



OFFICE OF INSPECTOR GENERAL

UNITED STATES POSTAL SERVICE

Modes of Delivery and Customer Engagement with Advertising Mail

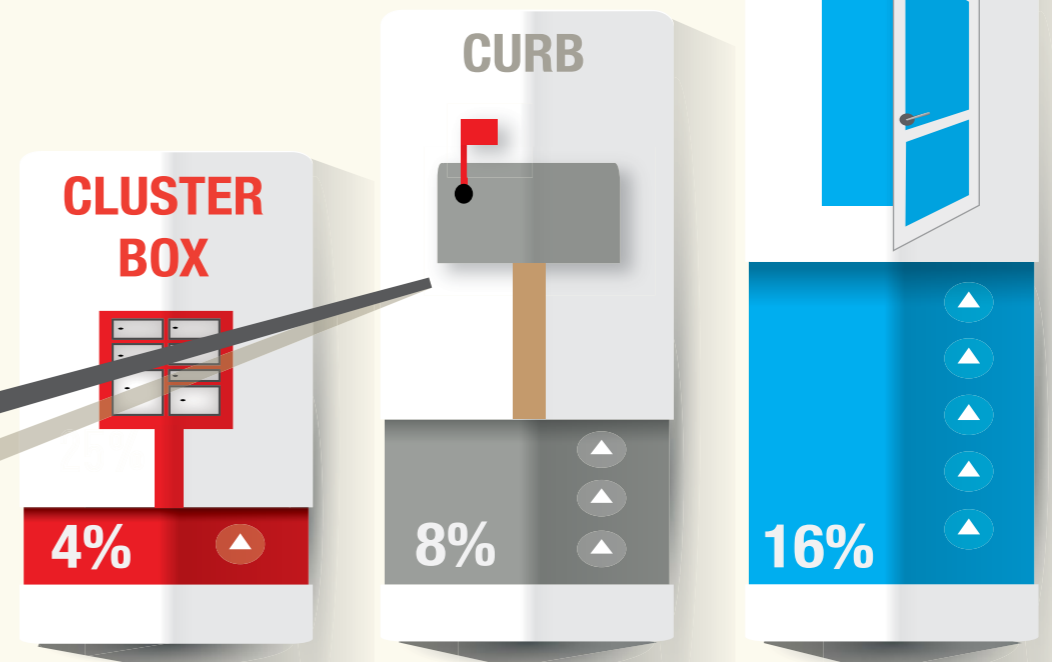
RARC Report

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April 20, 2015



READ AND RESPOND RATES *(self-reported)*





OFFICE OF INSPECTOR GENERAL

UNITED STATES POSTAL SERVICE

Executive Summary

Advertising mail delivered to a recipient's door generates higher "read and response" rates than advertising mail delivered to the curbside or a neighborhood cluster box. Door delivery customers also are less likely to throw their ad mail away than customers with curb or cluster box delivery.

These are among the key findings of a survey of 5,000 household mail recipients commissioned by the U.S. Postal Service Office of Inspector General (OIG) and conducted by InfoTrends, Inc. The degree of recipient engagement varied from one type of advertising mail to another.

Professor Michael Bradley of George Washington University analyzed the survey data. To control for the possibility that some other variable, such as gender or recipient use of the Internet, was not at play, Dr. Bradley performed statistical tests for relevant subgroups of the sample. He found no evidence that other defined variables were driving the results. Also, together with the OIG, Dr. Bradley analyzed data from two other U.S. Postal Service surveys. This analysis corroborated findings from the OIG/InfoTrends survey.

This paper examines only recipients' reported preferences; it does not reflect their actual behavior or explain its underlying causes. Nor does this paper discuss potential financial impacts on the Postal Service. We suggest that the Postal Service work closely with advertising mailers to better understand customer attitudes, their underlying causes, and any potential detrimental impacts on mail demand.

Highlights

The OIG, working with InfoTrends, surveyed 5,000 households across the country to help determine their engagement with advertising mail.

Customer engagement with advertising mail varies with mode of delivery.

Door delivery customers report higher levels of engagement with advertising mail than those who receive their mail through a curb or neighborhood cluster box.

Analyses of data from two Postal Service surveys reveal a general consistency with the results from the OIG-InfoTrends survey, which was analyzed by Professor Michael Bradley.

Centralized delivery will lower Postal Service delivery costs, but could have implications on the demand side. We suggest that the Postal Service and advertising mailers work together to understand these potential impacts.

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Introduction

Postal delivery costs vary greatly by mode. Deliveries to neighborhood cluster box units are less expensive than curbside deliveries and are substantially less expensive than delivery to the door. The reason is obvious: carriers can avoid the time and expense of moving through a neighborhood when delivering the mail. The U.S. Postal Service Office of Inspector General (OIG) quantified the cost savings in an audit report in 2011.¹ This report addresses a different, yet equally important strategic question: does mode of delivery affect the recipient's engagement with the mail? In particular, this paper analyzes whether mode of delivery has any effect on recipients' stated engagement with advertising mail.

Strategic Importance of Advertising Mail

Advertising mail is of great strategic importance to the Postal Service. In 2013, Postal Service products generated \$28.2 billion in contribution to institutional cost. The OIG estimates that 23 percent of this total, \$6.3 billion, came from advertising mail sent to households.² According to the Boston Consulting Group, the Postal Service can expect the non-advertising component of First-Class Mail volume, its main source of contribution to institutional cost, to decline significantly by 2020. This inexorable change will force the Postal Service to rely increasingly on other products, including advertising mail, as well as cost-cutting to fund its operations.³

The Postal Service, like other postal operators, is considering moving delivery, to the extent possible, away from the door to curbside and cluster boxes.⁴ However, door delivery is convenient for customers and is likely to be viewed as an entitlement by current door-delivery customers. This paper looks at a more nuanced aspect of this convenience. Simply stated: do door-delivery customers have a higher level of engagement with advertising mail? Do they read their advertising mail with a higher degree of frequency? This leads to a further question (not directly considered in this paper): could moving door-delivery customers to cluster boxes or curbside ultimately cause a decrease in mailing volumes? This is important because, despite cost savings on the delivery side, it is possible that such a decrease on the demand side could potentially put advertising mail's contribution to Postal Service institutional costs in jeopardy.

Methodology

To investigate the issue of mail engagement, the OIG retained InfoTrends, Inc., a survey research firm, to conduct a survey of 5,000 U.S. households. The survey methodology design ensured that respondents mirrored key demographic characteristics of the U.S. population. Ninety percent of respondents had Internet access and used the Internet to participate. The remaining 10 percent of respondents did not have Internet access and were contacted by phone. To analyze the survey data, the OIG retained Professor Michael Bradley of the George Washington University. Dr. Bradley's analysis is summarized in the [Detailed Analysis](#). The OIG worked closely with InfoTrends and Dr. Bradley to design a [survey questionnaire](#) that would address the key issues of interest.

In addition to the OIG/InfoTrends data, the OIG asked Dr. Bradley to examine data from the Postal Service's 2012 Mail Moment survey and the 2014 Household Diary Study recruitment questionnaire to see if these data supported the OIG/InfoTrends findings.

¹ U.S. Postal Service Office of the Inspector General, *Audit Report – Modes of Delivery*, Report Number DR-AR-11-006, July 7, 2011, <https://www.uspsoidg.gov/sites/default/files/document-library-files/2013/dr-ar-11-006.pdf>.

² OIG calculation using data from three Postal Service sources from U.S. Postal Service, *FY 2013 Public Cost and Revenue Analysis*, Report Number USPS-FY13-1, December 27, 2013, <http://www.prc.gov/dockets/document/88658>; Postal Service, *The Household Diary Study*, May 2014, http://www.prc.gov/sites/default/files/uspsreports/USPS_HDS_FY13.pdf; and Postal Service, *Market Dominant Billing Determinants*, Report Number USPS-FY13-4, December 27, 2013, <http://www.prc.gov/dockets/document/88662>.

³ The Boston Consulting Group, *Projecting US Mail Volumes to 2020, Final Report – Detail*, March 2, 2010, <https://about.usps.com/future-postal-service/bcg-detailedpresentation.pdf>.

⁴ Canada Post, *Five Point Action Plan*, December 2013, http://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/5_en.pdf.

The OIG/InfoTrends survey asked about customer engagement with seven kinds of advertising mail:

1. Advertising mail from local companies I do business with.
2. Advertising mail from national companies I do business with.
3. Advertising mail from companies I do not do business with.
4. Donation Solicitations.
5. Credit Card Solicitations.
6. Catalogs.
7. Mail that includes a coupon.

To determine their engagement with the mail, recipients were asked how they handled the advertising mail they received. The options were:

1. Read and respond to the mail.
2. Read and throw away the mail.
3. Set the mail aside for later use.
4. Throw away the mail without reading it.

It is important to note that the survey results indicate what customers report they would do, not their actual behavior.

Findings

The key findings of this research are:

- For most kinds of advertising mail, mode of delivery has a significant impact on customer engagement. Customers who receive their advertising mail at their door are less likely to throw it away without reading it. Door-delivery customers are also more likely to read and respond to their advertising mail.
- There are two exceptions to these findings:
 - When advertising mail contains a coupon, customers “toss without reading” at the same rate, regardless of delivery mode.
 - Similar results held for advertising mail that came from a local company with which the customer had a pre-existing business relationship.

- For some kinds of advertising mail, mode of delivery makes an enormous difference in customer engagement.
 - Respondents who received mail at the door said that they will read and respond to credit card solicitations at the rate of 10.6 percent. The read and response rate drops by 70 percent, to 3.1 percent, when a cluster box is the mode of delivery. Respondents said that they would toss 59.2 percent of credit card solicitations without reading when they received them via a cluster box. The percentage reduced to 40.2 percent when delivery was made to the door.
 - Responses to the remaining four categories were qualitatively similar to the credit card solicitation results, albeit with less dramatic differences by mode.
- Cluster box customers found their mail delivery location to be less convenient than either curbside or door delivery customers.
- Most customers (63.3 percent) who currently do not have cluster box delivery say they would be displeased if their delivery was moved to a cluster box. Only 17.2 percent indicate they would be pleased by such a move.⁵
- Dr. Bradley analyzed whether other factors besides delivery mode might be causing the results above. He examined whether numerous other variables such as attitude toward advertising mail, age of respondent, household income, population density, gender, and Internet use could have played a role in his findings. He concluded that none of these factors in the survey could explain the results.
- Because cost savings for curbside delivery compared to door delivery are significant, Dr. Bradley repeated the analysis to compare curbside customers with cluster box customers. Curbside customers reported somewhat higher “read and respond” rates to advertising from local merchants with which they had done business and to advertising that contains a coupon. In addition, curbside customers reported that they were less inclined to throw away catalogs without reading them. Otherwise, the survey showed that curbside customers’ self-reported engagement with advertising mail is similar to that of cluster box customers.

Analysis of the Mail Moment and Household Diary Study data supported these findings.

- Mail Moment survey cluster box respondents pick up their mail with less frequency than do respondents with other modes of delivery. Only 62.5 percent of cluster box customers picked up their mail at the first opportunity; compared to 93.9 percent of door customers and 87.7 percent of curbside recipients. In this regard, curbside and door customers report more similar behavior than curbside and cluster box recipients.
- According to the Mail Moment data, cluster box recipients were significantly less likely to keep their advertising mail and significantly more likely to discard it without reading. Similar, although less marked differences, were found in the Household Diary Study data.

These results reflect variations in customer response data. We caution the reader that extended inferences concerning causality can be problematic. Because we are working with survey data, we are not claiming to be investigating causality. Rather, we are examining stated postal customers’ actions and reactions. This examination revealed differences between cluster box and door recipients. Although the survey design and analyses controlled for other factors, we have not constructed a causal model of cluster

⁵ Although the survey did not ask why customers would prefer cluster box delivery, previous OIG qualitative research indicated that these customers are concerned about the security of their mail. See OIG, *What America Wants and Needs from the Postal Service*, Report Number RARC-WP-14-009, February 18, 2014, https://www.uspsoidg.gov/sites/default/files/document-library-files/2014/rarc-wp-14-009_1.pdf.

box recipients' interactions with advertising mail and do not claim to have done so. Further work would be useful in identifying causal explanations of customer behavior by mode of delivery.

It should also be noted that we surveyed customers about existing modes. Our survey results imply, but do not definitively conclude, that door delivery customers who are converted to cluster box or curbside delivery will adopt the same behaviors and attitudes toward advertising mail as current cluster box or curbside customers. The survey found that over 60 percent of recipients said they would be displeased if their current mail receptacle were changed to a locked cluster box. This is another potential area for additional research.

Conclusions and Suggestions

Results of this survey indicate that self-reported customer engagement with advertising mail varies with mode of delivery. Door delivery customers report a higher level of engagement with advertising mail than customers who received their mail through a neighborhood cluster box. Differences in engagement between curb delivery customers and cluster box customers are similar, but less pronounced.

The results of this survey do not diminish the importance of centralized delivery to Postal Service cost savings efforts. We do suggest, however, that the Postal Service step up its customer research in this area. Part of that effort should be engagement with advertising mailers, especially those advertising mailers who stand to be most adversely affected by conversion of delivery to cluster boxes. More information would help them make more informed decisions about whom to target when designing their direct mail advertising campaigns.

Finally, it should be noted that we examined mode of delivery's impact(s) on advertising mail in broad terms. It could be the case that certain types or locations of cluster boxes might mitigate some of the adverse behaviors we discovered. More research is needed. Both the Postal Service and advertising mailers would benefit from having additional data on modes of delivery as soon as possible.

