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Richard A. Stevick
*Messiah College*, rstevick@messiah.edu

James H. Barnes

Sandra G. Orke

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COMPARING SURVEY RESULTS OF VOLUNTEER AND RANDOMLY-SELECTED SUBJECTS

RICHARD A. STEVICK, JAMES H. BARNES III, AND SANDRA G. ORKE

Messiah College

Summary.-Based on research on nonresponse bias summarized by Rosenthal and Rosnow in 1975, the researchers hypothesized that responses from the 43% of college students who voluntarily returned surveys of students' attitudes and behavior would be more congruent with college goals and expected lifestyle than responses one year later from a randomly selected group of 7% of the students. When percentages of students from the volunteer and random groups were compared on each of 82 items of a survey of students' attitudes and behaviors, most items showed differences of 3% or less. Of the 23 items which varied between 5 and 9%, only six were statistically significant. When compared with the college's stated goals and lifestyle expectations, only three of these items were congruent, which did not support the original hypothesis. With such small and random differences, the authors concluded that either method was equally valid in sampling students' self-reported attitudes and behavior.

Since Hilgard and Paine (1944) raised the issue 45 years ago, researchers have been interested in the possible bias caused by potential subjects who do not volunteer, respond, or show up for research. Although Smith (1983) summarized nine approaches to assess and compensate for nonresponse, he concluded that accurately determining the extent to which results are biased by nonrespondents is exceedingly difficult. The current study was done to examine the difference between answers given by college students who voluntarily returned a questionnaire and a randomly selected sample of students who answered the same questionnaire a year later.

The impetus for this study came when a number of faculty and staff at a small, church-related liberal arts college in the Northeast questioned the results of a survey of attitudes, values, and behavior collected by the Office of Student Development. Survey items dealt with a range of topics that included academic involvement and problems (six items), attitudes toward various aspects of the college experience (13 items), participation in co-curricular programs and activities (four items), attitudes toward moral and ethical issues, e.g., divorce, homosexuality, gambling (20 items), use of time (12 items), religious practice and attitudes, e.g., church attendance (five items), psychological/emotional status, e.g., reported incidents of depression, eating disorders, and the like (six items), prohibited behaviors, e.g., drug use, stealing, premarital sexual activity (11 items), and unclassified or unusable (five items).
When the responses were tabulated and distributed to the faculty, many expressed surprise that reported attitudes and behaviors were so congruent with institutional goals and ideals. From their contact with students, they had expected to find more problems, alienation, and rejection of the college's goals and commitments than had been reported on the survey. This apparent discrepancy stimulated the present study.

In April 1988, all 2000 full-time students were sent the questionnaire, and 868 responded, giving a 43.4% response rate. However, the fact that the majority of students (56.6%) did not respond raised the question of whether nonrespondents differed in any systematic way from respondents. In analyzing hundreds of studies on volunteer subjects, Rosenthal and Rosnow (1975) concluded that one consistent difference was that volunteers tended to have a higher need for social approval than did nonvolunteers. Conceivably, those students who cooperated with the student development office by volunteering to fill out a questionnaire may have been more likely to seek and find their approval from supporters of the stated values of the college. If this is what in fact happened, the data would reflect a systematic positive bias.

Other studies indicated that people who felt competent or successful in the area of inquiry were more likely to volunteer than those who felt incompetent or lacking in that area (Rosenthal & Rosnow, 1975; Beck & Jones, 1973). Conceivably, students who deviated from the normative institutional standards of moral, religious, or academic behavior disproportionately did not return their questionnaires. Perhaps a lack of "success" in these areas inhibited their responses. If so, this also would contribute to biased results.

Finally, in terms of lifestyle differences, Edlund, Craig, and Richardson (1985) found that nonrespondents in surveys were more likely than respondents to have drug and alcohol-related problems. Smith (1983) found, among other things, that "hard-to-get" respondents were more likely to have received a traffic ticket and favored the legalization of marijuana. Although such a group was not expected to be large at this church-related college, their failure to respond might contribute to a systematic bias of the results.

