The Effectiveness of Monetary Incentives in Mail Surveys: Further Data

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Three studies investigated the effectiveness of using various monetary incentives for improving mail survey response rates. The results provide further evidence that response rates in excess of 60% can be achieved in mail surveys of the general public and of businesses. However, contrary to previous findings that response rates of this magnitude could be achieved without an incentive by sending two follow-up mailouts, the studies reported here required the use of an incentive to obtain this result. Fifty cent and $1 coins were the most effective incentives, with the 50 cent incentive generally the most cost-effective. A 20 cent incentive, an Instant Kiwi, and the promise of a $1 donation to a charity, also increased response rates above a no incentive control.

Keywords: monetary incentives, mail survey, response rates, cost effectiveness

Introduction

In a recent paper (Brennan 1992a), empirical evidence from over twenty New Zealand studies was presented which demonstrated very clearly that response rates in excess of 60% could be achieved, over a wide range of topics, for mail surveys of the general public and of businesses.

The studies also demonstrated that this result could often be achieved by simply sending two follow-up mailouts, and that even higher response rates could be obtained by using this procedure in conjunction with a monetary incentive. So far, a 50 cent incentive sent with the first mailout seems to be the most cost-effective method for obtaining respectable response rates.

The use of a 50 cent incentive, plus two follow-up mailouts, has produced response rates as high as 75% to 81% in surveys of the general public (Brennan 1992b). In one case, it cost only 6% more than a control that did not use an incentive, to produce a response rate that was 30% higher. A $1 incentive has also been found effective, but not as cost-effective as 50 cents (Brennan, Hoek & Astridge 1991). To date, there is no published data regarding the effectiveness of monetary incentives in business surveys.

Clearly, the cost-effectiveness of using a monetary incentive would be increased even further if similar response rates could be achieved with an incentive of lesser value. The only New Zealand study that has examined this so far (Brennan, Hoek & Astridge 1991) found that a 20 cent incentive was no more effective at increasing the survey response rate than using no incentive at all. However, it would be premature to dismiss the possibility that a 20 cent, or some other low value monetary incentive, could be effective. Similarly, it is possible that other types of monetary incentive could effectively increase response rates, but there is no published New Zealand data on this.

The purpose of this paper is to report the findings of three further New Zealand studies that have examined the effectiveness of using monetary incentives to improve the response rates and cost-effectiveness of mail surveys. Specifically, the studies examined monetary

incentives of different values (20 cents, 50 cents, and $1), and types (coins, $1 Instant Kiwi, and the promise of $1 donation to a charity).

Method

The data reported here comes from three mail surveys conducted between May and October, 1992. Two of the studies were conducted by groups of third year marketing students, as part of a third year marketing paper. The third was a large survey undertaken by the Department of Marketing as part of the International Social Survey Programme (Gendall, Wright & Hosie 1993).

Study A

A sample of 350 people was randomly selected from the seven electoral rolls nearest to Woodville, and assigned to one of four experimental groups. One group served as a control; the other three received either a 20 cent, 50 cent or $1 coin with the first mailout. These groups were balanced across electorate and Elley-Irving socio-economic classification (Elley & Irving 1981). The topic of the survey was potential patronage of a proposed sports facility.

Study B

Random national samples of 250 dairy and 250 beef farmers were purchased from a commercial list house. Respondents in each sample were randomly assigned to one of four experimental groups. Three of the groups received either a 50 cent or $1 coin, or a $1 Instant Kiwi ticket, with the first mailout; the fourth group was the control. The survey examined farmers' use of mineral supplements.

Study C

A systematic random sample of 2154 people was drawn from the electoral rolls (including the Maori rolls) These people were systematically assigned to one of four treatment groups, balanced across electorates. One group served as a control; two received either a 50 cent or $1 coin in the first mailout; and the fourth group were informed, in all three mailouts, that $1 would be donated to IHC for each valid return. The survey investigated respondents' attitudes towards social inequality.

Measuring cost-effectiveness

Cost-effectiveness is measured in this study using the procedure reported by Brennan et al. (1991). That is, the cost and response rate for the control are used as baseline measures, against which the experimental groups are compared. The cost-effectiveness of an incentive is measured by computing the incremental cost [(total cost of incentive - total cost of control)/ total cost of control x 100], and the incremental response rate [(response rate for incentive -response rate for control)/ response rate for control) x 100]. These two measures are used to compare the different types of incentive.

In addition, a new summary statistic, E, has been computed. E is the ratio of incremental response to incremental cost. An E value greater than 1 indicates that the incentive is more cost-effective than the control, whereas an E value less than 1 indicates that the incentive is

less cost-effective than the control. E should be used in conjunction with the actual response rate and cost data when deciding whether a particular incentive is worth using, or not.

Results and Discussion

Study A

Response Rates

The response rates associated with each type of incentive are summarised in Table 1. Although none of the differences between the incentive groups and the control was statistically significant at the .05 level, this is most likely due to the small sample sizes, for a clear pattern is evident for each wave. That is, the response rates in each wave increased as the value of the incentive increased.

