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Patterns of "I Don't Know" Responses in Telephone Surveys

Hinkle

PATTERNS OF "I DON'T KNOW" RESPONSES IN TELEPHONE SURVEYS

by

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The question of how best to handle "don't know" responses continues to be a troublesome problem to survey researchers. There are no guidelines for handling "don't know" responses because little systematic investigation for the problem has been made. This research addresses the characteristics of those who answer "don't know" in social surveys. I am focusing on four independent variables, sex, age, income, and education. Included in this research will also be an independent variable of interviewer gender. The fact that most survey research does not record the sex of the interviewer has caused this research to be somewhat limited. I plan to discover the different characteristics of those who answer "don't know" and "neutral" and also look at any effects interviewer gender may have on the respondents answering "don't know."

TABLE OF CONTENTS

Table of Contents--Continued

LIST OF TABLES

CHAPTER I

INTRODUCTION

The question of how best to handle "don't know" responses continues to be a troublesome problem to survey researchers. There are no guidelines for handling such responses because little systematic investigation of the problem has been done. A "don't know" or "no opinion" results when a respondent feels uncertainty, lack of knowledge or holds no opinion. Some researchers disregard these answers as non-substantive responses and do not include them in their analysis, considering these answers as omissions. As the percent of non-substantive responses increase, the claim that the substantive responses are atypical of the entire sample becomes highly questionable (Rapoport, 1979). According to Rapoport (1992), non-substantive responses such as "don't know" and "no-opinion "are not randomly distributed. Rather, they are consistently within certain subgroups and occur under varying interview and questionnaire conditions. For example, women, older respondents and the less educated are subgroups that answer "don't know" most frequently. Different survey topics can encourage substantive responses; issues that are important to the respondent encourage people to answer with an opinion rather than answering they don't know. Rapoport feels that these responses are valuable substantive data which can be used to reveal characteristics of the respondents, and which, in turn, may affect

the representiveness of the sample.

Another issue in survey research is the effect that interviewer gender has on the respondents. Ascribed characteristics such as sex cannot be eliminated, therefore it is important to understand if gender effects occur in the responses as a result of the interview process (Zehner, 1970).

Our culture builds generalized and exacting differentiations among roles and we learn these as a result of our individual socialization experience. In any social action, we have learned there is specifically appropriate behavior expected from men and women because training in these roles is most critical (Benney, Riesman, & Star, 1962). In the telephone interview, respondents are usually aware of the sex of the interviewer, and as a result gender norms may cause an unanticipated effect. This effect is a social process that occurs during the interview as the interviewer and respondent carry on their respective roles of asking and answering. This can produce different results when the gender of the interviewer is different from that of the respondent. Sex role socialization teaches conformity to gender norms. Therefore, willingness to admit lack of knowledge and no-opinion will be effected by interviewer sex. Interviewer training cannot minimize disparity of sex therefore the gender effect can alter survey results.

Statement of the Problem and Purpose

The purpose of this project is to examine the characteristics

of respondents who answer "don't know" in response to survey questons. Many researchers eliminate the "don't know" response from their data in the analysis phase of the research. Determining the characteristics of respondents who answer "don't know" would help researchers by making them aware of the subgroups in their sample. Francis and Bush (1975) found that females, non-whites and unmarried people were all more likely to give "don't know" as an answer to questions about presidential elections. They also found that the best explanatory variables for such non-substantive responses are the education and sex of the respondent. Faulkenberry and Mason (1978), investigated opinions concerning the use of wind energy as a source of electricity and attempted to distinguish empirically between nonexistent and ambivalent opinion states. They found awareness, mass media exposure, knowledge and education on wind energy were all characteristics of respondents that are most frequently associated with neutral or non responses when answering survey research on this topic. By not including the "don't know" responses in analysis, a misrepresentation of substantive responses can occur (Feick, 1989).

Included in this research will also be an intervening variable of interviewer gender. There have been mixed conclusions regarding the effect of interviewer gender on the quality of survey research data (Grooves & Fultz, 1985). This is compounded by the fact that most survey research does not record the sex of the interviewers. There is only a small amount of research explaining interviewer

effects.

CHAPTER II

LITERATURE REVIEW

Reasons for Answering "Don't Know"

To virtually any attitude, opinion, or belief question in a survey, a possible reply is "I don't know" (Schuman & Presser, 1980). In Converse and Presser's (1986) discussion of survey design, they note that more people will mark "don't know" when it is explicitly offered. They also thought that most people do not give mindless opinions when they do not have an opinion although some do make up opinions on the spot. Their suggestion is to make it clear at the beginning of the interview that "don't know" is an acceptable and legitimate response.