Responsiveness to Advertising Mail by Delivery Mode

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April 20, 2015

A. Introduction

Could the type of mail receptacle used by the U.S. Postal Service (the Postal Service) influence the ways in which postal customers interact with advertising mail? As the Postal Service contemplates a move to more cluster box deliveries, it is of value to examine this and other questions related to delivery mode. Specifically, do cluster box recipients differ from door or curbside recipients in the way they handle and interact with advertising mail? Moreover, if cluster box recipients are observed to have different interactions, are they due to variations in the mail receptacle or to other factors – e.g., demographic or other differences?

This paper investigates these questions. It analyzes survey data, including data from a new survey commissioned by the Office of the Inspector General (OIG) to see if there is any evidence that cluster box recipients report different advertising mail retention or discard rates than door recipients or curbside recipients. It also includes statistical analyses of data from two previous surveys conducted by the Postal Service.

Analysis of these three data sources indicates that cluster box recipients are less responsive to advertising mail than door recipients. The paper also investigates possible reasons, other than receptacle type, that could explain why cluster box recipients appear less interested in advertising mail and reported lower advertising mail response rates.

Because it is based upon survey data, the following analysis describes what people said, not what they necessarily did. It thus focuses on their perceptions and attitudes about advertising mail not their actual handling and responses to the mail. In addition, the analysis identifies patterns and statistical differences in the survey responses, but does not investigate causality. The results should be interpreted with this in mind.

B. The OIG - InfoTrends Survey

1. Survey Design

To obtain data needed for investigating variations of responsiveness to advertising mail by delivery mode, the OIG worked with InfoTrends, Inc. to structure and conduct a survey designed to gather insight on the impact of cluster box usage on consumers' behavior with respect to advertising mail.¹ (Different types of advertising mail, including nonprofit solicitation mail, are discussed in more detail in [Section C2](#).)

¹ The OIG–InfoTrends survey concentrated on advertising mail, but asked questions about other types of mail as well. This study is limited to the data related to advertising mail.

The survey asked a group of mail recipients 20 to 25 questions, with two main purposes.

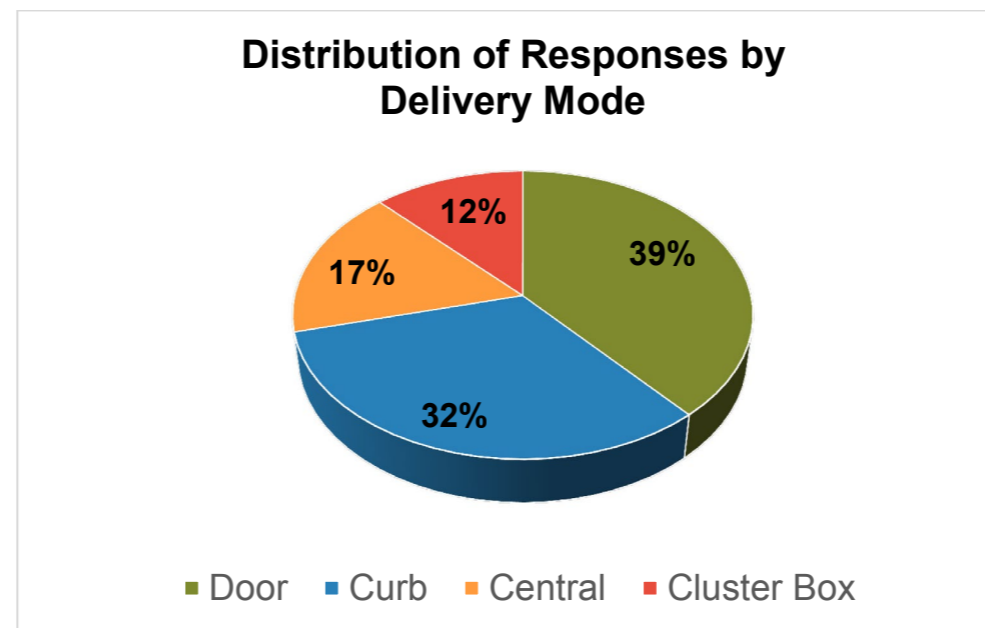
a.)The survey was designed to produce data useful for gaining an understanding of how postal customers feel about cluster boxes and if/how those receptacles affect their interactions with advertising mail. In order to do this, the survey investigated how consumers handled, opened, read, and discarded a wide variety of advertising mail. These questions were asked of mail recipients with different types of mail receptacles making it possible to investigate different patterns of advertising mail interactions by mode of delivery.

b.)The survey included a series of background questions about the participants. Response data can be used to check if any reported differences in mail interaction behavior can be attributed to factors other than mail receptacle type.

The OIG-InfoTrends survey was conducted in August 2014; and included 4,500 web-based responses and 500 phone-based responses for consumers who do not have Internet access. The 5,000 total responses provided the primary data used in the analysis of mail recipients.

2. Responses by Current Delivery Mode

The following chart displays the breakout of responses across current modes of delivery. It shows that 39 percent of respondents are in households with either a door slot or a mailbox near the door. Together, these categories comprise the “door” group and account for the largest group of total respondents by mode of delivery.²



² Of the 1,849 respondents classified as door recipients, 360 or 19.5 percent have a door slot, while the remaining respondents have a mailbox near the door. OIG-InfoTrends survey proportions presented in this chart are based on just the households receiving mail delivery and thus exclude a small proportion (about 4 percent) of respondents who picked up their mail at a post office or mailing center.

To provide some perspective on this distribution, these proportions derived from survey responses can be compared with the proportions of delivery points, by type, reported by the Postal Service for FY2013. The next table shows that for the Postal Service, curbside delivery comprises the largest proportion of deliveries. This contrasts with the OIG-InfoTrends sample which shows more door deliveries than curbside deliveries. The proportion of cluster box and central delivery points is about the same.³

Distribution of Delivery Points By Mode

	Cluster Box and Central	Curb	Door
OIG-InfoTrends Survey	29.0%	32.3%	38.6%
USPS Network FY 2013	30.0%	41.0%	28.0%

Note that the central and cluster box categories from the Infotrends data are combined into one category for this comparison because that is the way the Postal Service delivery points data were presented.⁴ For the purposes of this paper, the differences in mode proportions are not critical because there are sufficient responses within each mode and the OIG-InfoTrends survey was designed to be representative of the U.S. population, not to replicate the Postal Service's network as currently configured.

3. Profile of Participants

The OIG-InfoTrends survey was sent to a general population sample and monitored by recipient age, gender, and region. The monitoring was done to ensure a match to the relevant proportions in the U.S. Census.

Before examining whether there is any evidence that cluster box recipients have different attitudes toward their advertising mail or handle their mail in a way that is different from other types of recipients, we need to check the demographic profiles of recipients to see if they exhibit material differences across receptacle types. If so, then it may be necessary to control for those differences when comparing cluster box recipients to other types of recipients.

The following table provides the overall mean (average) values and the means (averages) by receptacle type for important demographic variables such as age, income, and education.

³ Central delivery boxes are banks of mailboxes in apartment buildings, condominiums, etc.

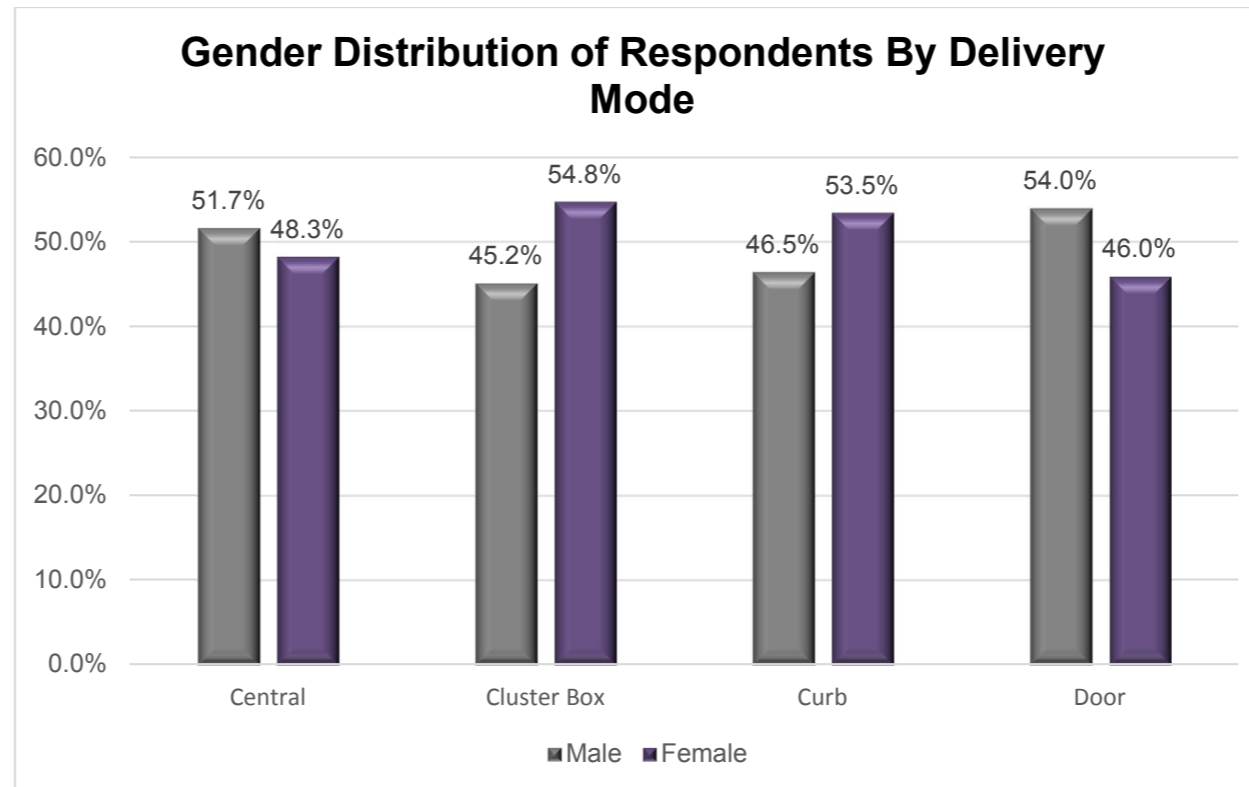
⁴ See, United States Government Accountability Office, "U.S. Postal Service: Delivery Mode Conversions Could Yield Large Savings, but More Current Data are Needed," May 2014, p. 6.

Average Values for Key Demographic Variables

	Full Sample	Cluster Box	Curb	Door	Central
Age (Years)	41.1	42.0	43.1	39.8	39.5
College Graduates (%)	52.0%	53.1%	48.7%	55.8%	52.0%
Income (\$1,000)	\$60.7	\$64.7	\$64.8	\$61.7	\$49.8
Unemployed (%)	13.2%	12.5%	12.9%	11.8%	17.2%

In all instances, the average values for cluster box recipients were quite close to the full sample averages, suggesting that there is nothing atypical about their demographic profiles. In addition, the demographics for cluster box recipients differed little from the demographics for door and curb recipients. This observation is important when comparing how these different types of mail recipients handle their mail; it suggests that any differences in attitudes towards their advertising mail cannot be attributed to the demographic factors of age, education, income, or employment.⁵

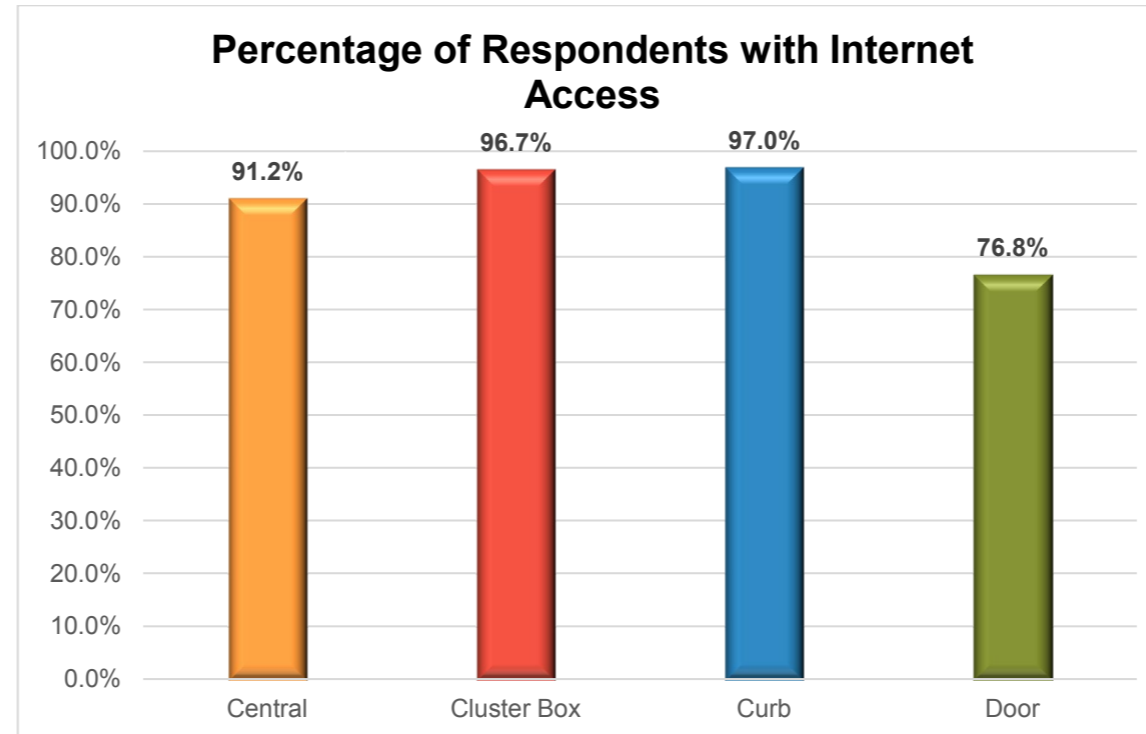
One area in which there was a marked difference between door recipients and cluster box recipients was in the distribution by gender. Respondents with door receptacles were 54 percent male, whereas cluster box respondents were only 45 percent male. These differences were large enough to merit further analysis in evaluation of survey results. Curb respondents had a gender distribution that was quite similar to the gender profile for cluster box recipients.