While the 20 cent incentive produced only a marginally higher response rate than the control in the first wave, the response rate for this incentive continued to improve throughout the survey, so that by the end of the survey it had produced a response rate only marginally lower than that produced by the 50 cent and $1 incentives. By contrast, the response rates for both the 50 cent and the $1 incentive were substantially higher in the first wave that both the control and the 20 cent incentive, and the difference between these incentives and the control was maintained for the rest of the survey.

Table 1. Response Rates for Study A

Treatment	n^1	r	Wave 1		Wave 2		Wave 3	
			%	$c.r^2$	$c.\%^3$	c.r	c.%
Control	79	21	26.6	35	44.3	44	55.7
20 cents	79	23	29.1	42	53.2	49	62.0
50 cents	80	32	40.0	46	57.5	53	66.3
$1	82	32	39.0	49	59.8	56	68.3

Note. 1. Adjusted for "Gone-No Address".
2. Cumulative valid responses.
3. Cumulative response rate.

Cost-effectiveness

The cost-effectiveness of the three incentives is examined in Table 2. Arguably, the most cost-effective incentive was the 20 cents, for the increase in response rate achieved by this incentive far outweighed the increased costs of using it, and this increase in incremental

response rate relative to the increase in incremental cost (i.e., E value) was higher than for either the 50 cent or the $1 incentives.

However, the decision regarding which of the incentives one would choose to use depends not only on the E value, but on the actual response rate and cost data. When response rates are considered as well as E, both the 50 cent and $1 incentives would seem to be preferable to the 20 cent incentive. Although the 50 cent and $1 incentives cost 12% and 28% more than the control to use, this may be considered a reasonable price to pay to increase response rates from 56% (control) or 62% (20 cent incentive), to 66% (50 cent incentive) or 68% ($1 incentive).

Table 2.   Cost-Effectiveness of Incentives in Study A

Treatment	Total[1] cost	Response rate %	Increm. [2] resp. %	Increm.[3] cost %	E[4]
Control	223	55.7	-	-	1.0
20 cents	224	62.0	11.3	0.5	22.6
50 cents	249	66.3	19.0	11.7	1.6
$1	285	68.3	22.6	27.8	0.8

Note. 1. Sample sizes adjusted to 100, and cost based on $1 per questionnaire per mailout.
2. Incremental response rate.
3. Incremental cost.
4. E = incremental response/incremental cost.

Study B

Response Rates

The response rates achieved by the various incentives used in Study B are reported in Table 3. In this study, the 50c incentive produced the highest response rate during each phase of the survey, and the increase in response rate over the control was statistically significant for all three waves (X^2 = 3.89, df = 1, p <.05, X^2= 7.13, df = 1, p<.01, and X^2 = 6.43, df = 1, p < .05, respectively). The $1 incentive was almost as effective, with a higher response rate than the control that was statistically significant for the third wave (X^2 =4.95, df = 1, p < .05). The Instant Kiwi, while considerably more effective than the control, did not produce a statistically significant increase in response rate, and was much less effective than either the 50c or $1 incentives.

A point to note is that the respondents in this survey were farmers, responding to a business related survey. The results therefore indicate that monetary incentives can be effective in business surveys, as well as in surveys of the general public. Whether or not monetary incentives are also effective for mail surveys of other types of businesses remains to be tested.

Table 3.   Response Rates for Study B

Treatment	n[1]	Wave 1		Wave 2		Wave 3	
		r	%	c.r[2]	c.%[3]	c.r	c.%
Control	101	27	26.7	38	37.6	50	49.5
Instant Kiwi	108	35	32.4	55	50.9	64	59.3
50 cents	103	42	40.7*	59	57.3**	70	68.0*
$1	100	35	35.0	51	51.0	66	66.0*

Note. 1. Adjusted for "Gone-No Address"
2. Cumulative valid responses.
3. Cumulative response rate.
* $p < .05$
** $p < .01$

Cost Effectiveness

The cost-effectiveness of the incentives is examined in Table 4. The most cost-effective incentive was the 50 cent coin, with an E of 4.3. This incentive produced a response rate that was 37% higher than that for the control, for only a 9% higher cost.

The $1 incentive was also cost-effective, although the E was just 1; it cost more than the 50 cent incentive and produced a lower response rate. The Instant Kiwi, on the other hand, was less cost-effective than the control (E = 0.5). Although it did produce a higher response rate than the control, it was nowhere near as effective or cost-effective as either the 50c or $1 coins.

Table 4. Cost-Effectiveness of Incentives in Study B

Treatment	Total[1] cost	Response rate %	Increm.[2] resp. %	Increm.[3] cost %	E[4]
Control	230	49.5	-	-	1.0
$1 "Kiwi"	314	59.3	19.8	36.5	0.5
50 cents	250	68.0	37.4	8.7	4.3
$1	307	66.0	33.5	33.5	1.0

Note. 1. Sample sizes adjusted to 100, and cost based on $1 per questionnaire per mailout.
2. Incremental response rate.
3. Incremental cost.
2. E = incremental response/incremental cost.

