

Mail Survey Experiments: Reminder Postcard and UPS Mail Innovations Envelope

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Abstract

This paper discusses the results of two experiments conducted with a national survey that primarily targeted households in rural counties. With a sample of 63,000 addresses drawn from an Address-Based Sampling (ABS) frame we use a two-way factorial design to test whether a reminder postcard significantly improved response rates and whether a UPS Mail Innovations Envelope compared to a 9x12 white envelope improved response rates. We evaluate the trade-offs between costs and response rate improvement and discuss some of the advantages and operational considerations of using UPS Mail Innovations envelopes. We also compare demographics and key outcomes of interest across the four treatment groups assessing the potential of non-response bias.

Key Words: mail survey, envelope experiment, postcard experiment

1. The Study

This study aimed to recruit 2,000 males ages 11-16 living in 30 rural areas to be part of a Food and Drug Administration (FDA) funded longitudinal study of an anti-tobacco media campaign. These respondents were to be recruited in-person for a baseline interview and four follow-up interviews. All males 11-16 in an eligible household recruited for the study and one parent/legal guardian was also interviewed at baseline. To find 2,000 males 11-16 in these specific areas we estimated that we would need to sample 63,000 addresses (proxies for households), a total which neither the budget nor the timeline could accommodate.

1.1 Study Design

Nationwide approximately 9% of households have at least one mail ages 11-16 (U.S. Census Bureau, 2013). We had four months to find 2,000 males 11-16 in rural areas – a very difficult task. Because it was cost- and time-prohibitive to do in-person screening for the 63,000 addresses we estimated we needed to sample to find our 2,000 eligible males we decided to do a five-minute mail screener mailed to all sampled addresses with an in-person visit to eligible addresses to conduct the ten minute parent interview (on a tablet) and 45 minute CASI youth interview (on a laptop).

Returned screeners received each day were scanned and eligible cases were ported to the field system so that they could immediately be assigned to a field interviewer (FI). The FI visited the household in-person to complete the adult interview and youth interview, after completing necessary parent permission and youth assent process.

1.2 Mail Screener Factors

The goal of using the mail screener was to quickly identify eligible sample members so an FI could be deployed to complete the interviews at the household. We wanted an envelope that would grab the recipient's attention and appear urgent enough to prompt them to respond quickly. Prior experiments looked at the effect of logos and other envelope characteristics on mailings but none for UPS Mail Innovations. We decided to implement a two-way factorial design testing two types of envelopes and two shipping methods to see which performed best in terms of response rates and return on investment. We also imbedded a postcard experiment to see if a reminder postcard was a worthwhile addition.

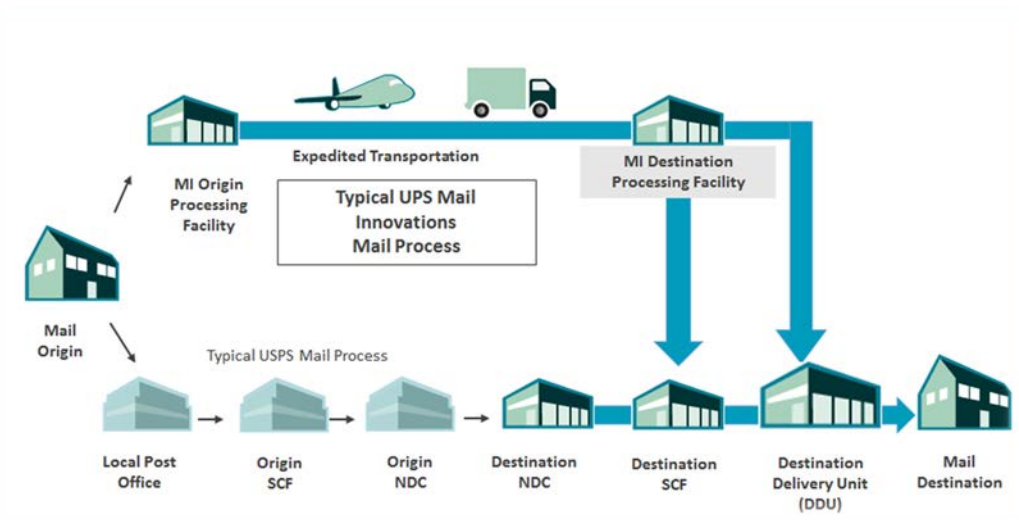


Figure 1: UPS Mail Innovations delivery process
(source: www.mailinnovations.com/services/index.html)

We selected Mail Innovations (MI) because it had a reasonable delivery schedule: equivalent to first class mail plus one day. We thought the UPS envelope may appear important to the recipient which might prompt them to open it sooner and respond more quickly. MI was also appealing because the shipping rates were the same for all addresses. As our sample was focused in rural areas some addresses could be rather remote. Figure 1 illustrates how MI (top row) processes and ships packages through its network and delivers them to the U.S. Postal Service who delivers to its final destination. Another benefit of MI is that it can deliver to P.O. Boxes, although we did not utilize that benefit because only locatable addresses were eligible to be selected for the study.

