

Why Do Research?

A workbook to be used in conjunction with the
NAB Convention Workshop, Small Market Radio Stations
Can Do Professional Research -- Here's How.

Research Department
National Association of Broadcasters

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Additional copies of Why Do Research?, are available to NAB members for \$2.00 per copy and Nonmembers for \$6.00 per copy. Please mail your order and payment to: Publications Manager, NAB, 1771 N Street NW, Washington, DC 20036.

Preface

Good management involves many factors, and effective use of research is one. But many broadcasters, who are unfamiliar with research, tend to shy away from using it. The problem is that these broadcasters believe that they have neither the staff nor the funds to conduct basic research. The NAB has developed this workbook as a guide for station management to help them better understand the details of survey research, and more importantly, the effective use of research as a decision-making tool.

Effective survey research can provide management with essential information on audience composition and programming preferences, advertising effectiveness, and emerging local issues and public opinions that may significantly influence your station's future plans.

This workbook is designed to be a step-by-step approach to research. It is written in clear, non-technical language, and will give the reader all of the basic skills necessary to conduct survey research.

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Why Do Research?

There is only one reason to do research about any topic--to gain information. There are of course many ways to find out what's going on in a given area. You can ask yourself. You can ask people you know. Or you can do a survey. Sometimes all the information you need can be obtained simply by a moment's reflection. But increasingly the kind of information needed by modern broadcasters requires much more.

Surveys or polls have a long history in broadcasting. And everyone knows about the so-called "public" polls, conducted regularly by Gallup, Harris, Yankelovich and others. Surveys rely on the laws of probability and chance. You don't have to poll everyone to find out, within limits, what everyone thinks.

There is a basic reason for the widespread use of polls by broadcasters. A properly conducted survey gives information which is scientific, reliable, valid, and actionable. Surveys have the particular advantage of being relatively easy and inexpensive to do--if you follow the instructions provided in these materials, and in the NAB's A Broadcast Research Primer.

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I. Designing the Study

Since the purpose of research of any kind is to find answers to questions, the first step must be to state these questions very clearly. It is not enough to have a vague notion that "we would like to find out as much as possible about...."

That kind of statement generally results in two problems: (1) it gives very little guidance as to what questions to ask in a survey, and (2) after the survey is over, one frequently discovers, when it is too late, that questions that should have been asked were not asked, or that questions that were asked are not helpful in serving the needs of the station.

This suggests--quite correctly--that a significant amount of the effort that goes into a survey actually precedes the writing of the questionnaire, the selection of a sample, the interviewing, and the analysis of the data. Being able to articulate the problem, knowing exactly what one wants to know, is really half the battle. It may sound ridiculously self-evident that unless one knows what the question is it is impossible to find an answer. Yet many a person designing a survey has let management get away with posing the problem vaguely, only to find that the answers provided by the survey were not the ones management had in mind.

An example will illustrate the importance of specificity. Management (and this could be the researcher himself or herself, or someone higher up who commissions the survey) says:

"We'd like to know who is listening to our broadcasts."

What could be clearer?

Well, an awful lot could. If we came back with the answer "60 percent of our listeners are in the 14-to-22 age bracket, 20 percent are over 55 years old, and the rest are somewhere in between," management might say, "that's very interesting, but what we meant is" any or all of the following:

"What are the income levels of our listeners?"

"In what parts of our listening area are listeners concentrated?"

"What racial or ethnic groups do they belong to?"

"What political parties do they belong to?"

"What are their education levels?"

"How long have they lived in the area?"

"What competing media do they listen to or watch?"

"Do they tend to be in white collar or blue collar occupations?"

You may say, "Well, simple. Why don't we ask all these questions and make sure that any or all of management's questions are answered?" There are two very important rebuttals to that. The first is that we haven't even begun to skim the surface of what management might have meant by "Who is listening to our broadcasts?" Here are a few additional questions management may have had in mind, or worse still, that may occur to management after all the answers are in:

"Are our listeners opinion leaders or followers?"

"Are they sports fans or do they hate sports?"

"Is this a musical crowd? What kinds of music do they like?"

"Are they married, parents, etc.?"

"Do they enjoy politics or are they turned off by it?"

"Are they regular listeners or only occasional?"

"Do they listen in groups or alone?"

"Do they like variety or just one type of program?"

The second reason why it's not as simple as merely asking all the "relevant" questions is that a good survey is one that asks only essential questions. Once again, there are two reasons for this: First, every question that is added to a survey costs money--in paper and supplies, interviewer time, in coding time, in data analysis for computer time, in secretarial time. Second, the more questions that are asked, the greater the likelihood that the people interviewed will tire and want to end the interview or give random, unconsidered answers to get the interview over with.

The planning phase of a survey should, therefore, be given enough time to consider all the needs of the station, should involve as many people as possible who should be encouraged to make inputs and to comment on the statement of the problem, and should include a discussion of why the data are needed and what will be done with them once they have been collected.

Since non-essential questions must be avoided, it is important to know what will be done with the results ahead of time. The best approach is to develop dummy tables, which are tables that show the kinds of responses expected without the number of

proportions of responses in each category. It is often useful to have contingency plans before doing the survey, thus: "if we find our listeners are mostly drivers who listen while driving, we will change our programming as follows..." Or, "if we find they like our comparative grocer store prices, we will..., if they don't, we will...." Making these decisions ahead of time is a good thing because it helps one decide whether the answers are really needed. If regardless of what the answers are, nothing will be done about it, maybe the question is unnecessary.

Survey research is a method of data collection that lends itself to certain kinds of problems. By no means all answers can be found through surveys. Some require other methods of data collection or analysis, such as content analyses or experimental studies. Surveys are useful for problems such as the following:

- *The nature of the audience
- *The distribution or location of the audience
- *Audience preferences, e.g., program preferences and ratings
- *Peak listening hours
- *Audience shopping habits
- *Audience media preferences and media credibility
- *Audience opinions on issues of the day
- *Set distribution
- *Audience reactions to specific programs
- *General image of the station as compared with other stations
- *Public service image of the station
- *Announcer preferences
- *Extent of knowledge of issues and of facts
- *New program testing

In designing a survey, an important consideration is what will be done with the results. If, for example, one needs to know the distribution of certain audience characteristics, such as income levels, fairly accurately, the sampling design (i.e., how the sample is drawn) will have to be fairly rigorous. The sample must be representative of the population from which it

is drawn and the size of the sample must be large enough so that one can say with a certain amount of confidence that the error will be no greater than a given number of percentage points.

If the survey is being done to predict the outcome of an election or to decide on whether enough people will buy a product to cover the expense of buying time on the air, one may need even higher precision. For greater reliability one must not only be more careful about the randomness of the sample selection, but one would also need a larger sample.

On the other hand, a survey to get new program ideas or to determine topics of current interest in the community does not require a great amount of precision. We do not have to know the exact distribution of the ideas in the community, only that they exist. Thus, the sample may be less random and the size smaller.

An often overlooked source of information on survey research is a local college or university. Most universities have someone on their staff who is experienced with social science research. In some cases you may find a professor who is willing to use your survey as a class project. This would be of tremendous mutual benefit for your station and for the students. The students would gain the experience of survey design, question writing, interviewing, and data analysis. Your station would be developing a good public relations image plus the advantage of having your survey managed by "professionals" at a nominal cost.

A. THE ELEMENTS OF A SURVEY--A CHECKLIST OF CONSIDERATIONS

1. How do you want to conduct the interviews?

In-person (face-to-face), by telephone, by mail? Each method has its strengths and weaknesses--and each has its costs.

2. Whom do you want to interview?

A sample of: all households in your city, your county, in your A.D.I., your metropolitan area, only men, only women, teenagers, frequent listeners, infrequent listeners, one-car families, households with working women, etc.

3. How many interviews do you want to complete?

Surveys based on fewer than 200 completed interviews are generally too small. Surveys with more than 1,000 interviews are very costly. About 4-500 interviews is respectable and the results generally meaningful. But remember, you won't complete all the interviews you attempt, so when you draw your sample allow for non-completions. See "STATISTICAL CONSIDERATIONS" for more information on sample size.

4. When do you want to do your survey?

Audience size and habits often vary by season. Summer audiences, for example, may be smaller. Can you postpone your planned study? Do you want to put your survey into the field coincident with a "ratings sweep"--or between "sweeps"?

II. Types of Surveys

Survey data can be collected in three ways: through a mail questionnaire, a personal interview, or a telephone interview. Keep the following points in mind when you choose one of these methods:

a. Personal Interviews

Personal interviews generally have the highest response rate of the three methods. Responses also are most accurate, as the respondent has face-to-face contact with the interviewer. Personal interviews can be longer than telephone interviews. Fewer personal interviews can be completed per day, however, making this method the most costly. Sampling for personal interviews is also more difficult because people must be interviewed in their homes, which are generally spread all over a city or rural area. In addition, many people in urban areas will not let a stranger into their home for an interview.

