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# UNIT 6 QUESTIONNAIRE DESIGN AND DEVELOPMENT

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## Objectives

After going through this unit you should be able to:

- Explain the use of a questionnaire as an instrument of data collection
- Explain the different types of questionnaire
- Design a questionnaire

## Structure

- 6.1 Introduction
- 6.2 Questionnaire: Format and Administration
- 6.3 Steps Involved in Designing a Questionnaire
- 6.4 Constructing a Questionnaire
- 6.5 Management of Field Work
- 6.6 Coding and Tabulation
- 6.7 Ambiguities in the Questionnaire Method
- 6.8 Summary
- 6.9 Self-Assessment Questions
- 6.10 Further Readings

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## 6.1 INTRODUCTION

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Questionnaires constitute the, most prevalent method of information collection among the communication methods used. Both structured and unstructured questionnaire are in use in marketing research. The unit discusses various issues regarding questionnaire, their types as well as the steps in designing a questionnaire. A sample questionnaire is also included to familiarise you with the structure and design of questionnaire.

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## 6.2 QUESTIONNAIRE: FORMAT AND ADMINISTRATION

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A questionnaire is a standardised format of data. collection. It is normally used when the data is collected from a large population about their awareness, attitudes, opinions, past and present behaviour. While there is no standard procedure to construct a questionnaire, the problem, situation and experience of the researcher greatly influence the process. The respondents may be asked questions without any formal questionnaire or with a pre-planned properly framed questionnaire. There could be a number of variations in the use of questionnaire method of data collection. They could vary in terms of its 'format' and also in terms of the way it is 'administered'.

### Questionnaire Format

Questionnaire format depends upon the amount of structure and diguise required during data collection,

#### a) Structure

At the time of fronting the questionnaire the researcher must appropiately determine the degree of structure to be imposed on the questionnaire. A highly structured questionnaire is one in which the question to be asked and the responses permitted are



explicitly pre-specified. On the other hand in a non structured questionnaire the questions to be asked are kept flexible in their own words and also the respondents are allowed to answer the questions in a manner they like. The response pattern may vary from open-ended to closed-ended. In open-ended question the respondent is free to choose the possible response, where as in the closed ended form, the researcher pre specifies certain options and the respondent is allowed to choose the alternative(s) from the given options. For example, the structure of these two forms of response will be as follows:

Open-ended : What brand of shampoo do you use?

Close-ended : Mention the brand of shampoo you use from the list given below:

( ) Ponds ( ) clinic ( ) Tiara ( ) Palmolive

#### b) Disguise

Disguised questions is one where purpose is not made obvious to the respondents and is asked in an indirect manner. Non-disguised questions, on the other hand, are ones which are direct and the purpose of asking them is known clearly is the respondents. Disguised questions are used in the conditions when the issues concerned are such that respondents may not give correct answer to direct questions.

Based on the above discussion, questionnaires could be classified into for categories.

- i) Structured, non-disguised questionnaire
- ii) Structured, disguised questionnaire
- iii) Non-structured, non-disguised questionnaire
- iv) Non-structured, disguised questionnaire

Structured, non-disguised questionnaires are very popular in marketing research studies. These are more applicable when large sample sizes are there. Non-structured, non-disguised questionnaires, on the other hand, are used when a freehand is to be provided to the respondents so that an in-depth information on the subject could be solicited e.g. in industrial marketing research wherein number of respondents would also be low.

Non-structured, disguised questionnaires are mainly used in 'motivation research'. 'Wore Association Test', 'Sentence Completion Test', 'Thematic Appreciation Test', 'Cartoon Test', etc. may be used in this category, Structured, disguised questionnaires are more appropriate where responses are required towards certain sensitive issues like attitude towards aids patients, abortion etc.

#### Questionnaire Administration:

So far we have discussed about different formats of questionnaires. However, the questionnaire method may also vary depending 'on the way it is administered: These could be broadly classified into three different categories.

- i) 'Personal interview', wherein there is a face to face interaction between interviewer (s) and respondents (s).
- ii) 'Telephone survey', in which survey is conducted over phone i.e. unlike personal interview there is only a voice contact.
- iii) 'Mail survey', as the name suggests, is conducted through mail and as such there are no interviewers.

