The Effect of Questionnaire Cover Design in Mail Surveys

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It has been suggested that the response rate for a self administered questionnaire will be enhanced if the cover of the questionnaire contains a picture, and, furthermore, that the more distinctive and complex the cover design created, the stronger this effect is likely to be. This paper reports the results of a study designed to test these hypotheses by comparing responses to six different questionnaire cover designs, varying in terms of complexity of graphic design and the presence or absence of images. These results suggest that, while the use of pictures or photos may marginally increase response rates, there is little evidence that a more complex design is better than a simple one.

Keywords: mail survey, response rates, questionnaire, cover design

Introduction

In his seminal work on survey research, Dillman (1978) suggested that prominent graphical designs on questionnaire covers encourages their recipients to respond. This view was supported by Jenkins & Ciochetto (1993) in a small exploratory study from which they concluded that subjects were overwhelmingly drawn to a cover page containing a picture (in this case an icon of an apple sitting on some books).

A study by Nederhof (1988) also found that a questionnaire with a largely black contrastive front cover yielded an 12.5% higher response rate than the same cover design that was white spaced and hardly contrastive. Nederhof's explanation for this result was that because the black questionnaire was more distinctive and visually complex it was more memorable. Hence the longer-term cognitive accessibility of the black questionnaire was enhanced; this increased the likelihood that it would be attended to once again after being put aside, and thus improved the chance that it would be completed and returned.

The significance of this enhanced cognitive accessibility was demonstrated by the fact that the white covers performed at least as well as the black covers early in the survey, but did significantly worse after the fourth wave when reminder techniques (postcards and telephone calls), which did not include a copy of the questionnaire, were used. Thus it appears that the response rate for a self administered questionnaire may be enhanced if the cover of the questionnaire contains a picture and, furthermore, that the more distinctive and complex the cover design created, the stronger this affect is likely to be.

However, attempts by Dillman & Dillman (1995) to replicate Nederhof's research using different cover designs were unsuccessful. Dillman & Dillman tested a range of cover designs including simple text versions, white dominant and black dominant graphic designs (to emulate Nederhof's experiment), and four-colour versions of the same graphic designs. But their results provided little or no support for Nederhof's theory. The black cover produced a higher response in one experiment, while the white cover was more effective in the other, though neither of the differences was statistically significant. Similarly, there were no differences in the effectiveness of text or colour designs, casting further doubt on the hypothesis that questionnaire cover design influences survey completion rates.

Nevertheless, Dillman & Dillman conceded the possibility that their conceptual replication of Nederhof's covers was sufficiently different to somehow affect the memorability of the covers tested in their experiments. Furthermore, the effect observed in Nederhof's study was very strong. Consequently it may be premature to reject Nederhof's conclusions simply because Dillman & Dillman found no support for them.

This paper reports the findings of another study designed to examine the effect of questionnaire cover design on the response to a mail survey, and, specifically, to test the effect of complexity of graphic design and the presence or absence of images.

Method

The vehicle for this research was the 1994 International Social Survey Programme (ISSP) survey on the family and changing gender roles[1]. The ISSP is a group of 22 countries which conducts an annual survey of economic and social policy issues using the same questionnaire in each country. In New Zealand, the ISSP surveys are conducted by mail.

In September 1994, a questionnaire, covering letter on University letterhead, and reply-paid envelope were sent to 1762 New Zealanders aged 18 and over. The sample was selected systematically from the New Zealand Electoral Rolls, with the number of names selected from each electorate proportional to the size of the electorate. The sample was randomly allocated to six groups, each containing approximately 280 potential respondents. Each of these groups received a questionnaire with a different cover.

The covers tested varied in terms of complexity of graphic design, the use of colour, and the presence or absence of images, but all were printed on the same beige card. The experimental design involved three "pairs" of covers. The first pair consisted of one cover with only a simple graphic design in black lettering, and the same cover, but with a picture included. The second and third pairs of covers consisted of more complex, but different graphic designs in black and red lettering, with one cover in each pair incorporating photographs. This experimental design is illustrated in Table 1 and the questionnaire cover designs are shown in Figure 1.

The questionnaire itself comprised 20 pages and 67 questions (though the total number of individual question items totalled 113). It asked respondents their opinions, behaviour and knowledge on a range of issues concerning the roles of men and women in marriage, at work, and in society in general. It also included an extensive demographic section.

A reminder letter was sent to all non-respondents four weeks after the initial mailing. A second reminder was sent to all remaining non-respondents four weeks later. Questionnaires were not included with either reminder. After a further four weeks a total of 1236 questionnaires had been returned. Eighty two respondents refused to take part in the survey, 26 had died or were otherwise ineligible, and 152 questionnaires were returned "Gone no address". This left 976 valid responses, representing a response rate of [976/(1762-178)]x100 = 65.3%.