⁵ For expositional convenience, we will define mail recipients by the type of receptacle in which they receive their mail. Thus, the term “curb recipient,” refers to those households who receive their mail in a curb line box.

The potential impacts (or lack of potential impacts) of gender distribution are discussed in [Section E2](#).

One other area of difference between door recipients and cluster box recipients relates to their relative Internet access at home. Door recipients reported a much lower rate of Internet access than the other type of recipients. This also could have an impact on comparisons of door recipients to other types of recipients and bears investigation when further evaluating survey results.



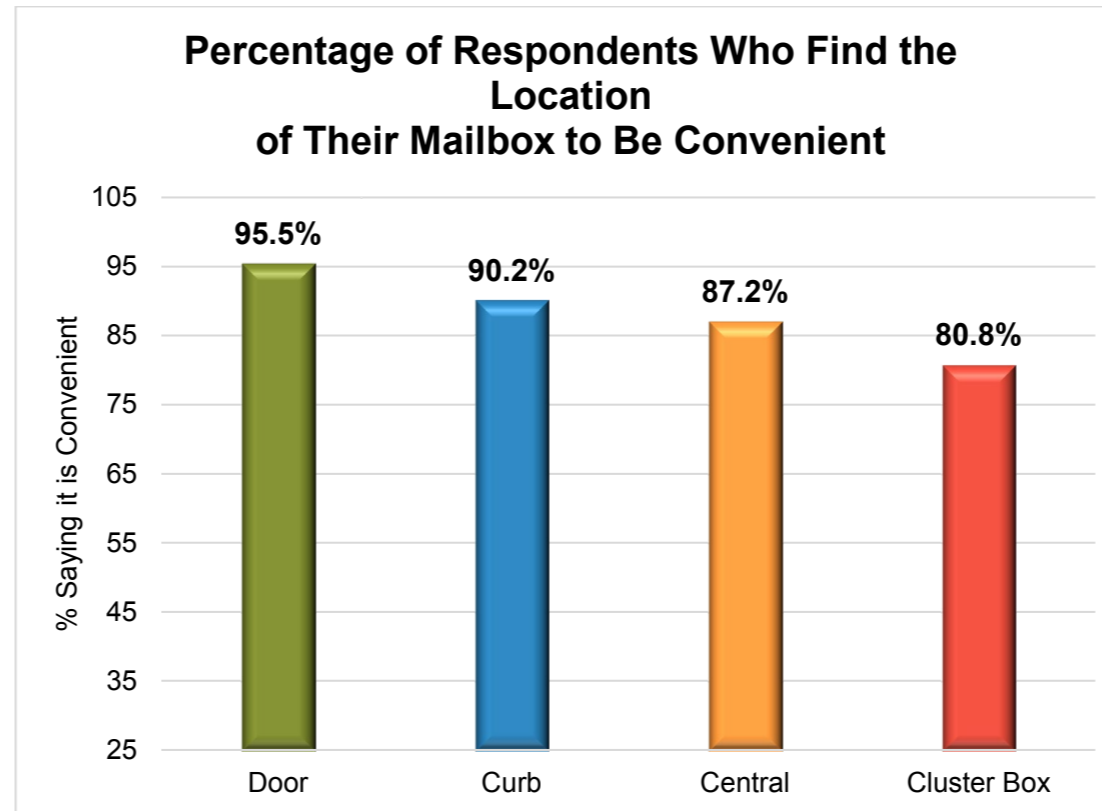
The potential impacts of differences in Internet access are discussed in [Section E3](#). Responses by population density and by residential type are discussed and investigated in [Section E4](#).

C. Cluster Box Recipients' Interactions with Advertising Mail Are Different

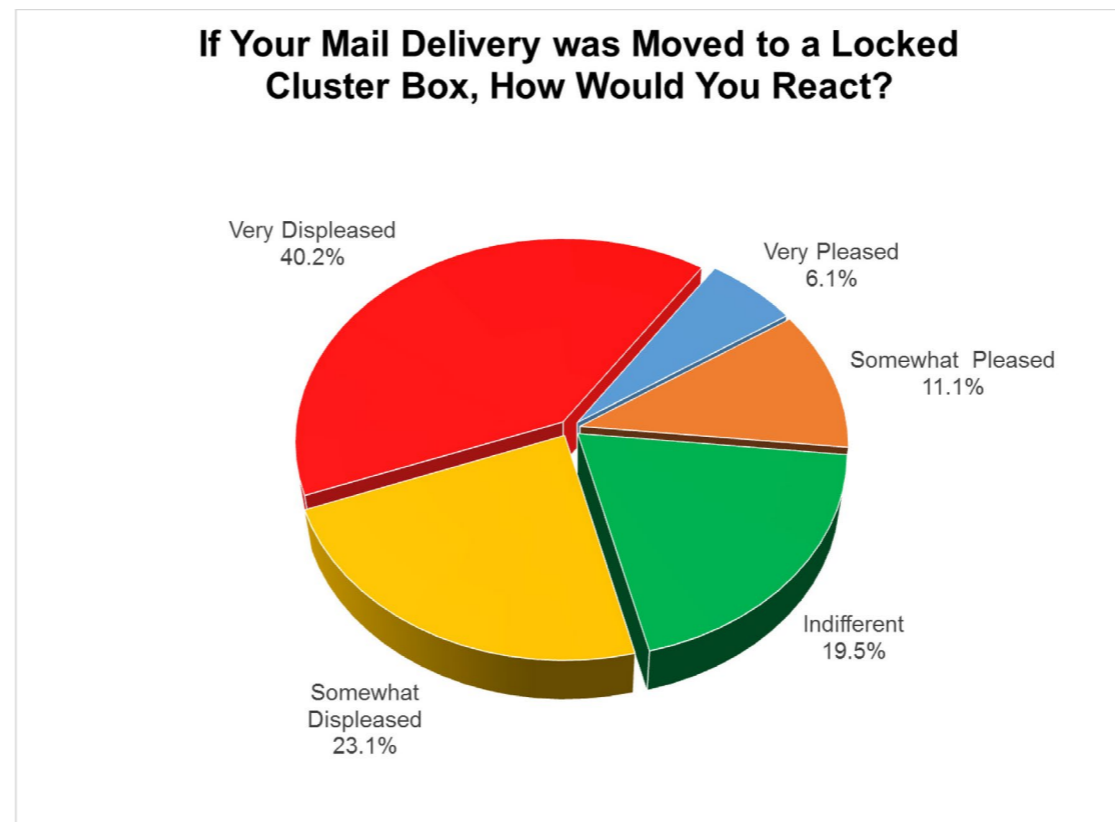
1. General Observations

The OIG-InfoTrends survey produced evidence indicating that cluster box recipients are less closely connected to advertising mail than door recipients. The differences were found to be statistically significant after a series of statistical tests, detailed below.

One set of evidence relates to how recipients view cluster boxes. For example, cluster box recipients found their mailbox location to be less convenient than door or even curb recipients. Nevertheless, over 80 percent of cluster box recipients stated that they found their mailbox location to be convenient.



Perhaps more importantly, the survey found that among the recipients that did not already have a cluster box, over 60 percent would be displeased if their mail receptacle were changed to a locked cluster box. See figure below.



2. Observations by Type of Advertising Mail

A second set of evidence relates to the attention that different types of mail recipients gave to the advertising mail they received. The OIG-InfoTrends survey asked survey participants to report how they handled different types of advertising mail. Participants were asked to choose one of the following answers that described how they handled their advertising mail by type of mail piece:

1. Read and respond to the mail⁶
2. Read and throw away the mail
3. Set the mail aside for later use
4. Throw away the mail without reading it.

The OIG-InfoTrends survey examined many different types of advertising mail to see how interactions with that mail varied by type. Participants were asked which action they took for the following seven types of advertising mail:

1. Advertising mail from local companies I do business with
2. Advertising mail from national companies I do business with
3. Advertising mail from companies I do not do business with
4. Donation solicitations
5. Credit card solicitations
6. Catalogs
7. Mail that includes a coupon.

Summary of OIG-InfoTrends Survey Results

	<u>Read and Response Rates</u>			<u>Toss without Reading Rates</u>		
	Cluster Box	Curb	Door	Cluster Box	Curb	Door
Known Local Business	10%	13%	24%	13%	12%	12%
Known National Business	9%	9%	19%	15%	14%	11%
Unknown Business	3%	4%	8%	46%	46%	32%
Donation Solicitation	4%	5%	12%	40%	42%	31%
Credit Card Solicitation	3%	4%	11%	60%	61%	40%
Catalogs	6%	6%	12%	17%	14%	12%
Coupons	14%	17%	20%	6%	5%	6%
All Types	7%	9%	15%	30%	30%	22%

⁶ These are the percentages of respondents who said they would read and respond to a particular advertising mail piece. Actual response rates are likely to be lower.

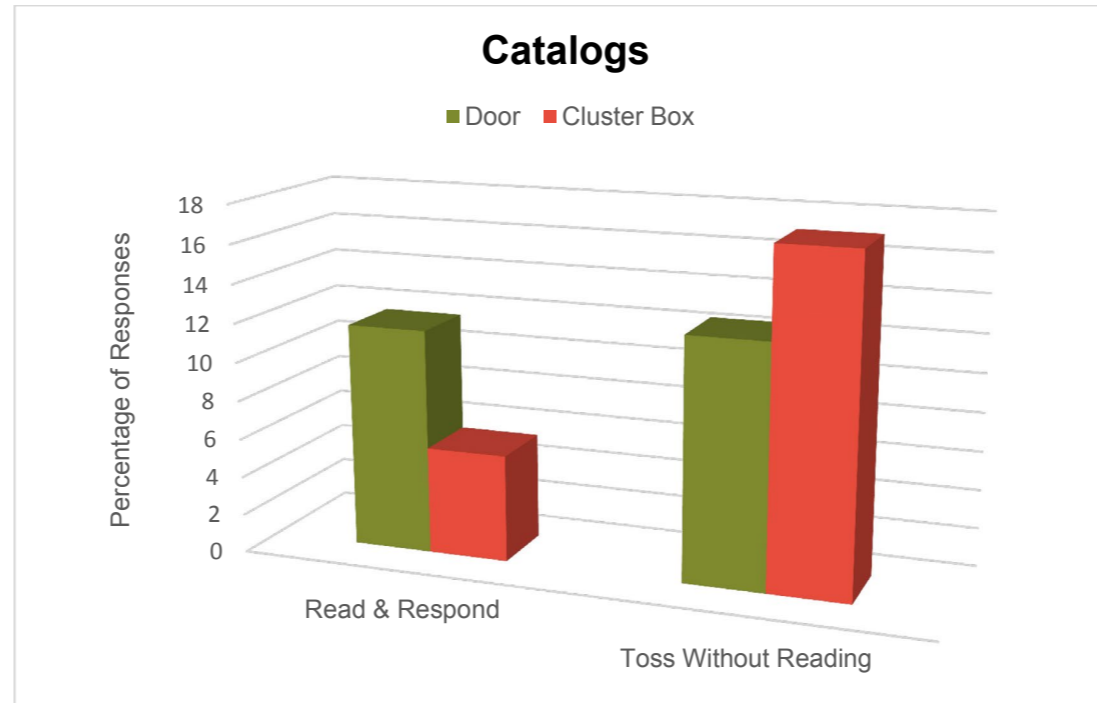
The results indicated that different types of advertising mail were handled in different ways by all recipients.⁷ Credit card solicitations were most likely to be thrown away without being read. Charitable solicitations were also discarded at a high rate, but not as high as credit card solicitations. Both catalogs and advertising mail from companies with which the recipient has done business had relatively high read and respond rates. Finally, mail with coupons included generated high response rates across-the-board.

Of particular interest, the OIG-InfoTrends survey produced data on how the read and respond rates for advertising mail varied across groups of participants defined by their type of mail receptacle. Comparing these rates provides some insight into whether or not the mail receptacle might affect how recipients interact with their advertising mail.