Although the Instant Kiwi did increase the response rate, the use of this type of incentive has the potential to create problems. For example, non-responders and refusers could receive a winning ticket. Quite apart from the annoyance to the researcher, the publicity surrounding this might well have a negative effect on response rates for subsequent waves. There is also the question of what to do with tickets returned by respondents or refusers, or in undelivered mail.

Study C

Response Rates

The response rates, reported in Table 5, show that the $1 incentive was the most effective, followed by the 50 cent incentive, then the promise of a $1 donation to IHC. Particularly evident is the much higher response produced by the three incentives in the first wave, compared to the control. The increase in response rate over the control was statistically significant for all three waves for both the $1 incentive ($X^2 = 27.2$, df = 1, p<.001; $X^2 = 13.9$, df = 1, p<.001, and $X^2 = 21.8$, df = 1, p<.001 respectively), and the 50 cent incentive ($X^2 = 14.5$, df = 1, p<.001; $X^2 = 9.3$, df = 1, p<.01; and $X^2 = 9.4$, df = 1, p<.01, respectively). The increase in response rate produced by the promise of a $1 donation was statistically significant only for wave 1 ($X^2 = 5.0$, df= 1, p<.05).

Table 5. Response Rates for Study C

Treatment	n[1]	Wave 1		Wave 2		Wave 3	
		r	%	c.r[2]	c.%[3]	c.r	c.%
Control	452	127	28.1	207	45.8	230	50.1
50 cents	454	183	40.3***	255	56.2**	278	61.2**
$1	463	208	44.9***	270	58.3***	307	66.3***
Donation[4]	478	168	35.2*	239	50.0	271	56.7

Note. 1. Adjusted for "Gone-No Address".
2. Cumulative valid responses.
3. Cumulative response rate.
4. Promise of a $1 donation to IHC
* p<.05
** p<.01
*** p<.001

Cost Effectiveness

The 50 cent incentive was the most cost-effective method, with an E value of 2.0 (see Table 6). For the 50 incentive, a 22% increase in response rate was achieved for an 11% higher cost.

The $1 incentive was not as cost-effective as the 50 cent incentive (E = 1.1), although it generated the highest response rate. The promise of a donation was also less cost-effective than either the 50 cent or $1 incentives (E = 0.6), and produced a lower response rate.

Table 6.   Cost-Effectiveness of Incentives in Study C

Treatment	Total[1] cost	Response rate %	Increm. [2] resp. %	Increm.[3] cost %	E[4]
Control	220	50.1	-	-	1.0
50 cents	244	61.2	22.2	10.9	2.0
$1	292	66.3	32.5	32.7	1.1
$1 donation	265	56.7	13.2	20.5	0.6

Note. 1. Sample sizes adjusted to 100, and cost based on $1 per questionnaire per mailout.
2. Incremental response rate.
3. Incremental cost.
4. E = incremental response/incremental cost.

Conclusions

These studies provide further evidence that response rates in excess of 60% can be achieved in mail surveys, particularly surveys of the general public, by using a monetary incentive in association with two follow-up mailouts.

The 50 cent and $1 coins proved to be the most effective types of incentive, each producing response rates of around 65%, with the 50 cent incentive generally proving to be the most cost-effective method. A 20 cent incentive was also cost-effective, but produced a lower response rate than either the 50 cent or the $1. While both the Instant Kiwi and the promise of a $1 donation to IHC also increased response rates, they were less effective than any of the coins, and not as cost-effective.

An interesting point to note is that, for both the 50 cent and the $1, the additional cost of using the incentive was less than the value of the incentive used. At first glance, this may seem strange, since incentives are obviously an additional cost. However, the reason for this is provided by the response wave data. An incentive is effective because it prompts a speedy response, producing a high response rate to the first mailout. This in turn reduces the cost of subsequent mailouts, since there are fewer non-responses to follow-up, saving the cost of the questionnaires, postage and labour.

While there is now a substantial body of evidence indicating that response rates exceeding 60% can be achieved in mail surveys, there is also some evidence to suggest that it is becoming more difficult to achieve results of this magnitude unless an incentive is used. The response rates for the control groups in the studies reported in this paper, and for a number of the studies reported by Brennan (1992a,b), only achieved response rates of between 50% and

58% after two follow-up mailouts. This is in marked contrast to earlier studies (Brennan 1992b), where the use of two follow-up mailouts, without an incentive, was enough to produce response rates in excess of 60%. Whether this apparent decline in response rates is evidence of increasing respondent resistance is not clear, but it does provide a timely reminder of the need to ensure that steps are taken to minimise factors that may contribute to the problem of non-response (see Brennan 1991).

In conclusion, the results of these studies indicate that response rates in the order of 65% can be achieved by using either a 50 cent or $1 incentive with the first mailout, and using two followup mailouts. Since the $1 incentive, on average, produced only fractionally higher response rates than the 50 cent incentive, and at a proportionally higher cost, for surveys of the general public, a 50 cent incentive should suffice.

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