Table 1: Sample Assignment

	UPS MI	USPS 9x12	Overall
No Postcard	15,750	15,750	31,500
Postcard	15,750	15,750	31,500
Overall	31,500	31,500	63,000

As shown in Table 1 the 63,000 selected addresses were allocated equally amongst the four treatment groups. Each mail package contained the same items and all were mailed on the same day. The contents were a lead letter promising a \$20 incentive for eligible homes that completed the in-person interview (though there was no mention of the eligible population being only 11-16yo males or that it was tobacco-related), a five minute Teleform screener, a project description sheet, a \$2 bill, and a #10 business reply envelope for returning the screener. Returns were recorded on the day they were received so that eligible cases could be sent to the field as quickly as possible. The reminder postcard was printed on blue card stock and, for the cases receiving it, was mailed one week after the screener packets.

The 9x12 envelope had the FDA logo on it with the selected address in the window. They were machine-stuffed and sent first class mail by USPS with the undeliverable mail returned. In contrast the MI envelope was heavier, did not have a logo (though it did show RTI as the shipper), had machine-generated labels but had to be hand-stuffed. It had MI postage and was picked up by UPS MI and we did not purchase the additional option to have the undeliverable mail returned (see Appendix for envelope comparison).

2. Results

2.1 Response Rates

The overall response rate to the mail screener was 31.8%. Overall the response rate for MI envelopes was 1.7 percentage points lower and the postcard group had a 3.2 percentage point higher response rate than those who did not receive a reminder postcard. Of the four combinations UPS MI with no postcard had the lowest response rate at 29.2% compared with the 9x12 envelope and reminder postcard with 34.1%. All screener response rates for the different treatments overall and in combination are shown in Table 2.

Table 2: Mail Screener Response Rates by Treatment Group

	UPS MI	USPS 9x12	Overall
No Postcard	29.2%	31.2%	30.2%
Postcard	32.8%	34.1%	33.4%
Overall	31.0%	32.7%	31.8%

2.2 Bias Investigation

We investigated the potential for bias by examining the unweighted results of five outcomes measured in the mail screener: presence of male 11-16 years of age, presence of children, presence of smokers, presence of smokeless tobacco users, and household income less than \$50,000 per year.

Table 3: Screener Outcomes by Postcard Group

	Male 11-16	Child(ren) Present	Smoker	Smokeless User	Income < \$50k
No Postcard	7.3%	27.8%	21.2%	8.6%	57.0%
Postcard	7.5%	25.3%	21.8%	8.8%	58.3%
Difference	-0.2%	+2.5%*	-0.6%	-0.2%	-1.3%

*p-value = 0.0165

As shown in Table 3, though there were slight differences in these outcomes between the postcard and no postcard groups only one was statistically significant.

Nationally the percentage of households with children is 31.8 so while neither group meet the national estimate the No Postcard group had a larger proportion of its respondents comes from household with children. We think this is caused by the postcard group, with its 3.2% high return rate, having more influence on older households, thus less likely to have children.

2.3 Cost and Return Time

We compared the cost per complete across the different treatment groups although we are only accounting for the material costs of the envelope, the incentive, the postage, and postcard where applicable. Labor is excluded from these estimates and is higher with MI due to the envelopes not being machine-stuffed. Overall the postcard group had the lower completion cost; however, the least expensive treatment group was the USPS envelope with no postcard (Table 4). There also appears to be a differential benefit of the reminder postcard between MI and the 9x12 envelope.

Table 4: Cost per Complete by Treatment Group

	UPS MI	USPS 9x12	Overall
No Postcard	\$11.70	\$11.45	\$11.57
Postcard	\$11.56	\$11.56	\$11.56
Overall	\$11.62	\$11.51	

Our goal was to identify the eligible households quickly so we also wanted to examine which envelope type had a faster rate of return. Screeners were logged each day they were received. As shown in Figure 2, the screeners mailed in the 9x12 envelope were returned faster than the screeners mailed in the MI envelope.

