Questionnaire Design, Return Rates, and Response Favorableness in an Employee Attitude Questionnaire

Michael T. Roberson
College of Business
Eastern Kentucky University

Eric Sundstrom
University of Tennessee

Topic order and location of demographic items were systematically varied in an employee attitude survey distributed to 1,188 office personnel of a single organization. With six questionnaire topic areas arranged in the order that matched employee representatives' perceptions of employee priorities, returns were higher (96%) than with any of five random orders (average 78%). Returns were higher with demographic items placed at the end (85%) than at the beginning (77%). Global attitudes and three of six topic attitudes varied with topic order and were more positive with the prioritized topic order than with the five random orders. The largest order effect was noted in employees' attitudes toward pay ($p < .001$), which was the most important topic. Methodological and practical implications are discussed.

In this experiment, we examined two design features of an employee attitude survey—topic order and demographic item location. Criteria were questionnaire return rates and response favorableness, including favorableness of global attitudes and attitudes toward specific topics. Understanding such effects is important for both scientific and practical reasons.

Earlier research on return rates in attitude surveys has investigated effects of several features of questionnaire design and administration (see reviews by Dillman, 1978; Kanuk & Berenson, 1975). Little previous research has examined the effects of item order in surveys. Kraut, Wolfson, and Rothenberg (1975) circulated two versions of a questionnaire in which the order of two 23-item sections (from a total of 168 items) was manipulated and analyzed. Favorableness of responses was not influenced by whether the items appeared in the first half or the last half of the survey. Bradburn and Mason (1964) varied the order of questions in face-to-face interviews but found no differences in responses. Martin and McConnell (1970) examined the effects of order of presentation on return rates. Two questionnaires were given, one more difficult than the other; higher return rates were obtained when the easier one was given first. None of these studies considered the possibility that there might be differences between the return rates of questionnaires whose topics are arranged logically based on their relevance to respondents, and questionnaires whose items are arranged randomly.

Giles and Feild (1978) examined the effects of the location, format, and amount of demographic information requested on questionnaire return rates, and failed to find any effects of the placement of demographic items. The lack of effects could stem from special characteristics of the population used in the study, namely, university professors.

Hypotheses

Hypothesis 1: A questionnaire in which the topic order matches employee preferences yields a higher return rate than other topic orders. Employees whose questionnaires immediately address their most pressing concerns may be more motivated to finish and return their surveys than those whose questionnaires open with items irrelevant to their main concerns (Dillman, 1978).

Hypothesis 2: Location of demographic items at the end of the survey yields a higher return rate than location at the beginning. Seeing such items at the beginning of the questionnaire may detract from the apparent relevance to employees' concerns, in contrast to a survey in which the first items address issues important to employees.

Hypothesis 3: Respondents express more favorable attitudes in questionnaires arranged in the prioritized topic order than in other orders. With topics presented in order of priority, employees may be able to vent their strongest concerns first, then give more accurate responses to items for which they have less salient opinions.

Method

Research Design

In an experiment with a $6 \times 2$ factorial design, independent variables in an employee attitude survey were topic order (prioritized order and...
five random orders) and demographic item location (beginning or end
of questionnaire). Criteria were return rate (proportion of question-
naires sent out that came back) and attitudes (a global attitude measure
and six separate topic measures).

Survey Questionnaire

The survey questionnaire consisted of 95 closed-ended items, ap-
ppearing in six topical sections located on separate pages and numbered
separately within sections. The topics were pay, supervision and man-
agement, benefits, job and surroundings, career development, and
communication. A standard 5-point response scale was used (agree,
slightly agree, not sure or no opinion, slightly disagree, disagree, and does
not apply). Four closed-ended demographic questions addressed length
of organizational service, age, sex, and education. At the end of the
questionnaire, respondents were given the chance to write comments
about any concerns not addressed in the survey.

Procedure

Thirty-six employee-elected representatives were asked to rank the
survey topics in order of priority to the employees they represented.
Representatives' rank orderings showed good agreement (Kendall's co-
efficient of concordance = .47, p < .001) and provided an estimate of
true priorities (Kendall, 1948). The representatives' summed ranks
were used to design a prioritized topic order.