The Institute for Survey Research at the University of Michigan published an Interviewer's Manual (1976) which instructs interviewers on the topic of "don't know" answers. The manual listed several possible reasons for "don't know" responses:

> The respondent does not understand the question and answer don't know to avoid saying he doesn't understand
>
> The respondent is thinking the question over and says "don't know" to fill the silence and to give himself time to think
>
> The respondent may be trying to evade the issue, or he may feel that the question is too personal and does not want to hurt the interviewer's feelings by saying so in a direct manner.
>
> The respondent really may not know, or may not have an opinion or attitude on the subject. (pp. 10)

The authors of the Interviewer Manual stressed that if the person does not have any information, then that is significant data in itself. However, if the respondent is really saying "wait a minute, I'm thinking," it is important to probe any "don't know" for a substantive response. Similarly, Gordon (1987), describes the "I don't know" reply not as a form of resistance by the respondent but rather a form of modesty, tentativeness or cautiousness. Only rarely does a person not know the answer. This is a form of "give me a moment to think." He also describes the questions that people are hesitant to answer: questions dealing with the future, some factual or quantitative information (how many hours a day do you watch tv?), and those questions the respondents do not know how to word the answer because the question may not have a consistent answer (is your roommate a messy person?).

Feick (1989), elaborates on the reasons for giving a "don't know" response. First, it may be an error, respondents misunderstand the question due to poor instruction, lack of attention to items, or ambiguous phrasing. These misunderstandings can be due to the characteristics of the items and also to the characteristics of the respondents (Converse, 1976). Second, respondents may feel they are in the "gray" area with regard to their opinion on a topic and are uncertain or ambivalent about the question. Also, the respondent may have never considered the topic and thus has not formulated a position. As a result, a non-attitude is expressed. Bogart (1976) believes that such non-attitude responses could come from a lack of

interest in the topic of inquiry.

Topics Affect "Don't Know"

Non-attitudes are, of course, dependent on the topic. According to Schuman and Presser (1980), respondents employ their general knowledge or general attitudes on a subject when answering specific opinions on an attitude object. To examine this, they used a little known issue, presuming no respondents were aware of its nature or content, and found willingness to admit "don't know" rises with education. Overall, they reported that 20% to 25% of the respondents were not willing to answer "don't know" on subjects that were unknown to them. Moreover, the most educated respondents were the most willing to answer "don't know."

Similar research using fabricated issues resulted in different findings according to Bishop, Oldendick, Tuchfarber and Bennet (1980). These researchers asked questions about fictitious issues, and found that those at the college level were more likely to offer an opinion on non-existing issues and those with less education were more likely to answer "don't know." After looking at the individual questions, the researchers found that issues regarding domestic affairs seemed to demand more immediate response, and that the educated respondents did not want to appear uninformed. In contrast, the questions regarding foreign policy elicited many more "don't know" responses from educated respondents.

"Don't Know" Over Time

Rapoport (1982) argued that "don't know" responses are not randomly distributed and there are two main reasons for answering "don't know" to a survey question. First, respondents may have insufficient information or education to construct an answer. Second, respondents may lack the subjective competence and confidence required to develop or express an opinion. This answer, "don't know," used as a substantive variable should be held constant over time (repeat same item or use different items from the same subject area). Using a four year panel study conducted by the Center for Political Studies Rapoport (1982) examined the "don't know" rates on political attitude questions from 1972-1976. He found that females answered "don't know" twice as many times as men. After entering age, political knowledge, and political interest into a regression equation, the impact of age for females was highly significant. Moving from oldest to youngest the "don't know" rate was reduced. There was a strong decline for younger females (8%) but only a 4% decline for the younger males. He generalized the findings to changes in sex-role socialization for different generations. They found that the sex differences in the "don't know" response rates increased substantially from young to old and this strong increase is due entirely to the lower rates among younger women. However, Rapoport did expect to find fewer differences by gender in answering "don't know" as age decreases.

Subgroups Prone to Answer "Don't Know"

Standard procedure in data analysis is simply to treat "don't know" responses as missing data, the same as if the respondent had not answered the question (Rapoport, 1982). Ferber (1966) found that "don't know" responses were not random and that the respondents who answer "don't know" had different characteristics from those who provide substantive responses. In his research, he found only 13% of the retired respondents had given substantive answers to each question, and females had higher rates of non-substantive responses than men. Similarly, Gergen and Black (1965) found that as age increased so did the number of "don't know" responses. Glenn (1969) criticized the Gergen and Black findings, stating that education and sex were not controlled in their research. According to Glenn, the elderly on average had less education, which contributed to their higher percentages of "don't know" responses. Furthermore, there were more women than men in the highest age category, this would also contribute to the high proportion of elderly answering "don't know." Glenn further argued that if these controls are applied, the relationship between "don't know" responses and age vanishes. Sudman and Bradburn (1974) also found "don't know" responses declined as education increased and "don't know" responses increased as age of the respondent increased. Looking at different surveys they found small but consistent differences in respondents non-substantive answers. For those issues more salient to women (such as women's health issues), there were few who did not give a substantive answer.