It is also important to decide when--days of the week and time of day--the interviewing sessions will be scheduled. If you only make your interviews on weekdays in the mornings and afternoons, you will be missing the majority of people who work a regular 9 to 5 day. Instead, it is better to schedule the interviews on weekdays in the early evenings (6 to 9 P.M.) and on weekends in the afternoons and early evenings. Certain local conditions must also be considered. A large factory town, like Detroit, is a good example. A large proportion of the work force is employed on staggered--shift hours. It would be better to schedule the interviews around the factories' shifts.

Instruct your interviewers to make three attempts to reach the proper respondent. Have them try at different times of the day, and, if possible, schedule an appointment to meet the respondent, if he is not at home on the first try.

b. Telephone Interviews

Telephone interviews rapidly are becoming the most popular survey technique. They are less expensive than personal interviews, because the interviewer need not travel from one location to another. Sampling is easier because respondents can be taken from the telephone directory or chosen by random digit dialing (see notes on sampling) and interviews can be widely dispersed. Many survey research books state that telephone interviews must be

short (no more than 10 minutes in length). Recent studies have shown, however, that telephone interviews can run as long as personal interviews. Rapport may be more difficult with telephone interviews. All things considered, however, the telephone provides a fast and inexpensive way of conducting a survey.

As with personal interviews, it is important to remember to schedule the telephone interviews by day of the week and time of day.

Also, instruct your interviewers to make five attempted phone calls to each home where the phone is busy, the desired respondent is not in, or there is no answer. Have them try at different times of the day, and, if possible, schedule an appointment to talk with the respondent, if he is not at home on the first try.

1. Tips on Interviewing

Here are some rules to follow in conducting personal and telephone interviews:

Interviewer Training

Interviewers should be familiar with the questionnaire. They should know the purpose of the study and the nature of the organization doing the research. They should also understand what each question was designed to measure. Interviewers should also have read the questionnaire aloud several times. And they should have conducted practice interviews both in the office and in the field.

Interviewer Attitude

The interviewer should be neutral and impartial. He or she should give no indication that one answer might be more acceptable than another. He should express no surprise or indignation with an answer, no matter how silly or prejudiced the answer might be. An interviewer who displays interest in whatever the respondent says usually gets an accurate measure of what the respondent really thinks.

Interviewer Appearance

For personal interviews, the interviewer should be conventionally dressed. He should also be neat and well-groomed. Style of dress connotes attitudes that may bias responses. On the telephone the interviewer should speak in a warm and friendly voice. Above all, the interviewer should know the questionnaire well enough so that it does not sound as though he is reading it.

Interviewer Characteristics

Apparent racial and ethnic characteristics of the interviewer can bias responses. For example, a white interviewer may encounter problems when interviewing in an ethnic neighborhood. These differences are less important in telephone than in personal interviews, although the interviewer's voice may connote race or ethnic background. Choose interviewers carefully, therefore, when the survey involves racial or ethnic issues. It should also be noted that female telephone interviewers get a higher response rate than males.

Administering the Questionnaire

1. Always follow the wording of the questionnaire exactly--a slight change in wording may elicit a different response.
2. Record exactly what the respondent says when he replies to open-ended questions--interpretation may introduce the bias of the interviewer.
3. Probe for responses when the respondent gives a reply that doesn't fit the responses in a closed-ended question--for example, if the respondent says "yes" to a five-part agree or disagree question, the interviewer should repeat the response categories.

Verification of Interviews

If the interviewer is someone you know and trust personally or if you are present when he conducts the interview, you may not have to verify that the interview did indeed take place. For other interviewers, however, someone should call about one in ten of the respondents that supposedly were interviewed to make certain the interviews were done. Interviewers sometimes become bored with the task and fill out many of the questionnaires themselves. Telling the interviewers that their interviews will be verified also discourages them from filling out their own questionnaires.

EXAMPLE OF VERIFICATION PHONE CALL

May I speak to Mr. (Mrs.) _____ ?

Hello, this is _____ (Name) _____ from

(Radio Research, Inc. or some other "dummy" research
company name)

We are checking to see if one of our surveys was done properly. Were you recently interviewed about your radio listening habits?

() NO

() YES

Do you have an FM radio?

() NO

() YES

Were you asked to evaluate some of the area radio stations?

() NO

() YES

Thank you very much.... We appreciate your time and your answers.

c. Mail Questionnaires

Mail surveys provide a simple way of developing a large sample. They are also used when surveying across a wide geographic area. Mail questionnaires can be longer than personal interviews and telephone interviews. The disadvantage is the response rate. People will not return questionnaires that do not involve or interest them. Thus, you should use a mail questionnaire only if the respondents have a great deal of interest in the topic. You should plan to do extensive mail and telephone follow-ups to increase the response rate.

III. Sampling

HOW TO USE A TABLE OF RANDOM NUMBERS

Regardless of the type of survey you're planning, at some point you'll have to "draw a sample." And, if you want the results based on that sample to be representative and meaningful, you will have to use a table of random numbers. (See Appendix A for a Table of Random Numbers)

The word "random" doesn't mean haphazard or willy-nilly. It means that the laws of chance or probability are at work. Flipping a perfectly balanced coin and choosing heads or tails is one common example of probability, since the odds are 50-50 that with a large number of "flips," heads will appear. Random numbers have been generated by computers, using a sort of electronic roulette wheel. The odds are that any number from 0 to 9 will appear more or less exactly 10% of the time in the random number table.

To Select Random Numbers from a Table

1. Begin anywhere on the table. It doesn't matter where you start. One good place is with the first number in the first row in the upper left hand corner.
2. Read across the row or down the column. Take the random numbers in sequence, reading as many numbers as there are digits in the "count" of the population you are sampling.

Example: If you want to randomly select pages from a telephone directory with 284 pages you must use any number from 1 to 284. That means any 3-digit number from the table from 001 to 284.

3. If the random number selected is larger than the total number of elements you're sampling, discard it.

Example: Don't use a random number of 357, when drawing a sample from a phone book with only 284 pages.

4. Continue to read through the table, accepting or rejecting random numbers, until you have as many numbers as you need. If, for example, you want to have 25 randomly-selected pages from a phone book, then read through the table until you have 25 useable random numbers.
5. If the same number comes up more than once, and it can, discard it the second time and any other time it re-occurs.

6. Don't start over just because the random numbers you've selected look "wrong." Keep going. The laws of probability almost always work out and you'll wind up with a set of numbers that you can use.

DRAWING A RANDOM SAMPLE OF TELEPHONE NUMBERS

If you have decided to do a survey using telephone interviews, and if you have decided what geographic area you want to cover and how many interviews you would like to complete, the next step is to actually select phone numbers to call. Before you begin, assemble the following "tools":

1. The telephone directory(s) to be sampled.
2. A table of random numbers.
3. Paper, lined in columns.

Step 1. Decide how many interviews you plan to complete. In general, it is a good idea to "overdraw" your sample at least 25%. In other words it is better to have too many telephone numbers than too few.

Example: If you plan to complete 400 interviews, it is a good idea to draw 500 telephone numbers.

Step 2. Take the number of interviews you plan to complete and divide by ten.

e.g., 500 interviews \div 10 = 50

That gives you the number of "base" telephone numbers you need to draw.

Step 3. Add up the total number of "white" pages in the phone book(s) you are using. Don't forget to subtract out any pages that are designated for Federal, State, County, or Municipal listings. Count any partial pages as one full page.

Step 4. From the table of random numbers, select a "random page number" for each of the base telephone numbers you determined in Step 2.

Example: Say you are using one phone book with 345 pages, and assume you have determined that you need 50 base telephone numbers. From your random number table, select 50 numbers, each with 3 digits, ranging from 001 to 345.

- Step 5. Turn to the first randomly-selected page in the telephone book. Count the total number of names in one column. Phone books are typically arranged in three to five columns, each with approximately 60-100 names.
- Step 6. Go back to the second page of the table of random numbers. Select a random number with as many digits as there are digits in the total number of names per page.
- Example: You have a phone book with 4 columns of names, each column contains approximately 75 names, for a total of 300 names per page. Select a random number from 001 to 300.
- Step 7. Using the random number chosen in Step 6, go back to the page chosen in Step 4 and count down the columns until you reach the random base telephone number. The number which appears at that point is your first base telephone number. Always start with the left-most column of the page and work left-to-right.
- Step 8. If the base telephone number you selected in Step 7 is not a residential number, you will not want to use it. In that case count up the column until you reach the first residential number.
- Step 9. Write down the base telephone number selected in Step 7 on a scrap piece of paper. Turn once again to the table of random numbers. This time use the third page of the table and copy down the first ten random numbers.
- Step 10. Using the first four digits of the base telephone number and the ten random 3-digit numbers, create ten new telephone numbers.

