**10. Collecting primary data using Questionnaires**

**What is a questionnaire?**

It is a general term to include all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order (deVaus, 2002).

It is used in many research areas. All the people are provided the same questionnaire and it provides an efficient way to collect responses from a large sample. However many authors argued that it is more difficult to produce a good questionnaire than what has been expected. The questionnaire must ensure that it will collect the precise data that are required to answer the research questions and to achieve the objectives. This is important because it is difficult to go back to the same people with another questionnaire.

The design of the questionnaire will affect the response rate and the reliability and validity of the data collected. The response rate, reliability and validity can be maximised by:

* careful design of individual questions
* clear layout of the questionnaire form
* lucid explanation of the purpose of the questionnaire
* pilot testing
* carefully planned and executed administration.

**When to use questionnaire?**

Questionnaires are not good for exploratory or other research that requires large numbers of open-ended questions.

They work best with standardised questions that all respondents will interpret the same way.

They are therefore used for descriptive and explanatory research. Descriptive research requires the respondents to identify and describe variables such as attitudes and opinion and different occurrences in the workplace.

On the other hand, exploratory or analytical research requires you to examine the factors and want you to explain their relationships especially about the cause and effect relationships. As a consequence the questionnaire has to be designed differently from that of the descriptive and explanatory types.

**Types of Questionnaire**

1. Self-administered questionnaires which are to be completed by the respondents as seen in on-line questionnaire, postal questionnaire and delivered and collected questionnaire.
2. Interviewer administered questionnaires where the interviewer records the answers from the respondents, especially through telephone or as being known as *telephone questionnaire*. Another category is known as *structured interviews* (also known as *interview schedules*) where the interviewers physically meet respondents and ask the questions face-to-face.

Questionnaire

Self-administered Interviewer administered

On-line Postal Delivery & Telephone Structured

questionnaire questionnaire collection questionnaire interview

questionnaire

**The Choice of Questionnaire**

Many factors will influence your choice of the questionnaire:

* characteristics of the respondents from whom you wish to collect data
* importance of reaching a particular person as respondent
* importance of respondents’ answers not being contaminated or distorted
* size of sample you require for your analysis, taking into account the likely response rate
* types of question you need to ask to collect your data
* number of questions you need to ask to collect your data

These factors may not apply equally to your choice of questionnaire and for some research questions or objectives may not apply at all. The type of questionnaire you choose will dictate who your respondent should be. For example using the delivery and collection questionnaire, you expect to have a particular respondent to answer the questionnaire and this is a way for you to ascertain that when you get back the answered questionnaire that particular person has answered it. This is to improve the reliability and validity of the data collected. If e-mail or postal questionnaire is used there is no certainty that the person to whom you intended would answer the questionnaire. On the contrary, if interviewer administered questionnaire is used you can ensure the right respondent answers it and this can improve the reliability and validity of your data.

Furthermore any contamination of the respondents’ answers will reduce your data’s reliability. This can occur when the respondents are not sure of the answer because they do not have the knowledge or experience and you get what is known as ***uninformed response***. If could be the outcome of uninformed response if the respondent finds the answer from other persons.

The type of questionnaire you used and the size of the questionnaire will influence the response rate. These are some examples of how the choice of questionnaire can affect the response rate and the reliability of the data gathered.

All data collected by questionnaires will be analysed by computer. Some software packages allow you to design your questionnaire and to enter and analyse the data.

**Deciding what data need to be collected**

**Research design requirements (requirements to design the questions)**

It is important that the questions you want to ask in the questionnaire must be clear and precise so that you can get the appropriate answers from the respondents and consider how you are going to analyse data gathered. Next you must know how to design the questionnaire to meet these requirements so that you are able to answer your research questions and meet your objectives.

For business research, the data collected from using questionnaires will be used for descriptive or explanatory purpose. If the questions are for describing the characteristics of a population, then they are normally administered to a sample. The sample however must be a close representative of the population so that generalizability is possible.

You can do a literature review or discuss with your colleagues, project tutor or interested parties to get some idea to designing the research questions.