Rapoport (1981) suggests the female reluctance to express attitudes finds it roots in childhood and adolescent socialization. When females are informed as well as males about politics the differences between women and men answering "don't know" lessen, although they may not be completely eliminated. He found sex differences existed mainly among those with the lowest level of knowledge. If political knowledge can be taught in school at adolescence and answering "don't know" is stable from adolescents to adult, this would benefit females as they become adults.

In another study researching the characteristics of those who do not know the answer to survey questions, Rapoport (1985) looked at the role of parental socialization in the way children learn to express opinions. He interviewed parents and children ages 16 to 20, in a home, using a multinational sample. He found an intergenerational transmission of "don't know" response rate. Mothers had a significant greater impact on daughters "don't know" rates than did fathers. For the son, the father had a greater impact than did the mother. Political orientations such as political efficacy, system responsiveness and political interest were all measured for transmission from parent to child but women expressed fewer attitudes than men and this parent transmission rate (non-attitude) surpassed all other orientations.

Sudman and Bradburn (1974) use an idea from Bem and Bem (1970) as a possible explanation for why women tend to answer "don't know" or claim they do not have an opinion more than men in surveys. A

non-conscious ideology is a set of beliefs and attitudes a person accepts implicitly but which is out of his awareness because alternative concepts are unimagined (such as a fish being aware its environment is wet). Bem and Bem (1970) used this notion to describe women; there is a social influence which is hard to challenge because it remains invisible. They believe that attitudes which most hold about women, best exemplify their ideology. They describe this effect, non-conscious ideology, as holding women in their place. For those issues more salient to women (such as women's health issues) Sudman and Bradburn, found few women who did not give substantive answers.

Subsequently, Francis and Bush (1975) discovered that being unmarried (single, divorced, separated or widowed) was positively related to the tendency to give a "don't know" response. They constructed an index by counting the number of questions for which a "don't know " and a "no opinion" response were given by respondents, and concluded that either excluding these respondents from the analysis or combining them in other response categories produced bias.

CHAPTER III

INCLUSION OR EXCLUSION OF THE "DON'T KNOW" RESPONSES

Much of the literature relating to the "don't know" option discusses whether the respondents should be eliminated from the data or whether the answer (don't know) should be eliminated from questionnaires. Some researchers argue that the fact the questions are asked presupposes that the respondent has an answer therefore, the "no opinion" or "don't know" options are not a proper reply (Molenaar, 1982). The opposite of a nonattitude is a false negative, people who really have an underlying attitude but decline the opportunity to express their opinion (Gilljam & Granberg, 1993). This research focuses on the "don't know" people who really do not have an attitude but are pressed into taking a position. Using data collected in the context of a national referendum in Sweden in March 1990, a sample of eligible voters were interviewed in person during the campaign proceeding the referendum. The respondents were later mailed a questionnaire after the referendum indicating whether or not they voted and which alternative did they choose. In the interview the sample was asked three questions regarding their attitude toward nuclear power. The findings indicate that false negatives do exist. Those who answered "don't know" to the first or second question then subsequently expressed an attitude on later questions all followed with voting behavior matching their attitudes expressed in

the later questions. In another comparison, those who said "don't know" on the first and second item but expressed an attitude on the third item were significantly more likely to vote than those who said "don't know" on all three items. Therefore, according to these researchers, it is unclear if it is a good idea to take "don't know" for an answer because the more steps taken to avoid non-attitudes or false positives, the greater the likelihood of false negatives and vice versa. Each of these possibilities is equally serious.

Guessing by the Respondent

Another approach to test for the accuracy of answers with the option of "don't know" was researched by Courtenay and Weideman (1985). They asserted that adding the option of "don't know" reduced the amount of guessing by respondents. By comparing two different forms of the Palamore's Facts on Aging Quiz (with and without the "don't know" option) they found that adding "don't know" eliminated guessing and reflected a more accurate knowledge of the information. The researchers also tested the characteristics of those answering "don't know" and found that education was the only significant factor for answering "don't know."

Understanding the Question

Stanley Payne (1950) discusses the problem of meaningless questions and the problem of knowing whether or not respondents actually understand the questions being asked. He claims that a

normal distribution of responses are no guarantee that a question is meaningful to respondents. Indeed, respondents do give answers to questions they do not understand rather than answering "don't know." There is a possibility of some element of meaningless in every question, and there is no way of determining the proportion of guesses from the structure of answers to a question. In his opinion there is no absolute distinction between knowing and guessing. The black and white version of knowing and guessing do not exist instead, a continuum with four ideas exists: (1) respondents "really know" (2) respondents "think they know" (3) respondents make "informed guesses" and (4) respondents make Outright guesses.