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### 6.3 STEPS INVOLVED IN DESIGNING A QUESTIONNAIRE

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Step 1, Preliminary decision

- a) Assess what information will be sought after a thorough scanning of secondary sources of data.



a) Determine the target respondent.

Step 2. Decide on the type of questionnaire and method of administration.

Step 3. Evaluation of question content. Before including a question in the schedule, examine whether.

- a) This question is really essential.
- b) The respondent can understand the question. (i.e. is it too technical, ambiguous, or advanced for the target respondent?)
- c) The respondent can answer the question. (Say, the respondents possess sufficient knowledge. As such, it is better not to ask too much of factual data or about past history.)
- d) The respondent will answer the question. Specially, if it invades into one's privacy or it requires too much effort to answer, then they usually refuse to cooperate.

Step 4. Check question phrasing. For Example

- a) Do words have ambiguity in meaning?
- b) Are there any implied alternatives in the question?
- c) Are there some assumptions to be made to answer the question'?
- d) Will the respondents approach the question from the same frame of reference as designed by the researcher?

Step 5. Determine form of response to each question:

- a) The response format may be open or closed ended. In general, the type of response format will depend on the objective of the research, nature of data to be collected and analysis to be performed.

Step 6. Determine sequence of questions.

- a) Use simple and interesting opening questions;
- b) Design branching questions with care;
- c) Put the questions in logical manner;
- d) Ask for classificatory data at the end.

Step 7. Assess the physical layout of the questionnaire. Naturally, the questionnaire must be printed properly; put in elegant form and facilitate handling.

Step 8. Pre-test the questionnaire.

It is normal practice to pretest a questionnaire on a small number of target respondents. The pretest is done to assess both individual questions and their sequence of response pattern. Accordingly, a researcher must revise questions which cause problems.

While developing a questionnaire, researcher must

- a) Use simple words in framing the questions;
- b) Avoid ambiguous- questions;
- c) Avoid implicit alternatives;
- d) Avoid questions that require too much memory recall and calculation;
- e) Avoid double barreled questions;
- f) Ideally, a questionnaire should first secure' some basic information to get the respondent's cooperation and gradually try to collect more information about the phenomenon of interest.
- g) It is easier to administer a multiple choice response categories that requires one simple tick.



## 6.4 CONSTRUCTING A QUESTIONNAIRE

### Marketing Problem

A tyre manufacturing company is planning to launch a new tyre for scooters/motorcycles. The company would like to have information about how consumers select a brand of tyre for such vehicles.

### Marketing Research Objectives

- 1) To estimate the prevailing level of brand awareness among consumers and to what degree are the consumers able to differentiate between company name and brand image.
- 2) To identify the attributes of scooter/motorcycle tyres which are important to consumers and to what extent do these attributes influence the buying behaviour.
- 3) To study the buying process for scooter/motorcycle tyres.

### Information Requirements

- 1) Top of the mind awareness of manufacturers of scooter/motorcycle tyres.
- 2) Consumer's perception of brands and the importance they attach to brand names.
- 3) The extent to which the consumers think the following attributes; company name, tread design/road grip, long life and comfortability are present in the tyres they are using.
- 4) The degree of importance which the consumers attach to the attributes mentioned above.
- 5) The buying process involved in the selection of a tyre
- 6) Consumer attitude towards retreading.

### Questionnaire

- 1) Do you own any scooter or motorcycle? Please tick below.

Scooter ( )                      Motorcycle ( )

If no, terminate the interview

- 2) What is the make of your scooter/motorcycle?
- 3) Which tyres are you using on your two-wheeler at present?
- 4) Please name some two-wheeler tyre companies that you have heard of.
- 5) What do you understand by the term "brand" of a tyre?
  - a) Company name
  - b) Quality of the tyre
  - c) Identifying name/number on the tyre
  - d) Type (Specification) of the tyre.



