The Impact of Visual Design in Survey Cover Letters on Response and Web Take-up Rates

William Mockovak[1]
Bureau of Labor Statistics, 2 Massachusetts Ave, N.E., Washington, DC 20212

Abstract
Cover letters for mailed survey forms can differ in a variety of ways. Previous research suggests that visual design can impact response, and that the effects might even be negative. Therefore, the purpose of this study was to continue this line of research and investigate the impact of a unique visual design for a cover letter, while holding the information content constant. Whereas the possible types of visual design changes are numerous, this study looked at the impact of only one type of approach (Information Mapping©), which has been shown to improve the usability of written materials in a variety of written materials. A sample of 1,000 addresses was randomly assigned to either an experimental or control condition (500 in each), and the response rate was analyzed after one mailing attempt. Results showed no statistically significant difference between groups in response rates (overall response was 27.6 percent). A secondary objective was to determine how many respondents would opt to use a simple Web-reporting option when one was clearly offered in the cover letter. Only 2.6 percent chose the Web option, with ten times as many choosing to respond using the mail.

Key Words: Cover letters, Web take-up rate, response rates, Information Mapping

1. Introduction

As response rates have continued to drop, survey organizations have searched for approaches that will help halt or stabilize the decline. Cover letters sent with mailed questionnaires appear to be a good candidate for positively affecting response because they have low costs and they have the potential to reach all respondents. However, the challenge is finding the right appeal and design for the population of interest.

Cover letters can vary on a variety of features including the verbal appeal used, survey sponsorship, length, and visual design. Previous research on the design of cover letters suggests that small gains in response rates are possible (for example, 2-4 percent) when such factors are varied. The current study looked at a specific visual design approach for the cover letter, called Information Mapping,© that has not been tested previously, but which has been successfully used in other applications to improve learning and communication.

---

[1] The views expressed in this paper are those of the author and do not necessarily reflect the views of the Bureau of Labor Statistics.

2. Previous Research

Dillman (1978) presents basic guidelines for writing cover letters that emphasize the usefulness of the study to a group that the respondent identifies with, as well as the importance of the respondent to the success of the study. Dillman also suggests using the survey organization's normal business stationary, and personalizing the letter by including the respondent's name, if known, and address. Finally, he suggests that the letter be personally signed.

In a nice synopsis of relevant research, Redline et al. (2004) conclude that cover letters have not proven to be important predictors of response rates, but given the increasingly difficult survey environment, argue that even small gains are worthwhile. As summarized by Redline et al., research into cover letters has studied the impact of verbal appeal, survey sponsorship, and visual design. Verbal appeals have included both altruistic and egoistic appeals, where altruistic appeals explain to the respondent how others benefit (including appeals to social utility and help-the-sponsor). On the other hand, egoistic appeals show how personal gain can result by participating in a survey. In addition to these types of verbal appeal, survey sponsorship and visual design have also been varied.

In their study involving a very large national sample (177,320 sample cases), Redline et al. (2004) varied the type of appeal used (no appeal, authoritative, egoistic, and altruistic) and the visual design of the altruistic letter. Their results showed significant differences favoring the altruistic appeal, but the largest overall difference in response rates among groups was only about 2 percent. And, surprisingly, the response rate for the altruistic-appeal letter with visual design changes was significantly less than the unenhanced altruistic letter. In this study, the content of the letters was nearly the same, but in the enhanced visual version the first sentence of every paragraph was converted into a question and printed in bold face type. Redline et al. were puzzled by this result and wondered if drawing attention to certain words, such as *survey*, actually discouraged response. They also conjectured that if respondents saw a format that was not what they expected for serious letter discourse in a government survey, they might be discouraged from reading further. Of course, another possibility is that some respondents simply scan cover letters no matter what their visual design and base their decision about participating after reviewing the questionnaire or on some unrelated factor (for example, personal attitudes toward surveys or company policy).

Since the visual design of a cover letter has been shown to have some impact on response, this study looked at an even less conventional, more dramatic approach for varying the visual design of the cover letter, known as *Information Mapping[©],* to see what impact it might have on response. This design approach has its origin in the development of self-paced learning materials, but it has also been used in developing manuals and general types of business communications (Horn 1969, Information Mapping, 1999).[2] Research has shown that the use of Information Mapping can have a positive impact on the usability (effectiveness, efficiency, and user reactions) of a variety of written materials (Information Mapping, 1999; le Pair et al., 2007).

---

[2] See Information Mapping, http://www.infomap.com/

3. Methodology

An experimental study was conducted as part of a process used to obtain opinions from data users about a possible decision to discontinue publication of the print version of the Bureau of Labor Statistics' Occupational Outlook Handbook. Since the number of copies of the Handbook sold by the Government Printing Office (GPO) has decreased dramatically over the past decade, whereas usage of the Web version has literally exploded,[3] BLS was considering stopping production of the print version and using available resources to produce only an online version optimized for the Web. However, before doing this, BLS wanted to hear from users of the Handbook to find out how this decision would impact them.