For international or cross-cultural research, it is important to have an understanding of the countries or cultures when designing the research questions. As with explanatory research the data are required to test a theory or theories. This means you have to define the theory/theories to test relationships between variables prior to designing the questionnaire. To be able to do this you need to review the literature first, discussed your idea widely and conceptualised your own research clearly prior to designing the questionnaire. In particular you need to be clear about which relationships are likely to exist between variables.

**Defining theories in term of relationships between variables**

The relationships between variables are normally tested statistically from the data gathered by **the questionnaire.**

**Types of variables**

Dillman (2000) distinguishes between three types of data variable that can be collected through questionnaires:

* opinion variables - record how respondents feel about something or what they think or

believe is true or false. It is about their experience.

* behaviour variables

record what respondent do and are.

* attribute variables

When recording what the respondents do you are recording their behaviour. On the other hand, respondents’ opinions refer to their experience.

Behavioural variables contain data on what people did in the past, do now or will do in the future.

Attributes are best thought of as things a respondent possesses, but not what the respondent does. They are the characteristics of the respondent and include age, gender, marital status, education, occupation and income.

**Ensuring that essential data are collected**

Data collected must enable the research question(s) are answered and objectives achieved. There is no universal method to do this but there are guidelines to enable this to happen:

1. Decide whether the main outcome of your research is descriptive or explanatory.
2. Subdivide each research question or objective into more specific investigative questions about which you need to gather data.
3. Repeat the second stage if you feel that the investigative questions are not sufficiently precise.
4. Identify the variables about which you will need to collect data to answer each investigative question.
5. Establish how to measure the data for each variable.

Investigative questions are questions that you need to answer in order to address satisfactorily each research question and to meet each objective. They are generated to meet the research question(s) and objectives. Some investigative questions may be subdivided into more detailed investigative questions. You need to be clear whether you are interested in the respondents’ opinions, behaviours or attributes. It is found that literature review, discussions with interested parties and pilot studies to be of help here.

Then you need to identify the variables about which you need to collect data to answer each investigative question and how they are to be measured. You can find suggested possibilities through literature review.

An example of Data requirements table

Sarah was asked to discover staff attitudes to the possible introduction of a no smoking policy of her workplace. Discussion with senior management and colleagues and reading relevant literature helped her to firm up her objective and investigative questions. A selection of these is included in the extract from her table of data requirements.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Research question/objective: To establish employees’ attitude to the possible introduction of a no-smoking policy at their workplace. | | | | |
| Type of research: Predominantly descriptive, although wish to examine differences between employees. | | | | |
| Investigative questions | Variable(s) required | Detail in which data  measured | Check included in questionnaire - | |
| Do employees feel that they should be able to smoke in their office if they want to as a right? (opinion) | Opinion of employees to smoke in their office as a right. | Feel… should be allowed, should not be allowed, no strong feelings | |  |
| Do employees feel that the employer should provide a smoking room for smokers if smoking in office is banned?(opinion) | Opinion of employees to the provision of a smoking room for smokers | Feel … very strongly that it should, quietly strongly it should, no strong opinions, quiet strongly it should not, very strongly it should not | |  |
| Would employees accept a smoking ban at work if the major of people agreed to it? (behaviour) | Likely behaviour of employees regarding the acceptance of a ban | Would ….accept with no pre-condition, accept if a smoking room is provided, not accept without additional conditions (specify conditions), would not accept whatever the conditions | |  |
| Do employees opinions differ depending on   * age? (attribute) * whether or not a smoker? (behaviour) | (Opinion of employees outlined above)   * Age of employee * Smoker | (Included above)   * To nearest 5 years band (youngest 16 years, oldest 65) * Non-smokers, smokes but not in office, smokes in office | |  |
| How representative are the responses?  (attributes) | Age of employee  Gender of employee  Job | (Included above)  Male, female  Senior management, management, supervisory, other | |  |

**Designing the Questionnaire**

The validity and reliability of the data you collect and the response rate you achieve depend, to a large extent, on the design of your questions, the structure of your questions, and the rigour of your pilot testing. A valid question will enable accurate data to be collected, and one that is reliable will mean that these data are collected consistently. According to Foddy (194:17) ‘the question must be understood by the respondent in the way intended by the researcher and the answer given by the respondent must be understood by the researcher in the way intended by the respondent’. This means that there are 4 stages that must occur if the question is to be valid and reliable as shown in the diagram below.

