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1. Questionnaire Design

The questionnaire is a structured technique for collecting primary data in a marketing survey. It is a series of written or verbal questions for which the respondent provides answers. A well-designed questionnaire motivates the respondent to provide complete and accurate information.

The survey questionnaire should not be viewed as a stand-alone tool. Along with the questionnaire there is field work, rewards for the respondents, and communication aids, all of which are important parts of the questionnaire process.

A questionnaire is a formalized set of questions for obtaining information from respondents.

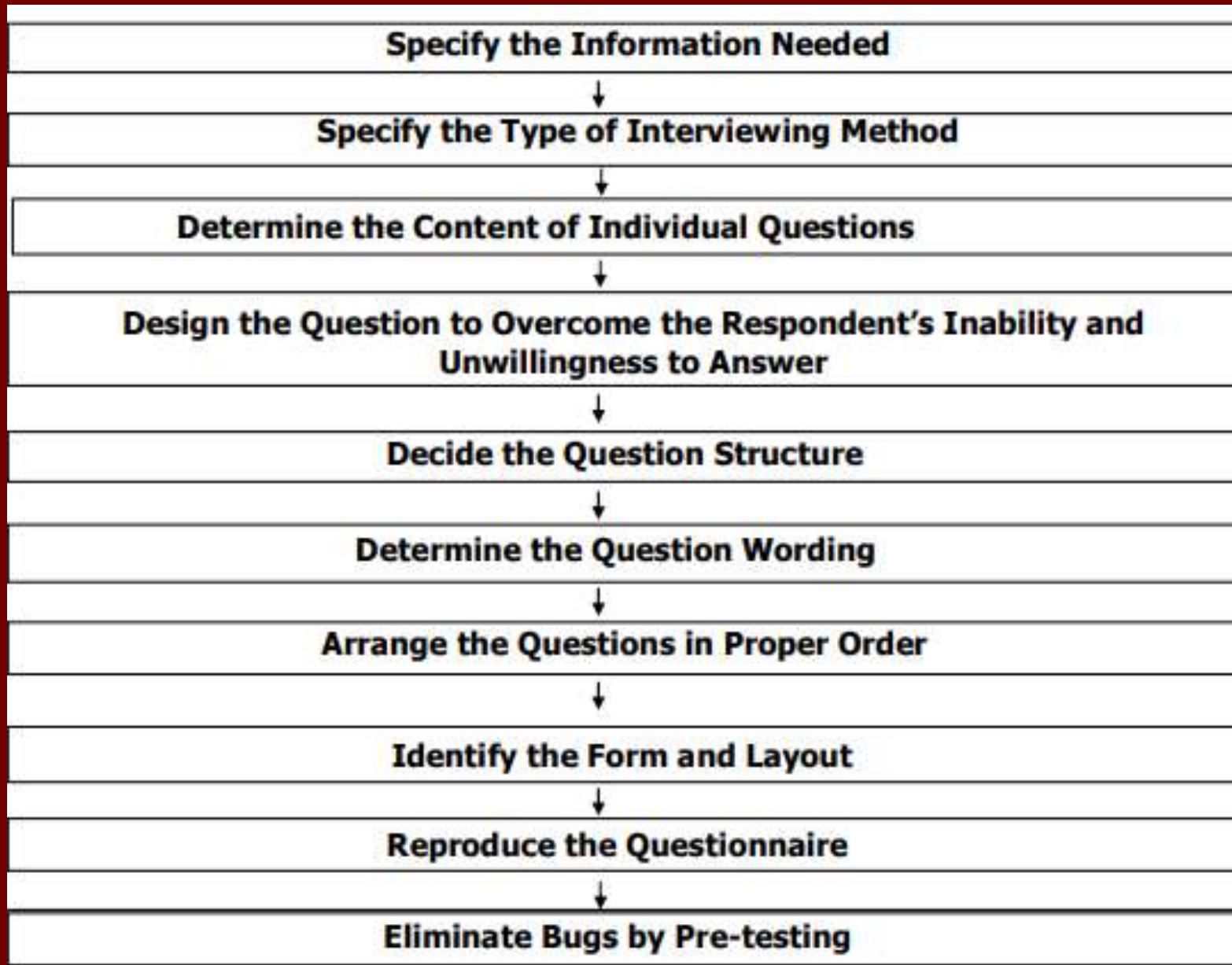
2. Questionnaire Objectives

- It must translate the information needed into a set of specific questions that the respondents can and will answer.**
- A questionnaire must uplift, motivate, and encourage the respondent to become involved in the interview, to cooperate, and to complete the interview.**
- A questionnaire should minimize response error.**

3. Points to be observed in design

- a. Questions should be simple
- b. Questions should be unambiguous**
- c. The best kinds of question are those which allow a pre-printed answer to be ticked
- d. The questionnaire should be as short as possible**
- e. Questions should be neither irrelevant nor too personal
- f. Leading questions should not be asked. A "leading question" is one that suggests the answer, e.g. the question "Don't you agree that all sensible people use XYZ soap?" suggests the answer "yes"**
- g. The questionnaire should be designed so that the questions fall into a logical sequence. This will enable the respondent to understand its purpose, and as a result the quality of his answers may be improved

4. Questionnaire Design Process



5. Steps to Develop a Questionnaire

Following are steps to develop a questionnaire - exact order may vary somewhat.