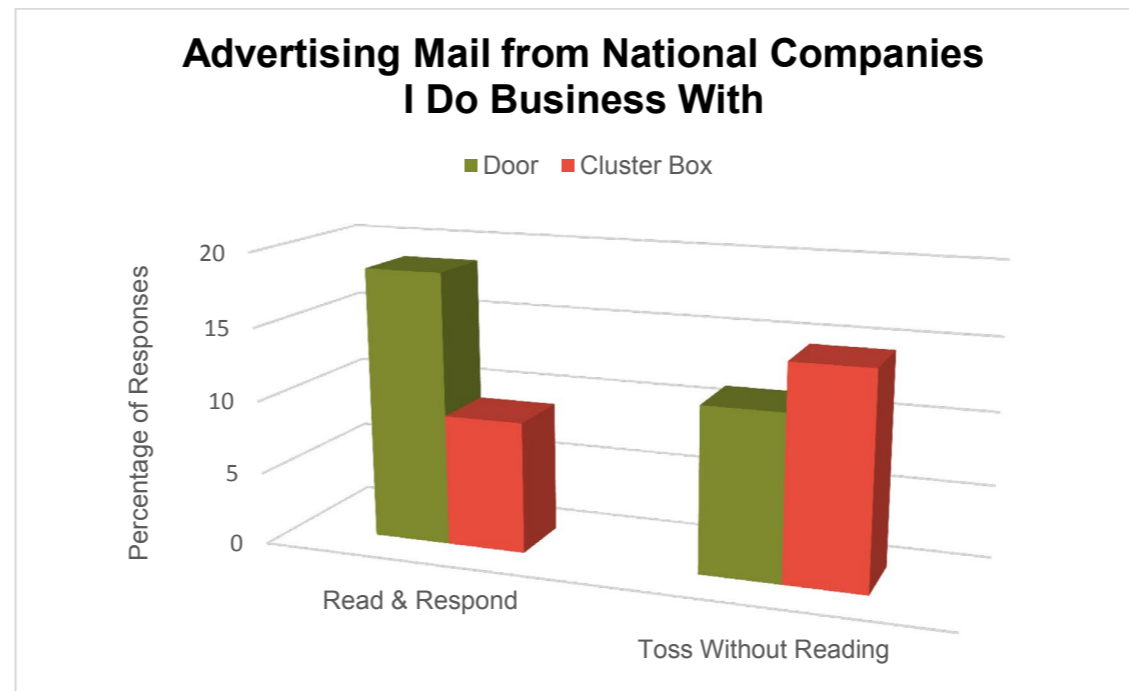
First, the OIG-InfoTrends data were used to compare the read and respond rates, as well as the discard rates, for mail recipients with cluster boxes with the read and respond rates and discard rates for mail recipients who received door delivery. The next set of figures graphically displays the results of this comparison.

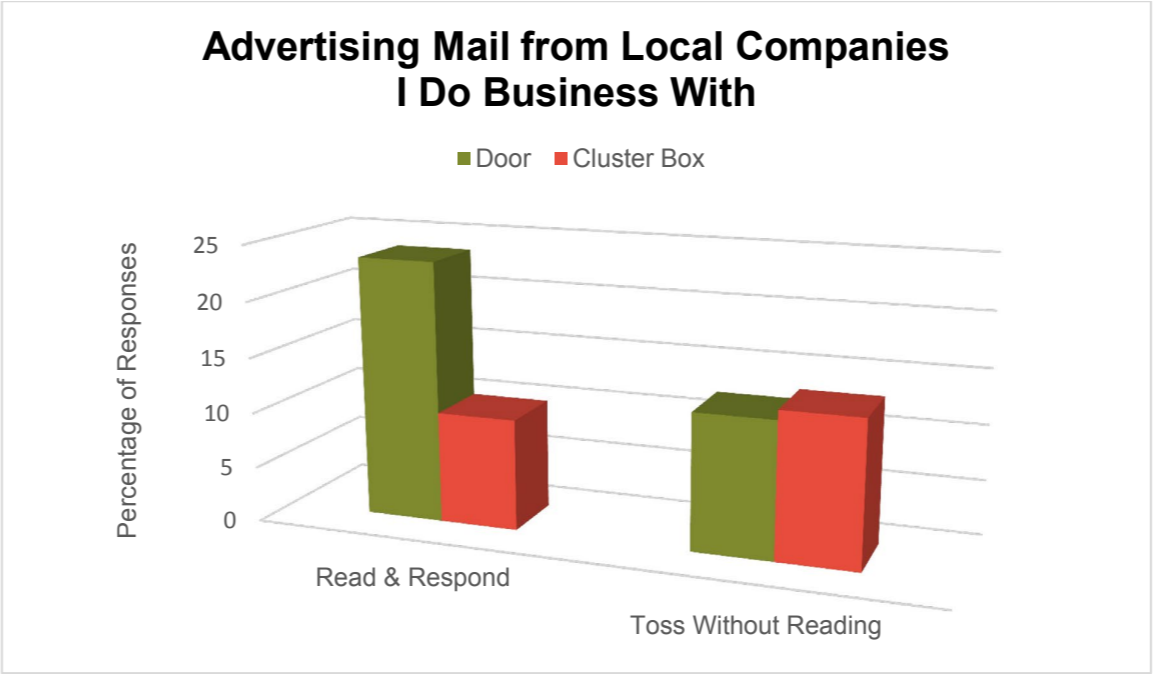
The figure below shows the read and discard rates for catalogs. The catalog read and respond rate for door recipients, at 11.6 percent, was twice the read and respond rate for cluster box recipients, at just 5.5 percent. In contrast, 17.1 percent of cluster box recipients threw away their catalogs without looking at them but just 12.5 of door recipients did so. These results suggest that cluster box recipients were less receptive to catalogs than were door recipients.

⁷ Note that the sum of the read and respond rate and the discard without reading rate for any type of advertising mail is less than 100 percent for each delivery mode. This is because survey participants also provided “read and throw away” and “set aside for later” responses. Because the implications of these responses for advertising mail engagement are less clear, our initial analysis of the survey data focused just on the read and respond and discard rates. Future research may be able to glean additional insights from the intermediate categories.



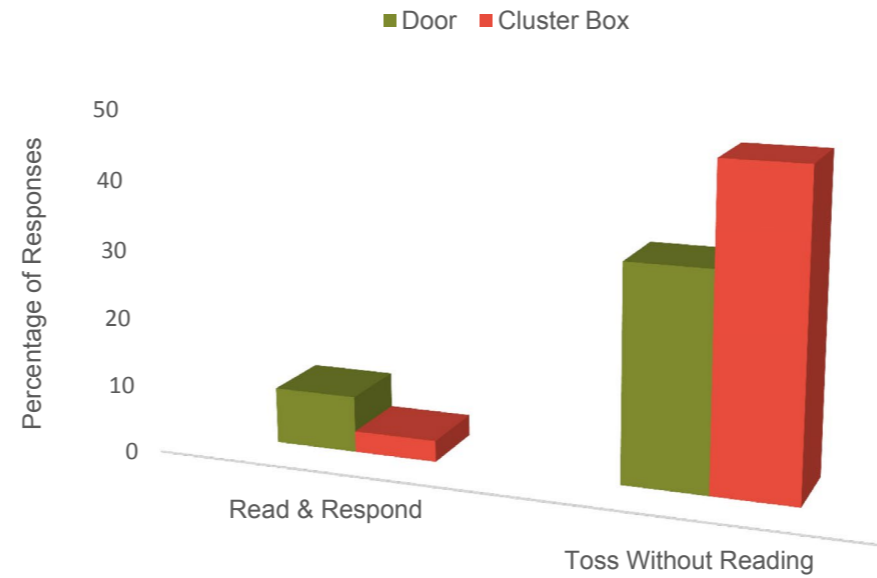
Next, we investigated advertising from companies with which the mail recipient has already done business, including both local companies and national companies. Both cluster box recipients and door recipients were more receptive to this type of mail than they were to catalogs, as the read and respond rates were higher than for catalogs. But again, both graphs display the pattern that door recipients had higher read and respond rates and lower discard rates.



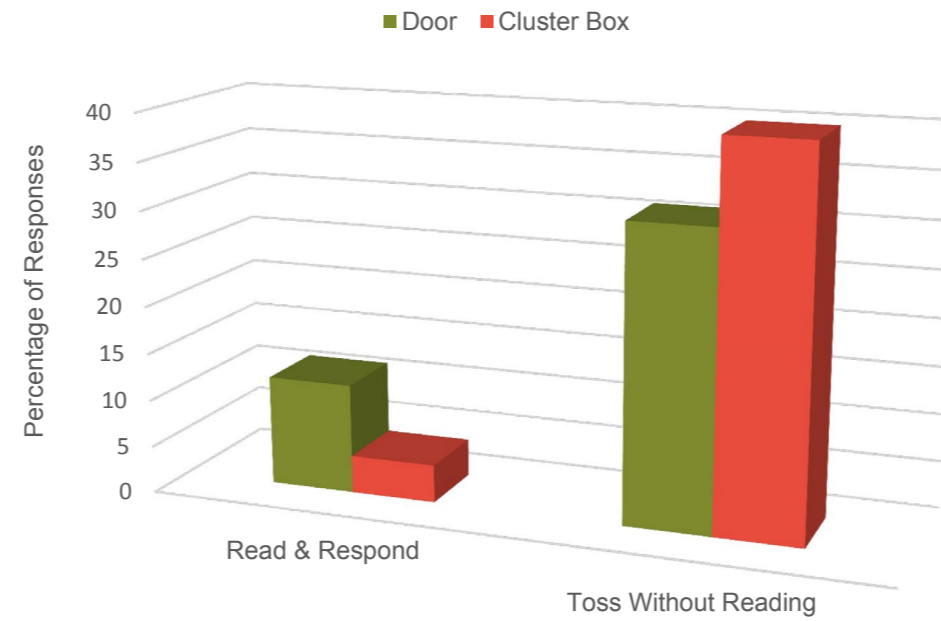


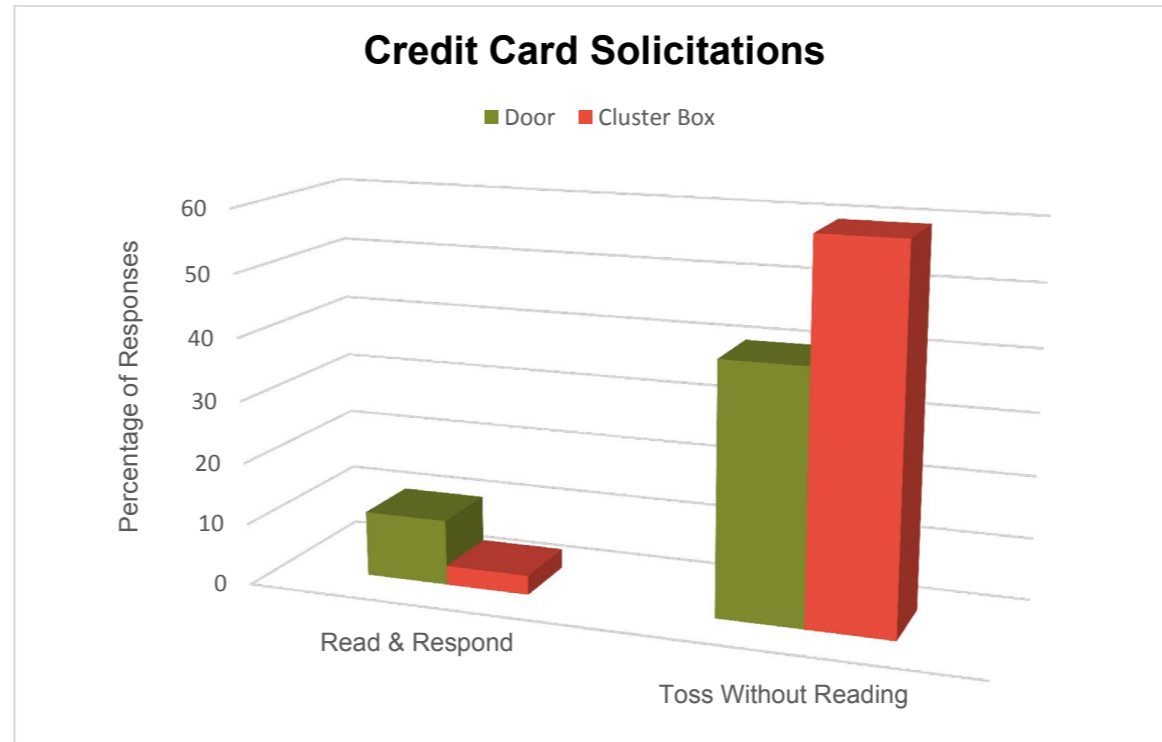
As should be expected, the read and respond rates were much lower, and the discard rates were much higher, for advertising mail from companies with which the recipient had not done business, regardless of receptacle type. However, this difference in overall rates did not change the relative pattern exhibited by other types of advertising mail. Door recipients exhibited higher read and respond rates and lower discard rates than cluster box recipients.

Advertising Mail from Companies I Do Not Do Business With



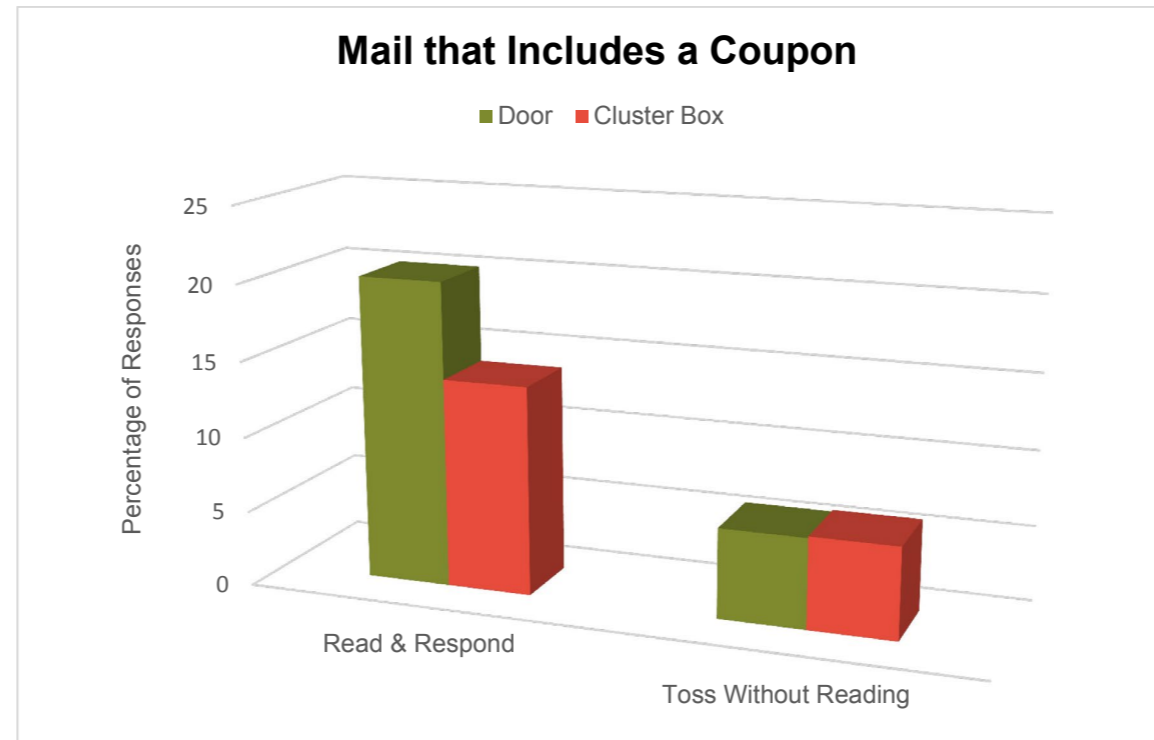
Donation Solicitations





Credit card and non-profit solicitations generated similar patterns of interaction, albeit with recipients less likely to interact with credit card solicitations. Just 10.6 percent of door recipients and 3.1 percent of cluster box recipients read and responded to credit card solicitations. At the same time, 40.2 percent of door recipients and 59.5 percent of cluster box recipients discarded credit card solicitations without looking at them.