Table 1. Experimental design

Cover A1 Simple graphic design Black lettering only No pictures or photos	**Cover A2** Simple graphic design Black lettering only Picture included
Cover B1 More complex design Black and red lettering No picture or photos	**Cover B2** More complex design Black and red lettering Photos included
Cover C1 Different complex design Black and red lettering No picture or photos	**Cover C2** Different complex design Black and red lettering Photos included

Results

At the end of 12 weeks, response rates for the six treatment groups ranged from 62% to 67% (see Table 2).

Table 2. Response rates for six cover designs

Design Complexity	Response Rate[1]			
	No picture or Photos (1)		Picture or Photos Included (2)	
	N	%	n	%
Simple A	168	65.9	161	67.4
Complex B	165	64.5	169	66.3
Complex C	166	66.4	147	61.5

Note: 1. Response rates adjusted for "Gone-no-address" and ineligible.

There is little or no evidence in these results that the inclusion of a picture or photos in a questionnaire cover increases the response to a mail survey. Though in two pairs of questionnaires the version including a picture or a photo had a higher response, the increases were less than 2% and were not significant, and for the other pair of questionnaires the cover with no picture or photo achieved the highest response. Overall, the response rate for the three questionnaires without images was 65.6%, compared to 65.1% for those which included either a picture or photos.

Similarly, there is little evidence that increased complexity or distinctiveness increases mail survey response rates. Overall, the response rate for the simple design was 66.6%, compared to 65.4% and 64.0% for the two more complex designs. Furthermore, the response achieved by the very simplest design was virtually the same as that for the most successful of the more complex designs, and better than for two of them.

However, Nederhof's (1988) theory of the cognitive accessibility of questionnaires suggests that more distinctive and visually complex questionnaires should produce higher response rates in the later phases of a mail survey, particularly if reminders are not accompanied by another questionnaire. The response rates for the three waves of this survey are shown in Table 3.

If Nederhof's theory were correct, we would expect the more complex cover designs to produce higher response rates in the second and third waves. This is not what happened. In fact, the simplest (and by assumption, the least memorable) covers had the highest response to both the first and second reminder letters.

Table 3. Response rates by wave

Cover Design	Response Rate[1] %					
	Initial Posting		First Reminder		Second Reminder	
	n	%	n	%	n	%
Simple graphic (A1)	123	43.0	43	31.9	12	13.5
Simple graphic plus picture (A2)	111	44.4	37	29.4	13	16.5
Complex graphic (B1)	114	42.9	39	27.9	12	13.0
Complex graphic plus photos (B2)	126	47.6	35	27.6	8	9.1
Complex graphic (C1)	118	45.7	41	32.0	7	8.8
Complex graphic plus photos (C2)	110	43.8	26	20.8	11	11.3
Total	692	44.6	221	28.3	63	12.3

Note: 1. Adjusted for "Gone-no-address" and ineligible and based on number of letters sent in each wave.

However, examination of first-wave responses alone shows that the addition of a picture to the simple graphic design increased the response rate by 1.4%, and the inclusion of photos increased the response to one of the complex designs by 4.7% (in the third pair of covers, the effect of photos was to decrease the response rate by just under 2%.) This provides some support for Jenkins & Ciochetto's conclusions. But the three questionnaires without images performed better in the second and third waves, so that by the end of the survey the positive differences in favour of images observed at the end of the first wave had virtually disappeared and the other difference had increased.

Despite these results, it is possible that the cover designs tested had differential effects on the responses of men and women or of those in different age groups. For example, a particular cover design could have achieved a high response rate among younger people and a low response rate among older people, but these effects could have been disguised in the overall response rate. However, as Table 4 shows, there was no relationship between age or sex and response to the alternative cover designs.

In an attempt to gain some insight into respondents' reactions to the covers tested, three focus groups were conducted with convenience samples of potential respondents. Participants were 13 men and 15 women between the ages of 18 and 50, recruited from local community organisations.

Table 4. Sex and age distributions by cover design

Cover Design	Sex		Age Group				
	Male	Female	Under 30	30-39	40-49	50-65	Over 65
	%	%	%	%	%	%	%
A1	41.6	58.4	19.4	20.6	21.3	24.4	14.4
A2	38.0	62.0	15.8	24.1	19.6	25.9	14.6
B1	41.7	58.3	21.0	23.5	17.9	19.8	17.9
B2	40.4	59.6	17.5	19.9	26.5	23.5	12.7
C1	43.5	56.5	17.5	20.6	21.9	27.5	12.5
C2	39.7	60.3	18.5	24.0	18.5	24.7	14.4
Total	40.8	59.2	18.4	22.1	21.0	24.3	14.4

Note:
1. For cover design by sex, $X^2 = 1.18$, $d.f. = 5$, $p = .95$.
2. For cover design by age group, $X^2 = 10.92$, $d.f. = 20$, $p = .95$.