At the time of administration, employees received an envelope,
through their department, containing a survey questionnaire and a
letter from the chief executive officer of the organization. Each depart-
ment received a package of questionnaires with equal numbers of the
12 combinations of topic order and demographic page location. The
questionnaires had been shuffled so that the 12 versions would be
approximately randomly distributed throughout each department's
package.

Although most of the questionnaire items were attitudinal, the sur-
voy contained some informational items that assessed respondents' knowl-
dedge of employee-related programs (e.g., "I know what [name of
organization]'s affirmative action policy is.").) as opposed to their atti-
dudes toward them. Because Hypothesis 3 predicted differences in
employee attitudes by topic order, a panel of expert judges was con-
sulted to distinguish attitudinal items from those that were informa-
tional in nature. Seven colleagues, experienced in questionnaire design
and analysis, were asked to select items that definitely called for an
evaluation or expression of attitude. Our criterion for designating atti-
dudal items was selection by 5 of 7 judges. Thirty-two items met the
criterion and were included in the attitudinal analysis.

Participants

A total of 1,188 nonexempt office employees in a single, nonunion-
ized organization were invited to participate in an employee attitude
survey. Approximately 79% of the participants were women. The me-
dian age group was between 26 and 36 years old; the average partici-
pant had less than three years tenure with the organization. Eighty-
nine percent had graduated from high school; 49% had some training
beyond high school, but only 13% had college degrees. Of those
employees invited to take part, 964 completed and returned their ques-
tionnaires, an overall return rate of 81%.

Variables

Topic order. Six topic orders were used: the prioritized order (based
on rankings by employee representatives) and five alternative orders.
The prioritized order was pay, supervision and management, benefits,
job and surroundings, career development, and communication. The
five alternative orders were drawn from a single, randomly generated
latin square that provided for perfect counterbalancing. Topic order
was manipulated through arrangement of the pages containing the six
sections.

Demographic item location. In half of the questionnaires containing
each of the six topic orders, the page containing demographic items
appeared immediately following the instructions, prior to attitudinal
items. In the remaining half of the questionnaires, this page came last.

Return rate. The proportion of questionnaires returned within 3
weeks of distribution was calculated as the measure of response rate.

Global attitude. A composite was calculated from all attitudinal
items.

Topic attitudes. Within each topic area, a composite of items deal-
ing with that topic was formed. Internal consistency reliability esti-
mates for the attitude measures ranged from .50 to .87. Attitudinal
items selected for use in the questionnaire were not intended to be
homogeneous groupings, which may account for the modest level of
some of the reliabilities.

Results

Return Rate

Topic order. To examine the effects of topic order, we per-
formed a planned contrast between the prioritized order and the
average of the five random orders, using a chi-square test for
equality of proportions (Gibbons, 1976). The prioritized order
had a substantially higher return rate than the average of the
random orders (96% vs. 78%), \( \chi^2(1, N = 1,188) = 34.08, p < .001 \),
and each of the random orders had a return rate lower than the
prioritized topic order. Even for the random order with the best
return, the return rate was lower than for the prioritized topic
order and represented a significant difference, \( \chi^2(1, N = 396) =
18.00, p < .001 \). Results supported Hypothesis 1.

Demographic item location. When the demographic items
were located last in the questionnaire, the average return rate
was 85%, compared with 77% with the same items located first,
\( \chi^2(1, N = 1,188) = 12.68, p < .001 \). This result supported Hy-
pothesis 2.

Figure 1 displays return rates for the four combinations of
topic order and demographic item location. There was no inter-
action.

Attitudes

To test for differences in attitudinal responses as a function
of topic order and demographic item location, we began with a
6 \( \times \) 2 (Topic Order \( \times \) Demographic Item Location) multivariate
analysis of variance (MANOVA) with attitudes for each of the six
topic areas as the criteria. The multivariate test for interaction
was not significant. Tests revealed multivariate differences by
topic order, Wilk's lambda (30, 2266) = .91, \( p < .05 \), but no
significant differences by demographic item location. Global
attitudes as affected by treatment condition are shown in Figure
1, with higher scores representing more favorable attitudes.