Researcher is clear

about the information

required and designs

a question

Researcher decodes Respondent decodes

the answer in the the question in the

way the respondent way the researcher

intended intended

Respondent

answers the question

**Designing Individual Questions**

The data you need to collect should dictate the kind of question to be designed. There three possible ways to do this:

1. adopt questions used in other questionnaires
2. adapt questions used in other questionnaires
3. develop your own questions

Type and wording of individual questions

Clear wording of questions using terms that are likely to be familiar to and understood by respondents can improve the validity of the questionnaire.

Most types of questionnaire include a combination of open and closed questions. Open questions (also known as open-ended questions) allow respondents to give answers in their own way. However, closed questions (referred to as closed-ended questions or forced-choice questions) provide a number of alternative answers from which the respondent is instructed to choose. Closed-ended questions are quicker and easier to answer. Six types of closed-ended questions are identified:

1. list, where the respondent is offered a list of items, any of which may be selected.
2. category, where only one response can be selected from a given set of categories.
3. ranking, where the respondent is asked to place something in order.
4. scale or rating, in which a rating device is used to record responses.
5. quantity, to which the response is a number giving the amount.
6. grid, where responses to two or more questions can be recorded using the same matrix.

Example of an open question

Please list up to three things you lie about your job:

1. …………………………………………………………………………………….

2. …………………………………………………………………………………….

3. …………………………………………………………………………………….

Note: Open questions are time consuming when coding them at the time of analysis and it is advisable to keep their use to a minimum.

Example of a list question

Please tick the box in the provided column for services you provided as a home care

assistant for this client in the past month.

If you have not provided a particular service, please leave the box blank.

service provided

cleaning rooms

shopping

bed making

laundry

other

(please describe) ………………….......................

Note: It must not assume that any unmarked response is a negative response. A non-

response can mean uncertainty or an item does not apply.

Example of a category question

How often do you visit this shopping centre?

Interviewer: listen to the respondent’s answer and tick as appropriate.

first visit 2 or more times a week

once a week less than once a week to fortnightly

less than fortnightly to once a month less often

Note: Responses should be arranged in a logical order for ease to locate the response category. The categories should be mutually exclusive (should not overlap) and should cover all possible responses. The layout of the questionnaire should make it clear which boxes refer to which response category by placing them close to the appropriate text.

Example of a ranking question

Please number each of the factors listed below in order of importance to you in your choice of a new car. Number the most important 1, the next 2 and so on. If a factor has no importance at all, please leave blank.

factor importance

acceleration

boot size

depreciation

safety features

fuel economy

price

driving enjoyment

other

…………………………. ( please describe)

Note: For ranking questions, ensure the instructions are clear and will be understood by the respondent. Generally, respondents find that ranking more than 7 or 8 items takes too much effort, so you should keep your list to this length or shorter. Respondents can rank accurately only when they can see or remember all items.

Example of a rating or scale question

For the following statement please tick the box that matches your view most

closely.

agree tend to tend to disagree

agree disagree

I feel that employees’ views have

influenced the decisions taken by

management.

Note: You can expand this form of question further to record finer shades of opinion of the

respondents.

Conversely for rating the respondent’s attitude a 10-point numeric rating scale can be used. It is to reflect the feeling of the respondent to an issue as shown below.

For the following statement please circle the number that matches your view most closely.

This concert was ….. Poor value 1 2 3 4 5 6 7 8 9 10 Good value

for money for money

Another variation is the semantic differential rating scale. The respondent is asked to rate a single object or idea on a series of bipolar rating scales. Each bipolar scale is described by a pair of opposite adjectives designed to capture respondent’s attitudes towards service. For these rating scales, you should vary the position of positive and negative adjectives from left to right to reduce the tendency to read only the adjective on the left.

