify the sample list. The purchased sample list was converted to an Excel format and each entry was given a personalized name. A latent function of this task was the identification of organizations that were not involved in agricultural production but whose names somehow appeared on the list of agricultural producers. Those names were removed from the list. Creating the mailing list took about 40 hours.

Phase Four—Create Introductory Postcards

Postcards to be mailed to those selected to be included in the survey and designed to introduce the study and to explain its purposes were created in the fourth phase of the process. The creation of the postcards

included designing the postcards, composing the introductory statements to be printed on them, and their purchase. The time needed to compose, purchase, and print them was minimal; the cost for the 3,000 was \$210.00.

Phase Five—Mail Introductory Postcards

Five tasks were completed in this phase. First, mailing labels were purchased. The time involved was minimal; the labels cost \$50.00. Second, the names and addresses on the mailing list created in phase three were printed on the mailing labels, taking minimal time. Third, all postcards were personally signed by one of the researchers. Signing the postcards took nine hours. Fourth, the mailing labels were applied to the postcards. This process took 14 hours. Finally, the postcards were mailed. The time involved was minimal, but the non-labor financial cost was \$530.00.

Phase Six—Format and Print the Questionnaires

The time involved in the construction of the survey instrument is not included in the estimates here. However, there was an effort to create an attractive instrument. Since most of the labor to format the questionnaire was provided by the university's publication editor and not by the researchers involved in the survey, there was minimal labor. Given that a follow-up mailing was planned, a total of 6,000 questionnaires were printed. The cost was \$2,460.00.

Phase Seven—Format and Print the Survey Envelopes

Two sets of envelopes were required—one for mailing the questionnaires and one for the respondents to use to return the completed questionnaires. The time involved in formatting the former was minimal, but the cost involved in printing 3,000 9x12 envelopes was \$560.00. The time involved in formatting the return envelopes was minimal; the non-labor financial cost for printing the 3,000 7.5x10.5 return envelopes was \$630.00. The cost for printing the smaller envelopes was higher because of their unusual size.

Phase Eight—Compose and Reproduce the Cover Letters

Cover letters were purchased, composed,

Table 1 - Approximate Time and Non-Labor Financial Costs of Mail Survey, cntd.

Phases	Time	Non-Labor Financial Costs
Phase Ten		
Process Returned Questionnaires		
1) Post Office (682 surveys)	Minimal	\$480.00 (7 cents per return)
2) Log-in returned surveys & modify mailing list	43 Hours	None
Phase Eleven		
Create Reminder Postcards		
1) Design/Compose reminder postcards	Minimal	None
2) Purchase/Print 2,700 postcards	Minimal	\$190.00 (7 cents per card)
3) Address postcards	17 Hours	None
Phase Twelve		
Mail Reminder Postcards		
1) Sign 1,900 reminder postcards	8 Hours	None
2) Mail 1,900 reminder postcards	Minimal	\$400.00 (21 cents per card)
Phase Thirteen		
Compose and Reproduce Cover Letters for Follow-up Mailing		
1) Compose follow-up letter	Minimal	None
2) Merge 1,900 cover letters with mailing list	Minimal	\$100.00
Phase Fourteen		
Mail Follow-up Questionnaires		
1) Purchase 1,900 stamps	Minimal	\$1140.00 (60 cents per stamp)
2) Apply stamps to 1,900 envelopes	10 Hours	None
3) Number questionnaires	6 Hours	None
4) Apply mailing labels to 1,900 envelopes	10 Hours	None
5) Signing replacement cover letters	5 Hours	None
6) Stuff envelopes	17 Hours	None
7) Checking and sealing envelopes	9 Hours	None
8) Mail questionnaires	Minimal	None
Phase Fifteen		
Process Returned Surveys		
1) Post office (238 surveys)	Minimal	\$160.00 (70 cents per return)
2) Log-in returned surveys	2 Hours	None
3) Modify mailing list	1 Hour	None
Total Labor Hours	298 Hours	
Total Non-Labor Financial Costs		\$10,380