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b) Tread design/Road grip

1	2	3	4	5
Poor				Good

c) Price of the tyre

1	2	3	4	5
Low				High

d) Life of the tyre/Hardness

1	2	3	4	5
Low				High

e) Comfortability

1	2	3	4	5
Uncomfortable				Very Comfortable

9) Are you satisfied with the overall performance of your present tyre?

1	2	3	4	5
Very Satisfied				Very Comfortable

10) Have you ever bought a new two-wheeler tyre?  
Yes ( ) No ( )

11) Did you change both the tyres at the same time or one at a time?  
Both at the same time ( ) One at a time ( )

12) Is your present tyre of the same make as the previous one?  
Yes ( ) No ( )

13) a) If No then what was the make of the previous tyre?  
b) What made you change over to the present tyre?

14) How did you decide that your tyres needed replacement?  
a) Decided on your own  
b) Advised by your mechanic  
c) Advised by your friends  
d) Advised by your service station man  
e) Any other, please specify.....

15) How did you buy your tyres?  
a) You bought them personally from the nearest shop  
b) You bought them personally from a specific dealer  
c) You asked your mechanic to buy them  
d) You asked your friend to buy them

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- e) Any other, please specify.....
- 16) How did you decide the make of the tyre?
- On your own
  - After consultation with your mechanic
  - After consultation with your friends
  - After consultation with the dealer/shopkeeper
  - Any other, please specify .....
- 17) What are the factors that you considered when you bought the tyre?
- Company name
  - Price of the tyre
  - Brand name
  - Past Experience
  - Advertising
  - Physical qualities of the tyre
  - Any other, please specify.....

- 18) Have you ever retreaded your two-wheeler tyres?  
Yes ( )                      No ( )

If No, then you did not get them retreaded because

- It is not safe
- It does not last long
- It is not worth the saving
- If yes, then why?

- 19) How important are the following qualities of a two-wheeler tyre to you?

a) Good company name	1	2	3	4	5
Not so important					Very important
b) Tread design/Road grip	1	2	3	4	5
Not so important					Very important
c) Price of the tyre	1	2	3	4	5
Not so important					Very important
d) Life of the tyre/Hardness	1	2	3	4	5
Not so important					Very important
e) Comfortable ride/softness	1	2	3	4	5
Not so important					Very important



20) If your friend asked you which tyre to buy, which one would you recommend?

21) Kindly tick ( ) the ones you have heard of

**Company****Brand**

- |                     |             |
|---------------------|-------------|
| a) Dunlop           | a) Nylogrip |
| b) Ceat             | b) B-82     |
| c) Moth Continental | c) Chetak   |
| d) Vikrant          | d) ANC      |
| e) MRF              | e) K-Series |
| f) Modistone        | f) Vs-101   |
| g) Metro            |             |
| h) JK               |             |
| i) Srichakra        |             |

22) Please let us know the following information about yourself

- a) Your age group (Years)
- i) 18-25
  - ii) 26-35
  - iii) 36-50
  - iv) Above 50
- b) Your family income group (Rs. per month)
- i) Less than 2000
  - ii) 2000-3000
  - iii) 3000-4000
  - iv) 4000-5000
  - v) Above 5000
- c) Your educational qualifications
- i) High school
  - ii) Graduate
  - iii) Post Graduate
  - iv) Any other qualification, specify
- d) What is your occupational status?
- i) Own business
  - ii) Engaged in service
  - iii) Unemployed
  - iv) Student

## 6.5 MANAGEMENT OF FIELD WORK

Data collection in a marketing research study may require to utilise the services of many interviewers. As most marketing research studies involve extensive tours, the interviewer must have good health. Secondly she/he should have a pleasing personality. Thirdly, given the nature of Indian market, they must have command over local and some regional languages. Fourthly, an interviewer should be able to freely communicate with the respondents.

Before the interviewers are sent out for data collection, the interviewers must be thoroughly briefed about the project and manner in which data are to be collected.

It is also necessary to continually supervise the progress of work made by the



interviewers during the survey. It is some times necessary to visit the field without prior intimation to the interviewer in order to check that the interviewers are following the instructions properly. This sort of checking will enable the researcher to assess whether the interviewer has selected the respondents as per the sampling procedure, whether the interviewer has resorted to some anal-practices and also to see the difficulties faced in data collection stage.