Example:

Base Telephone Number: 555-5279
Random Numbers: 366, 427, 178....
New Telephone Numbers:

555-5366
555-5427
555-5178...

- Step 11. Repeat Steps 5-10 until you have used up all of the randomly-selected page numbers from Step 4.

HOW TO SELECT HOUSEHOLDS FOR "IN-PERSON" INTERVIEWS

Assuming you are going to do in-person (face-to-face) interviews, and you also have made a decision about sample size and geographic area to be surveyed, you now are faced with selecting actual households to be interviewed. The best technique for drawing this sort of sample is known as area probability sampling and relies on the census count of all American households. It is, however, a fairly complicated and time-consuming process.

As an alternative to area probability sampling, you should consider choosing your sample from a city directory. There are about 1,400 city directories available, and they list most households in most medium-sized cities, say 50,000 to 800,000 in population. City directories are published by R. L. Polk and Co. (6400 Monroe Boulevard, Taylor, Michigan 48180) and can usually be obtained from the public library.

Most directories contain both an alphabetical list of the names of residents and businesses and a street directory of households. Directories are usually up-dated every two or three years. Although some people may have moved within that period, the listing of street addresses will not change. Of course, new construction will not be included. Still, city directories are an acceptable and readily available means of drawing a household sample.

Before you start, assemble the following "tools":

1. The appropriate city directory
2. A table of random numbers

Step 1. Decide how many interviews you plan to complete. In general, it is a good idea to "overdraw" your sample by about 20%. In other words, it is better to have too many households than too few.

Example: If you plan to complete 400 interviews, it is a good idea to draw 480 households.

Step 2. Take the number of interviews you plan to complete and divide by eight.

e.g., 480 interviews \div 8 = 60

That gives you the number of "base" households that you need to draw.

Step 3. Examine the city directory you are using. Count the total number of pages in the section listing street addresses. Count any partial pages as one full page.

Step 4. From the table of random numbers, select a "random page number" for each of the base households you determined in Step 2.

Example: Say you are using a city directory that has 114 pages of street addresses, and assume you have determined that you need 60 base households. From your random number table, select 60 numbers, each with 3 digits, ranging from 001 to 114.

Step 5. Turn to the first randomly-selected page in the city directory. Count the total number of addresses in one column. City directories are typically arranged in three to five columns each with approximately 60-100 addresses.

Step 6. Go back to the second page of the table of random numbers. Select a random number with as many digits as there are digits in the total number of names per page.

Example: You have a city directory with 4 columns of names, each column contains approximately 75 names, for a total of 300 names per page. Select a random number from 001 to 300.

Step 7. Using the random number chosen in Step 6, go back to the page chosen in Step 4 and count down the columns until you reach the random base household. The address which appears at that point is your first base household. Always start with the left-most column of the page and work left-to-right.

Step 8. If the base household address you selected in Step 7 is not a private residence, you will not want to use it. In that case, count up the column until you reach the first residential address.

Step 9. Record the name and address chosen in Step 8. Instruct your interviewers to go to that address and attempt to complete an interview. Further, instruct your interviewers to attempt to complete interviews with the appropriate person at the next seven "housing units." (See notes below on definition of "housing unit.")

Step 10. Repeat Steps 5 through 9 until you have obtained the desired number of interview sites and households to be interviewed.

Some Additional Details on Housing Units

1. What is a housing unit? Any apartment, single-family, multi-family house, or mobile home. In general, you will not want to conduct interviews in institutions (nursing homes, dormitories, etc.)
2. After attempting to complete an interview with the first household designated as the initial interview site, interviewers should be instructed whether to go to the next household on the right or left. Tell half your interviewers to move clock-wise around the block. The other half to go counter-clockwise.
3. If the interview site is an apartment building, interviewers should go from top to bottom in seeking interviews. Also, when attempting interviews on the same floor of an apartment building, half of the interviewers should be instructed to go clockwise around the floor and half counter-clockwise.

Note: This sampling technique will also work if you want to draw a sample of names and addresses for a survey which is to be conducted by mail. To draw a sample for a mail survey, follow Steps 1 through 8. The person chosen in Step 7 represents your first interview "target". Take the seven names which immediately follow that initial "target" name in the directory and send questionnaires to them. Repeat this process until you have drawn a complete sample of names and addresses.

SELECTION OF A RESPONDENT WITHIN A HOUSEHOLD

Once you have selected either the random telephone number to be called or the household to be approached for a personal interview, you must then select the person within the home who should answer your questions. Naturally, if you allow who ever happens to answer the telephone or the door to respond, you may find that your survey contains a disproportional number of particular types of persons. For example, recent studies have demonstrated that young men (18-30 yrs.) are often underrepresented in surveys unless some method of respondent selection is used.

Below are two charts which many researchers use for selection of respondents. In order to use these charts the interviewer must first determine how many adults (18+) are in the home. Once you know this number, then the interviewer can consult the charts to select the desired respondent. The interviewer then asks to speak with that respondent. If the proper respondent is not at home, then the interviewer either makes an appointment or finds out the time when the respondent is expected back home.

For mail questionnaires, certain steps are necessary to insure a high response rate. Generally, at least 50% of the possible respondents should return a questionnaire before you can draw any conclusions about your market from the sample. Even then generalization is risky. An ideal response rate is 70% or more. Here's what you can do to increase response rates.

Postage

Generally, a stamp both on the envelope containing the questionnaire and the return envelope brings higher response rates than metered postage or business reply envelopes. (People hesitate to throw away a good stamp.) Use a business reply envelope only if cost is extremely important.

Cover Letter

Write a cover letter explaining the purpose of the study and why the study will be of interest to the respondent. Point out that his response is important because every respondent must return the questionnaire if the sample is to be valid.

Identification Number

You should assign each questionnaire or return envelope a unique code number. This number can be used for mailing purposes and should be so explained in the cover letter. Match these numbers to your master sampling list. In this way, you will have a record of who has returned the questionnaire for follow-up purposes.

Follow-ups

Send a post card about five days after the questionnaire is mailed reminding the respondent of the questionnaire and its importance. Send a second questionnaire about ten days to two weeks after the first. If the response rate still lags, you can call respondents to ask them to please return the questionnaire.

CHART A

It is important that we interview a man in some households and a woman in others so that the results will truly represent all the people of your state. To find out who I need to talk to in your household, I need to ask two short questions.

Q-1 The first one is, how many people 18 years and older live in this household including yourself? (Circle answer in chart below)

Q-2 How many of them are men? (Circle answer in chart below)

	1	2	3	4+
0	Woman	Oldest Woman	Youngest Woman	Youngest Woman
1	Man	Man	Man	Oldest Woman
2	X	Oldest Man	Youngest Man	Youngest Man
3	X	X	Youngest Man	Oldest Man
4+	X	X	X	Oldest Man

(INTERVIEWER: CIRCLE CATEGORY AT INTERSECTION AND USE IN THIS SENTENCE)

Okay, according to our selection method, I need to interview the _____ in your household.
Sex

CHART B

It is important that we interview a man in some households and a woman in others so that the results will truly represent all the people of your state. To find out who I need to talk to in your household, I need to ask two short questions.

Q-1 The first one is, how many people 18 years and older live in this household including yourself? (Circle answer in chart below)

Q-2 How many of them are men? (Circle answer in chart below)

	1	2	3	4+
0	Woman	Oldest Woman	Oldest Woman	Youngest Woman
1	Man	Woman	Youngest Woman	Man
2	X	Youngest Man	Woman	Youngest Woman
3	X	X	Oldest Man	Youngest Woman
4+	X	X	X	Youngest Man

(INTERVIEWER: CIRCLE CATEGORY AT INTERSECTION AND USE IN THIS SENTENCE)

Okay, according to our selection method, I need to interview the _____ in your household.
Sex

ALTERNATE BETWEEN CHART A AND CHART B

Using these charts, you can be reasonably assured that your survey is balanced in terms of respondent selection. You may wish, however, not to follow these charts if your survey is not designed to reach a full range of respondents. For example, if your station wanted to survey only 18-34 persons, or only women, then you should not use the charts. Instead, you should develop several "screening" questions at the beginning of the interview so that you can "weed out" persons not in your target group.

IV. Questionnaire Design

A. WRITING THE QUESTIONS

Every question on a questionnaire should be designed to measure something. Too often people forget the purpose of their study and what they are trying to measure when they begin to write questions. Therefore, the first step in successful research is to prepare a clear statement of what information is needed and why. Then, ideally, you should make a list or an outline of the types of information a study should produce. Researchers call each item of information to be measured in a study a variable. Variables you might want to measure could, for example, include age, sex, income, or education of audiences, preferences for several kinds of program content, attitudes toward government regulation of broadcasting, or ratings of several kinds of programs.

