The Effects of Non-Monetary Incentives Upon Survey Refusal Tendencies of the Affluent Consumer Population

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Abstract

This study examined the "refusal to respond" phenomenon in survey research. The effects of various non-monetary incentives upon response rates of upscale consumers were tested. High value probabilistic and low value reward incentives were administered, in conjunction with a control group. Chi Square analysis indicated a significant difference between response rates for the control and probabilistic executions. These results suggest that the high value probabilistic incentive actually decreases response rates in the affluent population.

Introduction

Research on survey methodologies has produced a plethora of information, as well as recommendations for improvement on problems inherent to this method. The primary concern of this research project is the nonresponse phenomenon. Sociological research points to the fact that nonrespondents often differ noticeably from respondents (Filion 1975). For this reason, nonresponse bias should be a major concern in any effort to collect valid and reliable survey based data (Kanuk and Berenson 1975; Fox, et. al. 1988).

In addition to techniques designed to increase response rates, it is also necessary to understand the nature of the target population. One segment which is especially attractive to marketers is the upscale consumer (Stanley, et.al. 1987). Although this group represents a relatively small percentage of the population, it controls a large proportion of purchasing power. This presents attractive segmentation opportunities with great market potential. Measurement of the wants and needs of this upscale group may require modifications, since they respond differently to incentives when

compared to the population as a whole (Gelb 1975).

This research tests the effects of various nonmonetary incentives on the refusal to respond tendencies of the affluent consumer population. Three executions of the incentive factor were administered in a telephone survey: a promised low value reward, a high value probabilistic reward, and a no incentive control group. A Chi Square analysis was used to determine the significance of the incentives in increasing survey response rates.

Literature Review

The Nonresponse Problem

For the purpose of this research, the problem of nonresponse bias is defined as differences between the sample estimates and the population parameters due to differences between responding and non-responding sample members (Cochran 1961, Filion 1975). The magnitude of this bias depends on two factors: the extent of the difference

between the responding and nonresponding groups and the proportion of the original sample that fails to participate in the survey. The former can be estimated by pursuing the nonrespondents and gathering the desired data. This data is then compared to a profile of the responding group and the degree of difference is determined. Problems often encountered in this effort include the additional expense, time consumed and the ethical issues associated with pursuing those individuals who refused to participate.

If the responding and nonresponding groups are not significantly different, the potential for nonresponse bias is negligible regardless of the response rate. If, on the other hand, they are heterogeneous there may be cause for concern, depending upon the response rate achieved. With high response rates, the effects of bias resulting from the differences between the responding and nonresponding groups would tend to be negligible. Low response rates, however, would result in substantial misrepresentation of the target population by the sample data. This, in turn, could lead to fundamental strategic and tactical marketing errors.

To avoid the potential problems of nonresponse bias and the ethical concerns associated with pursuing nonrespondents, most efforts have been directed at increasing survey response rates (Kanuk and Berenson 1975). This can best be done by understanding the reasons for nonresponse. Three reasons cited for the nonresponse phenomenon are: lack of ability, inaccessibility, and refusal to respond (Yu and Cooper 1983).

Lack of ability refers to circumstances where the prospective respondent does not meet the prerequisite conditions for participation. These might include age, income, education, sex or issue familiarity requirements. In such cases, it may be assumed that the individual contacted is not, in reality, a legitimate member of the target population. This situation, however, accounts for a very small proportion of the nonresponding group.

Inaccessibility, or the "not-at-home" phenomenon

(Wilcox 1977), includes those cases where the researchers are unable to contact the prospective respondent. Reasons for the inability to contact include odd work or social schedules, vacations and the use of answering machines. The extent of this problem depends upon the effort made to contact each individual. Persons with college degrees and higher incomes often require more callback attempts than do lower income respondents (Dunkelburg and Day 1973). The first two causes of nonresponse involve no active decision on the part of the nonrespondent. For the most part, the subject's failure to participate is due to conditions beyond their control.

Finally, refusal-to-respond refers to the deliberate, conscious decision by the prospective respondent not to participate in the survey. The reasons for refusal often include lack of interest in the survey issue, unwillingness to spend the necessary time, and/or a general mistrust or disdain for survey research efforts.