Missing Data

Further research into nonsubstantive responses focuses on the procedures involved in the data. In Poe, Seeman, McLauglin, et al. (1988) the investigation of whether "don't know" boxes should be offered in factual questionnaires, two types of questionnaires were used, one with the option and one without the option of "don't know." Using an experiment conducted by the National Center for Health Statistics, the sample included death certificates selected from several states; the respondents who provided the information about the descendants were usually close relatives. Of the respondents who answered, 7.1% marked don't know" when it was offered and only 1.9%, said they did not have an answer when there was not an option of "don't know" offered. In 89% of the questionnaires there were no

significant differences in substantive responses. Interactions with the inclusion or exclusion of the boxes were looked at for age, race, Hispanic origin, sex, and marital status, but none of these items were significant. The researchers' conclusion was to exclude the option of "don't know" in order to have a higher rate of substantive responses and fewer "missing" responses.

The Use of Filters

Similar research using a comparison of mail surveys, telephone surveys and face to face interviews was conducted by Ayidiya and McClendon (1990). Questions were taken from previous interview split-ballot experiments. The questions included both forms where "don't know" was offered as an acceptable answer and forms which did not include the option of "don't know." The researchers assumed the information supplied by each mail question form was the same as what the interviewer provided therefore, they did not expect to find a difference in the "don't know" responses. The "don't know" percentages for each item were clearly smaller for the mail questionnaire than for the previous interview surveys. The conclusion formulated was the uncertain mail respondents have more time to formulate a substantive response or mail respondents have more crystallized opinions because of the greater interest and knowledge about the survey topics.

CHAPTER IV

IMPACT OF THE INTERVIEWER SEX

Differences in Data

A limited amount of research has been done in the field of interviewer gender effects. Groves and Fultz (1985) described an issue with this research; the small number of men traditionally found on interviewing staffs may threaten the generalizability of the conclusions. The fear researchers have is that small group variations could be attributed to the particulars of the individual interviewers rather than the gender of the interviewer. These researchers did not find significant differences between male and female interviewers on missing data rates. They did find differences in respondent optimism; males more than females tended to obtain more optimistic responses from both male and female respondents.

Similarly, Kane and Macaulay (1993) only found a small number of items showing differences in "don't know" and "no answer" responses by interviewer gender. They also failed to find a similarity between items showing interviewer gender effects for non-response and substantive responses. Therefore, they excluded "don't know" from their analysis. The interviews were conducted by telephone and a national probability sample of U.S. households were asked about their attitudes related to home, work and perceptions of men's and women's group interest. They found a major tendency for both male

and female respondents to offer more egalitarian or critical responses to female interviewers. The most significant findings were in the home related items, males were more likely to say men and women share responsibility of child care when interviewed by a female. In the work related items, males responded significantly more egalitarian or critical to female interviewers. In gender-related action orientation, females were significantly more likely to advocate collective action by women only when interviewed by a female. On the other hand, when women were interviewed by a male, they were more likely to advocate government action related to occupational equality and day care. There is a pull for "polite conversation" on gender issues which seem to affect the interaction of interviewer sex and respondent. The types of questions asked will have an impact on the gender effect. Different topics, such as women's access to employment and men helping with the housework tend to receive a lot of attention. Therefore, both men and women may not want to "offend" an interviewer of the opposite sex. Other issues less gender specific might be less affected by interviewer gender.

Sensitive Topics and Interviewer Sex

Some research studies which have discovered gender effects of the interviewer have focused on sensitive topics such as the topic of sex. Johnson and Moore (1993), conducted a community standards survey regarding the scale and use of sexually explicit material. Telephone interviews were conducted and 25 questions were asked

related to attitudes, opinions, and behaviors related to pornography. A significant interviewer effect was observed; female respondents were more likely to report having purchased or read pornography to male interviewers than to female interviewers. However, chi-square tests indicated that interviewer gender was not significantly associated with response of either male or females. Results did show both male and female respondents were more likely to report less traditional opinions when interviewed by a male. Weak acquiescence effects were observed but social distance effects were not evident.

Darrow, Jaffee, Thoman, et al. (1986) was using both men and women interviewers when he asked 57 homosexual men reported with AIDs about their drug use and homosexual activities. A gender effect did occur with the five male and three female interviewers, all physicians. Respondents reported lysergic acid diethylamide (LSD), phencyclidine (PCP),and ethyl chloride more to female interviewers. Female interviewers also had more reports of homosexual acts at significantly young ages than the men interviewers. Although this was a face-to-face interview situation, the effects are similar to those in the telephone interviews (Darrow, et al. 1986).