- **Determine which information is being sought**
- Choose a question type (structure and amount of disguise) and method of administration (for example, written form, email or web form, telephone interview, verbal interview)
- **Determine the general question content needed to obtain the desired information**
- Determine the form of response

Steps to develop a Questionnaire

- Choose the exact question wording
- **Arrange the questions into an effective sequence**
- Specify the physical characteristics of the questionnaire (paper type, number of questions per page, etc.)
- **Test the questionnaire and revise it as needed**

6. Question type and administration method

- **Fixed-alternative questions** provide multiple-choice answers. These types of questions are good when the possible replies are few and clear-cut, such as age, car ownership, etc.
- **Open-ended questions** allow the respondent to better express his/her answer, but are more difficult to administer and analyze. Often, open-ended questions are administered in a depth interview. This technique is most appropriate for exploratory research.

7. Projective technique

- **Projective methods** use a vague question or stimulus and attempt to project a person's attitudes from the response. The questionnaire could use techniques such as word associations and fill-in-the-blank sentences. Projective methods are difficult to analyze and are better suited for exploratory research than for descriptive or causal research.

Three commonly used rating scales

Graphic, itemized, and comparative

- **Graphic** - simply a line on which one marks an X anywhere between the extremes with an infinite number of places where the X can be placed.

- **Itemized** - similar to graphic except there are a limited number of categories that can be marked.

- **Comparative** - the respondent compares one attribute to others. Examples include the Q-sort technique and the constant sum method, which requires one to divide a fixed number of points among the alternatives.

Questionnaires typically are administered via a personal or telephone interview or via a mail questionnaire. Newer methods include e-mail and the Web.

8. Question Content

Each question should have a specific purpose. Ambiguous questions should not be included in the questionnaire. The goal of the questions is to obtain the required information. This is not to say that all questions directly must ask for the desired data. In some cases, questions can be used to establish rapport with the respondent, especially when sensitive information is being sought.

Question content

Sensitive questions can be posed in ways to increase response likelihood and to facilitate more honest responses. Some techniques are

- Place the question in a series of less personal questions
- **State that the behavior or attitude is not so unusual**
- Phrase the question in terms of other people, not the respondent
- **Provide response choices that specify ranges, not exact numbers**
- Use a randomized response model giving the respondent pairs of questions with a randomly assigned one to answer. The interviewer does not know which question the person is answering, but the overall percentage of people assigned to the sensitive question is known and statistics can be calculated.

9. Form of question response

Questions can be designed for in three ways

- **Open-ended** responses are difficult to evaluate, but are useful early in the research process for determining the possible range of responses.
- **Dichotomous** questions have two possible opposing responses, for example, "Yes" and "No".
- **Multi-chotomous** questions have a range of responses as in a multiple choice test.

The questionnaire designer should consider that respondents may not be able to answer some questions accurately. Two types of error are telescoping error and recall loss.

- Telescoping error is an error resulting from the tendency of people to remember events as occurring more recently than they actually did.
- Recall loss occurs when people forget that an event even occurred. For recent events, telescoping error dominates; for events that happened in the distant past, recall loss dominates.

10. Question wording

The questions should be worded so that they are unambiguous and easily understood. The wording should consider the full context of the respondent's situation. In particular, consider the who, what, when, where, why, and how dimensions of the question.

**For example, the question,
"Which brand of toothpaste do you use?"**

Might seem clear at first. However, the respondent may consider "you" to be the family as a whole rather than he or she personally. If the respondent recently changed brands, the "when" dimension of the question may be relevant. If the respondent uses a different, more compact tube of toothpaste when traveling, the "where" aspect of the question will matter.

Question wording

**A better wording of the question might be,
"Which brand of toothpaste have you used personally at home during the past 6 months? If you have used more than one brand, please list each of them."**

When asking about the frequency of use, the questions should avoid ambiguous words such as "sometimes", "occasionally", or "regularly". Rather, more specific terms such as "once per day" and "2-3 times per week" should be used.