For example:

On each of the lines below place a x to show how you feel about the service you received

at our restaurant.

Fast Slow

Unfriendly Friendly

Value for money Over priced

Note: Instead of developing your own scales, it often makes sense to use or adapt existing scales developed by others. These can be found by referring to articles that use scales or refer to literature.

Example of a quantity question

The responses to a quantity question is a number, which gives the amount of a characteristic. For this reason, a quantity question is used to collect behaviour o attribute data. A common quantity question, which collects attribute data, is:

What is your year of birth 1 9

Example of a grid

It is a kind of a matrix that records two or more similar questions at the same time. Questions can be listed on the left-hand side of the page and the answer to each question is recorded in the cell where the row and column met. Using the grid may save space but respondents may have difficulties comprehending these designs and they are a barrier to response.

Note: The wording of each question must be carefully considered to ensure that the responses are valid i.e. measure what you think they do. Your questions have to be within the context for which they are written rather than in abstract.

A checklist is used to ensure that the question wording is within the context as shown below:

1. Does your question collect data at the right level of detail to answer your investigative

question as specified in your data requirements table?

2. Will respondents have the necessary knowledge to answer your question?

3. Does your question talk down to respondents? It should not!

4. Are the words used in your question familiar, and will all respondents understand them in

the same way? In particular you should use simple words and avoid jargon, abbreviations

and colloquialisms.

5. Are there any words that sound similar and might be confused with those used in your

question?

6. Are there any words in your question that might cause offence? These might result in

biased response or a lower response rate.

7. Can your question be shortened?

8. Are you asking more than one question at the same time?

9. Does your question include a negative or a double negative? Question that include the

word ‘not’ is sometimes difficult to understand.

10. Is your question unambiguous?

11. Does your question imply that a certain answer is correct? If it does, the question is

biased and need to be reworded.

12. Does your question prevent certain answers from being given?

13. Is your question likely to embarrass the respondent?

14. Have you incorporated advice appropriate for your type of questionnaire (such as the

maximum number of categories) outlined in the earlier discussion of question types?

15. Are answers to closed questions written so that at least one will apply to every

respondent?

16. Are the instructions on how to record each answer clear?

**Translating questions into other languages**

It has to be done with care. This is extremely important if you are translating questions and associated instructions into another language.

According to Usunier (1998) translating questionnaire attention should pay attention to:

1. Lexical meaning - the precise meaning of individual words.
2. Idiomatic meaning - the meanings of a group of words that are natural to a native speaker and not deductible from those of the individual words (e.g. theEnglish expression for informal communication, ‘grapevine’, has a similar idiomatic meaning as the French expression telephone arabe, meaning literally ‘arab telephone’)
3. Grammar and syntax - the correct se of language, including the ordering of words and phrases to create well-formed sentences (e.g. in Japanese the ordering is quite different from English or Dutch, as verbs are at the end of sentences).
4. Experiental meaning - the equivalence of meanings of words and sentences for people in their everyday experiences (e.g. terms that are familiar in the source questionnaire’s context such as ‘dual career household’ may be unfamiliar in the target questionnaire’s context).

**Usunier** also provided a number of techniques for translating your source questionnaire. These, along with their advantages and disadvantages , are summarised below. The source questionnaire is the questionnaire that is to be translated and the target questionnaire is the translated questionnaire. Make sure the source questionnaire and the translated questionnaire are attached to the appendix.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Direct translation | Back translation | Parallel translation | Mixed techniques |
| Approach | Source questionnaire to target questionnaire | Source questionnaire to target questionnaire to source questionnaire; comparison of two new source questionnaires; creation of final version. | Source questionnaire to target questionnaire by two or more independent translations; comparison of two target questionnaires; creation of final version. | Back translation undertaken by two or more independent translators; comparison of two new source questionnaires; creation of final version |
| Advantages | Easy to implement, relatively inexpensive | Likely to discover most problems | Leads to good wording of target questionnaire | Ensure best match between source and target questionnaires |
| Disadvantages | Can lead to many discrepancies (including those relating to meaning) between source and target questionnaire | Requires two translators, one a native speaker of the source language, the other a native speaker of the target language | Cannot ensure that lexical, idiomatic and experiential meanings are kept in target questionnaire. | Costly, requires two or more independent translators, implies that the source questionnaire can also be changed |