The first step in writing questions, then, is to list the variables you intend to measure in the study. Then you can write one or more questions that will measure each of these variables. Any question that does not measure one of these variables should not be asked. The question may seem interesting, but if it serves no useful purpose it adds time and expense to your survey and makes the survey more of a burden to the respondent.

Questions can usually be classified as requesting one or more of the following types of information:

- (1) What people say they want: their attitudes
- (2) What people think is true: their beliefs
- (3) What people do: their behavior
- (4) What people are: their attributes

Each type of information is measured by a different type of question.

Attitudes

Attitudes describe how people feel about something. They are evaluative questions. They might ask a respondent what he thinks of the programming on WBPE, how he feels about a particular community issue, or how he rates a political candidate. Attitude questions are designed to place the respondent at some point on an underlying scale. A scale may represent, for example, the degree of positive or negative feeling toward your station. Or, as another example, it may measure the extent to which the respondent supports the mayor.

There are several different types of attitude questions you can use:

1. A multiple choice response, such as:
How would you rate the local news programs on WBPE?

- () Excellent
- () Good
- () Average
- () Poor
- () Very Poor
- () Other _____

2. Degree of agreement or disagreement:

To what extent do you agree or disagree with each of the following statements? Do you strongly agree, neither agree nor disagree, disagree, or strongly disagree?

WBPE plays good music SA A N D SD

I like WBPE's news SA A N D SD

Steve Tyler is my favorite d.j. SA A N D SD

3. Evaluation based on opposites:

How would you describe WBPE?

Bad ____: ____: ____: ____: ____: ____: ____: Good

Dull ____: ____: ____: ____: ____: ____: ____: Exciting

Old ____: ____: ____: ____: ____: ____: ____: Young

Slow ____: ____: ____: ____: ____: ____: ____: Fast

4. Ranking:

Please rank the following stations in terms of which one you think plays the best music.

() WBPE

() WZXY

() WYXZ

() WZZX

() WZYY

Beliefs

Beliefs are assessments of what a person thinks is true or false. The respondent is typically asked to choose between a True-False or Yes-No response.

Beliefs questions measure how much a person knows, how he learned about something, or when he heard about something.

Who is the afternoon disc jockey on WBPE?

- Terry Michaels
- Johnny Holliday
- Ted Baxter

During the last tornado watch, which radio station did you listen to for weather updates?

- WBPE
- WZXY
- WYXZ
- WZZX
- Did not listen to radio
- Don't remember

Do you think WBPE plays better music than any other radio station in town?

- Yes
- No

Behavior

Behavioral questions ask the respondent to describe their own behavior. They may concern what people have done in the past, what they are currently doing, or what they plan to do in the future.

During the average weekday, how often do you listen to the radio?

- Do not listen
- One hour or less
- Two to three hours
- Four to five hours
- More than five hours

Which WBPE programs would you say people listen to the most in this neighborhood?

- Old Time Radio
- Noonday News
- Open Line
- Sports Call

About how often do you typically shop for groceries?

- More than once a week
- Once a week
- More than twice a month
- Once a month or less

Attributes

Attributes are often referred to as personal or demographic characteristics. These questions ask for specific factual information such as age, education, occupation, income, sex, as well as information concerning TV set ownership, participation in leisure activities, and listenership to a particular station.

To which of the following age groups do you belong?

- Under 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 or over

How many radios do you have in your home?

- Five or more
- Four
- Three
- Two
- One
- None

Which is the highest level of education that you have completed?

- () Less than high school diploma
- () Completed high school
- () Some college
- () Completed college
- () Some graduate
- () Graduate degree

Tips On Question Writing

The major problem you will face when writing questions is how to word them. The wrong choice of words can create any number of problems-- from excessive vagueness to too much precision, from misunderstanding a technical term to completely missing the meaning of the question.

There are some guidelines you can follow when writing questions:

- (1) Use simple words
- (2) Do not be vague
- (3) Keep your questions short
- (4) Be specific, but not too specific
- (5) Avoid bias

The goal in writing each survey question is to make the question mean the same thing to everyone. It is important to keep the wording as simple as possible. Do not talk down to your respondents, but, at the same time, do not bury them under needlessly complex words. For example, the question "In radio fare, what are your predilections?" could be much more clearly worded, "What kinds of radio programs do you like best?"

Vague questions invariably produce vague answers. The problem is that people can interpret the question in many different ways. For example, the question "Do you think WBPE is a good radio station?" asks for an indefinite comparison. Ask, instead, "Compared to the other radio stations in town, do you think WBPE is an outstanding, good, average, below average, or poor radio station?"

The length of a question can affect the response rate. Long questions may contain too much information to remember.

Respondents may simply lose their train of thought. Sometimes it is better to break up a long question into a series of shorter questions. For example, instead of asking, "Which radio stations in town do you listen to, what time of day do you listen to them, and what do you like about the stations?" It would be better to ask three separate questions.

In an effort to avoid vagueness you may find your questions becoming too precise. The use of broad response categories presents a compromise between too much vagueness and too much precision. The question,

About how many hours did you listen
to the radio last week? ____ hours

could be improved simply by providing a series of response categories,

About how many hours did you listen
to the radio last week?

- None
- 5 hours or less
- 6 - 10 hours
- 11 - 15 hours
- 16 - 20 hours
- 21 hours or more

A biased question is one that influences people to respond differently than they normally would. Some people refuse to answer questions that appear to be "loaded". Here again, you must choose words carefully so as not to slant your question in a particular way. For example, the question, "Do you think the Federal Government should stop interfering with the freedom of broadcasters?" asks for an unfair evaluation. A biased question might use an emotionally charged word that could effect responses. For example, "Radical FCC Commissioner Harvey Hardcore has charged that" Do you agree or disagree with his position?"

Other common question writing problems are:

Questions Outside the Respondent's Experience. We too often assume that people have enough experience or knowledge about all issues. In fact, they may know nothing about something that is of vital interest to you. Asking for such opinions brings meaningless answers.

For example, the question, "Do you favor regulation of the broadcast industry?" may mean nothing to the person who does not know what effect broadcast regulation has. Instead, bring the question down to his level: "The Federal Government has developed regulations that would force television stations to limit the amount of advertising on children's programs. Do you think this is an excellent idea, a good idea"?"

Questions Relying Too Heavily on Memory. Every time you write a question, you should ask yourself whether the respondent can reasonably be expected to answer the question. Some questions may go back too far in time for the respondent to remember. For example, "What radio programs did you listen to when you were a child?" Other questions may ask for information the respondent has never stored in his memory: "What were each of the television programs you watched last week?"

Embarrassing Questions. Questions in this category ask the respondent whether he did something, such as vote or listen to the radio, that he did not do but feels he should have done. Thus, he is likely to report engaging in that activity even though he did not do so, because he believes it would be irresponsible not to do so. For example, if you told him you were doing a survey for WBPE and they asked how much he listened to WBPE he would be likely to tell you he had listened, even though he had not.

Embarrassing questions are best asked by making it clear that a negative answer is acceptable. For example, "Did you happen to have a chance to listen to WBPE yesterday?" or "Did you happen to vote in the November presidential election?"

Double Questions. Each question should ask for only one thing. Researchers often lapse into double questions when asking for opinions on complex issues. For example, "Do you think the FCC should relax its regulation of radio and allow broadcasters to do whatever they want?" "Do you think television contains too much sex and violence?" A respondent could think regulation should be relaxed but that broadcasters should be subject to other constraints. Or, he could think there is too much violence but not too much sex on television. A general rule is that when ever the word "and" appears in a question the question is a double one that should be split into two questions.

Negative Questions. Questions that contain the word "not" often present a problem because the respondent reads over or does not hear the negative term. The questions, "Joe Blow should not be kept on as anchorman on WBPE?" or "To what extent do you agree with the statement, 'The FCC should not regulate radio'?" may be read as precisely the opposite of what was intended. It's best, therefore, always to state questions positively.

Personal Questions. Many people will be reluctant to reveal their age, income, race, viewing habits of some programs, usage of certain products, etc. Often, however, these questions are of importance to your study. They can be asked if you write them with care. Allowing a person to fit his age or his income into a broad category makes the question seem less threatening and embarrassing than asking for his exact age or income.
For example,

Please indicate your approximate net family income, before taxes, in 1980.

- () Less than \$8,000
- () \$8,001 to \$15,000
- () \$15,001 to \$20,000
- () \$20,001 to \$25,000
- () \$25,001 to \$30,000
- () More than \$30,001

It should be noted that these questions are placed toward the end of the questionnaire. Also, keep in mind that the wording of these questions will vary according to the type of survey you are using. For example, the previous question on income is fine for a mail questionnaire, but for a telephone or personal interview it would be better to say,

"I am going to read you a list of income categories. Stop me when I reach the category that contains your approximate net family income, before taxes, in 1980."