11. Sequence the questions

Some neutral questions should be placed at the beginning of the questionnaire in order to establish rapport and put the respondent at ease. Effective opening questions are simple and non-threatening.

When sequencing the questions, keep in mind that their order can affect the response. One way to correct for this effect is to distribute half of the questionnaires with one order, and the other half with another order.

Step 1: Planning Questionnaire Research

- Consider the advantages and disadvantages of using questionnaires
- **Prepare written objectives for the research**
- Have your objectives reviewed by others
- **Review the literature related to the objectives**
- Determine the feasibility of administering your questionnaire to the population of interest
- **Prepare a time-line**

Step 2. Conducting Item Try-Outs and an Item Analysis

- Have your items reviewed by others
- **Conduct "think-aloud" with several people**
- Carefully select individuals for think-aloud
- **Consider asking about 10 individuals to write detailed responses on a draft of your questionnaire**
- Ask some respondents to respond to the questionnaire for an item analysis. In the first stage of an item analysis, tally the number of respondents who selected each choice
- **In the second stage of an item analysis, compare the responses of high and low groups on individual items**

Step 3: Preparing a questionnaire for administration

- **Write a descriptive title for the questionnaire**
- **Write an introduction to the questionnaire**
- **Group the items by content, and provide a subtitle for each group**
- **Within each group of items, place items with the same format together**
- **At the end of the questionnaire, indicate what respondents should do next**
- **Prepare an informed consent form, if needed**
- **If the questionnaire will be mailed to respondents, avoid having your correspondence look like junk mail**
- **If the questionnaire will be mailed, consider including a token reward**
- **If the questionnaire will be mailed, write a follow-up letter**
- **If the questionnaire will be administered in person, consider preparing written instructions for the administrator**

Step 4: Selecting a Sample of Respondents

- Identify the accessible population
- **Avoid using samples of convenience**
- Simple random sampling is a desirable method of sampling
- **Systematic sampling is an acceptable method of sampling**
- Stratification may reduce sampling errors
- **Consider using random cluster sampling when every member of a population belongs to a group**
- Consider using multistage sampling to select respondents from large populations
- **Consider the importance of getting precise results when determining sample size**
- Remember that using a large sample does not compensate for a bias in sampling
- **Consider sampling non respondents to get information on the nature of a bias**
- The bias in the mean is the difference of the population means for respondents and non respondents multiplied by the population nonresponse rate

Step 5: Preparing Statistical Tables and Figures

- Prepare a table of frequencies
- **Consider calculating percentages and arranging them in a table with the frequencies**
- For nominal data, consider constructing a bar graph
- **Consider preparing a histogram to display a distribution of scores**
- Consider preparing polygons if distributions of scores are to be compared

Step 6: Describing Averages and Variability

- Use the median as the average for ordinal data
- **Consider using the mean as the average for equal interval data**
- Use the median as the average for highly skewed, equal interval data
- **Use the range very sparingly as the measure of variability**
- If the median has been selected as the average, use the interquartile range as the measure of variability
- **If the mean has been selected as the average, use the standard deviation as the measure of variability**

Step 7: Describing Relationships

- **For the relationship between two nominal variables, prepare a contingency table**
- **When groups have unequal numbers of respondents, include percentages in contingency tables**
- **For the relationship between two equal interval variables, compute a correlation coefficient**
- **Interpret a Pearson r using the coefficient of determination**
- **For the relationship between a nominal variable and an equal interval variable, examine differences among averages**

Step 8: Estimating Margins of Error

- **It is extremely difficult, and often impossible, to evaluate the effects of a bias in sampling**
- **When evaluating a percentage, consider the standard error of a percentage**
- **When evaluating a mean, consider the standard error of the mean**
- **When evaluating a median, consider the standard error of the median**
- **Consider building confidence intervals, especially when comparing two or more groups**

Step 9: Writing reports of questionnaire research

- In an informal report, variations in the organization of the report are permitted
- **Academic reports should begin with a formal introduction that cites literature**
- The second section of academic reports should describe the research methods
- **The third section of academic reports should describe the results**
- The last section of academic reports should be a discussion. Acknowledge any weakness in your research methodology

12. Missing values on a sensitive topic

A natural way to get answers is to, as much as possible, assure people that the surveys are anonymous, and to find a way to make the respondent at least minimally comfortable.

