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First-Class Versus Pre-Canceled Postage: A Cost/Benefit Analysis

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ABSTRACT This paper examines the costs and benefits of using first-class postage compared to non-profit, pre-canceled postage in inducing response to a self-administered mail questionnaire. An experiment was conducted with the outgoing postage for the 1998 Nebraska Rural Poll. Twenty-five percent of the outgoing questionnaires were mailed with first-class postage, with the remaining seventy-five percent having non-profit, pre-canceled postage affixed. The results showed that there was no statistically significant difference in response rates between the two groups, there were no differences in demographic characteristics between the two postage groups, and the use of non-profit, pre-canceled postage resulted in substantial cost savings.

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Evidence from previous studies

Various methods have been tested and employed by survey researchers in an effort to increase response rates to mail questionnaires. Some of these methods have included the use of preliminary notification, incentives, and first-class postage. These methods have typically been shown to increase response rates (Yammarino, Skinner and Childers, 1991). But, the effect of first-class postage on outgoing envelopes is not clear. Kernan (1971) found that first-class postage did not significantly affect the response rate to his mail questionnaire. In addition, McCrohan and Lowe (1981) did not find a statistically significant relationship between the use of high-powered postage and response rate. However, the results of a meta-analysis conducted by Fox, Crask and Kim (1988) indicated that very small, but statistically significant effects were associated with using first-class versus second-class, third-class or bulk-rate outgoing postage. Additionally, Salant and Dillman (1994) give three advantages to using first-class postage: "it gets mail through the postage system faster, it's forwarded or returned if necessary, and it looks important" (p. 140-141).

Kernan (1971) argues that first-class mailings are justified only if their return rates are sufficiently higher than "bulk-rate" mailings to compensate for the additional costs involved. While we do not disagree with Kernan, there are additional considerations that must be considered. For example, what if different postage alternatives elicit differential response rates from among different demographic groups?

This paper will explore three critical issues or questions related to the use of two postage alternatives in a large-scale mail survey in Nebraska. First, the response rates for the two postage alternatives will be analyzed to see if a statistically significant difference in response rates occurs.

Second, the demographic characteristics of the two groups will be examined to see if using the pre-canceled postage generated different response rates from different types of respondents. Finally, a cost per return will be calculated for each postage alternative to determine the savings incurred by using non-profit, pre-canceled postage.

Methods

An experiment was conducted with the mailing of the 1998 Nebraska Rural Poll to determine if two types of outgoing postage would generate statistically significant differences in response rates. The Nebraska Rural Poll is an annual study conducted since 1996. Each year, a random sample of approximately 7,000 rural Nebraskans (those living in the state's 87 non-metropolitan counties) is sent a mail questionnaire that includes questions about the respondent's well-being, their community, their opinions regarding various government policy issues and their demographic characteristics.

For the mailing of the 1998 Poll, twenty-five percent of the questionnaires (1,749) were mailed using first-class postage on the outgoing envelope. The remaining seventy-five percent (5,247) were mailed with non-profit, pre-canceled postage affixed on the outgoing envelope. The names for the first-class postage were randomly selected.

A series of four mailings were used for the survey, following the total design method (Dillman, 1978). The sequence of steps used are described below. A pre-notification letter signed by the project director was first sent requesting participation in the study. The questionnaire and a cover letter signed by the project director were mailed seven days later. A reminder postcard was sent to the entire sample approximately seven days after the questionnaire had been mailed. Finally, those who had not yet responded within approximately 14 days of the

original mailing of the questionnaire were then sent a replacement questionnaire with a slightly different cover letter.

The cover letters, postcards and questionnaire were identical for both groups. All of the mailings to the pre-canceled group used the non-profit, pre-canceled postage stamps. The only other difference occurred with the reminder postcard and the replacement questionnaire mailing. For these two mailings, the phrase "RETURN SERVICE REQUESTED" was added on the first line of the label for the postcard and below the pre-printed return address on the envelope for the last mailing. This step was inadvertently skipped during the first two mailings.

Results

An overall response rate of 65% was achieved for this survey. The response rates for both groups of postage are shown in Table 1. As this table shows, the use of first-class postage was associated with a slightly increased response rate over that received by the non-profit, pre-canceled postage. However, a chi-square analysis reveals that this difference is not statistically significant. Therefore, using first-class postage on the outgoing envelope did not significantly affect the response rate to the survey.

The data in Table 2 address the question of whether or not the use of non-profit, pre-

Table 1. Analysis of Response Rates

Postage	***Number mailed***	***Number deliverable***	***Number returned***	***Percent returned***
First-class	1749	1667	1100	66.0%
Non-profit, pre-canceled	5247	4796	3042	63.4%

Overall response rate: 4196/6463 = 64.9%
χ^2 = 1.94; df = 1; NS.

canceled postage would result in responses from different demographic groups. Age, gender, household income, and education were examined for both postage groups. There were no statistically significant differences in any of these characteristics between the two postage groups. Therefore, using non-profit, pre-canceled postage did not result in different responses from different groups of respondents.