Research indicates that the latter two causes of nonresponse have a disproportionate impact upon nonresponse bias. Inaccessibility arises from a lack of physical availability, while refusals are attributable to a negative mental state. Those who are difficult to reach are socially but not attitudinally distinct (Stinchcombe et. al. 1981). Nonresponse bias, therefore, would appear to depend to a much greater extent on refusals than the "not-at-homes" (Stinchcombe et. al. 1981).

In addition to attitudinal distinctions, past research also suggests different demographic profiles for respondents and refusers. Refusers tend to be of lower economic status, less well educated and predominately more blue collar than respondents (O'Neil 1979; Kanuk and Berenson 1975). With regard to item nonresponse, omissions also appear to vary systematically with age and education, with older individuals with less education having a higher incidence of item nonresponse (Craig and McCann 1978).

In summary, the greatest cause of nonresponse bias appears to be refusal-to-respond. Refusers are

more often attitudinally different from those who are inaccessible and appear to have somewhat different socioeconomic profiles. Since the heart of the problem appears to lie in the refuser group, techniques designed to decrease their reluctance, thereby increasing response rates, should prove to be the most effective in reducing nonresponse bias.

Incentives

The potential for distortion due to nonresponse bias has provided an impetus for researchers to strive to improve survey response rates. Incentives and premiums have become popular as means for improvement. This method involves including, or promising, various rewards to entice the individual to complete the survey. Rewards have included such items as money, pens and pencils, letter openers, lottery tickets, digital clocks, and various foods (Kanuk and Berenson 1975).

Incentives can be categorized in many ways. The primary distinction is that of monetary vs non-monetary rewards. Beyond this dichotomy incentives may be further classified as prepaid vs promised, or token vs high value. Some may be probabilistic and some, such as donations to charity, may never be received by the respondent at all. This research is primarily concerned with the nonmonetary and probabilistic categories. A discussion of these is presented below.

Nonmonetary premiums and rewards are typically low value items, such as pens, key chains, food, lottery tickets or commemorative items given or promised to the sample members. The results of research conducted on these executions are mixed. A prepaid token item increases the response rate in most instances but may not be as cost-effective or increase the volume of response as much as the monetary incentive (Yu and Cooper 1983; Linsky 1975). Promised incentives generally have little or no impact upon response rates (Fox, et. al. 1988).

Other research indicates that, although non-monetary incentives do raise response rates, the benefits are nullified by the use of relatively standard survey procedures, such as multiple

callbacks or remailings (Nederhoff 1983). Nederhoff (1983) reports that the use of an incentive increased initial response rates one and one half times as compared to the control group which received no incentive. After subsequent remailings, however, the degree of difference between the control group and those receiving the incentive decreased dramatically, suggesting that the incentive has little or no effect on the hard to attain respondents (Nederhoff 1983).

Another version of incentive under investigation is the probabilistic or lottery-type incentive. Rather than a prepaid or promised token incentive, a probabilistic incentive attempts to encourage participation by offering the possibility of the respondent's receiving a relatively high value item (McDaniel and Jackson 1984).

The premise behind the probabilistic incentive is that the individual receiving the questionnaire with the chance of reward will weigh the expected value of the reward against the time and effort involved in completing the questionnaire. This weighing and assigning of a value to the reward can be viewed as a form of "expected utility" (McDaniel and Jackson 1984).

Probabilistic incentives have produced mixed results. Research indicates that when individuals have a choice between certain gain and a chance for larger gain, a majority prefer the certain gain (Kahneman and Tversky 1982). McDaniel and Jackson (1984) report that a probabilistic incentive of \$100.00 provided no significant increase in response over the control group with no incentive. In this same effort, a prepaid \$.25 incentive was a greater motivator than the chance of winning \$100.00, indicating risk aversion (McDaniel and Jackson 1984).

Although the previous implication is that individuals are risk averse, other studies provide different findings (Faison 1977; Hirschman 1980). Variety and chance-taking may be viewed as motivational for those who exhibit chance-taking behavior. Carlson and Hill (1982) found that a probabilistic incentive can be a positive motivator

of individuals in executive positions. In addition, Kindra, et. al., (1985) found that a lottery ticket resulted in a significant increase in response rates; 50% for those receiving the lottery ticket compared to 36% for those receiving nothing.