In some instances there are certain personal questions that should not be asked according to the type of survey being used. For example, you do not ask the respondent's sex when using a telephone or personal interview. The interviewer marks the appropriate response himself.

Open vs Closed Questions.

The questions given in the previous section as examples of how to measure facts, opinions, information, and self-perceptions all had fixed, or closed, responses. You will want to use such closed-ended questions in most surveys. They are easier for the respondent to answer, and thus make him more interested in continuing an interview or in finishing a questionnaire. Closed-ended questions also make the analysis of your data easier because all responses fit into a limited number of clearcut alternatives. They are especially useful for gathering factual information, information levels, and self-perceptions. They are also best for measuring opinions when the issue is clearcut and most people have already formed a clear opinion.

Open-ended questions are best, however, for measuring opinions on complex issues that cannot be boiled down to five or seven categories, or on new issues for which people generally have not formed a clear opinion. The open-ended question allows the respondent to explore aloud his own opinion as a result, they indicate the stage to which his thinking has progressed. Open-ended questions also work best when the person preparing the survey has only a limited idea of how people feel about an issue, what the relevant scale should be, or how relevant the issue is to the respondent. In those instances, a closed-ended question would force the respondent to agree or disagree with the researcher's opinions and would not actually measure the respondent's opinion.

Open-ended questions should ask clearly and simply how a person feels about something, such as the quality of radio programming or the ability of a political candidate. They should, however, state specifically the issue to which they refer. Ask, for example, "What do you think about the morning news program on Station WBPE?" Do not ask, "What do you think of Station WBPE?"

One additional use of open-ended questions is as probe questions. After a fixed-response attitude question, you might ask, "Why do you feel that way?" or simply, "Why?".

Open-ended questions can be difficult to analyze because the responses may appear to vary widely. Actually, however, they will usually fit into fewer than 10 categories. To analyze open-ended questions, it is best to have several persons individually read each response. They should try to group together any similar responses into small piles. The end result will be a series of response categories to the question. These response categories can be analyzed in the same way as closed-ended questions.

(See "Coding Open-Ended Responses Into A Limited Number of Categories")

B. QUESTIONNAIRE LAYOUT

Your questionnaire should be designed to catch the respondent's attention and maintain it throughout the interview or questionnaire. Most people like to be interviewed if the questionnaire does not threaten them in some way. To capture and hold interest, your questionnaire should contain the following general sections:

1. Introduction. The introduction should be a short statement describing the purpose of the study and how the respondent was chosen. The introduction should be written out so that the interviewer will use the same introduction each time. But it should be short and simple enough so that the interviewer can recite it without reading. Nothing bores a potential respondent so much as an interviewer who is obviously reading the introduction. The introduction should be serious, not light. The respondent should know the survey is important. It should also be neutral, to make clear you are not trying to support, say, one station over another. The introduction should not be threatening; it should avoid mention of emotional issues which people may not want to discuss.

Generally, one should not mention exactly how much time an interview will take--so as not to give someone an excuse for refusing to be interviewed. Most interview refusals come at the beginning. Once the respondent gets into the interview his interest mounts, and he is unlikely to cut it off. A typical introduction might read as follows:

Hello, my name is _____ . I'm calling you as part of a survey of radio listenership in the Metropolis area. Your name was chosen randomly from the Greater Metropolis telephone book. I've been asking your neighbors some questions and now I would like to talk to someone in your household. To begin with - I need to know how many adults 18 and over live in your household, counting yourself?

2. Warm-up Questions. The first questions asked should be interesting to the respondent. They should also be questions he can easily answer. They should not be threatening or emotional questions. Sensitive questions, such as age or income, or opinions on emotional issues should be kept to the end of the questionnaire. Questions about exposure to radio or television stations, radio listening trends, or ownership of radios or television sets are best at the beginning. Avoid questions that the respondent may not be able to answer or ones he might find offensive. Such questions may lead to termination of the interview.

3. Main Body of the Questionnaire. After the warm-up questions, the respondent will be into the interview and will be willing, and often eager, to continue. At this point, you can ask most of your questions in whatever order seems most logical.
4. Demographic Questions. The last set of questions should be about age, sex, income, education, etc. Often these are sensitive, and if the respondent refuses to answer them at this point, you will not have jeopardized the questions you most want to ask.
5. Transitions. Questions can usually be grouped together logically. For example, program exposure questions might go together, or opinion questions, political questions, or demographic questions. When you switch from one grouping to another, it is best to write in a transition statement to be read by the interviewer or the respondent himself in the case of a self-administered questionnaire. Generally, you should write these transitions in capital letters to set them apart. An example:

THAT'S ALL THE QUESTIONS I HAVE ABOUT THE RADIO STATIONS
YOU LISTEN TO. NOW I WOULD LIKE TO ASK SOME QUESTIONS
TO DETERMINE YOUR OPINION ABOUT THE QUALITY OF THESE
SHOWS.

C. FORMAT OF THE QUESTIONNAIRE

Questionnaires should be typed neatly and may be reproduced inexpensively by mimeograph, ditto, or multilith.

When a yes or no answer to one question leads to an exclusion of another question, use arrows to guide the interviewer or respondent. For sample:

Q-4. Have you listened to WBPE radio in the past week?

() No —————→(Go to Q-7)

() Yes —————↓

Q-4a. Have you heard the WBPE commercial for the spring sale at Jill's Boutique?

() No —————→(Go to Q-6)

() Yes —————↓

Q-4b. Are you planning to shop at Jill's Boutique during the sale?

() No

() Yes

D. PRE-CODING

If you plan to process your results on a computer, you may wish to precode your questionnaire to make it possible to transfer the data directly to computer cards. Each response should be numbered and a column of the computer card should be specified for each question at the right margin of the questionnaire. You should consult book on survey research listed in the bibliography for detailed advice on precoding, i.e., indicating in what column and in what row to punch each answer on the computer punch card.

E. PRETESTING THE QUESTIONS

Pretesting is an essential step for catching any flaws in question wording and making suggestions about improving the survey.

To pretest, select five to ten people who will be typical respondents. Try to find people who have different levels of knowledge and types of opinions. Read them the questions, in the case of telephone or personal interviews, or have them read the questions, in the case of a self-administered questionnaire. Ask the respondents to pay particular attention

to the wording of the questions and to ask you about questions they do not understand. If there are questions about which you have doubts, ask the respondents how they interpreted those questions.

F. CODING OPEN-ENDED RESPONSES INTO A LIMITED NUMBER OF CATEGORIES

Here are some hypothetical responses from a survey. Persons interviewed were asked, "Why do you listen to Station WBPE for the news?" The numbers in parentheses refer to the coding categories developed below.

- "I like the music they play during the day." (1)
- "It's the best. Good journalism." (3)
- "Gee, I don't know." (8)
- "The announcer has a professional-sounding voice." (4)
- "I don't really care. I just have the radio on." (6)
- "Most of my favorite programs are on WBPE." (6)
- "That's the station my wife sets the radio for." (7)
- "I met James Mason (the newscaster) once. He seemed real nice." (5)
- "It comes on at a good time, just before the hour." (6)
- "They're always first with a bulletin if something happens." (3)
- "I never really thought about it." (8)
- "I always listen to Nat Murphy (a D.J.) and so I just hear the news." (6)
- "The other stations spend too much time on news. One minute is just right." (2)
- "I don't pay very much attention to the news on radio." (8)
- "I feel like I really know James Mason (the newscaster). He's been around for years." (5)
- "They give the best news. You know, important things that happen around here." (3)
- "I listen to WBPE all the time. It's the best station." (1)
- "I don't like the people at WWLP (the competition)". (7)
- "It's short and sweet. To the point." (2)

Here are some possible coding categories. Next to each category is one analysis of the twenty responses above.

<u>CODE</u>	<u>TYPE OF RESPONSE</u>	<u>NUMBER OF RESPONSES</u>
1	Overall Station Format/Quality	2
2	Radio News Format	2
3	Quality of Newscast	4
4	Quality of Newscasters	1
5	Feelings toward Newscasters	2

<u>CODE</u>	<u>TYPE OF RESPONSE</u>	<u>NUMBER OF RESPONSES</u>
6	Lead-in Lead-out Programming	4
7	Miscellaneous	2
8	Don't know/Not Sure	3

V. Analyzing Your Survey

With your survey "back from the field," the time has come to analyze its results. For most surveys of the type suggested here, you analyze its results. For most surveys of the type suggested here, you and your staff can tabulate the results by hand. Of course, you can arrange to have the results punched into punch cards and analyzed by computer. But if your sample size is relatively small--say under 350 interviews--it won't take any longer to do the analysis by hand; it might even be quicker. And it certainly will be cheaper.

Before actually beginning your analysis, you must "edit" the questionnaires.