Looking further into any differences that the sex of the interviewer may have on the respondent, Grimes and Hansen (1984) studied questions regarding sex-role orientation. They used 36 items and a Likert-type response format from Brogan and Kutner (1976) sex-role orientation scale. Questions such as "is it acceptable for

women to hold important elected political office in state and national government?" and "Should a husband not feel uncomfortable if his wife earns a larger salary" were asked. They discovered that females interviewed by female researchers gave significantly less traditional responses compared to females interviewed by males. There were no significant differences for male respondents. The conclusion was perception of interviewer's ability to offer sympathetic understanding to problems covered by the interview will cause respondents to react to these perceptions of the interviewer.

Contrary to the previous findings, other studies have found different results after analyzing responses from men and women. Landis, Sullivan, Sheley (1973) discovered sex of the interviewer was an important variable in response patterns. They assumed women would respond in a militant fashion to female interviewers because people identify more with members of their "in" group. However, females gave less traditional responses to males. The researchers hypothesized that to give a traditional response meant inferior status and new definitions of the role for women demanded women do not defer to men.

Changing Sex Roles

The continuing concern with changing sex-roles makes it likely that the interviewers' gender orientations may be an important source of response effects in answers to questions about gender characteristics and sex-role orientation (Lueptow, Moser, & Pendleton,

1990). Females make better interviewers because they receive more disclosure and response comfort, especially from females. After examining the previous work on sex-role processes they observed that male interviewers elicit more response effects than female interviewers, especially from females. Respondents, especially females, will disclose their liberal orientations more to female than male interviewers. Finally, females will show desirability effects to a greater degree than males. The study involved 432 adult respondents contacted through random digit dialing, the questions were from an annual fall survey on the quality of life. Female respondents gave more liberal responses to female interviewers and male respondent gave essentially identical responses to interviewers of either sex.

Finally, Sudman and Bradburn (1974) describe the information on interviewer characteristics related to the use of "don't know" by respondents as fragmentary. Their findings indicate that the "don't know" rate for female interviewers is higher than for the male interterviewers.

Literature Summary

From the review of the literature, it appears that there are many reasons that respondents choose to answer "don't know" although they may actually have an opinion on the topic. There are several techniques interviewers can learn to increase the number of substantive responses. The topic of the question may increase the number

of nonsubtantive responses as well as the characteristics of the respondents. As Table 1 indicates there are three characteristics that that may be used to predict the response of "don't know." Women, older respondents, less educated respondents may answer "don't know" more frequently than any other groups. The response of "don't know" may not be random and excluding the respondents (who answer "don't know") from the analysis may produce bias.

The inclusion and exclusion of the "don't know" option is debated throughout the literature. The conclusion from this literature is quite mixed. Some researchers would like to ignore the option in order to obtain more substantive responses and others feel that the fact that a person does not know an answer to a question or several questions is substantive data within itself.

The interaction effect caused by the interviewer's sex and the "don't know" response has been virtually ignored in the literature. The main reason for this is most surveys do not record the interviewer gender, therefore analysis is impossible. A second reason for the lack of literature regarding this issue is that most interviewers are female, as a result there are not enough men interviewers to substantiate any statistics. Overall, the research in the interviewer gender effect is directed towards sensitive topics, such as premarital sex, homosexuality, pornography, and gender issues.

Hypotheses

The following bivariate hypotheses were constructed based on

Table 1

Literature Summary

Authors	Age	Education	Sex	Comments
Bishop, Olendick, Tuchfarber & Bennet 1980		S		used fabricated issues
Courtenay & Weieman 1978	*	*	*	include DK to eliminate guessing
Faulkenberry & Mason 1978		S		
Ferber 1966	S		S	DK varied with questions
Francis & Bush 1975		S	S	
Gergen & Black 1969	S			
Gilligam & Grandberg 1993	*	*	*	False negatives exist
Glenn 1969				Used controls with Gergen and Black study
Poe et al. 1988	*	*	*	eliminate DK more usable data
Rapoport				
1981	S		S	
1982	S		S	
1985			S	
Schuman & Presser 1980		S		used little known topics
Sudman & Bradburn 1974	S	S	S	

S significant according to authors guidelines
* not studied by author

the previous research; education, age, sex, and influence of the sex of the interviewer on female respondents. The hypotheses based on income and influence of the sex of the interviewer on the male respondents were available in the data set therefore, used to find additional information describing the patterns of "don't know" responses. The last two hypotheses are multivariate and partially based on the literature with the addition of income and influence of the male interviewer, because of the availability of information.