A random sample of 1,000 purchasers of the print copy of the Occupational Outlook Handbook was selected from a list provided by the Government Printing Office (GPO). This list included individuals and organizations that had purchased the Handbook between April 2008 and May 2010, and was randomly divided into two groups of 500 (experimental and control). The following table shows the rough composition of this list based on a random sample of 100 addresses. As shown, the sample was about evenly divided between individuals and organizations.

Table 1: Sample Composition

Data User	Percent
Individuals	49.0
Educational institutions	17.0
Organizations (research institutes, labor offices, job/career offices, etc.)	16.0
Libraries	16.0
Professional offices (e.g., law, dental)	2.0

Respondents were contacted via mail and given the option of either mailing back a simple, 6-item paper questionnaire or completing a Web version of the form. There was no pre-survey notification, one mailed contact attempt, and no follow-up attempts. Also, no incentives were used. Respondents were asked to complete and return the survey within 30 days. Respondents accessed the Web survey by entering a simple URL in their Web browser. The Web survey did not require use of either a username or password, since no personally identifiable information was requested.

As can be seen in the Attachment, with the exception of the word labels in Column 1 and some minor changes in order, the content of the one-page cover letter in each group is almost identical. The primary differences are the word labels, which were bolded, and the general formatting used by the Information Mapping version. No color was used on either version. The primary appeal for cooperation was an egoistic one, since discontinuation of the printed copy could potentially lead to negative impacts on the users of the print version of the Handbook.

Two hypotheses were made about the impact of the information-mapped design. First, it was hypothesized that the information-mapped version would result in a higher response rate, and, second, that a larger percentage of respondents in the experimental group would

---

[3] Over one million visitors per month in 2010.

voluntarily choose the Web-reporting option, since this option was more visible in the information-mapped version.

3.1. Control and Experimental Groups

The 1,000 addresses were randomly assigned to two groups (500 each): a control group using a conventional cover letter, and an experimental group that used essentially the same cover letter redesigned using the principles of Information Mapping. Since proponents of Information Mapping argue that analysis, organization, and presentation mode are critical to its success, the content for the cover letter was first developed using Information Mapping principles, and then converted to the control version by dropping the word labels (see Attachment 1 for the versions used).[4]

4. Results

The following table shows the response rates for the experimental (Information Mapped) and control groups. The overall response rate for the combined groups was 27.6 percent. There were 75 postmaster-returned mailing packages. Of these, 29 were control forms, 25 were experimental, and 21 could not be identified because only a copy of the address label was returned. A total of 231 forms were returned in the mail. As shown in Table B, there was a 3.05 percent difference in response rates between the experimental and control groups. A Z-test for two proportions yielded a Z value of 0.963, which indicated that there was no significant difference between the group response rates at the 95 percent confidence level.

Table 2: Response Rates

Group	Mail	Web	Total	Sample Size	Response Rate
Information mapped	109	12	121	464.5	26.05
Control	122	12	134	460.5	29.10
Total	231	24	255	925	27.57

Data quality was evaluated by analyzing item non-response rates and data distributions for the experimental and control groups. No significant differences were found between the groups.

With respect to use of the Web-reporting option, only 24 or 2.5 percent of the respondents chose to use the Web option, with no difference in Web usage between the groups.

5. Discussion

In this study, a cover letter with primarily an egoistic appeal and visual design changes based on principles of Information Mapping[©] yielded a lower response rate of 3.05 percent when compared to a standard control letter. This finding was unexpected, and

---

[4] The Attachment shows only the text used in the cover letter. Identical headers and footers were used on the actual letters.

although statistically insignificant, the direction of the difference was contrary to expectations.

In their much larger study,[5] Redline et al. (2004) found a significant difference of 1.56 percent between the response rates for a cover letter with an altruistic appeal and the same letter with visual design changes, but as occurred in this study, their "visually enhanced" letter also had a lower response rate. Although the response-rate difference of 3.05 percent found in this study was not statistically significant, it was in the same direction as the Redline et al. results, which suggests that unless carefully understood, visual changes made to enhance key information may hurt, rather than help, response.

Why might visual design approaches that emphasize key content hurt response? Unfortunately, one obvious reason may be that emphasizing the voluntary nature of a survey may lead to lower response. And emphasizing the purpose of the survey may be counterproductive in cases where respondents think the survey is not relevant to them, the appeal for participation does not resonate with them, or if they are unclear how the data will be used.

Another factor may be the overall impression given by the cover letter. The American public may simply be used to the conventions used in a standard business letter, and expect these to be used in government communications. Therefore, any deviation from these conventions may lead to increased scrutiny or scepticism. In the current study, an unfamiliar, and somewhat unconventional format was used, which may have deterred some respondents.

Despite the potential importance of a cover letter, the cover letter alone will not determine response. The cover letter is only a first hurdle in the response process. Most respondents will also review the questionnaire before making a decision to participate. For example, follow-up surveys after small pretests for a survey under development at the Bureau of Labor Statistics revealed that between 31 to 35 percent of respondents did not remember the cover letter when asked about it within 3-4 weeks of the initial mailing.

In the current study, the survey form consisted of six simple questions that were printed on the front and back of a one-page form. The simplicity of the form likely affected a respondent's decision to complete and return the paper form via mail rather than complete the survey on the Web. However, it is also worth noting that use of the Web questionnaire only required entering a simple URL in a browser.

