



BUREAU OF SOCIOLOGICAL RESEARCH

An experimental study on the effects of incentive packaging on response rates and sample composition

Technical Paper

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Abstract

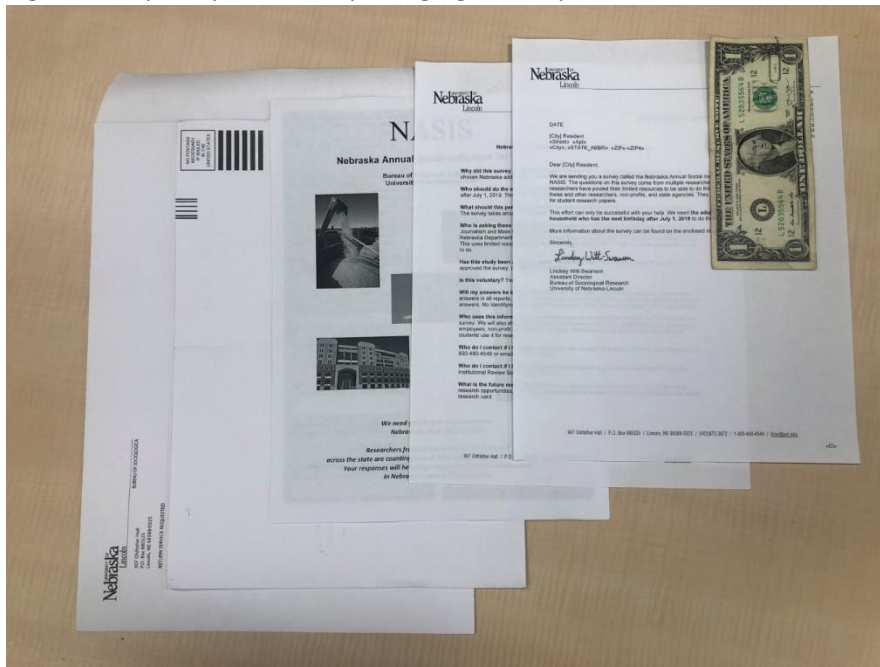
In 2019, the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln needed to change how cash incentives were added to standard mail survey protocols because of demands from the services used for printing and mailing paper questionnaire materials. In particular, prepaid cash incentives needed to be placed inside a #9 envelope which was subsequently placed inside a larger outgoing envelope, along with the survey questionnaire and cover letter. This change enabled using a machine to process a high volume of surveys for outgoing mail. However, this meant that the cash incentive was not immediately visible to the respondent when opening the survey packet. Research has shown that emphasis on incentives can affect response rates and possibly sample composition (Dillman et al. 2014). Thus, to better understand how this change may impact results, we embedded an experiment on this change in presentation of incentives in a general population mail survey (n=4,800). Sampled addresses were randomly assigned to receive a \$1 incentive using the standard protocol in which the incentive was paper clipped to the cover letter inside of the survey packet mailing or the new protocol in which the \$1 incentive was enclosed in a standalone colored envelope. We examined the effects of the incentive packaging technique on response rates and sample composition across the treatments. Analyses indicate that there were no differences in response rates or sample composition (region, age group, sex, race, sexual orientation, education, political party, income range, home ownership, marital status, presence of children, overall health rating) across the two incentive packaging techniques. These results indicated that changing how incentives were packaged would have no notable effect on BOSR studies.

Introduction and Background

This report documents an experiment conducted on how monetary incentives are packaged in mail surveys. The experiment was motivated by the practical need to increase automation in the printing, stuffing, and mailing of a large number of surveys. The idea for the experiment arose in 2018 when the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln was asked to complete a project with a mail survey component that had a sample size around 90,000 households. Each sampled household was to receive a \$1 prepaid cash incentive. Due to the time constraints and the large sample size, it was not feasible to hand-stuff the mail survey packets in-house at BOSR. BOSR searched for partners who could help with this task. The University of Nebraska-Lincoln's Print and Mail Services (hereafter Print Services) had machines that could prepare a large number of survey packets in the required timeline. As a result, Print Services was contracted to print and package these mail survey packets.