The final issue addressed in this paper is the magnitude of the cost savings incurred by using non-profit, pre-canceled postage (see Table 3). Using this approach, costs per return were

Table 2. Analysis of Demographic Variables By Postage Treatment

Demographic Variable	***First-class***	***Non-profit, pre-canceled***
Age:		
19 - 39	27%	24%
40 - 64	53%	56%
65 and older	20%	20%
	$\chi^2 = 3.61$; $p = .164$	
Gender:		
Male	40%	42%
Female	60%	59%
	$\chi^2 = 1.75$; $p = .099$	
Household income:		
Under $10,000	3%	3%
$10,000 - $39,999	48%	47%
$40,000 - $74,999	40%	40%
$75,000 or more	9%	10%
	$\chi^2 = 1.23$; $p = .745$	
Education:		
High school or less	38%	39%
Some college	38%	37%
College graduate	25%	24%
	$\chi^2 = 0.31$; $p = .856$	

reduced by more than one-half in comparison to using first-class postage ($1.07 per return in contrast to $2.43). A more detailed examination of Table 3 indicates that savings, as measured by cost per return, occurred in each of the four mailings, although the total dollar savings and savings per return were greatest in the second and fourth mailings.

It should be noted that the rates for the non-profit, pre-canceled postage depend upon the

Table 3. Cost Information by Postage Alternative

	Pieces Mailed/ Returned	***Total Cost***	***Cost per Piece Mailed/ Returned***	***Cost per Return****
Pre-notification Letter				
First-class	1,749	$559.68	$0.32	$0.51
Non-profit, pre-canceled	5,247	$619.28	$0.12	$0.20
Questionnaire and Cover Letter				
First-class	1,724	$948.20	$0.55	$0.86
Non-profit, pre-canceled	5,245	$615.32	$0.12	$0.20
Reminder Postcard				
First-class	1,710	$342.00	$0.20	$0.31
Non-profit, pre-canceled	5,238	$707.13	$0.14	$0.23
Replacement Questionnaire and Letter				
First-class	850	$467.50	$0.55	$0.43
Non-profit, pre-canceled	2,938	$346.72	$0.12	$0.11
Return Postage				
First-class	1,100	$352.00	$0.32	$0.32
Non-profit, pre-canceled	3,042	$973.44	$0.32	$0.32
TOTAL COST				
First-class	7,133	$2,669.38	$0.37	$2.43
Non-profit, pre-canceled	21,710	$3,261.89	$0.15	$1.07

* Based on 1,100 completed and useable surveys returned from the first-class mailing; and 3,042 returns from the non-profit, pre-canceled postage alternative.

number of letters going to the same 5-digit and 3-digit zip codes. For non-profit organizations, the rates for letters range from $0.114 to $0.132 per piece. Since the Nebraska Rural Poll uses such a large sample, many of the letters qualified for the cheaper rate because many of them were going to the same 5-digit or 3-digit zip code areas. Therefore, the use of the non-profit, pre-canceled postage resulted in substantial cost savings compared to first-class postage. However, even if the highest rate for non-profit organizations had been applied to the Nebraska Rural Poll, the total cost and cost per return would have increased to only $3,437.62 and $1.13, respectively. This higher cost per return is still substantially below the $2.11 associated with the first-class postage approach.

It should also be noted that the use of non-profit, pre-canceled postage results in some added labor costs. In order to qualify for the postage discounts, the mail must be sorted and bundled by zip code. However, the added labor costs incurred for the 1998 Poll mailing were minimal. Specifically, we estimate those costs to be approximately $110, an amount much less than the cost that would have occurred had the entire survey used first-class postage.

Conclusion

The use of the non-profit, pre-canceled postage did not result in a statistically significant difference in response rates compared to the first-class postage. This is consistent with the findings of McCrohan and Lowe (1981). In addition, it did not result in different responses from different groups of respondents but did generate substantial cost savings. Therefore, the associated cost of using first-class postage compared to non-profit, pre-canceled postage in this experiment was appreciably higher, while the associated benefit it produced was negligible.

A few special circumstances regarding the Nebraska Rural Poll need to be considered

when analyzing the results of this postage experiment. First, this experiment was conducted with the mailing of the third annual poll. The results of the two previous surveys generated considerable media coverage throughout the state. For example, the results from the 1997 survey were released in four parts and each press release generated approximately 30 articles in newspapers across the state. Therefore, the visibility and recognition of the Rural Poll is high. In addition, the questionnaire included questions on two topics that have been the focus of much discussion throughout rural Nebraska: school financing and large-scale pork production facilities. These two factors could have influenced the results of this experiment since people may have been especially inclined to fill out and return the survey regardless of the type of postage used for mailing.

Another consideration involves the population used for this survey. The survey was sent to a rather specific population, rural Nebraskans. It is not known whether or not different results would have occurred if more urban areas had been included in the sample.

And, as mentioned previously, the cost savings generated through this particular survey were probably greater than those that would be generated if a smaller sample was used. However, the cost savings would still be substantial (approximately $900 for a sample size of 1,000)[1] even if the higher rate were used for the pre-canceled postage.

Results from this study suggest that first-class postage significantly increases survey costs without a commensurate increase in benefits, e.g., there was not a significant increase in the

[1] This figure assumes a 6% undeliverable rate and 33% response rate after the first mailing. The highest rate for non-profit, pre-canceled postage was used in these calculations ($0.132); the first-class postage calculations used $0.32 for the pre-letter postage, $0.55 for the first and second mailings (where the survey is included) and $0.20 for the postcard postage.

response rate. However, caution must be exercised in generalizing this conclusion -- this was but one study that had certain unique attributes. However, the findings are sufficiently important to call for additional research on the costs and benefits of different postage alternatives. For example, experiments involving a nationwide sample would be particularly useful to see if the results are the same when a more general population is surveyed. The potential cost savings that the use of non-profit, pre-canceled postage generates makes future research in this area essential, especially in an era of increasingly constrained resources.

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