Although use of the Web in this study was very low, it is worth emphasizing that there was only one mailing attempt and no follow-up efforts. In a recent effort, Moore (2011) demonstrated that about 30 percent of respondents (farmers) would respond using the Web when follow-up efforts included mail and telephone prompting. In this case, the initial Web response before follow-up was about 10 percent, with the Dillman approach being used (personalization of letters, etc.).

---

[5] Sample sizes for different conditions ranged from 13,798 to 27,638. Response rates were higher than in the current study by 1.3- 2.9 percent. Use of a pre-notification letter may explain some of that difference.

Other research has also demonstrated that moderate take-up rates (21-33 percent) can be obtained for Web-based surveys, but significant incentives may be needed to achieve this result (Bonke and Fallesen, 2010) depending on the information being collected.

In summary, based on the results of this relatively small study it appears that the reported benefits of information mapping do not transfer to the preparation of cover letters for surveys, and that given the option of a simple paper questionnaire or a simple Web questionnaire, the sample population in this study overwhelmingly opted for the paper questionnaire.

Acknowledgements

References

Bonke, J. and Fallesen, P. (2010) The Impact of Incentives and Interview Methods on Response Quantity and Quality in Diary- and Booklet-based Surveys. Survey Research Methods, Vol. 4, No 2.

Dillman, D.A. (1978) *Mail and Telephone Surveys*: *The Total Design Method*. New York: John Wiley & Sons.

Horn, R.E. (1969). Information Mapping for Learning and Reference. Lexington, MA: Information Resources, Inc.

Information Mapping (1999). The Information Mapping Method ©. 30 years of research. Research papers and notes. Waltham, MA: Information Mapping, Inc.

le Pair, R. Jansen, C., Korzilius, H., van Gerdingen, J., de Graaf, S., and Visser, R. (2007) Information mapping: Effects of Text Features and Reader characteristics on Performance and Appreciation. Information Design Journal 15(1), 69-83.

Moore, Dana (2011) "Can We Drive Respondents to the Web? Experimental Tests of Multi-Mode Survey Implementation and Varied Survey Benefit Appeals," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.

Redline, C., Oliver, J., and Fecso, Ron. "The Effect of Cover Letter Appeals and Visual Design on Response Rates in a Government Mail Survey." *Paper presented at the annual meeting of the American Association for Public Opinion Research, Pointe Hilton Tapatio Cliffs, Phoenix, Arizona*, May 11, 2004 <http://www.amstat.org/sections/srms/proceedings/y2004/files/Jsm2004-000330.pdf>

Attachment: Text for Information Mapping Cover Letter

Dear Handbook Purchaser	We are sending this survey to you because you, or your organization, purchased a copy of the Occupational Outlook Handbook in the past.
What is the purpose of this survey?	Because use of the print version of the Occupational Outlook Handbook has decreased dramatically over the past decade, BLS is considering ending production of the print version and producing only an online version better suited for (or "optimized for") the Web. However, before stopping production, we would like to hear from purchasers of the Handbook about how this decision will impact them or others.
What if I do not use the Handbook?	Please give the questionnaire to someone who uses the Handbook. If no one is available who uses the Handbook, please return the blank questionnaire.
How long will this take?	This brief survey should take less than 5 minutes.
Two ways to respond: Mail or Web	1. You can mail back the questionnaire in the enclosed envelope (no postage necessary), or 2. You can complete the form online: http://www.surveymonkey.com/S/H1
When should I mail back the questionnaire?	Please return the questionnaire within 2 weeks.
Will my responses be kept confidential?	Your responses will be kept confidential, and we will not link your name with your opinions. The OMB Approval Number for this study is 1225-0059, expiring 11/30/2012.
Whom can I contact with questions or comments?	Please contact Dr. William Mockovak, 202-691-7414, Mockovak_W@BLS.gov.

Attachment: Text for Control Cover Letter

Dear Handbook Purchaser,

We are sending this survey to you because you, or your organization, purchased a copy of the Occupational Outlook Handbook in the past.

Because use of the print version of the Occupational Outlook Handbook has decreased dramatically over the past decade, BLS is considering ending production of the print version and producing only an online version better suited for (or "optimized for") the Web. However, before stopping production, we would like to hear from purchasers of the Handbook about how this decision will impact them or others.

This brief survey should take less than 5 minutes.

1. You can mail back the questionnaire in the enclosed envelope (no postage necessary), or
2. You can complete the form online: http://www.surveymonkey.com/S/M2

If you do not use the Handbook, please give the questionnaire to someone who does. If no one is available who uses the Handbook, please return the blank questionnaire.

Please return the questionnaire within 2 weeks.

Your responses will be kept confidential, and we will not link your name with your opinions. The OMB Approval Number for this study is 1225-0059, expiring 11/30/2012.

If you have questions or comments, please contact Dr. William Mockovak, 202-691-7414, Mockovak_W@BLS.gov.

Sincerely,

William P. Mockovak, Ph.D.
Office of Survey Methods Research
Bureau of Labor Statistics