The last type of mail covered in the survey was advertising mail that included a coupon. The next figure shows that coupon mail also had higher read and respond rates for door recipients, so all seven types of advertising mail have this characteristic. But, unlike the other six types of mail in which the discard rates were higher for cluster box recipients, the discard rate for coupon mail was the same for cluster box and door recipients.



These results suggest that cluster box recipients were less responsive than door recipients to the ad mail they received, but statistical evidence on these differences is helpful in assessing the validity of this comparison. This requires formal testing as to whether there is a difference between the responsiveness of cluster box recipients and the responsiveness of door recipients. By testing differences in both the “read and respond” proportions and the “throw out without reading” proportions, we can determine that the observed differences are statistically significant.

3. Hypothesis Testing

a. Cluster Box and Door Read and Respond Rates

The statistical testing starts with the assumption that the groups of door and curb recipients are independent samples for basis of calculating the proportions of mail read and responded to. (This is typically the case in surveys, unless the subset respondents are matched.⁸) The next step is to label the outcome that a piece of mail is “read and responded to” by a door recipient as a “success” and define p_1 as the probability of a success (a mail piece is read and responded to) for door delivery recipients. Quantitatively, p_1 is measured as the ratio of pieces read and responded to relative to

⁸ For respondents to be matched, they either have to be the same people in both groups, or people who have been individually matched on an important characteristic that might potentially influence the outcome. For example, matching would occur if both cluster box and door recipients were restricted to be women between the ages of 45 and 60. That is not the case in the InfoTrends survey. Door recipients and cluster box recipients are two completely different groups of individuals that we want to compare to determine if they are significantly different from one another with regard to their interaction with advertising mail.

all pieces handled by door recipients. The next step is to define p_2 as the probability of success for cluster box recipients and measured by the proportion of pieces read and responded to by cluster box recipients. The observed success rates in the two samples, \hat{p}_1 and \hat{p}_2 are the estimates of their corresponding population success rates. The null hypothesis to be tested is that $p_1 = p_2$, or that $p_1 - p_2 = 0$. Note that under this null hypothesis, proportions of mail pieces read and responded to are the same for both door and cluster box recipients, so one can pool the information across the two samples to obtain a common population proportion of success, p_c . That common probability of success is given by:

$$\hat{p}_c = \frac{n_1\hat{p}_1 + n_2\hat{p}_2}{n_1 + n_2}$$

With this definition in place, one can form the test statistic required for testing the null hypothesis of an equal proportion of mail read and responded to for door and cluster box recipients as:

$$\text{Test Statistic} = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\hat{p}_c (1 - \hat{p}_c) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Computing this test statistic permits testing the hypotheses of equal read and respond rates. The critical value at a 95 percent level of confidence is 1.96, and the critical value at a 90 percent level of confidence is 1.65.⁹ This means the null hypothesis of equal responsiveness between door and cluster box recipients is rejected if the calculated test statistic is greater than either of these values.

The [table](#) below presents the hypothesis tests for the seven types of advertising mail included in the survey. It shows that for all seven types of mail, the read and respond rate for cluster box recipients was smaller, and sometimes greatly smaller, than for door recipients. For “advertising mail from national companies with which the recipient does business,” the read and respond rate for cluster box recipients was half of what it was for door recipients and for “donation solicitations” the cluster box recipient rate was about one-third of the door recipient response rate. Moreover, all of the test statistics

⁹ Two-tailed tests are used when investigating the various hypothesis surrounding cluster box recipients and door (or other mode) recipients. In a two-tailed test the null hypothesis of equality between two values is compared to an alternative hypothesis that the two values are not equal, without restriction about which one of the two values is greater. In a one-tailed test, the null hypothesis of equality between the two values, is compared to an alternative is that one of the values is greater (or lesser) than the other. For a given level of significance, it is harder to reject the null hypothesis with a two-tailed test than it is with a one-tailed test, so the application of two-tailed tests is a conservative approach.

are well above 1.96, indicating that there is little chance that these results are simply due to statistical fluctuation.

Tests of the Hypotheses that the Read and Respond Rate for Cluster Box Recipients Is the Same as for Door Recipients

Known Local Business				Known National Business			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	10.0%			Cluster Box	9.0%		
Door	23.5%	7.04	Reject at 95%	Door	18.7%	5.48	Reject at 95%

Unknown Business				Donation Solicitations			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	3.1%			Cluster Box	4.0%		
Door	8.3%	4.23	Reject at 95%	Door	11.6%	5.40	Reject at 95%

Credit Card Solicitations				Catalogs			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	3.1%			Cluster Box	5.5%		
Door	10.6%	5.52	Reject at 95%	Door	11.6%	4.23	Reject at 95%

Mail that Includes a Coupon			
Mode	Sample Proportion	Test Statistic	Result
Cluster Box	13.8%		
Door	20.2%	3.41	Reject at 95%

b. Cluster Box and Door Discard Rates

The previous results indicate that cluster box recipients were less responsive to advertising mailings than door recipients, in terms of their positive responses to those mailings. However, it is also possible to test for differences in mail recipients' negative responses to ad mailings. As discussed above, the OIG-InfoTrends survey also measured the proportion of participants that threw out their advertising mail without reading it. The statistical tests used to examine read and respond rates can also be used to see if cluster box recipients' discard rates were the same as for door recipients.

As before, the null hypothesis is that discard rates are the same across receptacle types and the absolute critical values are the same. The one difference is that negative values for the calculated test statistics mean that the cluster box discard rate is greater than door discard rate. This means that the associated critical values will be negative at -1.65 and -1.96.

The next table presents the results of testing this hypothesis for the seven mail categories. The results are not as uniform in rejecting the null hypothesis as for the read and respond tests, but they do indicate that cluster box recipients generally had higher discard rates than door recipients.

In all cases, the discard rate was higher for cluster box recipients than for door recipients, and the null hypothesis of an equal discard rate for door and cluster box recipients is rejected for five of the seven mail types. Only two categories, “advertising mail from local companies with which the recipient does business” and “mail that includes a coupon,” had statistically similar discard rates. In some cases, the difference in the discard rates was large. Door recipients discarded 40 percent of their credit card solicitations without looking at them while cluster box recipients discarded 60 percent. Similarly, door recipients immediately discarded about 32 percent of “advertising mail from companies with which they do not do business,” whereas cluster box recipients immediately discarded 46 percent of that mail.

Tests of the Hypotheses that the Do Not Read and Discard Rate for Cluster Box Recipients Is the Same as for Door Recipients

Known Local Business				Known National Business			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	13.2%			Cluster Box	14.5%		
Door	12.3%	-0.55	Do not reject	Door	11.3%	-2.08	Reject at 95%

Unknown Business				Donation Solicitations			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	46.4%			Cluster Box	40.0%		
Door	31.6%	-6.47	Reject at 95%	Door	31.2%	-3.93	Reject at 95%

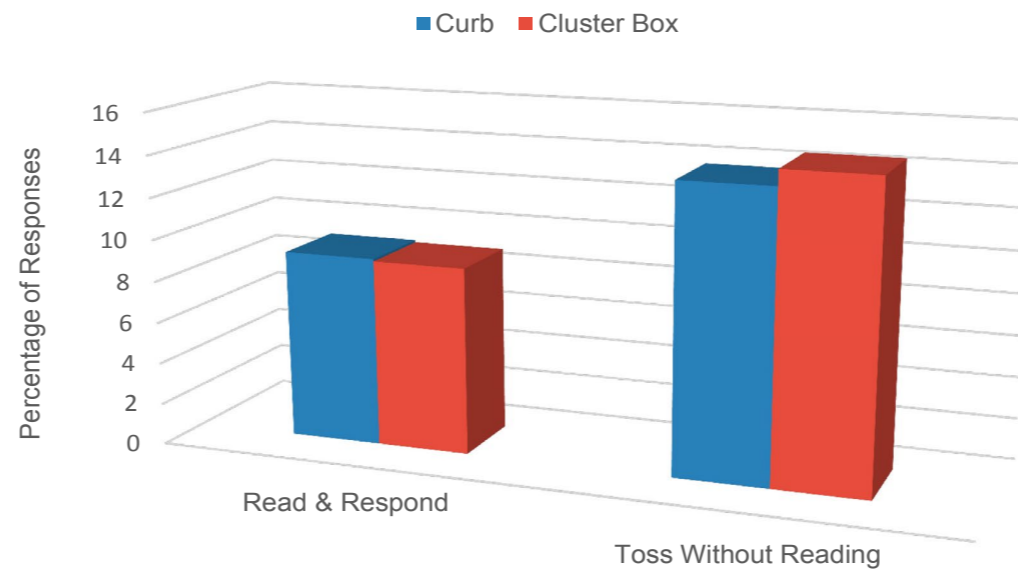
Credit Card Solicitations				Catalogs			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	59.5%			Cluster Box	17.1%		
Door	40.2%	-8.14	Reject at 95%	Door	12.5%	-2.84	Reject at 95%

Mail that Includes a Coupon			
Mode	Sample Proportion	Test Statistic	Result
Cluster Box	6.1%		
Door	6.0%	-0.10	Do not reject

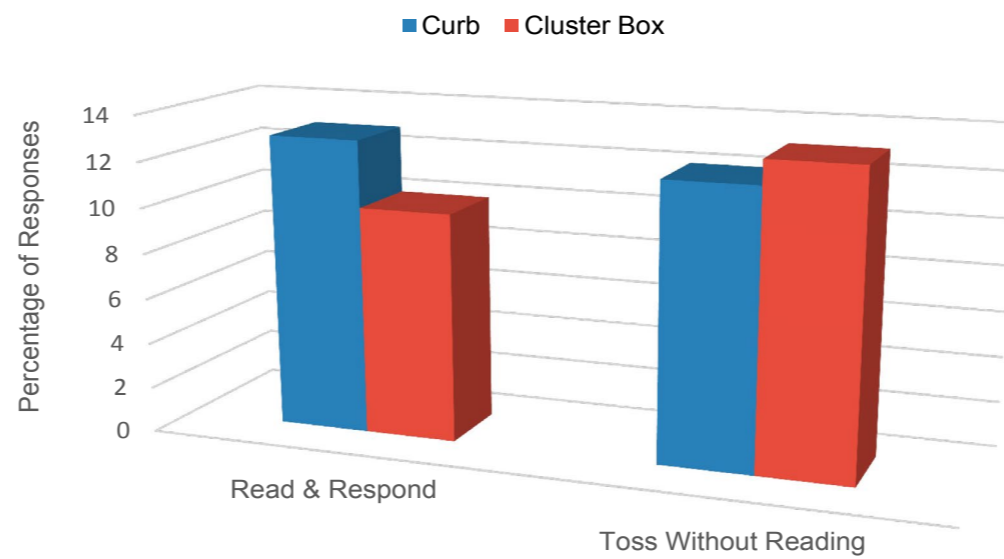
c. Cluster Box and Curb Recipients

Comparison of cluster box recipients with door recipients produced consistent evidence that door recipients were more engaged with advertising mail. The same methods can be used to examine possible differences between cluster box recipients and curb recipients. The next page presents the set of graphs comparing read and respond and discard rates for curb recipients and cluster box recipients. The graphs reveal far fewer differences between curb and cluster box recipients than there were for door and cluster box recipients.