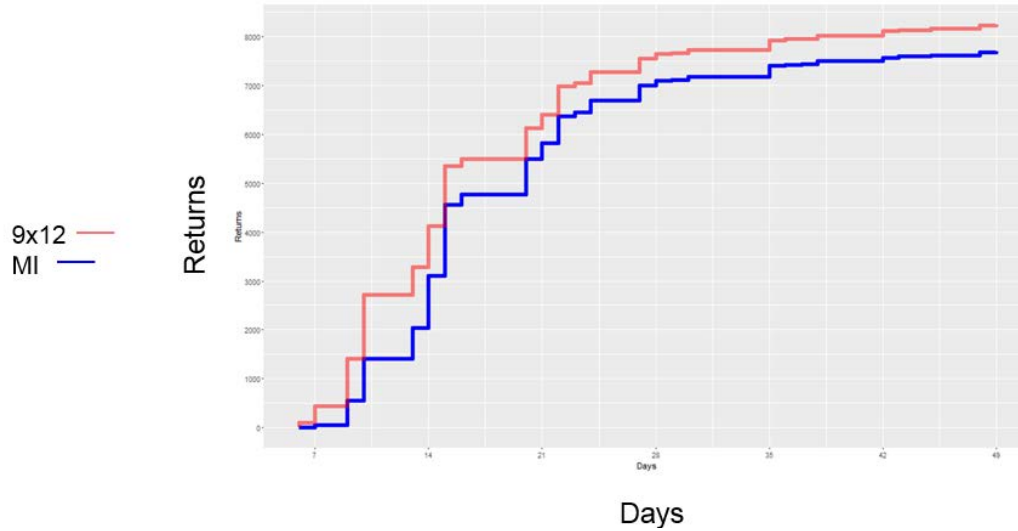


Figure 2: Return day by envelope type

One reason for this difference in return time may be because MI envelopes had a delivery rate of First Class postage plus one day meaning that MI sample members may have received their packets later than the 9x12 envelope sample members.

3. Conclusions

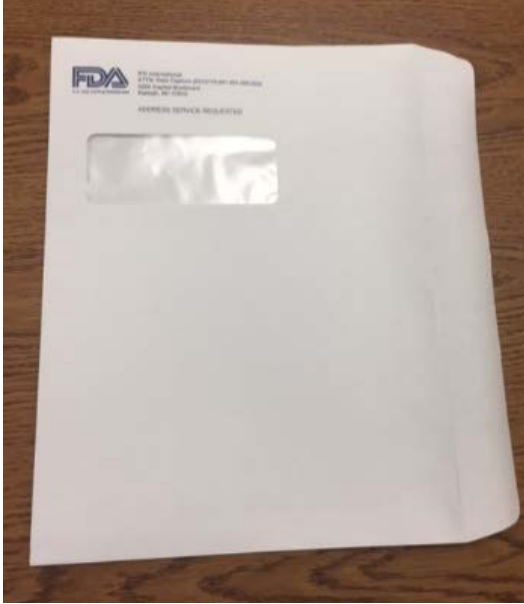
The USPS 9x12 envelope outperformed the UPS Mail Innovations with a 1.7 percentage point higher screener response rate and a slightly lower cost to complete. It was somewhat of a surprise that the USPS 9x12 outperformed the UPS Mail Innovations because the MI envelope looks like an enhanced or special mailing. We think this is largely due to the FDA logo on the front of the USPS envelope (see Appendix for envelope comparison). The 9x12 envelopes also outperformed MI with delivery with an average return time was three days faster.

The results for the reminder postcard were interesting in that the screening rates were higher for the postcard group, as expected, but the postcard may not have been equally appealing to all segments of the population. We see some evidence of this in Table 3 where the postcard group with its higher return rate appears to appeal to more to households without children. This has implication on non-response bias and more investigation is needed.

References

U.S. Census Bureau; American Community Survey (ACS), 1-Year Public Use Microdata Sample (PUMS), 2013; generated by Joseph McMichael; accessed via ftp.

Appendix



USPS 9x12 white envelope

1. FDA logo
2. Address in window
3. First Class Mail
4. Machine stuffed
5. Picked up by USPS
6. Undeliverable mail returned



USP Mail Innovations

1. MI heavier weight
2. No logo (RTI shipper)
3. Machine generated labels
4. MI postage
5. Hand stuffed
6. Picked up by UPS MI
7. Did not purchase undeliverable mail returned