- STEP 1. Examine each questionnaire to make sure that it is fully and accurately filled out. Some questions may have been left blank accidentally. If the response to an important question is missing--and if you can identify the person who was interviewed-- set that questionnaire aside until you can get the missing answer. This missing information can be collected as part of the verification process. The interviewer asks the respondent those questions which were not answered on the original questionnaire.
- STEP 2. Check the questionnaire for "suspicious" patterns. If, for example, all responses to a given set of similar questions are identical, or if seemingly contradictory answers have been given, you should be suspicious. This won't happen often. But when it does, it is possible that your interviewer did not follow your instructions. Or worse yet, the interviewer may have fabricated the results. If possible, check back with the person who was supposed to have been interviewed.
- STEP 3. If your questionnaire included any "open-ended" questions, you now need to develop a "code" for categorizing these responses. Refer to the two sections on open-ended questions for more information on how to code the responses. Once you have a coding scheme, go through the actual questionnaires and apply it to all open-ended responses; mark your "code" in red ink in the margin next to the open-ended question.

With your questionnaire properly edited, you can now begin to tabulate the response.

- STEP 1. On a large desk or conference table, arrange all of your completed questionnaires into one or more convenient sized stacks. Give yourself plenty of room to work.

- STEP 2. Check Question 1 on the first questionnaire to see how many different possible answers could be given. On a scratch pad draw columns and tables, one for each possible answer, plus one for "blank" or no answer.
- STEP 3. Starting with the first questionnaire, tabulate all responses to Question 1. One good way to keep track of answers is by the a system of vertical and slash lines:

HHH III = 8

- STEP 4. When you have gone through all of the questionnaires, count up the number of vertical lines and slashes for each type of answer and record that number. Take a copy of the questionnaire which has not been filled out. Next to the appropriate response, write in the count that you have just obtained.
- STEP 5. Add up all responses to Question 1, including "blanks" or "missing." Check that total against the number of questionnaires completed. The two numbers should be equal. If not, you've miscounted and you should try to find your mistake.
- STEP 6. Repeat Steps 2 through 5 for the remaining questions in your survey.
- STEP 7. For purposes of further analysis and presentation, it is most useful to convert your actual counts into percentages. Depending on the question, you may or may not want to include answers of "Don't know" or "Not sure." Whether you do or do not include them depends on whether you wish to talk about a percentage of all listeners/viewers, or a percentage of those listeners/viewers who have an opinion or who have answered this particular question. Thus, if 20 of 100 respondents answer "yes," that is 20% of all respondents. But if 20 of 100 respondents answer "Don't know," the 20 who answer "yes" are 20/80, or 25% of all respondents who have an opinion.
- STEP 8. When you do report percentages, make certain to include the raw number of interviews on which those percentages are based. Knowing how many interviews are included in the percentages makes a big difference in how those percentages are interpreted. Also, it is generally o.k. with small samples to report only whole number percentages, e.g., 71%.

At this point you have your findings based on the answers given by all persons interviewed. You may now want to examine responses to certain questions by sub-groups (men, women, teenagers, home-owners, etc.). To obtain these "cross-tabulations", simply pull out those questionnaires answered by the sub-group you want to examine. Then follow Steps 2 through 6 above.

A. STATISTICAL CONSIDERATIONS

Your survey results were obtained from a sample of people. You did not interview everyone. As a result, the findings of your survey may vary somewhat from the actual opinions, feelings, and actions of the entire population. The "accuracy" of your sample depends in part on how large it is. It is very important interpreting your findings to know what the so-called "margin of error" is for your results.

The table of probable deviations (see table in Appendix B) is a chart for determining the accuracy of results based on your sample size. The table is based on the laws of probability (the same laws that say that if you flip a coin enough times, heads will come up half of the time and tails the other half).

You can use the chart to estimate how many interviews you will need. The safest thing to do is use the 50% column, since this tells you how close your result is likely to be for the most "controversial" question used (any question where the "yes" and "no" answers divide about 50-50). You must decide if you can live with results based on a sample size of, let's say, 100 and a probable deviation of plus or minus 10 points.

This means that if you surveyed 100 people's opinions on a new tax law and 51 of them favored the law, your results could be "off" by as many as 10 points either way. The true opinion of the entire community could range from as low as 41 in favor to as high as 61 in favor. To improve your accuracy you could draw a larger sample. For example, using the 50% column, if you drew a sample of 400 people the probable deviation has decreased to plus or minus 5 points.

Seldom are all results in a survey close to the 50-50 division; so you may decide that you can risk getting a few such rough figures, and settle for a sample of 250 cases, where your results will be about 6 points above or below the true figure for the total population.

As a general rule of thumb, most surveys you can do should use between 200 and 500 interviews. A larger sized sample is generally not needed unless you are doing a nationwide study or trying to measure public opinion. The more quantitative your results are (e.g., ratings), the larger your sample should be.

Qualitative measurements (e.g., likes & dislikes about a particular program) can get by with smaller samples when all you need is a good indication of your audience's tastes.

Note: Nielsen bases their national television program ratings on a sample size of 1200.

How To Use a Table of Probable Deviations

Let's say you have asked a Yes-No opinion question about a new tax law to a sample of 300 persons, and 73% of the people were in favor of the law and 27% of the people were opposed to the law. Let's check to see how accurately these percentages reflect the true figures for the total population.

- Step 1. Read across the top of the table until you find the two percentages that are closest to the two percentages you want to test.

Example: Our two percentages are 73% and 27%. We must choose between 25% or 75%, and 30% or 70%. It is better to take the second pair and be a bit more conservative in our margin of error. As a general rule of thumb, if your two percentages fall in between two columns on the table always choose the pair of percentages closest to the 50% column.

- Step 2. Read down the right-hand side of the column until you find the sample size closest to your own.

- Step 3. Find the intersection of the two columns and copy down the number. The number represents your margin of error.

Example: If you find the intersection of a sample size of 300, and a pair of percentages (70%-30%) you will find the number 4.6.

- Step 4. Add the margin of error to your original smaller percentage, and subtract it from your original larger percentage.

Example: $27\% + 4.6\% = 31.6\%$
 $73\% - 4.6\% = 68.4\%$

- Step 5. Compare your two "new" percentages. If the original larger percentage is still larger than the original smaller percentage then you can say that it is quite likely that more people would have answered Yes than No had every single member of the population been surveyed.

Example: 68.4% is larger than 31.6%. Therefore it is quite likely that more people in your community will favor the new tax law.

One Additional Note

When interpreting your survey results, it is best to be cautious about making too much from small differences. Even without using the Table of Probable Deviations, you will be able to "eye-ball" the findings and decide when differences are likely to be meaningful. If you have any doubts, however, check with the Table of Probable Deviations or with someone who can help you carry out more sophisticated statistical testing.

B. CHECKLIST FOR PRESENTING RESULTS IN TABLES

When you present your findings in a table, it is important to make sure that your task includes the following:

1. Table number, e.g., Table 4; Table 2A.
2. Actual wording of question.
3. Results in percentages, adding to 100% (errors from rounding may cause a slight difference in total percentage).
4. Number of interviews on which percentages are based. Make sure you give the number for all sub-groups (e.g., male, female, teenagers) you report.

All of this information will be helpful in making sense of the results and giving your study a measure of credibility.

EXAMPLE: Presenting Results in Tables

Table 1: Would you say that the quality of the programs is excellent, good, fair, poor?

	Total	Men	Women	Male Teenagers	Female Teenagers
Excellent	22.1	20.9	23.7	22.8	11.0
Good	35.9	37.2	34.6	41.7	6.5
Fair	27.5	29.1	25.1	28.2	20.5
Poor	10.0	11.7	9.8	5.6	51.7
Undecided	<u>5.5</u> <u>100.0</u>	<u>2.1</u> <u>100.0</u>	<u>6.8</u> <u>100.0</u>	<u>1.7</u> <u>100.0</u>	<u>10.3</u> <u>100.0</u>
	<u>(401)</u>	<u>(200)</u>	<u>(201)</u>	<u>(75)</u>	<u>(82)</u>

VI. Applying the Findings

Having collected the data and analyzed their significance, the next thing to do is to go back to the original design of the study for application of the findings. If the study was well conceived and if the planning was done along the lines suggested in these materials, application will follow naturally.

A well designed survey will have started out with a written statement of what information is needed and why. There will also have been dummy tables showing the kinds of data expected, and contingency plans to suggest action to be taken if the data turn out one way or another. The action that must be taken will thus have been preordained.

There are a few statistical manipulations of the data that are possible for further applications of the findings. It is possible to determine the types of programs that attract common audiences; to determine what different types of audiences exist and what their characteristics are; and to suggest what groups are most likely and which ones are least likely to be interested in certain programs. These types of analyses require the use of a computer. If you are interested in this type of data analysis you should contact your local university or a data processing firm at the outset of your survey design.