Univariate planned contrasts were performed to test the hy-
pothesis that attitudinal responses from questionnaires
arranged in the prioritized order would differ favorably from
those arranged randomly. Significant differences \( (p < .05) \) were
noted for three of six topic attitudes, as well as for global atti-
tudes. The strongest difference was found for pay (M = 2.72 for the prioritized order, M = 2.47 for random orders combined), t(829) = 3.47, p < .001. In all instances, the prioritized order yielded more favorable responses. Global attitudes from two of the random orders (M = 3.35 and M = 3.38) differed only slightly from those with the prioritized order (M = 3.40), however. Hypothesis 3 was supported.

Attitudes toward pay were markedly less favorable (M = 2.52) than attitudes for the other five topic areas (combined M = 3.47). This difference may have magnified the order effect induced by the random topic arrangements. Order effects would logically be greatest when attitudes for the topic of greatest concern are substantially different (e.g., more negative) from other topic attitudes, as was noted here.

Discussion

Results demonstrated significant effects on the return rates of an employee attitude questionnaire associated with topic order and demographic item location. Topic order had a particularly powerful influence. The prioritized topic order, designed by employee representatives, was associated with a return rate 18% higher than the average of 78% for five randomly generated orders using exactly the same items. Also, return rate was higher when demographic items were placed at the end. Given the size of the organization studied, the four demographic items in the survey provided only a moderate threat to the anonymity of respondents. Effects on return rate might be greater when employees perceive more risk of being identified.

It is possible that the return rate results obtained in this study may have been influenced by a ceiling effect, in which the high overall return rate restricted potential variability by experimental condition (see Cook & Campbell, 1976). If so, these results may be conservative and may underestimate what would have been found in a study with an overall return rate approximating 50%.

As expected, results on employee attitudes revealed more favorable global attitudes in response to the questionnaire arranged in the order of employee priorities. Two random orders produced results similar to the prioritized order, however. Examination of these two topic orders disclosed that one of the random orders differed only slightly from the prioritized order, with the two most important topics (pay and supervision) in the second and third positions. Here the positive response was no surprise and was consistent with the prediction. The positive response to the other random order was more surprising because it had the most important topics in the fourth and fifth positions and lower priority topics in the entire first half of the questionnaire. This topic order also had a lower response rate than the prioritized order (79%, compared with

Figure 1. Return rates and global attitudes as affected by topic order and demographic item location.
One explanation consistent with our hypotheses is that respondents with the least positive attitudes were put off by the topic order and failed to turn in their questionnaires, leaving a higher proportion of favorably disposed respondents in this group. If true, this phenomenon represents a hidden cost of insensitive questionnaire design: the exclusion of some of the most disgruntled employees from the survey, yielding a falsely positive response that does not reflect the target group of employees as a whole. In general, it may be impossible to accurately test the effects of questionnaire design on substantive attitudinal responses when the design features differentially affect response rates among attitudinal groups.

It appears that the most important design features of questionnaires concern the beginning items. The design of a questionnaire, particularly the early parts, may influence participants' motivation to finish the instrument. Once the participant has been "hooked" into completing part of questionnaire, he or she is more likely to finish and return it because of a "completion tendency" noted in earlier research (Martin & McConnell, 1970). The results of this study may not generalize to studies with shorter questionnaires, in which employees can quickly peruse all of the items and determine how closely the total contents reflect their concerns. Effects of questionnaire arrangement would be expected to be of greatest concern when the instrument is relatively lengthy.

The questionnaire in this study was designed through surrogate participation. In designing the prioritized topic order, employee representatives were used to estimate employee perceptions. It is not known whether the results obtained from employee representatives were a true reflection of overall employee priorities. Ideally, all employees would be consulted to determine topic importance, but this is often impractical in organizational settings. Surrogate participation, either through employee representatives or a random sample taken from the general employee population, appears to be the most viable means of securing the information needed for effectively designing employee attitude questionnaires.

In conclusion, this study demonstrated that questionnaire design influences the proportion returned and the favorableness of responses. Researchers need to be aware of the potential for experimental artifacts due to unexamined, and therefore uncontrolled, design features of questionnaires arranged in a single format. Two practical suggestions are offered. First, when there is evidence that respondents have stronger opinions about some survey topics than others, determine the priority of their concerns and assemble the survey instrument in that order. Second, place any demographic questions at the end of the survey.

References