Note: In totaling the time involved, the estimates for each phase were rounded to the nearest hour. In totaling the non-labor financial costs, the estimates for each phase were rounded to the nearest ten dollars.

merged with the mailing list, reproduced, and then individually signed by both researchers. Departmental letterhead on which to print the cover letters was purchased. Since a follow-up mailing was planned, 5,500 sheets of letterhead stationery were purchased, taking minimal time but costing \$450.00. Composing the letters involved minimal time. Hiring the institution's computer center to personalize each letter by printing the names and addresses from the mailing list onto the letterhead stationery involved a minimal amount of time, but a non-labor financial cost of \$130.00. Having both researchers sign each letter took 13 hours.

Phase Nine—Mail the Questionnaires

Mailing the questionnaires involved seven identifiable tasks. First, stamps for the initial mailing had to be purchased. The purchase of the 2,700 60-cent stamps involved minimal labor, but included a non-labor financial cost of \$1,620.00.² Second, applying the stamps to the 2,700 envelopes took nine hours. Third, individually numbering each questionnaire took five hours. Fourth, applying the mailing labels to the mailing envelopes that would contain the packet of material to be sent to the potential respondent took thirteen hours. Fifth, inserting a cover letter, a questionnaire, and a self-addressed return mail envelope into the mail envelopes took 23 hours. Sixth, checking each stuffed envelope to ensure the names and numbering of the mail envelopes, the numbered questionnaires, and personalized cover letters were coordinated, and then sealing the envelopes took 14 hours. Finally, taking the boxes of envelopes to the campus post office to be mailed took minimal time.

Phase Ten—Process the Returned Questionnaires

Several tasks were included in processing the returned questionnaires. The postage for the returned questionnaires was handled through metered mail. There was no labor for the project, but the non-labor financial cost of the returned questionnaires was \$480.00. Records were kept for each returned questionnaire. Those that were completed were noted and their names and addresses removed from the mailing list being prepared for the follow-up mailing. Envelopes returned because of incorrect addresses were corrected or, in the cases of

those for which correct addresses could not be found, were deleted from the mailing list. This phase of the process took about 43 hours.

Phase Eleven—The Creation of the Reminder Postcards

The creation of reminder postcards involved three tasks: 1) designing the postcards and composing the reminder note, 2) purchasing and printing the reminder postcards, and 3) addressing the postcards. Since the institution's publication editor again composed and formatted the reminder postcards, their creation involved minimal time and no non-labor financial cost. The purchase and printing of the 2,700 postcards entailed minimal time, but cost \$190.00. An alternative procedure to the one used earlier was employed to address the reminder postcards. Instead of printing the names and addresses on mailing labels and then applying those labels to the postcards, the names and addresses were printed directly on the postcards, a procedure that took 17 hours.

Phase Twelve—Mail the Reminder Postcards

Nineteen hundred reminder postcards were mailed. Personally signing the cards took eight hours; mailing them involved minimal labor but cost \$400.00.

Phase Thirteen—Compose and Reproduce the Cover Letters for the Follow-Up Mailing

Follow-up cover letters were composed and merged with the mailing list. Composing the letters involved minimal time. Since letterhead stationery that had been purchased earlier was used, there was no extra cost for the stationery at this stage. Hiring the institution's computer center to personalize each letter by printing the names and addresses from the mailing list onto the letterhead entailed minimal time and resulted in a non-labor financial cost of \$100.00.

Phase Fourteen—Mail the Follow-Up Questionnaires

Mailing the packets containing the follow-up questionnaires involved the same steps and costs as did mailing the packets containing the initial questionnaires, with the addition of signing replacement cover letters. As noted earlier, enough questionnaires had

been reproduced for both an initial mailing and a follow-up, so there was no additional cost for questionnaires. Nineteen hundred packets were mailed. There was minimal labor in the purchase of the stamps, but their cost was \$1,140.00. Applying the stamps to the 1,900 envelopes took ten hours. Numbering the questionnaires took six hours and applying the mailing labels to the envelopes took ten hours; neither task involved any cost. Signing the replacement cover letters took five hours. Stuffing the envelopes with the signed replacement cover letter, a numbered questionnaire, and a self-addressed return mail envelope took 17 hours. As before, the envelopes were sealed only after each stuffed envelope was doubled checked to ensure the names and numbering of the mail envelopes, the numbered questionnaires, and personalized cover letters were all coordinated. This series of steps took nine hours. Finally, the boxes of envelopes were taken to the campus post office and mailed. Again, there was minimal labor and no non-labor financial cost to this step.