Whatever the applications, the data are most usable and the findings most reliable if the applications were anticipated before the field work for the study was undertaken.

In planning a study, one should also anticipate the possibility that at some future time it may be desirable to study trends. Among the kinds of trends a station may find useful are trends in

- *Audience composition
- *Program preferences
- *General image of the station compared with other stations
- *Public service image of the station
- *Audience attitudes and opinions
- *Listening times
- *Media credibility
- *Knowledge of issues

Of course, there are many other topics on which trends may be desirable.

In order to study trends, identical questions must be used over a period of time. Professional survey researchers maintain records of questions they have asked in the past and the kinds of responses they got to each question. Some questions are not worth retaining because of the high "Don't Know" response rate or for some other reason. If each question along with responses is typed on a separate card and a card file is maintained under appropriate headings, such as "Audience Characteristics," "Political Opinions," "Program Preferences," it will not be long before the station will have a useful catalog of trends.

19-10-1919

APPENDIX A

573	364	299	58	127	11	412	370	154	111	434	803	288	687
169	874	525	197	101	313	195	186	47	479	703	132	174	766
773	409	747	206	374	651	358	1	103	293	111	527	381	376
212	994	290	428	241	737	513	12	71	609	547	459	934	303
905	437	857	185	300	807	823	206	607	420	372	73	222	325
748	336	831	185	717	819	8	703	86	908	900	594	604	439
19	786	461	291	498	640	935	573	791	504	70	366	293	442
894	939	675	25	346	1	550	929	166	771	773	328	352	681
161	475	630	156	279	658	991	465	960	326	516	498	815	551
854	661	352	694	60	148	449	451	538	596	580	496	310	987
396	597	304	76	417	764	708	742	844	604	622	743	573	259
398	145	953	578	418	258	793	819	206	403	264	83	488	32
991	817	540	112	747	129	513	371	245	905	811	382	382	180
201	972	931	723	979	722	483	522	552	555	654	73	151	93
880	839	991	655	525	363	782	703	98	786	209	847	247	940
161	7	947	547	939	176	702	819	33	106	727	141	435	33
88	474	954	623	801	88	982	978	380	321	908	792	995	46
555	881	222	158	411	282	995	457	53	639	226	302	874	153
802	255	149	410	486	123	947	215	401	405	375	287	395	738
488	802	598	271	180	726	805	494	772	120	393	98	368	147
142	141	942	850	625	409	926	779	87	548	764	531	619	717
125	828	564	167	334	591	220	223	236	155	799	641	667	649
758	790	209	722	56	194	239	654	495	68	782	55	433	795
906	506	907	281	997	104	467	124	799	229	35	594	293	489
748	141	746	658	703	545	491	234	512	498	436	557	313	81
88	377	613	153	825	52	206	329	673	890	366	759	111	337
80	290	703	945	365	149	84	615	929	278	88	345	299	480
72	62	978	932	691	969	693	737	230	504	426	783	579	830
612	259	346	509	394	223	210	319	721	35	103	166	735	484
452	90	872	474	26	527	917	805	391	196	539	273	571	636
535	945	723	151	557	610	458	929	268	371	713	56	249	602
713	875	808	372	687	847	96	976	984	405	652	349	55	471
956	451	141	639	435	31	462	663	336	324	381	644	854	658
572	678	386	377	543	892	55	944	370	832	876	407	320	829
52	815	53	866	394	216	787	867	447	125	400	117	311	324
286	422	843	571	31	684	85	724	299	431	989	481	107	900
591	447	809	133	860	290	544	209	671	861	912	5	824	839
87	808	481	999	180	645	870	511	85	440	847	337	738	233
857	3	57	284	736	687	810	187	557	708	134	423	584	956
248	719	756	712	124	679	975	608	754	84	785	137	72	344
679	659	231	171	450	896	762	591	215	514	709	5	349	642
33	35	782	839	736	591	203	630	521	97	560	255	114	794
872	65	308	496	206	44	655	62	279	323	819	189	769	567
394	319	647	304	110	487	480	477	822	781	967	997	467	556
58	867	2	213	569	524	698	81	114	334	433	260	357	430
934	728	19	419	838	993	12	966	161	385	145	420	682	227
723	755	314	358	977	656	65	964	668	3	574	336	205	125
966	541	860	340	470	859	885	210	426	947	45	838	515	742
786	765	244	588	160	868	983	86	224	566	336	334	521	700
515	355	762	225	175	232	619	922	819	173	881	935	714	192

476	474	569	14	82	327	381	242	636	943	194	434	60	611
592	867	885	798	815	53	795	86	143	407	216	78	311	774
609	232	970	554	886	563	760	635	221	225	417	499	104	744
440	926	781	119	775	828	48	958	816	177	561	122	76	539
268	147	579	978	640	80	915	145	762	869	510	414	956	136
779	799	954	151	554	263	910	769	412	94	455	426	733	648
791	665	621	296	550	985	684	237	749	9	597	370	825	186
209	665	900	614	306	719	327	772	465	130	141	209	820	854
277	788	871	684	788	745	235	778	569	771	920	982	978	912
814	697	864	419	910	33	630	496	830	268	566	504	780	2
526	289	630	809	64	808	412	543	667	502	358	948	509	324
626	924	949	478	432	529	49	128	713	273	135	759	788	846
452	684	212	340	456	571	803	919	164	573	992	88	389	650
342	438	209	409	813	640	436	50	284	227	364	304	513	188
339	248	837	796	535	456	385	985	84	167	111	182	268	888
558	750	899	284	901	164	240	746	812	810	831	119	432	929
740	765	219	337	588	581	867	195	682	585	448	993	180	693
569	801	439	273	465	444	426	793	336	156	915	664	135	778
146	327	952	543	384	135	923	380	730	159	553	985	866	965
193	171	865	386	225	808	918	85	547	261	281	903	796	274
292	47	220	386	932	772	35	229	534	339	599	683	463	475
558	211	773	609	447	911	567	263	294	766	59	793	535	169
838	792	552	795	269	876	883	301	828	452	601	888	882	868
507	908	278	779	770	763	177	963	353	260	698	769	995	833
602	541	134	503	387	399	217	339	989	985	140	443	819	566
860	944	908	273	325	996	6	96	176	922	38	863	670	724
698	28	991	446	304	96	862	91	85	888	467	299	978	93
498	329	673	729	402	178	944	625	74	969	154	527	778	197
535	936	238	826	67	93	501	572	45	519	448	444	178	84
613	595	523	378	668	373	538	64	706	519	883	898	905	507
344	111	915	57	547	289	994	208	760	987	300	603	852	240
212	768	939	88	949	915	155	448	651	250	451	842	725	507
268	240	473	674	832	999	949	420	586	476	588	670	107	631
685	303	749	701	859	317	738	284	276	657	351	633	23	126
487	648	326	297	369	150	574	784	814	633	410	743	257	463
660	508	70	859	476	310	849	540	359	229	409	992	596	624
873	110	63	705	144	406	798	801	178	329	606	882	98	570
56	522	890	742	709	514	86	831	756	457	947	508	379	127
418	903	428	954	47	268	451	128	111	497	770	175	785	808
521	245	641	204	574	344	4	750	613	516	909	715	860	631
474	129	729	17	15	181	101	526	230	339	86	938	52	488
185	484	358	587	342	496	170	293	980	33	469	858	225	535
321	852	761	350	765	688	541	562	392	320	990	429	249	520
568	715	254	277	633	192	478	942	174	907	821	905	705	606
580	301	143	563	399	233	954	860	301	648	349	764	995	811
604	999	784	193	675	843	750	482	247	779	957	597	142	63
515	531	947	87	611	932	45	219	812	221	714	397	485	978
370	507	268	406	857	129	172	830	730	509	989	898	709	330
991	189	271	890	263	896	895	182	104	183	367	399	837	13
731	577	962	893	711	384	607	232	939	758	274	768	104	387