Hypotheses

Based upon a review of the literature, two hypotheses were proposed for the current study. The first deals with the expected response of the affluent market to a low value, promised reward. The second deals with the anticipated response of the same population to a high value, probabilistic incentive. The logic for each hypothesis and its precise statement is presented below.

Past research demonstrates little or no value associated with the use of token type incentives, regardless of the population studied (Kanuk and Berenson 1975; Fox, et. al. 1988). The focus of this study was the affluent population. Based upon the low value of the token incentive relative to the high economic status of the consumer group in question, it is anticipated that the results of past research would hold true in this study. Based upon the preceding logic, the following hypothesis is proposed:

H1: Low value promised incentives have no significant effect upon completion rates due to refusal to respond in affluent populations.

Limited research indicates that high value probabilistic incentives may positively influence response rates (Kindra, et. al. 1985; Carlson and Hill 1982). Research on the affluent market also indicates a high incidence of investing and collecting activity (Stanley, et.al. 1987). Incentives that are consistent with these affluent tendencies should serve to enhance expectations of a positive effect. These implications serve as the basis for the second hypothesis:

H2: High value probabilistic incentives have a significant positive effect upon completion rates due to a decrease in

refusal to respond in affluent populations.

Both of these hypotheses are consistent with much of the past literature on the use of nonmonetary incentives and with the characteristics of the affluent market.

Methodology

The methodology utilized for hypothesis testing incorporated an experimental research design. Various levels of the incentive factor were administered to the respective cell members. These treatment conditions were couched within a new product potential telephone survey with the incentive being the only point of variation. The research design is presented first, followed by the sample design and, finally, a discussion of the questionnaire.

Research Design

Three incentives were offered in this experiment: a no incentive control group, a digital clock pen reward, and a chance of winning a 1/2 ounce South Dakota Bison gold coin. The odds of winning were approximately one in 200. According to the hypotheses stated earlier, the pen reward should have no effect and the gold coin should decrease refusals. The resulting experimental design is presented in Figure 1. Each of the treatment conditions in this three by one matrix were assigned 350 prospective respondents, stratified to represent a national sample.

The outcome for each individual sample member was categorized as one of the following; completed survey, refusal, no contact, or disconnected. Since the focus of this research is on the refusal phenomenon, the inability to contact a prospective respondent and outdated telephone/mailling lists are of little consequence and are, therefore, not considered in the analysis. The analysis concentrates on the respondents who actually agreed or refused to participate. The test for significant differences between the treatment conditions is based upon a Chi Square analysis.

Figure 1
Experimental Design

Control	Promised	Probabilistic
No Incentive	Pen	Gold Coin

Sample Design

The population of interest for this project was the United States affluent, or upscale market. This was defined to include households in the contiguous 48 states satisfying all of the following criteria; purchasing power of \$75,000.00 or above, home values of \$100,000.00 or more, and white collar occupations. These characteristics are consistent with previous descriptions of the affluent, or premium markets (Stanley and Sewall 1986; Stanley et.al. 1987; Thomas 1987).

To develop a sample of the specified target population, a telephone/mailling list was purchased from Donnelley Marketing of Stamford, Connecticut. These names were stratified to match the percentage of the United States population located in each respective state. The actual names assigned to each cell were selected at random from the Donnelley list, on a state by state basis.

Questionnaire Design

The survey instrument utilized in this research effort included two components: a new product information mailing piece and a telephone questionnaire. The mailing piece was designed to communicate product knowledge and can, therefore, be considered a form of prenotification. The questionnaire was designed to measure attributes of new product concepts. The delivery of the new product information and the execution of the telephone interview were carefully coordinated in order to assure adequate time to review the material. At the same time, contact should be

made relatively soon after receipt in order to aid recall and reduce the likelihood that the material be discarded or misplaced. Contacts, therefore, were made from two to six days after receipt of the product information packets.

Analysis And Results

To test each of the hypotheses, Chi Square analyses were performed. A significance level of .10 with one degree of freedom established a critical value of 2.71. The analysis incorporated the actual number of both refusals and completions for the treatment conditions identified in each respective hypothesis. The results are presented in Tables 1 and 2. Once again, the column totals represent only legitimate contacts. This is less than the original 350 members per cell due to the occurrence of disconnected and unanswered numbers.