Phase Fifteen—Process the Returned Questionnaires

The last phase included all of the tasks associated with handling the returned questionnaires. Having the questionnaires physically delivered from the post office to the researchers involved minimal time, but the metered mail postage cost of the returned questionnaires was \$160.00. The processing time to document the return of the questionnaires was two hours, and the time spent modifying the mailing list was one hour.

TIME AND NON-LABOR FINANCIAL COSTS: AN OVERALL ESTIMATE

The estimated cost in terms of the work invested in the mailing of the questionnaires was almost 300 hours. The non-labor financial costs were close to \$10,500 (see Table 1).

POSTSCRIPT: A DISAPPOINTING RESULT

As noted earlier, one of the researchers had previously used Dillman's (1978) procedures. He had collaborated in a study of married couples that had obtained a 72 percent response rate (Lichtie 1989) and had collaborated in a study of rural couples that had yielded a 55 percent response rate (Gorham & Stover 2000). In neither case was Dillman's

(1978) final step to obtain a high response rate—a third questionnaire sent by means of certified mail—employed. Dillman (1978: 21) suggested that the procedures preceding that final step should yield a response rate exceeding 50 percent and that the certified mail tactic would boost the rate to about 75 percent.

However, the response rate for the current survey was disappointing. Even though Dillman's (1978) procedures had been used, the response rate was about 17 percent below what we had expected given there were no plans to send out a third questionnaire using certified mail. Instead of an expected response rate of about 50 percent, the final response rate was only 33 percent.

At this point, we do not know why. Since Dillman's (1978) procedures had been followed as carefully as possible, it is reasonable to suspect there were other factors affecting the response rate. One possibility is that the topic of the survey might have influenced the willingness of potential respondents to fill out and return the questionnaire. It dealt with agricultural biotechnology. Agricultural biotechnology is a controversial topic and the range of opinions on the topic is broad. Negative comments were received from a few potential respondents who refused to fill out the questionnaire claiming it was biased. Procedures had been employed in the initial stages of the development of the questionnaire to address the issue of perceived bias. Both traditional farmers and sustainable agricultural producers had been asked to preview the questionnaire to look for biases and to help eliminate them.

A second possible explanation for the low response rate has to do with the sample. The survey was directed at agricultural producers, a population subjected to a wide range of surveys—from commercial surveys concerning the agricultural products they use, to the Agricultural Census they fill out every five years, to the seasonal and annual crop production surveys of the United States Department of Agriculture. It is possible these producers simply did not want to fill out another questionnaire.

There is reason to believe the latter explanation is the more salient. Our study involved two separate samples and yielded very different response rates for each. The first sample consisted of the five sub-samples of agricultural producers from the

five states. The overall response rate for that sample was about 31 percent. The second sample consisted of the certified organic farmers. The response rate for that sample was 49 percent—the rate Dillman (1978) predicted could be expected with the use of his procedures, excluding the use of the certified mail procedure. Since we used the same procedures for both samples, the different response rates of the two samples are not due to the procedures.

Clearly, Dillman's (1978) procedures can work. However, it is also clear that in special circumstances, his procedures might not produce the high response rate desired for mailed surveys.

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ENDNOTES

1. The Consortium to Address the Social, Economic, and Ethical Aspects of Agricultural Biotechnology. Funded by: The Initiative for Future Agriculture and Food Systems, Cooperative State Research, Education, and Extension Service, United States Department of Agriculture, Under Agreement No. 00-52100-9617.
2. We purchased 2,700 stamps despite having 2,746 names because some names were unusable.

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