**Designing the survey form**

The order and flow of questions - should be logical to your respondents and interviewer. rather than to follow the order of your data requirements. To assist the flow of the survey it may be necessary to include filter questions i.e. if certain questions do not apply to the respondent, he/she can skip them and continue on to respond to other questions in the subsequent questions.

Example: Are you currently registered as unemployed? Yes 1

No 2

If ‘no’ go to question 25

***Checklist for question order***

1. Are questions at the beginning of your questionnaire more straightforward and ones the

respondent will enjoy answering? Questions about attributes and behaviours are usually

more straightforward to answer than those collecting data on opinions.

2. Are questions at the beginning of your questionnaire obviously relevant to the stated

purpose of your questionnaire? E.g. question requesting contextual information may

appear irrelevant.

3. Are questions and topics that are more complex placed towards the middle of your

questionnaire? By this stage most respondents should be completing the survey with

confidence but should not yet be bored or tired.

4. Are personnel and sensitive questions towards the end of your questionnaire, and is their

purpose clearly explained? On being asked these a respondent may refuse to answer;

however, if they are at the end of an interviewer-administered questionnaire you will still

have the rest of the data!

5. Are filter questions and routeing instructions easy to follow so that there is a clear route

through the questionnaire?

6. (For interviewer-administered questionnaires) Are instructions to the interviewer easy to

follow?

7. Have you re-examined the wording of each question and ensured it is consistent with the

position in the questionnaire as well as with the data you require?

**Layout of the questionnaire**

Layout is important for both self-administered and interviewer-administered questionnaires.

Interviewer-administered questionnaires should be designed to make reading questions and filling in responses easy.

The layout for self-administered questionnaire should , in addition, be attractive to encourage the respondent to fill it in and to return it, while not appearing too long. A cramped questionnaire is not likely to be more acceptable to respondents.

Therefore is a wide spread view that long questionnaires should be avoided as this reduces response rate. On the contrary, a short questionnaire may suggest that your research is insignificant and hence not worth bothering with. In general, it has been found that a length between 4 and 8 A4 pages has been acceptable for self-administered questionnaires in organisations. For structured questionnaires can vary from few minutes in the street to 2 hours in comfortable environment. The advice from deVaus’ (2002) is:

* Do not make the questionnaire longer than is really necessary to meet your research questions and objectives.
* Do not be too obsessed with the length of your questionnaire.

One way to reduce apparent length that will not reduce legibility is to record answers to questions in a table with the questions in one column and answers in the corresponding column.

***A checklist for questionnaire layout***

1. (For self-administered questionnaires) Do questions appear squashed on the page? This will put the respondent off reading it and reduce the response rate. Unfortunately a thick questionnaire is equally off- putting!
2. (For self-administered questionnaires) Is the questionnaire going to be printed on good quality paper? This will imply that the survey is important.
3. (For self-administered questionnaires) Is the questionnaire going to be printed on warm-pastel-coloured paper? Warm pastel shades such as yellow and pink generate more responses than coal colours such as green or blue. White is good neutral colour but bright or fluorescent colours should be avoided.
4. (For structured interviews) Will the questions and instructions be printed on one side of the paper only? You will find it difficult to read the questions on back pages if you are using a questionnaire attached to a clipboard.
5. Is your questionnaire easy to read? Questionnaires should be typed in 12 point or 10 point using a plain font. Excessively long and excessively short lines reduce legibility. Similarly, respondents find CAPITALS, *italics* and shaded backgrounds more difficult to read. However, if used consistently, they can make completing the questionnaire easier.
6. Have you ensured that the use of shading, colour, font sizes, spacing and the formatting of questions is consistent throughout the questionnaire?
7. Is your questionnaire laid out in a format that respondents are accustomed to reading? Research has shown that many people skim-read questionnaires (Dillman, 2000). Instructions that can be read one line at a time from left to right moving down the page are therefore more likely to be followed correctly.