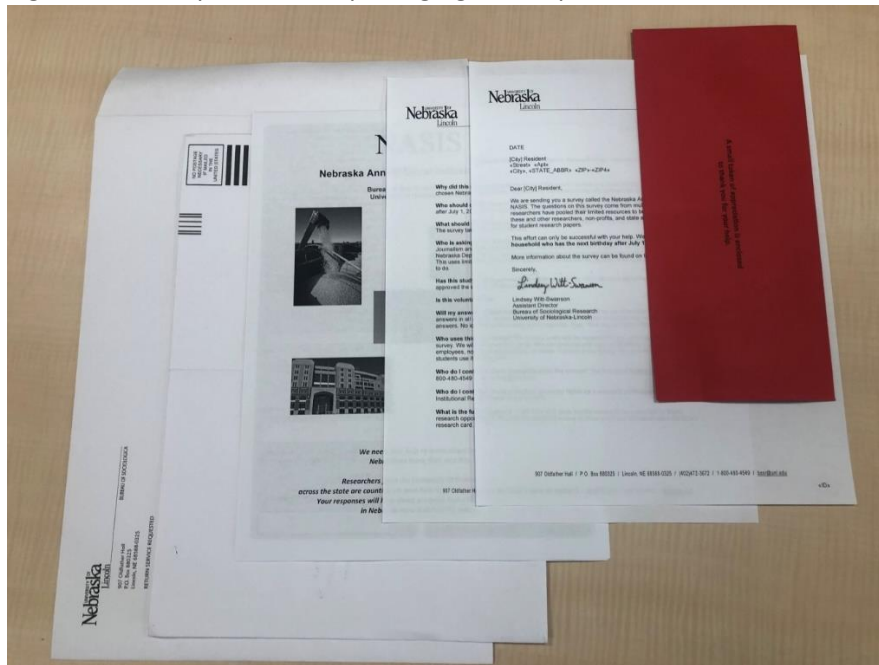
Prior to this experiment, mailed packages that included a \$1 prepaid cash incentive were hand-stuffed. Trained BOSR staff paper clipped the incentives to the invitation cover letter. The \$1 bill and cover letter were then placed at the top of the stack of materials that go into each mail survey packet (Figure 1). This packaging helped ensure that respondents immediately found the incentive when pulling the materials out of the envelope.

Figure 1. Paperclip incentive packaging technique



Unfortunately, the printing and mailing machines at Print Services were not able to paper clip the incentives to the cover letters. Because including the incentive was important for increasing response rates for this study, a proposed solution was to first use the printing machines to place the \$1 bill into a small envelope, and then use the machines to insert the small envelope with the incentive inside the larger envelope with the rest of the mail survey packet materials. We used envelopes in multiple colors because 90,000 envelopes of any single color were not available in the needed timeframe. These envelopes were strategically placed at the top of the mail survey packet materials (Figure 2). Having brightly colored envelopes and placing the envelope on top of the materials were used strategically to enhance the visibility of the envelopes containing the incentive.

Figure 2. Envelope incentive packaging technique



In addition to the colored envelopes, the front of the incentive envelopes contained the message “A small token of appreciation is enclosed to thank you for your help.” to help elicit social exchange (Dillman et al., 2014).

While the automation of stuffing was necessary for this project, BOSR wanted to understand what, if any, effect sample members receiving the incentive in an envelope versus paper clipped to the cover letter might have on response rates and sample composition. Thus, BOSR staff designed and conducted an experiment comparing these two incentive packaging methods in a different mail survey that had many of the same design features as the survey that necessitated automatic stuffing. This paper reports the results of the experiment.

Hypotheses

We had two hypotheses for the experiment.

Hypothesis 1: The envelope incentive packaging technique will produce a higher response rate than the paper clip incentive packaging technique.

The envelope allowed sample members to receive the incentive and thank you language at the same time. We expect the addition of the thank you language to better elicit reciprocity and garner trust through a social exchange mechanism (Dillman et al. 2014), thereby increasing response rates.

Hypothesis 2: The two incentive packaging techniques will recruit different types of respondents.

It has been shown that incentives will affect the demographic composition of respondents (Dillman et al. 2014). Paper clipping the \$1 bill directly to the cover letter would make the incentive easier to see, while the envelope would not be immediately recognized as an incentive. We would expect these differences in incentive visibility to recruit different types of respondents.

Data and Methods

Nebraska Annual Social Indicators Survey

This experiment was conducted using the 2019 Summer Nebraska Annual Social Indicators Survey (NASIS). This statewide omnibus mail survey is conducted by BOSR, and consists of a set of core questions and client added questions. NASIS uses a simple random address-based sample of adults aged 19 and older (Nebraska's age of majority), along with the next birthday within-household selection method. In summer 2019, NASIS consisted of a 12-page paper questionnaire that was administered by mail to a sample of 4,800 Nebraska households. The 2019 Summer NASIS achieved a 27.4% response rate (AAPOR RR2) overall. Demographic characteristics of the respondents can be found in Table 1.