Based upon this analysis, null hypothesis 1, no difference between the control and low value reward treatments, cannot be rejected. The completion rates for the control group and those receiving the digital clock pen were almost identical. The difference was not significant, yielding a test statistic of only 0.22. The data, therefore, does support Hypothesis 1, which states that the low value incentive should have no effect upon response rates in the upscale market.

In the case of Hypothesis 2, the data failed to support the expectation of a higher response rate. In fact, the data indicates that the probabilistic incentive actually had a negative effect upon

Table 1
Results of Control vs Pen Reward

	Control	Pen	Total	
Completed	Actual #	213	227	440
	%	76%	75%	
	Expected #	210.6	229.5	
	%	75.5%	75.5%	
Refusals	Actual #	66	77	143
	%	24%	25%	
	Expected #	68.4	74.5	
	%	24.5%	24.5%	
Total		279	304	583

CHI SQUARE (.10,1) = 2.71

ACTUAL CHI SQUARE = 0.22

response rates. The Chi Square analysis produced a test statistic of 2.74 which is significant at the .10 level.

To pursue this apparent negative impact, a short follow-up survey was administered to those who refused the probabilistic incentive. The goal of this survey was to determine perceptions of the chance of winning the gold coin, value placed on the incentive, and belief that it was a genuine offer. This short, six item survey took approximately two minutes to complete and the response rate was only 30%. The results are presented in Table 3.

Although no formal hypotheses were proposed, and the sample size is extremely small, a large proportion viewed their chances of winning the gold coin as very poor, and over half felt that the \$220 gold coin would not be worth the time and effort required to participate. The majority, however, did believe that the probabilistic incentive

was a genuine offer.

Discussion

In the case of the first hypothesis the results obtained were expected. Past research indicates the inability of promised rewards to decrease refusals (Fox, et. al. 1988; Nederhoff 1983). A possible explanation for the failure to reject the first null hypothesis is that the procedures employed in the telephone survey center already serve to maximize response rates. The experienced staff, together with University sponsorship, the five callback and three day-part procedures consistently produce response rates in the 70% to 90% range. The failure to reject the first null hypothesis confirms past findings. It appears that the benefits of incentives under these conditions are marginal at best, as has been reported by previous research (Nederhoff 1983).

Table 2
Results of Control vs Gold Coin Reward

		Control	Gold Coin	Total
Completed	Actual # %	213 76%	200 70%	413
	Expected # %	204.3 73.2%	208.7 75.2%	
Refusals	Actual # %	66 24%	85 30%	151
	Expected # %	74.7 26.8%	76.3 26.8%	
Total		279	285	564

CHI SQUARE (.10,1) = 2.71 ACTUAL CHI SQUARE = 2.74

Table 3
Results of Follow-Up Survey

	Strongly Agree or Agree	Not Sure	Strongly Disagree or Disagree
Good Chance	9.52%	47.62%	42.82%
Valued Incentive	39.12%	8.69%	52.17%
Genuine Offer	65.21%	8.69%	26.08%

N = 23

to \$50,000 (Stanley and Sewall 1986). The specification of the affluent market in the current study was household incomes of \$75,000 and above. The degree of similarity between households in the \$50,000 to \$75,000, and the \$75,000 plus categories has yet to be established. This lack of clarity and consensus further limits the generalization of results.

All of these limitations require further testing of the basic hypotheses under various operationalizations of the incentives, survey subject matter, and the affluent population. As such, these shortcomings represent limitations of the general research process and not inherent flaws in this particular study.

Managerial Implications

The goal of a research director is to obtain reliable market information. To this end, two avenues have proven effective in increasing response rates across various populations and survey topics: conscientious execution (Nederhoff 1983) and prepaid monetary incentives (Furse and Stewart 1982; Linskey 1975). Conscientious execution includes a combination of standard survey procedures including multiple call-back attempts, coverage of all major day-parts, reputable sponsors and trained and experienced interviewers. Prepaid monetary incentives facilitate the social exchange of information and consistently outperform other incentives (Fox, et. al. 1988).

Although these measures increase the time, effort and cost of the survey effort, the likelihood of nonresponse bias is decreased and the value of the information is enhanced. The key issues faced by management are: how much information is needed and how much can they afford. The temptation is to sacrifice data quality for data quantity, however, mountains of questionable or spurious results are of little use to the marketing

decision maker. Serious consideration of the research question can help identify key informational needs and result in more purposeful data gathering.