1. Those respondents with less education are more likely to answer "don't know" than those with more education.

2. Older respondents are more likely to answer "don't know" than younger respondents.

3. Those respondents with a lower income are more likely to answer "don't know" than those with a higher income.

4. Women are more likely to answer "don't know" than men.

5. Women are more likely to answer "don't know" when interviewed by a male than when interviewed by a female.

6. Men are more likely to answer "don't know" when interviewed by a female than when interviewed by a male.

7. Sex will be the best predictor of the "don't know" response in the regression model.

8. With the interviewer sex added to the regression, the model will be even more powerful in determining the characteristics that best predict "don't know."

CHAPTER V

PROCEDURES

Data Sources and Analysis

The data analyzed in this research were taken from the 1994 Portage Community Survey. This was a community sample consisting of 411 respondents. A random-digit-dialed telephone approach was used, employing the computer assisted telephone interviewing facility at WMU's Kercher Center for Social Research. Table 2 illustrates the demographics of the sample, Portage Community, and the Michigan population as a comparison. The sample is very similar to the Portage community except there were a few more older respondents in the sample than in the community. The Portage community has a younger population, has more college graduates, and has a higher income as compared to the entire population of the state of Michigan.

Dependent Variable

The dependent variable is the use of the "don't know" response. Eight questions from the survey were selected, including attitudinal and factual inquiries. These eight questions had the highest frequencies of "don't know" responses. Four of the questions dealt with the respondents' satisfaction with the city's programs, while the other four are factual inquiries. (e.g., Did you receive the November/December Portager?) The responses were coded

1 for "don't know" and 0 for a substantive response. The questions ranged from 12% "don't know" responses to 29% responses. Each respondent was given a total of "don't know" responses, ranging from 0 to 7.

Table 2

Sample Demographics and Portage Community Demographics and State of Michigan Demographics

Demographics	Sample	Portage	Michigan
Education			
Some College or Less	60%	64%	78%
College Graduates	40%	36%	22%
Age			
49 yrs or younger	63%	70%	65%
50 years or older	37%	30%	35%
Income			
Less than $50,000/yr	62%	65%	71%
More than $50,000/yr	38%	34%	29%
Sex			
Male	45%	48%	49%
Female	54%	52%	51%

Figures from the 1990 Census

Independent Variable

The independent variables are the sex, age, income, and education of the respondents. The independent variables were reported by the respondents in the course of the questionnaire. Sex, on the

other hand, was determined by the interviewers, on the basis of the voice of the respondents. All of these variables were coded on the basis of equal distribution for each category.

Also included in the research is the variable sex of the interviewer. The research addresses the effects of interviewer gender on both male and female respondents. For the bivariate analysis, these were coded 1 for male respondent/male interviewer, 2 for male respondent/female interviewer, 3 for female respondent/male interviewer, 4 for female respondent and female interviewer. In the regression analysis, each of the latter three categories were coded as dummy variables, 1 if a category, 0 if not.

Both bivariate (crosstabulation) and multivariate (regression) were used in the analysis. The alpha level of .05 was used with chi-square to test the hypotheses. The bivariate analysis is used to test the relationship between the respondents characteristics (sex, age, income, education, and influence of the interviewer gender) with the response of "don't know." The multivariate includes all the independent variables to test the combined effect on the "don't know" response.

CHAPTER VI

RESULTS

The characteristics of the respondents were the major focus of this study. The previous research has shown that all of the characteristics, education, income, age and sex were all predictors of the "don't know" response. There has been a limited amount of research in the area of sex of the interviewer effect because the interviewer gender is rarely recorded and also the majority of interviewers in social research are women.

Based on the previous research six hypotheses were constructed. The hypotheses were formulated in order to determine which of the respondents characteristics would predict a respondent to answer "don't know" more frequently. Chi-square was used as the statistic for the six bivariate analyses. Regression was used in the multivariate analysis to determine which of the variable would be most powerful in determining the answer, "don't know." Regression was also used to determine if there was an interaction effect with regards to the sex of the interviewer. The result for the first hypothesis is illustrated in Table 3.

The first hypothesis was those with less education will be more likely to answer "don't know" than those with a higher education. Table 3 indicates that those with less education marked "don't know" almost equally to those with a college degree. The percentages

are almost equal for each category, the largest difference is only 2% in the two "don't know" answer rank. The research hypothesis is not supported.

Table 3

Education of the Respondent

Number of Don't Knows	Some College or Less	College Graduates	n
0 DK	17.1	13.3	64
1 DK	29.4	29.1	120
2 DK	21.6	23.6	92
3-7 DK	31.8	33.9	134
n	245	165	410

Chi-Square = 1.229 DF = 3 Significance = .745

The second hypothesis is older people are more likely to answer "don't know" than younger respondents. Table 4 illustrates that this is indeed true, 45% of the older respondents answered "don't know" more than three times while only 25.6% of the respondents answered "don't know" more than three times. Therefore, age was found to be significantly related to the "don't know" response. The significance level for chi-square permits the null hypothesis to be rejected.