In light of these possibilities, the experimenters hypothesized that students in the original study who returned questionnaires would, on the whole, reflect attitudes and behavior more consonant with the values and expectations of the institution as expressed in its written institutional goals and in its lifestyle statement, whereas the randomly selected student group would reflect more deviance from the expected behavioral and attitudinal standards, e.g., more reported drinking, cheating, premarital sexual activity, negative attitudes toward their college experience, and the like.

METHOD

Initially, the 82 item attitude/behavior survey was developed and sent
DATA FROM VOLUNTEER VS RANDOM SUBJECTS

from the Vice President of Student Development in April 1988 to all 2000 full-time students who were asked for their cooperation in providing information about the student body. In April 1989, a randomly selected sample of 170 students from the current student body of 2170 received from the same vice president a letter explaining the importance of their participation and asking for their cooperation in filling out a survey of students' attitudes and behavior. The questionnaire was the same one that had been used the previous year. To maximize the return rate, students were given the option of filling out the questionnaire instead of attending the semiweekly convocation services. As in the past, anonymity was emphasized and assured. Participants simply signed in when they arrived so that absentees could be contacted again and encouraged to fill out a questionnaire. Systematic follow-up of nonrespondents resulted in usable questionnaires from 148 students, for an 87% return rate. In contrast to the earlier volunteer study in which women, freshmen, and sophomores were overly represented, respondents in this study accurately reflected, as intended, the sex and class ratios in the college.

Percentages of students responding to each of the 82 items which focused on attitudes, emotions, and lifestyle issues from the two years were then compared; finally, $x^2$ analyses were run.

RESULTS

The majority of items showed little difference (usually less than three percent) between the two surveys in percentage of students reporting specific behavior or attitudes, e.g., use of drugs, cheating, gambling, stealing, attitudes toward homosexuality, divorce, and the church. Twenty-four items showed at least a five percent difference between the two surveys. They involved college-related areas, such as participation in intramurals, use of personal computers, and attendance at concerts; more personal areas, such as depression, loneliness, petting, sexual intercourse; and attitudes toward the college's influence in helping students prepare for the world of work, for satisfactory adjustment to marriage and family, and to increased sensitivity to others.

However, when all responses from the two groups were subject by chi-squared analysis, only six items were significant ($p < .05$): the volunteer group, compared to the sample group, reported more disagreement with the statement that the college's chief benefit is to increase one's earnings ($x^2 = 10.61$), expressed more willingness to confront wrongdoing among their peers ($x^2 = 10.75$), and agreed more with the statement that the college was helping prepare them for satisfactory marriage and family responsibilities ($x^2 = 12.12$), but they reported more loneliness and homesickness ($x^2 = 12.97$), spent less time in classes and labs ($x^2 = 13.65$), and expressed less desire to participate in missions and service projects ($x^2 = 10.94$). Although the volunteer group's responses on the first three items reflected more agree-
ment with the college's stated goals and lifestyle statement, their responses on the last three items were less consonant with official expectations than were the responses of the sample. The only item significant at the .01 level was less participation in intramural sports for the volunteer group, an area which college expectations do not specifically address ($\chi^2 = 15.27$). Thus, contrary to our hypothesis, the volunteer group showed no systematic pro-institutional bias.

**DISCUSSION**

Since comparing answers from the volunteer sample with those of the random sample indicated no systematic bias, either positive or negative, and since the size of the difference was minimal, the volunteer sample of 43% and random sample of 7% were, for all practical purposes, equally accurate. However, even though the sample consisted of only 148 subjects, the actual effort expended to obtain an 87% return rate was considerably greater than the effort expenditure for the volunteer responses.

It is always possible that the small differences between the 1988 and 1989 survey results were cohort differences. In further study, one could examine a random sample and volunteers taken from the same population. Also, with 82 questions it is likely that at least four of the seven significant items occurred by chance. The few differences may have simply reflected the more accurate demographic composition of the sample. Finally, even though we obtained a good response rate for the sample, it is still possible that a bias exists in the 13% who failed to respond.

In conclusion, for this type of survey, one can apparently place as much confidence in responses by a random sample of 7% as in those of a volunteer population of 43%. Our experience leads us to conclude that it is extremely difficult to get 100% response. Some room for skepticism regarding the external validity and reliability of the results will always exist.

**REFERENCES**