- explain to respondent the reasons for asking the questions**
- make response categories as broad as possible**
- word the question in a non judgmental style that avoids the appearance of censure, or, if possible, make the behavior in question appear to be socially acceptable**
- present the request as factual matter as possible**
- guarantee confidentiality or anonymity**
- make sure the respondent knows the info will not be used in any threatening way**
- explain how the info will be handled**
- avoid cross classification that will allow for pinpointing responses**

13. Source of errors

- a) The use of an inadequate frame**
- b) A poorly designed questionnaire**
- c) Recording and measurement errors**
- d) Non-response problems**

14. Meaningful order and format

- **Opening questions:** Opening questions should be easy to answer and not in any way threatening to the respondents. The 1st question is crucial because it is the respondent's first exposure to the interview and sets the tone for the nature of the task to be performed. If they find the 1st question difficult to understand, or beyond their knowledge & experience, or embarrassing in some way, they are likely to break off immediately. If they find the opening question easy & pleasant to answer, they are encouraged to continue.
- **Question flow:** Questions should flow in some kind of psychological order, so that one leads easily and naturally to the next. Questions on one subject, or one particular aspect of a subject, should be grouped together. Respondents may feel it disconcerting to keep shifting from one topic to another, or to be asked to return to some subject they thought they gave their opinions about earlier.

Meaningful order and format

- **Question variety:** Respondents become bored quickly and restless when asked similar questions for half an hour or so. It usually improves response, therefore, to vary the respondent's task from time to time. An open-ended question here and there (even if it is not analyzed) may provide much-needed relief from a long series of questions in which respondents have been forced to limit their replies to pre-coded categories. Questions involving showing cards/pictures to respondents can help vary the pace and increase interest.

15. Reproduction of the questionnaire

- The **physical appearance** of a questionnaire can have a significant effect upon both the quantity and quality of marketing data obtained. The quantity of data is a function of the response rate. Ill-designed questionnaires can give an impression of complexity, medium and too big a time commitment. Data quality can also be affected by the **physical appearance** of the questionnaire with unnecessarily confusing layouts making it more difficult for interviewers, or respondents in the case of self-completion questionnaires, to complete this task accurately. Attention to just a few basic details can have a disproportionately advantageous impact on the data obtained through a questionnaire.

Reproduction of the questionnaire

Use of booklets	The use of booklets, in the place of loose or stapled sheets of paper, make it easier for interviewer or respondent to progress through the document. Moreover, fewer pages tend to get lost.
Simple, clear formats	The clarity of questionnaire presentation can also help to improve the ease with which interviewers or respondents are able to complete a questionnaire.
Creative use of space and typeface	In their anxiety to reduce the number of pages of a questionnaire there is a tendency to put too much information on a page. This is counter-productive since it gives the questionnaire the appearance of being complicated. Questionnaires that make use of blank space appear easier to use, enjoy higher response rates and contain fewer errors when completed.
Use of colour coding	Colour coding can help in the administration of questionnaires. It is often the case that several types of respondents are included within a single survey (e.g. wholesalers and retailers). Printing the questionnaires on two different colours of paper can make the handling easier.
Interviewer instructions	Interviewer instructions should be placed alongside the questions to which they pertain. Instructions on where the interviewers should probe for more information or how replies should be recorded are placed after the question.

In general it is best for a questionnaire to be as short as possible. A long questionnaire leads to a long interview and this is open to the dangers of boredom on the part of the respondent (and poorly considered, hurried answers), interruptions by third parties and greater costs in terms of interviewing time and resources. In a rural situation an interview should not last longer than 30-45 minutes.

16. Physical characteristics of questionnaire

Physical aspects such as the page layout, font type and size, question spacing, and type of paper should be considered. In order to eliminate the need to flip back and forth between pages, the layout should be designed so that a question at the bottom of the page does not need to be continued onto the next page.

The font should be readable by respondents who have less-than-perfect visual acuity. The paper stock should be good quality to project the image that the questionnaire is important enough to warrant the respondents' time. Each questionnaire should have a unique number in order to better account for it and to know if any have been lost.

17. Pre-testing the Questionnaire

The purpose of pre-testing the questionnaire is to determine

- whether the questions as they are worded will achieve the desired results' whether the questions have been placed in the best order**
- whether the questions are understood by all classes of respondent**
- whether additional or specifying questions are needed or whether some questions should be eliminated**
- whether the instructions to interviewers are adequate**

Usually a small number of respondents are selected for the pre-test. The respondents selected for the pilot survey should be broadly representative of the type of respondent to be interviewed in the main survey.

Key terms to follow

Group focus interviews

Mailed questionnaire

Open-ended and open response-option questions

Personal interviews

Piloting questionnaires

Target respondents

Telephone interviews

18. Questionnaire design and Survey management

This part of the course is aimed at students who need to perform basic statistical analyses on data from sample surveys, especially those in the marketing science. Students are expected to have a basic knowledge of statistics such as descriptive statistics and the concept of hypothesis testing. When the sampling units are human beings, the main methods of collecting information are

- **face-to-face interviewing**
- **postal surveys**
- **telephone surveys**
- **direct observation**
- **internet**