Other types of incentives, such as donations and probabilistics, may hold promise for the future, however, research results are mixed. A clarification of efficacy is needed before these techniques are endorsed for widespread use or dismissed as ineffective. Emphasis of future research must include the characteristics of the target population and the value of the incentive to the respondent.

Summary

A high value probabilistic and a low value reward were tested against a control group receiving no incentive. Chi Square analysis found that the low value incentive had no affect upon response rates. An additional Chi Square analysis found a negative effect associated with the high value probabilistic incentive. A follow-up study of those who refused the high value probabilistic incentive suggests that the affluent population has a basic understanding of the low probability of success. Furthermore, they found the value and investment potential of the incentive insufficient for survey participation. The apparent lack of enthusiasm toward the gold coin incentive was supported by an expected value analysis. Increasing the expected gain from participation may serve to reverse the refuser's perception.

Wholesale rejection of high value probabilistic incentives would not be warranted at this time. Considerations of data quality, other forms of probabilistic incentives, and other specifications of the affluent market require further analysis. This paper contributes to a body of literature that is still in its infancy with respect to understanding the affluent market and the impetus necessary to motivate survey response.

The results of the second hypothesis concerning the probabilistic incentive was unexpected. A possible explanation for these results could be the socioeconomic characteristics of the affluent consumer population. This population may better understand probabilities, due to higher education levels, and therefore more accurately assess the chance of winning. This recognition, coupled with the higher income levels and higher value of their time may produce a negative expected value for participation.

The expected value of participation can be expressed as the weighted sum of the possible outcomes from survey participation (McDaniel and Jackson 1984). There are two possible outcomes associated with participation: participate and win the gold coin, or participate and not win. As stated in the premailing, each participant has approximately a one in two hundred chance of winning the gold coin, or approximately .5%. The chance of not winning therefore is approximately 99.5%. The expected payoff is then

$$\begin{aligned} EV &= (\$220 * .005) + (0 * .995) \\ EV &= \$1.10 \end{aligned}$$

If one includes the cost of the individual's time and effort required for participation, the expected gain is clearly negative. Assuming that a professional values his/her time at \$50.00/hour, participating in a 15 minute telephone survey would cost \$12.50, regardless of whether the individual wins the gold coin. Based upon this assumption, the net expected gain is the \$1.10 expected value of the incentive minus the \$12.50 sunk cost, or -\$11.40. Although the actual numbers are not concrete, the explanation is conceptually appealing if one assumes that the prospective participant views the incentive as a form of compensation for his/her effort. This appears to be the implication of incentive offers; to create a compensatory relationship between the respondent and the researcher (Fox, et. al. 1988).

The results of the follow-up survey appear to be supportive of the expected value analysis presented above. These results, although not statistically

representative of the population in question, do suggest a basic understanding of chance and that many felt the incentive was not worth the time and effort required for participation. To increase the attractiveness of the offer, one must increase the odds of winning, the value of the reward, or both.

Research Limitations

These results are not without limitations. One important issue is the potential influence of an incentive upon the quality of the survey data. This was not a consideration of the current study. A second limitation pertains to the nature of the probabilistic incentive and the extent to which inferences can be made. Finally, the specification of the affluent market is only one of many presented in the literature, thus presenting a further limitation on the inference process.

Although some types of incentives have had little or no effect upon refusal rates, some have demonstrated a significant positive effect upon data quality (Godwin 1979). Some incentives create a higher level of commitment or obligation on the respondent's part. The value of these incentives may materialize, not in the form of higher response rates, but rather, in fewer omitted questions and more complete open-ended responses. This phenomenon was not considered in the current study. Further research is required before any final conclusions are drawn regarding the use of probabilistic incentives.

The second limitation deals with the execution of the probabilistic incentive. The incentive consisted of a 1/2 ounce Commemorative South Dakota Bison Gold Coin. This item could be valuable to investment speculators and collectors. This may not be the case with all forms of high value probabilistic incentives. Some may be valued only for their monetary equivalence or uniqueness. The dual nature of the gold coin execution in the current study may serve to limit generalizability.

Finally, a universal definition of the affluent market has yet to be established. Minimum income levels range from \$100,000 (Thomas 1987) down

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