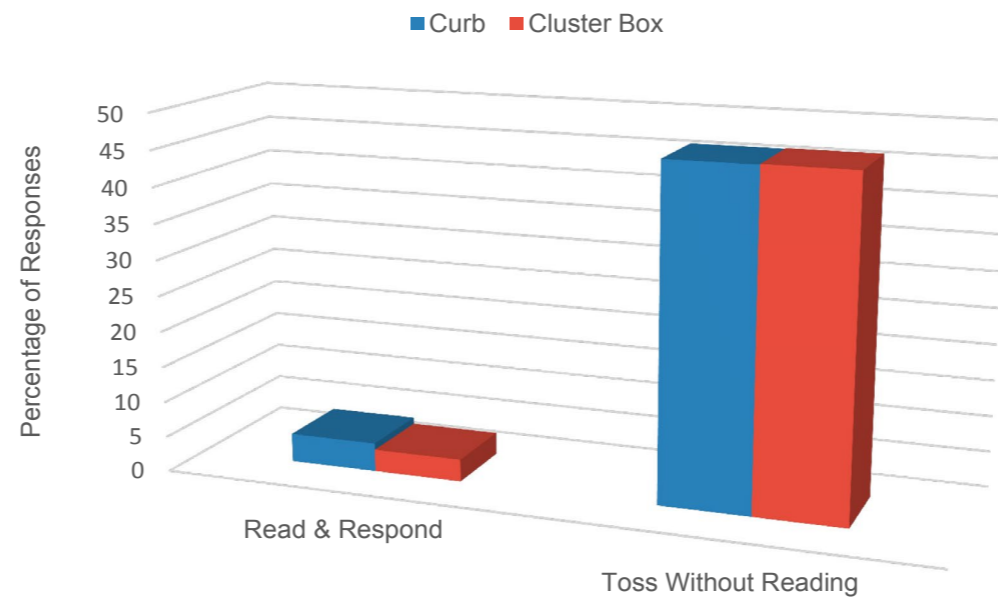
Advertising Mail from National Companies I Do Business With



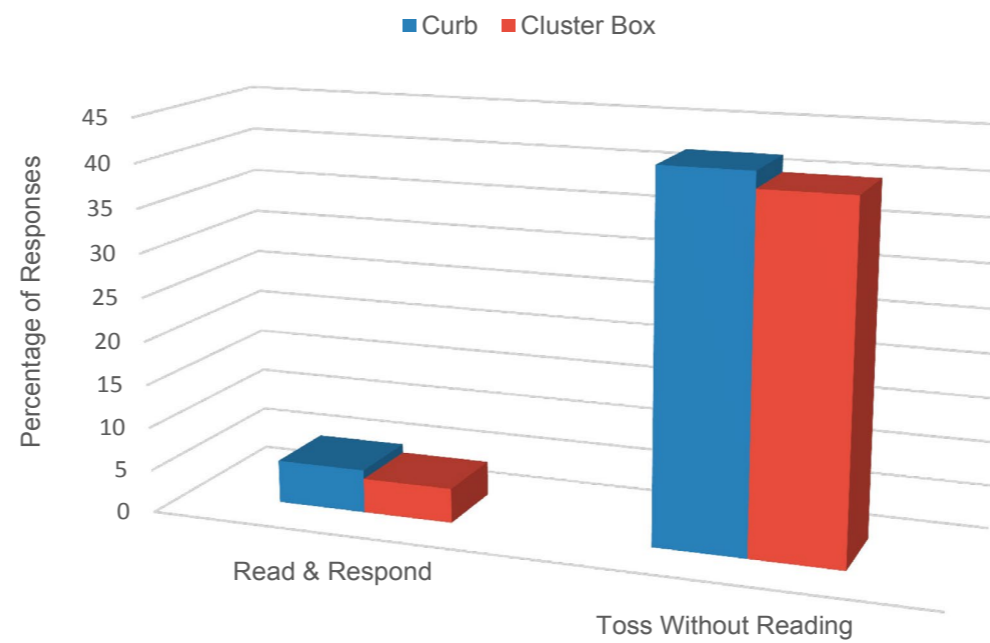
Advertising Mail from Local Companies I Do Business With



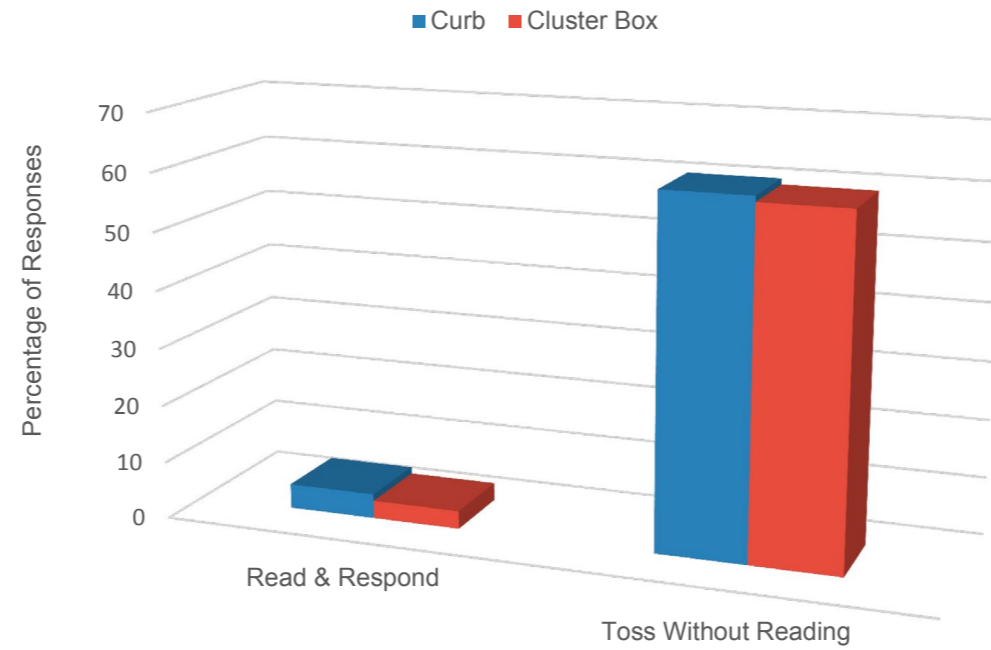
Advertising Mail from Companies I Do Not Do Business With



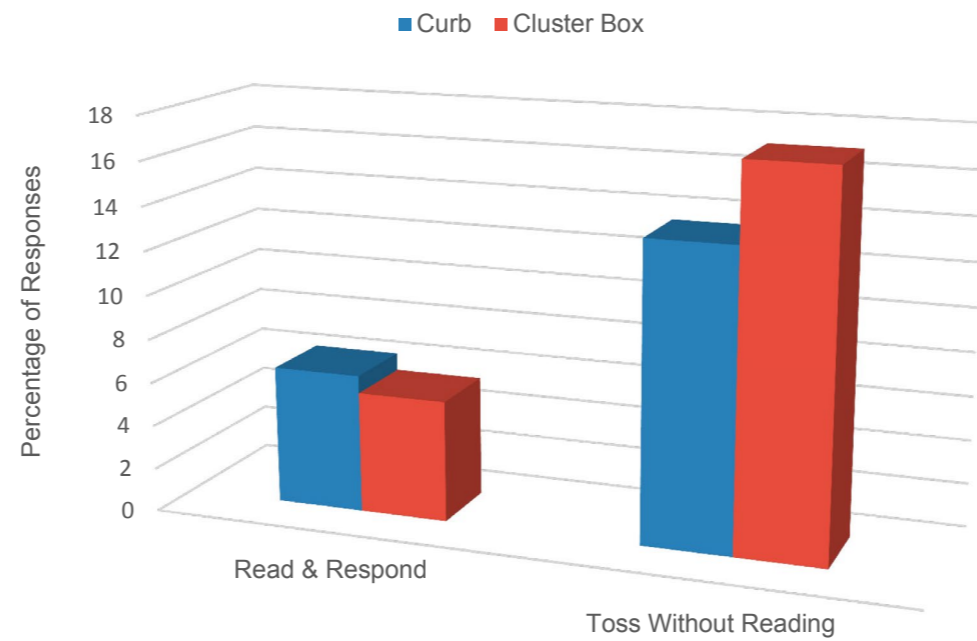
Donation Solicitations

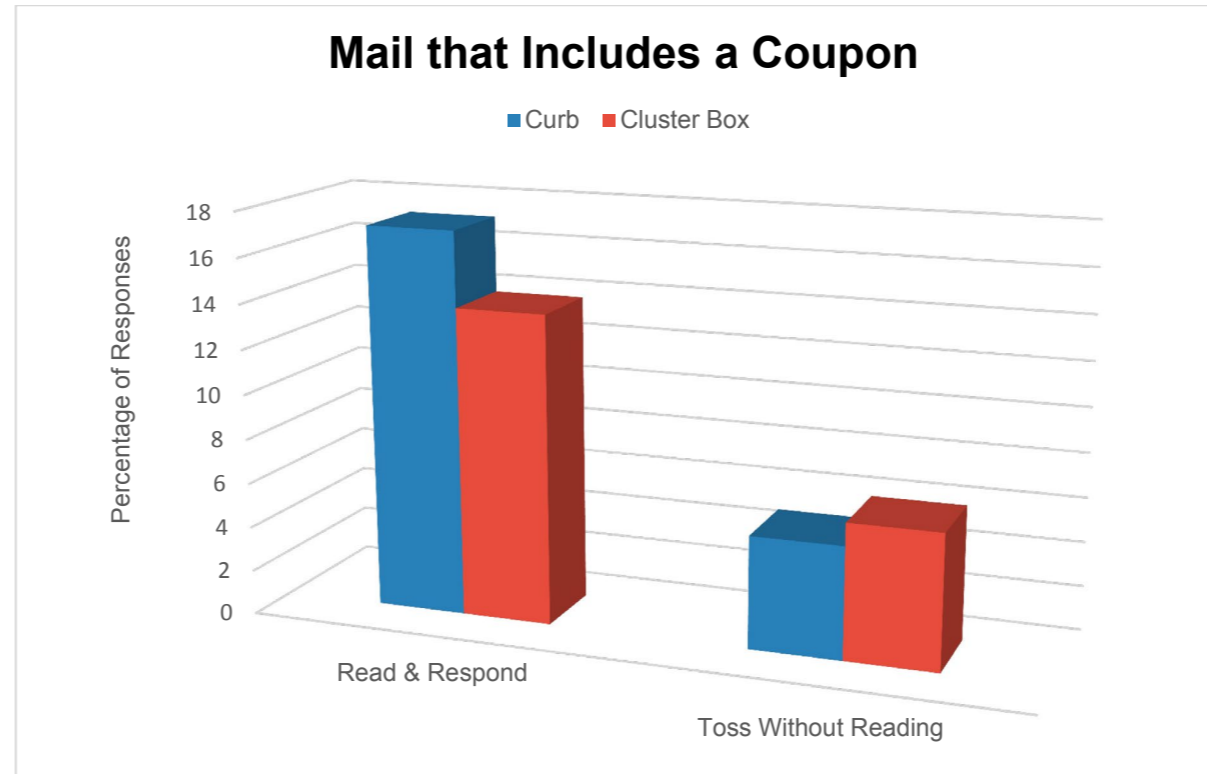


Credit Card Solicitations



Catalogs





While the read and respond rates were slightly larger for curb recipients than cluster box recipients, the differences were quite small. Similarly, discard rates were very similar across people receiving mail in these two types of receptacles.

d. Cluster Box and Curb Tests

This similarity is highlighted by results of statistical tests. The next set of tables contains the results of testing the hypotheses that the read and respond rates were the same for cluster box and curb recipients for the seven types of advertising mail. In no instance can this hypothesis be rejected at the 95 percent level, and only twice can it be rejected at the 90 percent level.¹⁰ This suggests a strong similarity between the read and respond rates for the two types of recipients.

¹⁰ If a one-tailed test was performed, two of the hypotheses could be rejected at the 95 percent level.

Tests of the Hypotheses that the Read and Respond Rate for Cluster Box Recipients Is the Same as for Curb Recipients

Known Local Business

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	10.0%		
Curb	12.9%	1.82	Reject at 90%

Known National Business

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	9.0%		
Curb	9.1%	0.08	Do not reject

Unknown Business

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	3.1%		
Curb	4.0%	0.97	Do not reject

Donation Solicitations

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	4.0%		
Curb	5.0%	0.97	Do not reject

Credit Card Solicitations

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	3.1%		
Curb	4.3%	1.22	Do not reject

Catalogs

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	5.5%		
Curb	6.3%	0.68	Do not reject

Mail that Includes a Coupon

Mode	Sample Proportion	Test Statistic	Result
Cluster Box	13.8%		
Curb	17.2%	1.86	Reject at 90%

Testing discard rates also reinforces the similarity in the way that cluster box and curb recipients interact with advertising mail. In only one case, catalogs, was the hypothesis of equal discard rates rejected.

Tests of the Hypotheses that the Do Not Read and Discard Rate for Cluster Box Recipients Is the Same as for Curb Recipients

Known Local Business				Known National Business			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	13.2%			Cluster Box	14.5%		
Curb	12.1%	-0.68	Do not reject	Curb	13.8%	-0.47	Do not reject

Unknown Business				Donation Solicitations			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	46.4%			Cluster Box	40.0%		
Curb	46.3%	-0.04	Do not reject	Curb	41.8%	0.82	Do not reject

Credit Card Solicitations				Catalogs			
Mode	Sample Proportion	Test Statistic	Result	Mode	Sample Proportion	Test Statistic	Result
Cluster Box	59.5%			Cluster Box	17.1%		
Curb	60.5%	0.40	Do not reject	Curb	13.6%	-2.30	Reject at 95%

Mail that Includes a Coupon			
Mode	Sample Proportion	Test Statistic	Result
Cluster Box	6.1%		
Curb	5.0%	-0.80	Do not reject

D. Evidence from Other Surveys

1. Alternative Sources of Data

In order to evaluate the results from the OIG-InfoTrends survey, the OIG also obtained relevant data from two recent Postal Service surveys: the Mail Moment survey and the Recruitment Questionnaire of the Household Diary Study. The Mail Moment survey was conducted by InnoMedia in 2012. It had 1,078 participants and was designed to foster understanding of the value of the consumer’s daily “mail moment.” That is, the Mail Moment survey was designed to investigate the value that households receive from different kinds of commercial and advertising mail.

The Recruitment Questionnaire of the Household Diary Study is part of an ongoing study of mailing behavior by the Postal Service. The version of the Recruitment Questionnaire used in this analysis was taken in 2013-2014 and had 4,549 participants. While much of the Household Diary Study analysis focuses on the quantities of mail sent and received by households, the Recruitment Questionnaire elicits a variety of attitudinal and demographic information from diary study participants.