## 6.6 CODING AND TABULATION

Coding is the technical name used to categorize the data collected. It involves specifying the alternative categories or classes into which responses are to be placed and assigning code numbers to the classes.

In fact, coding closed-ended questions are simple, depending on the response pattern one may design the various codes for different responses. Open-ended questions are, however, very difficult to code. Here no uniform rules exit. The researchers have been found to apply their own discretion in developing the coding procedure..

Tabulation consists of simply counting the number of cases that fall into the various categories. It may take the form of simple or cross tabulation. Simple tabulation involves counting the responses based on one variable.

One may apply various statistical tools like mean, median, mode, standard deviation or variance to condense and interpret the data. To present the data in graphical form one may make use of various forms of statistical graphs like histogram, frequency polygon, ogive etc. A brief description of these tools is given below.

**Histogram:** It is a form of bar chart where the values of the variable are placed on the X-axis and the frequency of each distinct occurrence is indicated on the Y-axis.

**Frequency polygon:** Figure obtained from the histogram by joining the midpoints of the bars of the histogram with straight lines.

**Ogive:** This graph shows the number of cases having a value less than or equal to specified quantity; that is, the cummulative frequency is generated. Afterwards the cummulative frequencies are plotted along the Y- axis against the given combination of values of the variable (or X-axis).

Cross tabulation involves counting the incidence of occurrence of various combinations of responses of two or more variables. For example, let two variables be various brands of a product and the different regions. Further assume that there are three brands namely A,B,C; and four geographic regions such as East, South, West and North, suppose sales figure of different brands was cross classified against different regions. Then the data will look like following:

### Geographic Region

Brand	East	South	West	North
A				
B				
C				

It basically shows the joint occurrence of different combination of responses. One may compute correlation coefficient to measure the degree of association between the two-way classification.





### Activity 1

Assume you are conducting an exploratory study about buying behaviour for televisions.

- a) Specify the kind of information that is to be sought.
- b) Outline a complete questionnaire for this study
- c) Explain how the data obtained by your questionnaire will be coded and tabulated
- d) Attach a set of instructions for collecting the data by a field force.

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 .....  
 .....  
 .....

## 6.7 AMBIGUITIES IN THE QUESTIONNAIRE METHOD

Unambiguous communication in the context of marketing research can be achieved if the question asked and the responses given mean the same thing to the interviewer and the respondent. For example in an actual research situation a company trying to find the desirable attributes of it's to be introduced soya fruit drink pretested a questionnaire. One of the question asked was:

Do you like the soya fruit drink'?

It is obvious that an assumption is being made here that the respondent in answering the above question would refer to the taste of the soya fruit drink. The pretesting exercise however revealed that housewives who formed the sample said yes to the above question, not because they liked the taste, but because they liked soya drink in terms of the protein input benefit it would bring to their children. Since the objective of this question was to probe consumer perceptions about product attributes like taste, the question after pretesting was changed to:

Do you like the taste of soya fruit drink?

Some ambiguity maybe associated with the different forms of questions used. If the form of question used is open ended, it requires the respondent to express himself more fully as well as individualistically. As a result, this form of questioning provides far greater possibility of ambiguity in interpreting responses. For example in the same study with respect to the soya fruit drink the actual response to an open question is given below:

**Question :** What suggestion do you have to improve soya fruit drink?

**Answer :** I haven't really given it much thought. I suppose it would be better if it came packed in transparent bottles instead of these pouch packages which you cannot use or be too sure of. But then, bottles break."

How would you interpret this response? Could you categories it as non-response? Or can you presume that she has made a clear suggestion that the drink should be packaged in a glass bottle or that pouch packages are not acceptable at all?

The conclusion that can be drawn is that, being short and simply structured, while the open ended questions allow the least possibility of the questions being ambiguous, they result in the highest possibility of answers being ambiguous.