Table 1. Demographic characteristics of respondents

	Percentage	n
Region		
Panhandle	4.3%	53
Southwest	5.1%	63
South Central	13.4%	164
North	9.9%	121
Southeast	26.9%	330
Midland	40.4%	496
Age		
19-34	10.9%	126
35-54	25.1%	289
55+	64.0%	737
Sex		
Male	41.4%	490
Female	58.6%	695
Race		
Non-Hispanic White	91.3%	1085
People of color	8.7%	103
Sexual Orientation		
Heterosexual/straight	97.3	1140
Homosexual, bisexual, something else	2.7	32
Education		
High school diploma/GED or less	17.4%	204
Some college or Technical/Associate/Junior college	36.1%	423
Bachelor's degree or higher	46.5%	545
Political party		
Democrat	27.1%	307
Republican	50.2	586
Independent	22.6	256
Income		
\$0-\$49,999	38.6%	435
\$50,000-\$74,999	18.5%	209
\$75,000+	42.9%	484

Home ownership		
Own outright	42.4%	502
Buying (paying a mortgage)	41.0%	486
Renting, provided as part of job, other	16.6%	197
Marital Status		
Married	63.7%	755
Not married, living with a partner	4.5%	53
Never married	10.7%	127
Divorced	11.0%	130
Widowed	10.2%	121
Presence of children		
Yes	25.5%	293
No	74.5%	856
Overall Health		
Excellent	29.0%	346
Good	56.2%	671
Fair	12.6%	151
Poor	2.3%	27

Each address was randomly assigned to receive one of the two incentive packaging conditions – either the traditional paper clip (n=2,400) or the envelope (n=2,400). Thus, our key independent variable is the experimental treatment.

We are interested in response rates across experimental conditions and in how the distributions of the above respondent characteristics vary across experimental conditions. We use a response indicator (1=respondent; 0= nonrespondent) as our first dependent variable. Unweighted response rates were calculated using the American Association for Public Opinion Research’s (AAPOR) standard definition for Response Rate 2. Our second group of dependent variables are the respondent demographic characteristics. We use unimputed respondent characteristics as listed in Table 1; listwise deletion is used for missing data. Because all of our outcome variables are categorical, we use chi-square tests to test for statistical significance across experimental conditions.

Results

Hypothesis 1: Response rate. There is no significant difference in response rates between the paperclip incentive packaging technique (28.1%) and envelope incentive packaging technique (26.6%) conditions (Table 2). As a result, Hypothesis 1 is not supported.

Table 2. Response rates

Condition	AAPOR Response rate 2	n	χ^2	p-value
Overall	27.4%	1227	1.251	0.263
Paperclip	28.1%	628		
Envelope	26.6%	599		

Hypothesis 2: Differences in demographic composition of respondents. Response distributions were then calculated for age, gender, race, education, political party, income, home ownership, marital status, presence of children, and overall health across the two experimental conditions (Table 3). However, no significant differences were found when looking at response distribution by respondent demographics, so Hypothesis 2 was not supported.

Table 3. Comparisons of demographic characteristics

Variable	Paperclip	Envelope	χ^2	<i>p</i> -value
Age			0.210	0.900
19 to 34	10.7%	11.2%		
35 to 54	25.6%	24.6%		
55 and older	63.7%	64.2%		
Sex			0.093	0.761
Male	40.9%	41.8%		
Female	59.1%	58.2%		
Race			0.390	0.532
Non-Hispanic White	90.8%	91.9%		
People of color	9.2%	8.1%		
Sexual Orientation			0.348	0.555
Heterosexual/straight	97.0%	97.6%		
Homosexual, bisexual, something else	3.0%	2.4%		
Education			0.000	1.000
High school diploma/GED or less	17.4%	17.4%		
Some college or	36.1%	36.1%		
Technical/Associate/Junior college				
Bachelor's degree or higher	46.5%	46.5%		
Political party			0.928	0.629
Democrat	28.4%	25.9%		
Republican	49.3%	51.2%		
Independent	22.3%	23.0%		
Income			2.392	0.302
\$0-\$49,999	36.4%	40.8%		
\$50,000-\$74,999	19.4%	17.6%		
\$75,000+	44.2%	41.6%		
Home ownership			0.657	0.720
Own outright	41.8%	43.0%		
Buying (paying a mortgage)	42.1%	39.9%		
Renting, provided as part of job, other	16.1%	17.2%		
Marital Status			2.668	0.615
Married	63.4%	64.0%		
Not married, living with a partner	4.4%	4.5%		
Never married	12.0%	9.4%		
Divorced	10.2%	11.8%		
Widowed	10.0%	10.4%		
Presence of children			0.820	0.379
Yes	75.6%	73.3%		
No	24.4%	26.7%		
Overall Health			1.583	0.663
Excellent	28.8%	29.2%		
Good	56.9%	55.4%		
Fair	11.8%	13.6%		
Poor	2.6%	1.9%		

Conclusions and Discussion

We found no significant differences in response rates or sample composition between incentive packaging conditions. As a result, BOSR concluded that using small envelopes to package incentives was not necessarily detrimental for survey participation decisions.

In the future, BOSR would like to explore the effect of incentive envelope color on response. Due to the time constraints and the envelope supply that Print Services had available, five different colored envelopes were used to package the 90,000 incentives in the larger survey. It is possible that these envelope colors have sponsorship implications (e.g., red connotes the university's colors). With this in mind, further research should be done to see what effect envelope color might have on participation.

References

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*. New York: John Wiley & Sons.