Although these two postal surveys were not specifically designed for cluster box research and asked different questions from the OIG-InfoTrends survey, they both generated data that can be used to potentially corroborate or contradict the OIG-InfoTrends results. These data are discussed below.

a. Mail Moment Survey

The Mail Moment survey data support the inference that cluster box recipients have lower retention rates and higher discard rates than either door or curb recipients. The Mail Moment survey asked several questions that can contribute to an investigation of different interactions with advertising mail for cluster box recipients than for door or curb recipients. For example, one question in the Mail Moment survey elicited participants' interest in picking up their mail at the first opportunity. As the next table shows, cluster box recipients were far less likely to pick up their mail at the first opportunity than were either door or curb recipients. This suggests that cluster box recipients were less engaged with their mail than other types of recipients.

Picked Up Mail at First Opportunity

Receptacle Type	Proportion
Cluster Box	62.5%
Curb	87.7%
Door	93.9%

Another question in the Mail Moment survey asked participants to identify what they did with the advertising mail, catalogs, and flyers they received. The choices included keeping the mail, discarding the mail without reading it, or reading the mail and then discarding it. The next table presents both the retention rate and the discard-without-reading rate for door, curb, and cluster box recipients. The table shows that cluster box recipients had the lowest retention rate and the highest discard-without-reading rate.

Handling of Advertising Mail, Including Catalogs and Flyers

Receptacle Type	Proportion Kept	Proportion Discarded Without Reading
Cluster Box	20.9%	38.1%
Curb	25.7%	34.9%
Door	30.9%	31.8%

Using the statistical procedure described in the previous section, it is possible to test whether the retention rate for cluster box recipients was significantly less than for door recipients or curb recipients. It also possible to test if the cluster box recipient discard rate was significantly greater than for door or curb recipients. The next table presents the calculated test statistics for those tests. (Recall that a positive calculated test statistic implies the cluster box rate is smaller and a negative calculated tests statistic implies that the cluster box rate is larger.)

Testing the Hypotheses of Different Retention and Discard Rates for Cluster Box Recipients

Hypothesis	Retention Rate Test Statistic	Discard Rate Test Statistic
Curb = Cluster Box	4.89	-2.91
Door = Cluster Box	8.61	-5.03

If the calculated test statistic is larger (in absolute value) than the critical value of 1.96 then the hypothesis of equal retention or discard rates can be rejected at the 95 percent level.¹¹ In all cases, the null hypothesis is rejected.

Thus, the Mail Moment survey data support the inference that cluster box recipients have lower retention rates and higher discard rates that either door or curb recipients. These are consistent with the Infotrends' result for door and cluster box recipients, but unlike the OIG-Infotrends' result, they found that curb and cluster box recipients had similar retention and discard rates.

¹¹ This level of significance is for a two-tailed tests. A critical value of just 1.65 needs to be exceeded to reject the null under a one-tailed test.

b. Household Diary Recruitment Questionnaire

One important question in the Household Diary Study Recruitment Questionnaire was geared to how recipients responded to advertising mailings. It asked participants to indicate how much attention members of the household pay to advertising material received through the mail. The options are: (1) "usually read it," (2) "usually scan it," (3) "read some but don't read others," and (4) "usually don't read it." The following table lists the proportions of recipients, by receptacle type, that reported usually reading their advertising mail.

Proportion of Recipients that Reported They Usually Read Their Advertising Mail

Receptacle Type	Proportion
Cluster Box	13.3%
Curb	16.1%
Door	18.3%

The table shows that "usually read it" proportion for cluster box recipients is well below the proportions for the other receptacle types, and it would be of interest to test the null hypothesis that the "usually read it" proportion was the same for cluster box recipients as it was for door and curb recipients.

Using the procedure described in the previous section, these hypotheses were tested and the results appear in the next table. The results indicate rejection of the null hypothesis of equal reading rates at the 95 percent level of significance for door recipient and the 90 percent level of significance for the curb recipients.¹²

In other words, the Household Diary data indicated that cluster box recipients had a significantly lower advertising mail read rate than door and curb recipients. This matches the OIG-Infotrends results showing similar differences between cluster box and door recipients but shows more differences for cluster box and curb recipients than the Infotrends' results.

Hypothesis	Test Statistic
Curb = Cluster Box	1.66
Door = Cluster Box	2.60

¹² Using a one-tailed test, both null hypotheses could be rejected at the 95 percent level of significance.

2. Summary of Investigation of Alternative Sources

The data from the two Postal Service surveys of mail recipients corroborates the main result found in the OIG-InfoTrends survey: cluster box recipients are less likely to read and retain their advertising mail than door recipients. The OIG-Infotrends' data showed little difference between cluster box and curbside read and response rates, but data from the two Postal Service surveys indicated that cluster box recipients had lower read and response rates than did curbside recipients. Finally, the Postal Service surveys produced evidence that cluster box recipients were more likely to discard their advertising mail without reading it than were either door or curbside recipients.

E. Exploring Other Possible Reasons for the Results

The evidence from the OIG-InfoTrends survey indicates a different pattern of interactions with advertising mail for those who receive advertising mail in cluster boxes rather than in other types of mail receptacles. However, further investigation is warranted to be sure that these observed differences are due to the difference in mail receptacle and not due to an underlying variable, such as attitude toward advertising mail, household age, household income, population density, type of residence, gender, or Internet use.

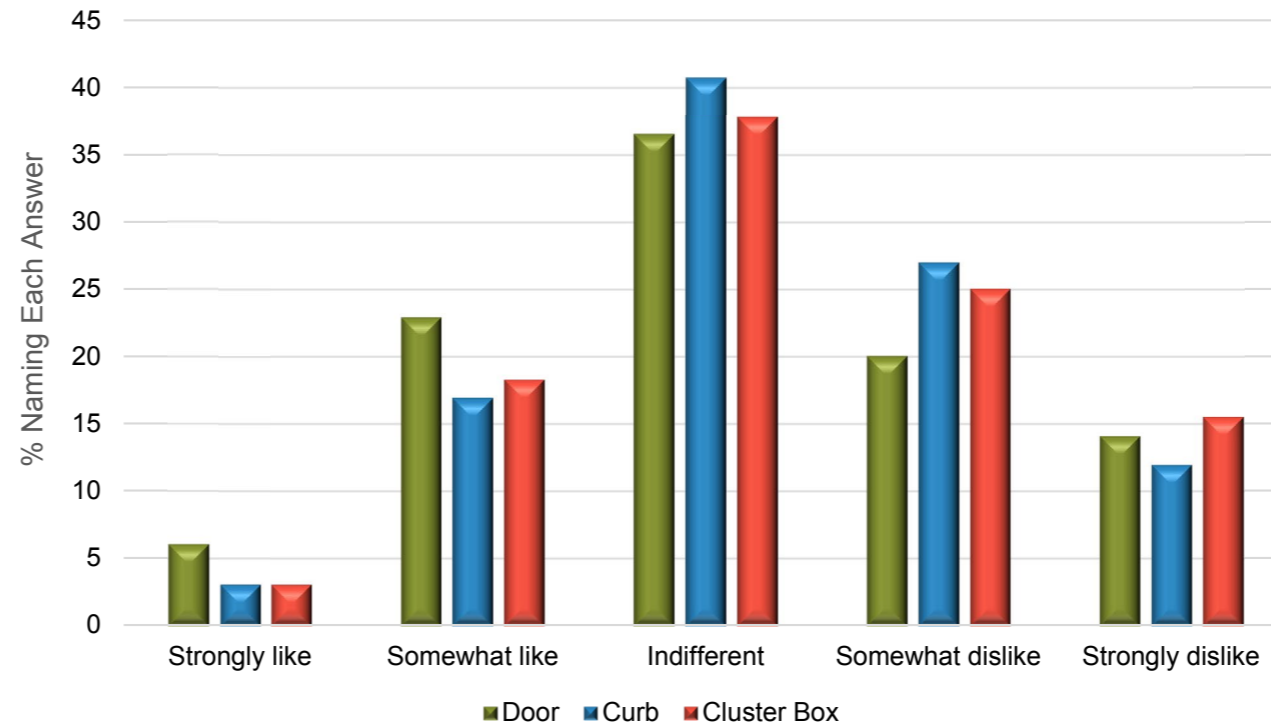
It is also important to note that this investigation is limited to survey data examining postal customers' attitudes and self-reported actions. These analyses are not intended to investigate causality. As detailed below, the survey design and analyses controlled for other factors, but we have not constructed a causal model of cluster box recipients' interactions with advertising mail and do not claim to have done so.

1. General Attitudes Towards Advertising Mail

One possible reason for the differences in advertising mail responsiveness is that cluster box recipients, apart from the way in which they receive their mail, simply do not like advertising mail. That is, if people who do not like advertising mail just happen to receive their mail in cluster boxes, it could explain part or all of the differences in response rate between door recipients and cluster box recipients. To investigate this hypothesis, an analysis was performed on an OIG-InfoTrends survey question that asked the participants to indicate how they feel about the advertising mail they receive. Participants were asked to rate their view of advertising mail on a scale from strongly liking it to strongly disliking it.

The following chart presents the results for door, curbside, and cluster box recipients. It plots the percentages for each answer. Very few people strongly like their advertising mail and relatively few people strongly dislike it. More importantly, the general pattern is the same for all three receptacle types. It appears that there may be a somewhat more positive attitude by door recipients, as they have slightly higher approval rates and slightly lower disapproval rates when compared to cluster box recipients.

Attitudes Toward Advertising Mail Received



The possible differences can be quantified by forming an index of advertising mail appeal. If we assign each of the categories a numerical value, ranging from a “1” for strongly liking to a “5” for strongly disliking, we can compute an index value. We do so by multiplying each answer’s proportion by its numerical value and finding the sum. The next table presents the calculated index values for the different receptacle types. As expected, door recipients have the lowest value, indicating the strongest preference for advertising mail, but the differences are quite small and would not appear to be sufficient to explain the significantly lower read and respond rates for curb recipients.¹³ As a result, we will investigate other possible reasons for the differences.

¹³ In fact, these differences could be caused by the inconvenience cluster box recipients face when disposing of any unwanted advertising mail. This factor could also explain why the index value for curb recipient is higher than for door recipients.

Index of the Attitudes Toward Advertising Mail Received

Delivery Mode	Index Value
Central	3.2
Cluster Box	3.3
Curb	3.3
Door	3.1

As indicated in [Section C](#), the average values for key demographics, including age, income, and education are quite similar for door and cluster box recipients, ruling out these variables as potential causes for different response rates. But there were two types of demographics that were different between cluster box recipients and door recipients: gender and Internet access. Next, we investigate these as potential alternative explanations for the apparent differences between door and cluster box recipients.

2. Responses by Gender

First, we examine the differential in gender proportions. (Recall that door delivery recipients were about 54 percent male, while cluster box recipients were about 55 percent female.) If the responsiveness to advertising mail is different for men and women, then this difference in gender profile could be the underlying cause for the measured differences between door recipients and cluster box recipients. Investigating this issue requires splitting the OIG-InfoTrends dataset into a male subset and a female subset.¹⁴ There were 2,512 female respondents (50.2%) and 2,488 male respondents (49.8%).¹⁵

The statistical analysis that was performed on the full set of data is repeated separately for the male and female subsets. The results will identify if men and women have different patterns in their responsiveness to the advertising mailings they receive.

The next table presents the results of testing the differences between door recipient advertising mail responsiveness and cluster box recipient advertising mail responsiveness, by gender. The first two columns test the differences in read and respond rates across the seven mail categories. As with the overall results, in all cases, the hypothesis of equal response rates was rejected in favor of the inference that the door read and respond rate is higher than the cluster box read and respond rate.

¹⁴ There were 2,512 female respondents (50.2%) and 2,488 male respondents (49.8%).

¹⁵ As discussed above, the web survey was sent out to a general population sample that was monitored for age, gender and region. These areas had quotas to match the U.S. census. The survey did not screen for head of household; it went to a general population sample. The question about how often the respondents pick up their mail is covered in Question 16 of the survey.

The table shows that this result holds for both men and women. The next two columns present the results of testing the “do not read and throw away” rates between door recipients and cluster box recipients for men and women.

Although they do not exactly replicate the full sample results, the results by gender generally match them. For the full sample, equivalence of discard rates was rejected for five of the seven mail categories. For the female subsample, the number of rejections rises to six out of seven, adding the “mail that includes a coupon” category to the list. For men the number of rejections of equal discard rates falls to three of the seven.

Taken together, these results suggest that differences in gender profile are not the basis for differences in response and discard rates between door recipient and cluster box recipients.

Testing the Response and Discard Rates Between Door Recipients and Cluster Box Recipients by Gender

Mail Category	Testing Read and Respond		Testing Do Not Read and Discard	
	Female	Male	Female	Male
Known Local Business	Reject at 95%	Reject at 95%	Do not reject	Do not reject
Known National Business	Reject at 95%	Reject at 95%	Reject at 95%	Do not reject
Unknown Business	Reject at 95%	Reject at 95%	Reject at 95%	Reject at 95%
Donation Solicitation	Reject at 95%	Reject at 95%	Reject at 95%	Reject at 95%
Credit Card Solicitation	Reject at 95%	Reject at 95%	Reject at 95%	Reject at 95%
Catalogs	Reject at 95%	Reject at 95%	Reject at 95%	Do not reject
Mail that Includes a Coupon	Reject at 95%	Reject at 90%	Reject at 90%	Do not reject

3. Responses by Internet Access

Next, the possible role of differential Internet access is investigated. Nearly all cluster box respondents indicated they had Internet access (96.7%), while just over three-quarters of door respondents had Internet access (76.8%). As with gender, this raises the possibility that the observed difference in response rates between door and cluster box recipients may have to do with Internet access and not mail receptacle type. To test this possibility, the analysis that was performed on the full set of data is repeated for just the 4,403 respondents that said they had Internet access. In other words, all of the door recipients and cluster box recipients included in this test reported having Internet access, so differential Internet access can be ruled out as a source of mail responsiveness differences.