The third hypothesis was those with a lower income are more likely to answer "don't know" than those with a higher income. Table 5 illustrates that those with a lower income answered "don't

know" once again almost equally to those with a higher income. The largest difference is Only 1.7% in the two "don't know" answer rank. The research hypothesis is not supported.

Table 4

Age of the Respondent

# of DK	49 or younger	50 or older	n
0 DK	18.6	10.6	64
1 DK	34.1	21.2	120
2 DK	21.7	23.2	91
3-7 DK	25.6	45.0	134
n	258	151	409

Chi-Square = 20.413 DF = 3 Significance = .00014

Table 5

Income of the Respondent

# of DK	Less than $50,000/year	More than $50,000/year	n
0 DK	15.9	18.1	64
1 DK	30.9	30.6	120
2 DK	23.2	21.5	91
3-7 DK	30.0	29.9	134
n	258	151	409

Chi-Square = .363 DF = 3 Significance = .947

The fourth hypothesis was that women are more likely to answer "don't know" than men. Table 6 indicates that the percentages are very similar. Women did answer "don't know" a few more times (41% vs 27.4%) than men, but not enough to make a significant difference. The research hypothesis is not supported.

Table 6

Sex of the Respondents

# of DKs	Male	Female	n
0 DK	17.8	13.8	64
1 DK	33.0	25.9	119
2 DK	19.5	25.0	92
3-7 DK	29.7	35.3	134
n	185	224	409
Chi-Square = 5.112	DF = 3	Significance = .163	

The fifth hypothesis was women are more likely to answer "don't know" when interviewed by a male than when interviewed by a female. Table 7 indicates that women did not answer "don't know" more when interviewed by a male. The research hypothesis is not supported.

The sixth hypothesis was men are more likely to answer "don't know" when interviewed by a female than when interviewed by a male. Table 8 indicates that men answered "don't know" more often when by a male. In the three to seven category men answered "don't know"

35.6% when interviewed by a male and only 27.9% when interviewed by a female. The research hypothesis is not supported.

Table 7

The Effect, Sex of the Interviewer on Female Answers of "Don't Know"

# of DKs	Female respondent with Male interviewer	Female respondent with Female interviewer	n
0 DK	13.8	14.0	63
1 DK	28.3	25.0	116
2 DK	28.3	23.8	85
3-7 DK	30.0	37.2	113

Chi-Square = 1.212 DF = 3 Significance = .749

Table 8

The Effect, Sex of the Interviewer On Male Answers of "Don't Know"

# of DKs	Male respondent with Female interviewer	Male respondent with Male interviewer	n
0 DK	17.9	17.8	33
1 DK	34.3	28.9	61
2 DK	20.0	17.8	36
3-7 DK	27.9	35.6	55
n	140	45	185

Chi-Square = 1.006 DF = 3 Significance = .785

The seventh hypothesis was sex is best predictor of "don't know." Results presented in Table 9 show that 6% of the variance in answering "don't know" can be predicted by education, age, income and sex. In particular, age exhibits the greatest power, (.236) with $p < .001$, in predicting the answer of "don't know." Therefore, the hypothesis is not supported because age is the best predictor (and only significant predictor) rather than sex.

Table 9

Sex as a Predictor of Don't Know

Respondent Characteristics	Standard Beta Weights
Education	.024
Income	-.067
Age	.236*
Sex	.065
R^2	.060

* $p < .001$

The eighth hypothesis was by adding sex of the interviewer into the regression the model would be stronger. This did not happen the R^2 actually decreased from .060 to .059, by including the interviewer sex. The regression did not increase predictability of a "don't know" response. Table 10 does indicate, that the only significant predictor is age; as age increased so did the number of "don't knows." Therefore, the hypothesis is not supported.

Table 10

Interaction Effect

Variables	Standardized Beta Weights
Female Respondent Female Interviewer	-.001
Education	.063
Age	.234*
Female Respondent Male Interviewer	.008
Income	-.009
Male Respondent Female Interviewer	-.032
R^2	.059

* $p < .001$

CHAPTER VII

SUMMARY AND CONCLUSIONS

The purpose of this research was to examine if the characteristics of the respondents answering a telephone interview would predict their responding "don't know." Schuman and Presser (1980), Francis and Busch (1975), and Ferber (1966), have shown that "don't know" responses are not random. Excluding these respondents from analysis or combining them with other response categories introduce bias (Francis & Busch, 1975). The empirical results suggest that "don't know" responses are more likely for individuals who are older, have less education, and are women.

Based on the literature, seven hypotheses were constructed to examine the relationship between respondents characteristics and the "don't know" response. Only one hypothesis was supported. Using results from the 1994 Portage Community survey, analysis showed that older respondents did answer "don't know" significantly more often than the younger respondents. The other characteristics education, income, and sex did provide significant support using the chi-square statistic. The results of the bivariate analysis for the characteristics not supported showed that most of the numbers were near equal for each category.