62	579	363	968	176	814	265	904	564	49	481	991	699	118
813	488	3	199	71	417	1	106	972	425	596	916	315	33
803	612	228	404	267	470	203	380	646	986	587	241	429	691
214	270	953	22	354	480	134	687	221	277	137	567	682	718
720	784	260	399	997	156	197	119	156	834	62	277	619	585
352	953	359	493	147	270	521	578	863	304	953	12	860	225
907	257	950	241	901	116	368	515	17	413	328	281	583	826
930	935	872	110	916	516	854	134	137	637	144	705	628	870
866	261	611	25	528	958	367	933	550	962	296	729	578	456
187	172	771	557	548	335	26	480	763	972	485	831	784	138
30	366	858	363	730	647	333	346	240	136	812	347	102	908
195	523	232	515	204	184	67	501	981	502	527	354	365	327
277	613	452	994	496	870	932	823	446	39	271	707	151	958
866	611	936	816	918	949	35	382	173	273	285	289	544	232
2	140	32	109	615	197	151	159	611	549	382	595	453	690
730	306	143	898	108	630	968	600	132	629	128	927	892	30
607	684	39	601	233	807	168	299	69	161	485	813	683	493
142	529	907	435	231	471	249	810	219	290	653	209	226	317
92	369	8	875	861	199	691	495	258	519	947	108	282	567
199	114	901	850	610	7	827	225	20	853	890	642	642	4
866	236	95	249	861	449	519	595	486	754	6	261	167	869
554	825	975	506	690	619	689	27	271	182	421	993	235	138
422	192	103	341	431	680	461	311	632	390	758	474	423	643
566	70	433	466	603	616	475	972	232	152	515	431	978	990
426	817	670	536	197	304	782	938	195	31	146	302	731	333
488	988	765	445	29	659	657	168	110	249	778	528	444	528
154	652	594	144	835	912	602	707	200	64	488	380	700	844
409	252	900	236	175	766	923	814	559	549	486	42	533	782
593	915	159	38	718	511	407	59	12	69	59	110	977	384
241	20	362	419	820	940	315	544	334	896	646	530	370	226
154	913	47	222	608	227	568	184	417	184	633	780	696	39
246	539	831	463	646	964	729	908	335	570	965	963	592	641
27	497	554	749	290	387	498	442	302	927	8	318	753	983
429	94	6	868	453	474	439	345	673	20	552	313	408	782
496	539	295	555	863	374	334	153	866	987	111	274	15	580
870	620	94	804	909	978	758	208	849	173	995	664	347	772
231	556	549	314	90	556	199	399	929	133	495	100	363	575
755	373	680	110	443	924	553	924	721	666	699	26	784	259
858	133	790	121	461	750	505	8	512	608	17	281	434	187
936	927	779	432	494	73	81	626	945	39	708	431	509	402
79	269	367	247	372	870	174	482	96	75	955	261	389	195
611	987	198	575	454	170	367	2	762	345	98	465	692	962
221	646	177	904	811	848	246	11	568	458	265	513	447	899
53	372	913	527	631	34	975	65	354	542	848	449	961	456
858	19	867	847	7	105	354	9	627	657	744	639	257	599
485	42	143	753	492	903	296	872	968	111	572	139	719	450
775	872	731	706	411	821	813	842	524	401	587	442	736	739
272	959	741	686	426	414	844	37	114	890	684	412	288	866
249	702	661	422	19	613	482	325	125	515	405	425	482	790
334	855	51	2	400	557	609	822	428	361	427	797	100	484



599	691	74	879	203	217	732	785	958	715	740	196	216	21
839	761	219	420	271	677	836	51	623	634	458	110	725	18
413	538	103	640	436	28	243	330	632	376	545	769	79	762
49	185	470	838	339	368	853	786	279	815	703	897	870	413
182	554	531	351	725	972	236	141	238	801	822	401	868	602
39	755	488	978	355	730	165	878	311	677	151	288	906	23
592	944	829	568	212	31	582	642	155	69	308	574	369	210
35	757	66	276	770	374	303	355	967	622	698	347	155	516
565	696	689	807	459	736	162	328	13	441	805	933	563	567
576	987	728	112	511	445	475	545	585	149	725	525	345	588
33	909	757	508	409	463	163	693	35	693	172	251	947	743
820	289	333	655	835	424	441	431	59	383	644	518	209	738
689	513	367	502	124	416	813	30	541	116	733	632	550	511
707	512	721	975	705	946	382	630	185	489	304	687	700	849
490	800	180	450	234	24	528	871	339	459	674	188	597	357
821	423	52	845	139	924	856	820	23	974	276	736	100	829
782	13	797	605	18	547	627	30	312	577	321	651	814	735
737	686	130	754	316	4	104	569	883	212	616	241	878	89
377	594	803	390	648	798	64	980	592	961	331	863	251	473
159	870	715	40	72	790	186	42	238	682	193	651	345	274
317	23	980	229	662	221	928	62	786	289	651	385	181	740
257	533	25	282	484	934	967	587	885	346	869	7	192	312
226	510	818	221	544	192	183	645	893	495	280	139	352	184
693	83	44	361	244	297	571	384	351	866	289	918	321	747
662	794	933	516	795	809	308	578	323	101	60	690	195	433
516	323	543	983	612	7	981	527	643	627	192	285	172	444
928	144	397	872	196	756	801	868	824	328	571	603	85	805
110	417	744	324	660	504	507	898	176	453	268	409	455	954
958	482	175	685	516	906	597	401	743	980	346	380	962	829
100	133	105	785	794	780	380	351	140	244	97	25	121	704
713	89	579	931	588	590	995	576	65	273	376	257	239	810
982	275	134	45	642	579	655	535	351	919	879	78	172	852
483	956	96	598	123	434	121	397	134	661	422	673	258	473
570	780	187	233	155	634	601	486	98	31	343	785	917	413
931	266	246	407	800	142	587	593	812	680	516	823	659	551
384	755	195	128	560	572	702	607	264	770	118	383	52	124
48	165	794	346	280	842	223	130	508	263	299	285	111	511
147	980	822	906	687	309	226	664	163	199	699	111	83	38
128	186	234	847	857	291	369	479	201	665	689	44	763	228
14	882	236	714	185	63	876	640	55	570	936	933	885	360
322	540	176	965	163	720	985	161	644	660	938	73	777	192
443	496	132	498	341	382	366	629	725	935	773	2	866	506
421	393	655	538	624	381	473	939	770	766	264	777	88	662
566	908	303	60	142	474	719	10	752	623	65	611	691	493
996	767	582	772	25	307	466	961	414	155	213	367	835	594
186	579	817	54	467	771	395	434	326	297	910	302	511	615
151	251	942	983	503	901	490	3	276	999	903	25	48	59
902	155	535	939	306	292	367	92	960	445	659	447	584	948
517	505	372	688	538	420	45	803	101	958	580	685	642	109
816	61	634	524	168	375	744	653	670	116	739	599	931	214

APPENDIX B

PROBABLE DEVIATION (PLUS OR MINUS) OF RESULTS DUE TO SIZE OF SAMPLE ONLY (Safety factor of 20 to 1)

Survey Result Is:	1%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
	or 99%	or 95%	or 90%	or 85%	or 80%	or 75%	or 70%	or 65%	or 60%	or 55%	
Sample of: 25	4.0	8.7	12.0	14.3	16.0	17.3	18.3	19.1	19.6	19.8	20.0
50	2.8	6.2	8.5	10.1	11.4	12.3	13.0	13.5	13.9	14.1	14.2
75	2.3	5.0	6.9	8.2	9.2	10.0	10.5	11.0	11.3	11.4	11.5
100	2.0	4.4	6.0	7.1	8.0	8.7	9.2	9.5	9.8	9.9	10.0
150	1.6	3.6	4.9	5.9	6.6	7.1	7.5	7.8	8.0	8.1	8.2
200	1.4	3.1	4.3	5.1	5.7	6.1	6.5	6.8	7.0	7.0	7.1
250	1.2	2.7	3.8	4.5	5.0	5.5	5.8	6.0	6.2	6.2	6.3
300	1.1	2.5	3.5	4.1	4.6	5.0	5.3	5.5	5.7	5.8	5.8
400	.99	2.2	3.0	3.6	4.0	4.3	4.6	4.8	4.9	5.0	5.0
500	.89	2.0	2.7	3.2	3.6	3.9	4.1	4.3	4.4	4.5	4.5
600	.81	1.8	2.5	2.9	3.3	3.6	3.8	3.9	4.0	4.1	4.1
800	.69	1.5	2.1	2.5	2.8	3.0	3.2	3.3	3.4	3.5	3.5
1,000	.63	1.4	1.9	2.3	2.6	2.8	2.9	3.1	3.1	3.2	3.2
2,000	.44	.96	1.3	1.6	1.8	1.9	2.0	2.1	2.2	2.2	2.2
3,000	.36	.79	1.1	1.3	1.5	1.6	1.7	1.7	1.8	1.8	1.8
4,000	.31	.69	.95	1.1	1.3	1.4	1.4	1.5	1.5	1.6	1.6
5,000	.28	.62	.85	1.0	1.1	1.2	1.3	1.4	1.4	1.4	1.4
10,000	.20	.44	.60	.71	.80	.87	.92	.95	.98	.99	1.0
50,000	.08	.17	.24	.29	.32	.35	.37	.38	.39	.40	.40

Example: When size of sample is 500 and survey result comes out 25%, you may be reasonably sure (odds 20 to 1) that this result is no more than 3.9 off, plus or minus. Doubling the sample to 1,000 reduces this margin to 2.8



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