For each group, participants were first asked to read a copy of the covering letter used in the survey. Then they were each given a complete set of the six alternative covers and asked to select the cover they considered would be most effective and least effective in motivating them to complete and return a questionnaire on the topic concerned, and to explain why. Table 5 shows the outcome of this process.

Ironically, the cover judged to be most effective by the highest number of focus group participants (cover C2) was the least effective in practice. Conversely, the simplest cover (A1) was clearly rated as least effective in the focus groups but performed as well as any of the other alternatives in the field. These results are, of course, based only on a small convenience sample, but they do suggest that either potential respondents are not good judges of what constitutes an effective questionnaire cover design or that what is on the cover of a questionnaire is not particularly important (provided the rest of the survey package is well designed and presented).

Table 5. Most effective and least effective covers

Cover Design	Most Effective Cover	Least Effective Cover
Simple graphic (A1)	3	16
Simple graphic plus picture (A2)	6	0
Complex graphic (B1)	5	3
Complex graphic plus photos (B2)	3	4
Complex graphic (C1)	2	1
Complex graphic plus photos (C2)	9	4

What the focus groups did confirm, however, was that the cover designs which were assumed to be more distinctive and complex were in fact perceived in this way by potential respondents. This could be deduced by the comments made about the alternative covers. For example, cover A1 was described as "Simple and to the point"; "Straightforward, no frills"; and "Nice and plain"; whereas comments about covers B2 and C2 included references to them being "Very busy", "Cluttered" and "Eyecatching". (Though two of these latter three comments are negative, they support the contention that these cover designs were perceived as more distinctive and complex than the others tested.)

Discussion

This study was designed to test the hypotheses that the response rate for a mail survey will be increased if the cover of the questionnaire contains a picture, and that the more distinctive and complex the cover design created, the stronger this effect will be. The results suggest that, while the use of photos or pictures may marginally increase response rates, the effect is not guaranteed and may even be negative. Similarly, there is little or no evidence in this study to support Nederhof's theory that a more distinctive, complex questionnaire cover design is better than a simple one.

However, as Dillman & Dillman (1995) point out, "retrievability", and hence the effect of questionnaire cover design, may be different for different populations. Nederhof (1988) surveyed biotechnologists at work, whereas those surveyed in both Dillman & Dillman's study and in this study were members of the general public, contacted at home. Perhaps memorability of questionnaire cover design is more important in situations where respondents are dealing with considerable paperwork, as would be the case for Nederhof's biotechnologists.

Even if this is so, it does not necessarily mean that questionnaire cover design is unimportant in surveys of the general public. The difference in response rates between the most successful and least successful of the six covers tested was nearly 6%, a non-trivial difference. Unfortunately, such a difference cannot be achieved simply by including a picture on the cover of a questionnaire or by increasing the distinctiveness or complexity of the cover design. Such measures **may** increase the response rate, but their effect is not predictable.

Intuitively it seems logical that the cover design of a mail survey questionnaire should affect the response to it, and, further, that the "right" design should increase the response rate achieved. The problem is how to determine the "right" design. Talking to potential respondents about cover design may not be particularly helpful; in this study the cover which potential respondents preferred was the least effective in practice. And, without a well-supported theory of what constitutes an effective cover design, we can only guess at what will work best.

From a practical point of view, this study suggests that a clear, simple, well balanced cover design is likely to be as effective as a more elaborate one, at least for surveys of the general public. The addition of a relevant graphic appears unlikely to decrease the effectiveness of a questionnaire and may increase it, so there seems little to lose from doing this, if it can be done easily, and potentially something to gain. The wisdom of using complex cover designs and designs which include photos seems more doubtful. Photos, in particular, have the

potential to create unpredictable and sometimes undesirable images in the minds of respondents, and, for this reason, I suggest it is better to avoid them.

Overall, it appears that any effect of questionnaire cover design on response rate will be marginal in a well-conducted mail survey. Nevertheless, the appearance of the questionnaire inevitably contributes to the impression created by any survey package, consequently it would be wrong to ignore the issue of questionnaire cover design simply because we have not yet been able to determine what constitutes a better questionnaire cover.

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Footnote.

1. Though the official title of the ISSP module was "The family and changing gender roles", in New Zealand the title used on the survey questionnaires was "The roles of men and women in society". The latter was considered a more appropriate title for a survey of the general public.