The next table provides the results of repeating the statistical tests for Internet users. As with the complete sample, the test for read respond rates showed that among Internet users, the door response rate was greater than the cluster box response rate for all mail categories. This indicates that the differences between door and cluster box read and respond rates are not due to differential Internet access.

Testing the Response and Discard Rates Between Door Recipients and Cluster Box Recipients for Internet Users

Mail Category	Testing Read and Respond	Testing Do Not Read and Discard
Known Local Business	Reject at 95%	Reject at 90%
Known National Business	Reject at 95%	Reject at 95%
Unknown Business	Reject at 95%	Reject at 95%
Donation Solicitation	Reject at 95%	Reject at 95%
Credit Card Solicitation	Reject at 95%	Reject at 95%
Catalogs	Reject at 95%	Reject at 95%
Mail that Includes a Coupon	Reject at 95%	Reject at 90%

The test for discard rates provides even stronger evidence of differences between cluster box recipients and door recipients. When all responses were used, there were two categories, “advertising mail from companies with which I do business” and “mail that includes a coupon” for which we could not reject the null hypothesis of equal discard rates. Using the Internet access only subsample, the hypothesis for both of those categories is rejected at the 90 percent confidence level. In sum, there is no evidence that a difference in Internet access is the basis for the observed differences in advertising mail response between door recipients and cluster box recipients.

4. Responses by Population Density

One additional investigation was pursued in analyzing alternative sources of observed responsiveness rates. This investigation examines whether the differences between cluster box recipients and door recipients are the same in both rural (low population density) and urban (high population density) areas. For example, we can test whether cluster box recipients have lower read and respond rates in low population density areas than they do in high population density areas.

This investigation required obtaining data by ZIP Code from the most recent (2010) Census. The Census data set contains information on 33,120 five-digit ZIP Codes

including the ZIP's total population and square miles of land area. These variables can be used to construct a measure of population density – the number of people per square mile.

The next table shows the distribution of InfoTrends survey responses across population density quartiles:¹⁶

Distribution of OIG-InfoTrends Survey Responses by ZIP Code of Participant

Quartiles	Number of Responses	Proportions
ZIP Codes in the Top Quartile by Population Density	3,199	64.9%
ZIP Codes in the Second Quartile by Population Density	1,199	24.3%
ZIP Codes in the Third Quartile by Population Density	383	7.8%
ZIP Codes in the Bottom Quartile by Population Density	146	3.0%
TOTAL	4,927	100.0%

The table shows that the survey responses came primarily from the high density ZIP Codes, with almost 65 percent of them coming from highest density quartile. Also, only 3 percent of the responses came from the lowest population density quartile. The concentration of responses in the two highest density quartiles makes it difficult to perform an analysis by population quartile because there are so few responses from low density areas.

To have sufficient responses in the lower density areas, the OIG-InfoTrends data set will be split into two subsets, with the high population density subset consisting of responses from ZIP Codes in the highest density quartile and the low density subset consisting of responses from ZIP Codes in the remaining three quartiles. Even with this split, just 35 percent of the responses (1,728) come from the lower density ZIP Codes. Nevertheless, as the next table shows, there are material differences in population density across these two subsets.

¹⁶ Although there were, 5000 responses in the survey, we were able to match 4,927 of them to the list of Census ZIP Codes. The remaining 73 could either be from ZIP Codes that were not in existence in 2010 or from responses in which ZIP Code was erroneously reported.

Average Values for the Two Density Subsets

Variable	High Density	Low Density
Population Density	4,770.4	101.8
Population	22,908.6	4,942.8
Square Miles	10.1	112.2

In addition, there are sufficient observations in the low density subset to support statistical testing of the differences between cluster box and door read and respond rates. The results of that testing, along with the same tests for discard rates, are presented in [table](#) below. For both population density subsets, the results for the read and respond rates exactly matched the overall results. The tests showed that for all categories of advertising mail, read and respond rates for door recipients were significantly higher than read and respond rates for cluster box recipients. This difference held for both high and low density areas. As a result, lower read and respond rates for cluster box recipients do not appear to be arising because of differences in population density.

The results for the high density subset exactly matched the overall results for discard rates, with five of the seven ad mail categories showing statistically higher discard rates for cluster box recipients. The results for the low density subset were not as close. Although the results generally showed higher discard rates for cluster box recipients, as compared with door recipients, the difference was statistically significant for only two of the five advertising mail categories. Nevertheless, there is no evidence that population density is the explanation for difference in discard rates between door and cluster box recipients.

**Testing Differences Between Cluster Box and Door Read and Respond and Discard Rates
Across Population Density Groups**

Mail Category	<u>Testing Read and Respond</u>		<u>Testing Do Not Read and Discard</u>	
	High Density	Low Density	High Density	Low Density
Known Local Business	Reject at 95%	Reject at 95%	Do not reject	Do not reject
Known National Business	Reject at 95%	Reject at 95%	Reject at 95%	Do not reject
Unknown Business	Reject at 95%	Reject at 95%	Reject at 95%	Reject at 95%
Donation Solicitation	Reject at 95%	Reject at 95%	Reject at 95%	Do not reject
Credit Card Solicitation	Reject at 95%	Reject at 95%	Reject at 95%	Reject at 95%
Catalogs	Reject at 95%	Reject at 95%	Reject at 95%	Do not reject
Mail that Includes a Coupon	Reject at 95%	Reject at 95%	Do not reject	Do not reject

Data from the two Postal Service surveys were also investigated to see if there were any evidence of variables other than the mail receptacle causing the observed differences in interaction with advertising mail. (Recall that both the Mail Moment survey and the Household Diary Study survey produced evidence suggesting the cluster box recipients had a higher level of interaction with the Internet.)

In the Mail Moment survey, cluster box recipients appeared to have a higher affinity for Internet use. Cluster box recipients were less attached to the mail for paying bills than door recipients and they were less likely to worry about the safety of electronic payments. In the Household Diary Study survey cluster box recipients appeared to have slightly higher broad band Internet access and are less likely to have no Internet access than door recipients.

The Household Diary Study survey suggests that this difference may also be reflected in cluster box households' attitudes about the security of the mail as compared to messages on the Internet. Just under 30 percent of cluster box recipients thought the mail was more secure and 60 percent thought the two were equally secure. In contrast, approximately 40 percent of door recipients thought the mail was more secure than the Internet, with about 50 percent thinking they were equally secure.

The two Postal Service surveys did not produce data that permitted testing the hypothesis as to whether a greater affinity of Internet use among cluster box recipients was the source of difference in responsiveness of cluster box recipients as compared to door recipients. But the OIG-InfoTrends survey data did support such an analysis;

results of testing indicated that the differences remained, even when just comparing Internet users.

It is important to keep in mind that these results are based upon survey data, not the actions postal recipients performed. The results should thus be interpreted as reflecting peoples' attitudes toward advertising mail, not their interactions with it. Finally, the results identify patterns and statistical differences, but do not investigate causality.

5. Responses by Residential Type

Finally, data from the Household Diary Study survey indicated that the type of residence in which the recipient lives did not appear to affect how cluster box recipients interact with advertising mail. A smaller proportion of cluster box recipients than door recipients read their advertising mail whether both groups lived in single detached houses, apartments and condominiums, or townhouses and duplexes.

F. Conclusion

As the Postal Service contemplates a move to more cluster box deliveries, an important strategic question to investigate is whether the type of mail receptacle could influence the way in which postal customers interact with the advertising mail they receive. This paper has examined this issue using data from a new survey commissioned by the OIG and conducted by InfoTrends as well as two previous surveys managed by the Postal Service. All three surveys were designed to be representative of the U.S. population and stratified by key demographic elements.

Results from extensive data analyses indicate that cluster box recipients had significantly lower read and respond rates than door recipients for all types of advertising mail. In a number of instances, the cluster box read and respond rates were half of those for door recipients. Cluster box recipients also had higher discard without reading rates than door recipients.

Analysis of data from two other surveys commissioned by the Postal Service corroborated the main results from the OIG-InfoTrends survey.

To verify that the lower read and respond rates for cluster box recipients were not due to another variable such as household age, income, type of residence, gender, population density, or Internet access, subsequent analyses with rigorous statistical testing were performed. In all cases, the evidence indicated that the reported differences in read and respond rates were not due to alternative demographic or attitudinal variables.

Survey Questionnaire

Cluster Box for Postal Delivery Research

Technology Usage

Q1: Do you have Internet access at home?

- Yes
- No

Q2: How do you most often access the Internet?

- Personal computer
- Work computer
- Public computer (e.g., library)
- Smartphone
- Mobile tablet
- Other (please specify)
- I do not use the Internet

Demographic Questions

Q3: How old are you?

- Under 18 years (terminate)
- 18 to 24 years
- 25 to 34 years
- 35 to 44 years
- 45 to 54 years
- 55 to 64 years
- 65 years or older

Q4: What is your gender?

- Male
- Female

Q5: Which state do you live in?

Please choose from the dropdown menu.

Include "Do not live in the U.S." and terminate on this response.

Q6: What is your 5 digit zip code?

Q7: What is the highest level of education you have achieved?

- Did not graduate high school
- Graduated high school
- Attended college
- Graduated 2-year college
- Graduated 4-year college
- Post graduate

Q8: What is your annual household income?

- Less than \$15,000
- \$15,000 to \$24,999
- \$25,000 to \$34,999
- \$35,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 to \$199,999
- \$200,000 and over
- Prefer not to answer

Q9: What is your employment status?

- Employed full time (more than 30 hours)
- Employed part time (less than 30 hours)
- Unemployed (including full-time students)
- Retired
- Homemaker
- Other (please specify)

Q10: Is anyone in your household disabled?

- Yes, I am
- Yes, I am (along with others in the household)
- Yes, others in the household are
- No

Mail Preferences

Q11: Where do you normally receive your mail?

- Door slot
- Mailbox installed on my porch or near my front door
- Curbside single (not part of a cluster or group of mailboxes)
- Central mailbox cluster inside an apartment, condominium or other building
- Central mailbox cluster in my neighborhood
- PO Box (USPS or private)

Q12: Where do you normally receive your packages?

- At my door
- In my lobby unsecured
- My neighbor/building manager accepts for me
- In a parcel locker at my outside cluster box
- At the shippers office (UPS/USPS/ FedEx)
- Other

Q13: In a typical month, how many parcels/packages do you receive?

- 0
- 1
- 2-4
- 5-7
- 8-10
- 11-13
- 14-16
- 17-19
- 20+

Q14: Do you find the location of your mailbox to be convenient?

- Yes
- No

Q15: Do you consider your mail to be safe in the location where it is delivered?

Letter mail

- Yes, very safe
- Yes, usually safe
- No, somewhat unsafe
- No, very unsafe

Parcels/packages

- Yes, very safe
- Yes, usually safe
- No, somewhat unsafe
- No, very unsafe

Q16: In a typical week, how often do you check your mail?

- Six times
- Five times
- Four times
- Three times

- Twice
- Once
- I do not check my mail weekly

Q17: Do you change how often you check the mail depending on the season?

- Yes
- No

Q18: Would you (do you) find it useful to have a lock on your mailbox?

- Yes
- No

Q19: How do you receive the following types of communications?

	Only by mail	Both by mail and electronically	Electronically only	N/A
Newspapers and magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bills and statements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal mail (letters, postcards, greeting cards, announcements)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20: On average, how many of the following types of communications do you receive each month via physical mail?

	0	1	2-4	5-7	8-10	11-13	14-16	17-19	20+
Newspapers and magazines									
Personal mail (letters, postcards, greeting cards, announcements)									
Catalogs and other advertising mail									

Q21: In a typical month, how many different bills and statements do you receive only by mail, both by mail and electronically, and electronically only?

	0	1	2-4	5-7	8-10	11-13	14-16	17-19	20+
Only by mail									
Both by mail and electronically									
Electronically only									

Q22: In an average month, what portion of your bills do you pay by mail?

- All
- Most
- Half
- Some
- None

Q23: What do you typically do when you receive the following types of mail?

	Read and respond	Set aside for later use	Read and throw away	Throw away without reading	N/A
Advertising mail from local companies I do business with					
Advertising mail from national companies I do business with					
Advertising mail from companies I do not do business with					
Donation solicitations					
Credit card solicitations					
Catalogues					
Mail that includes a coupon					

Feelings Regarding the Postal Service

Q24: How do you feel about the advertising mail you receive?

- Strongly dislike
- Somewhat dislike
- Indifferent
- Somewhat like
- Strongly like

Q25: How would you rate the level of service that you currently receive from the Postal Service?

- Very unsatisfied
- Somewhat unsatisfied
- Indifferent
- Somewhat satisfied
- Very satisfied

Q26: Suppose your mail delivery was moved to a locked cluster box in a central outdoor location in your neighborhood/apartment complex, how would you react?

- Very displeased
- Somewhat displeased
- Indifferent
- Somewhat pleased
- Very pleased

Q27: Would you consider paying a yearly fee to retain home delivery?

- Yes
- No

How much would you be willing to pay per year to retain home delivery?

- \$5 or less
- \$5 to \$25
- \$25 to \$50
- \$50 to \$75
- \$75 to \$100
- \$100 or more

Q28: How would having a cluster box change how frequently you checked your mail?

- I would check it less often
- I would check it more often
- It would not change my current habit
- I already have a cluster box

Q29: If you had to use one word to describe the Postal Service, what would it be?



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