In close ended multiple choice question form, where several set alternative responses are provided, the commonest source of ambiguity is the difficulty of making' the alternatives mutually exclusive. For example:

You prefer this brand because you think:

- a) it is reasonably priced



- b) it is a tried and tested brand
- c) it has a better taste and flavour
- d) it is good value for money
- e) it is a well established brand.

Alternatives a) and d) as well as c) are not mutually exclusive or both present shades of the same of attribute. To the respondent this ambiguity may be confusing.

The multiple choice form is also prone to another kind of ambiguity. It is presumed here that there would be a single most correct response to a given question.

Related as most survey are to consumer behaviour situation there is hardly ever a single behavioural response which may describe respondent behaviour correctly in all circumstances. To give an example:

- Q) When your favourite brand is not available on your preferred shop do you:
- a) buy the second preferred brand
  - b) look for it in other stores
  - c) wait till stocks arrive
  - d) buy any other brand.

A respondent who normally would like to shop around in one or two shops before switching to another brand but not if he is short of time, would be confused between alternatives a and b.

An interesting type of error associated with forms of question is the tendency of respondents to chose the alternatives appearing first and last much more frequently than those in the middle. This error called the position bias may be reduced to a certain extent by rotating the order of alternatives for different respondents.

In the multiple choice form of question though the possibility of responses being ambiguous is average, that of questions being ambiguous is fairly high.

Some other possibilities of ambiguity may arise because of the following situation:

**a) Question being too long**

Long questions comprising of complex and compound sentence structures become 'incomprehensible to respondents. As all words are potential sources of ambiguity, the longer the question, greater will be the possibility of its being misunderstood. Consider the following question which was actually used in a study on distribution network for automobile parts:

- Q) Under the new system, do you think spare part dealers would be independent businessmen like appliance dealers and furniture merchants who own their outlets, or they would be employees of the automobile companies?

This sort of question would pose problems of comprehension among most respondents. It could easily be rephrased as:

- Q) Under the new system, do you think spare part dealers would be owners of their business or employees of the automobile companies?

**b) Question using vocabulary unfamiliar to be respondent.**

The questions should, as far as possible, consist of words that are a part of the normal vocabulary of the respondent. For example consider the following question.

- Q) Do you think the pasteurisation process interferes with the lactogenic balance of milk'?

This question may be all right if put to doctors, chemists or biochemists but how many members of the general public would be a match to the vocabulary of this researcher?

**c) Question using words that are ambiguous in context:**

Sometimes the words that are fairly understandable on their own may be used in a way that renders their ambiguous. In the following question:

Q) Do you watch television programmes regularly?

The word 'regularly' may have different meanings for different people. It does not specify whether regularly means the whole day long, seven times a week, five times a week, or certain programmes on every telecast. The question therefore needs to be rephrased in the light of the information sought.

**d) Combined questions**

Poor question construction sometimes results in two questions being asked as one. A question put to housewives is given below as an example:

Q) What do you think is a healthy and economic medium for your cooking, refined oil or unrefined ones?

It is clear that the housewife who thought that one medium was more healthy and the other more economical would not be able to respond logically to this question: The simpler and more effective way to get this information would be to break this question into two, one dealing with nutritional value and the other with economy.

From the above illustrations it must be clear to you that all research designs using communication methods of data collection have potential sources of ambiguity inherent in the communication process. As many safeguards as possible therefore should be used to avoid ambiguous question or confusing responses. Pretesting of question and verification of information collected are simple but effective way of ensuring that at least this error becomes controllable.

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**6.8 SUMMARY**

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The unit discussed the planning and execution of questionnaires. Steps involved in constructing questionnaires and rating scales have been explained. The errors associated with measurement have also been mentioned. The unit includes a sample questionnaire to facilitate the understanding of the construction, scaling and formatting of questionnaires.

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**6.9 SELF-ASSESSMENT QUESTIONS**

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- 1) What is meant by a questionnaire?
- 2) What sort of marketing information can be collected with the help of a questionnaire?
- 3) What are the merits and demerits of a structured questionnaire?
- 4) In what sort of marketing studies will you use an unstructured questionnaire?
- 5) Explain the meaning of open-ended and closed-ended question.



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## 6.10 FURTHER READINGS

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