Results for the multivariate analysis showed that age is the most powerful variable in predicting a "don't know" response. After

adding the sex of the interviewer into the regression, age was still the most powerful predictor but the R^2 did not change. Therefore, there was not significant interaction effect caused by the sex of the interviewer. Both multivariate hypotheses were not supported.

Results from this research indicate that in a community survey, the "don't know" responses are not substantive datum. As for the sex of the interviewer, this did not indicate an interaction effect, influencing respondents to answer "don't know."

Although the literature strongly suggests that the characteristics of the respondent are systematically related to the answer "don't know," this may not be the case in community surveys. From this research one may feel confident in ignoring the "don't know" responses, labeling them missing data, and excluding them from the analysis.

The sex of the interviewer, as the small amount of research indicated, does not have an effect on the respondents answering "don't know." The implication for this research is that the interviewer only does affect the respondents on community issues probably because they are gender sensitive issues.

The residents of Portage are atypical in the sense that they are better educated and have higher incomes as compared with the entire state of Michigan. This restricted variation could have caused all but one of the research hypothesis to be not supported.

APPENDIX A

Variables

DEPENDENT VARIABLES

How satisfied are you with the recreation programs offered by the city?

118	40.5%	1 Very Satisfied
88	30.2%	2 Somewhat Satisfied
74	25.4%	3 Neutral
7	2.4%	4 Somewhat Satisfied
4	1.4%	5 Very Dissatisfied
120	29.2%	6 Don't Know/no response

How satisfied are you with Street Sweeping Services in Portage?

136	38.6%	1 Very Satisfied
113	32.1%	2 Somewhat Satisfied
64	18.2%	3 Neutral
25	7.1%	4 Somewhat Satisfied
14	4.0%	5 Very Dissatisfied
59	14.4%	6 Don't Know/no response

Do you support the administration consolidation of the Kalamazoo and Portage City District court under Kalamazoo?

181	59.0%	1 Yes
126	41.0%	2 no
104	25.3%	3 Don't Know/no response

Is there a problem with the quality of our lake environments in Portage?

191	61.0%	1 No it is not a problem
28	8.9%	2 Yes, a slight problem
59	18.8%	3 Yes, a moderate problem
35	11.2%	4 Yes, a severe problem
98	23.8%	5 Don't Know/no response

Did you receive the Nov/Dec Portager?

275	61.0%	1 Yes
85	23.6%	2 No
51	12.4%	3 Don't Know/no response

What article do you recall reading from this last issue?

35	12.7%	1 South Westnedge Avenue article
18	6.5%	2 Centre Avenue projects
23	8.4%	3 Senior Center article
5	1.8%	4 Puppies as Pals (fire department)
13	4.7%	5 Holiday articles
3	1.1%	6 Stuart Manor article
8	2.9%	7 Building Improvement article
4	1.5%	8 Flood Plain article
4	1.5%	9 Flu Vaccine article
8	2.9%	10 Library information

207	75.3%	11 Don't know/ no response
136	33.1%	0 Skipped Question

Do you feel that the city is doing too much, just enough, or too to encourage low to moderate income housing in Portage?

24	7.1%	1 Too much
158	46.5%	2 Just enough
158	46-5%	3 Too little
71	17.3%	4 Don't know/no response

Do you feel that the city s doing too much, just enough, or too little to protect the groundwater supply?

2	.7%	1 Too much
184	63.0%	2 Just enough
106	36.3%	3 Too little
119	29.0%	4 Don't Know/no answer

INDEPENDENT VARIABLES

What is the highest level of education you have completed?

110	26.8%	1 High school or less
135	32.9%	2 Some college/technical school
108	26.4%	3 Bachelor's degree
57	13.9%	4 Graduate degree
1	.2%	5 Don't know/no response

What is your age, please? Are you.....

57	13.9%	1 29 years or younger
91	22.2%	2 30-39
110	26.9%	3 40-49
56	13.7%	4 50-59
95	23.2%	5 60 years or over
2	.5%	6 Don't Know/no response

Which of the following categories represents your total family income for the last year before taxes?

20	5.3%	1 Less than $10,000
37	9.8%	2 10,000 - 20,000
67	17.8%	3 20;000 - 30,000
109	28.9%	4 30,000 - 50,000
144	38.2%	5 50,000 or over
34	8.3%	6 Don't know/no response

Sex of the respondent. [Determined by voice]

185	45.3%	1 Male
224	54.7%	2 Female
2	.5%	3 Unable to determine

INTERVENING VARIABLE

Sex of the interviewer

105	25.7%	1 Male
304	74.3%	2 Female

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