**Explaining the purpose of the questionnaire**

The cover letter - explains the purpose of the survey. This is the first part of the questionnaire that a respondent will look at. Research by Dillman (2000) and others has shown that the message contained in a self-administered questionnaire’s covering letter will affect the response rate.

Structure of a covering letter

|  |  |
| --- | --- |
| Type of paper | Good quality, official letterhead, including address, telephone number and email address (if possible) |
| Maximum length of letter | One side (12 point font size if possible) |
| Date | In full e.g. 15 August 2015 |
| Recipient’s name | Title, forename, surname (absence suggest impersonality) |
| Recipient’s address | In full (absent suggests impersonality) |
| Salutation | Use recipient’s title and name (if possible) |
| First set of messages | What research is about, lwhy it is useful |
| Second set of messages | Why recipient’s response is important, how long it will take to complete |
| Third set of messages | Promises of confidentiality and anonymity |
| Fourth set of messages | How results will be used, token reward or charity donation for participation (if any) |
| Final set of messages | Whom to contact if have any queries, who to return completed questionnaire to and date by which should be returned. |
| Closing remarks | Thank recipient for their help. |
| Signature | Yours, by hand, in blue |
| Name and title | Yours including forename and surname |
| Postscript | Express thanks or other appropriate message (optional, but postscript is often the most visible aspect of letter). |
| Source: Dillman, (2000) |  |

**Introducing the questionnaire**

Dillman (2000) argues that to achieve a high response rate, you should explain clearly and concisely the questionnaire to the respondents on the first page of the questionnaire.

You may include a clear unbiased title to convey the topic of the questionnaire; substitile which conveys the research nature of the topic and neutral graphic illustration or logo to add interest.

**Closing the questionnaire**

At the end of your questionnaire you need to explain clearly what you want the respondents to do with their completed questionnaires. It is usual to start this section by thanking her or him for completing the questionnaire, and by providing a contact name and telephone number for any queries she or he may have. You should give the details of the date by which you would like the questionnaire returned and how and where to return it.

**Pilot Testing and Assessing Validity**

The questionnaire that is developed must be pilot tested before using it in the research project. The purpose of the pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problem in recording the data. In addition, it will enable you to obtain some assessment of the questions’ validity and the likely reliability of the data that will be collected.

Pilot test is done by asking an expert or a group of experts to comment on the representativeness and suitability of your questions and to receive suggestions for amendments and improvements. This trial run of the questionnaire is important and necessary as it enables the knowing of how the questionnaire will succeed. How many people you require to do the pilot test will depend on the size of the research project, the financial resources and the research questions and objectives.

**Testing for Reliability**

Reliability refers to the consistency of responses to the questions in the questionnaire. This can be achieved by doing a test re-test run i.e. the same questionnaire is given to the same respondents twice but at different times but within a reasonable time break.

Another approach is called the alternative form. The questions on another questionnaire are arranged differently from the first questionnaire. The responses from the two questionnaires are then compared to look for consistency.

Another way is to use statistical method to look of correlations of the responses to find internal consistency e.g. Cronbach’s alph.

**Administering the questionnaire**

Once the questionnaire is designed, pilot tested and amended and the sample selected, l the questionnaire is used to collect data. The stage of administering the questionnaire has arrived. Next thing is to gain access to the sample and attempt to gain maximum response rate.

The collection of the data is dependent on the type of questionnaire designed:

* on line questionnaire
* postal questionnaire
* delivery and collection questionnaire
* telephone questionnaire
* structured interviews

Questions

1. Under what circumstances would you choose to use a delivery and collection questionnaire rather than a postal questionnaire? Give reasons for your answer.
2. Develop a checklist of things to consider in questionnaire construction.
3. Describe how the proper sequence of questions may improve a questionnaire.
4. What is the importance of pre-testing of questionnaire?