

Collecting primary data using questionnaires

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ENT 636
Research Project

Lecture 7



Chapter

07

Learning outcomes

By the end of this chapter you should:

- understand the advantages and disadvantages of questionnaires as a data collection method;
- be aware of a range of self-completed and researcher-completed questionnaires;
- be able to design, pilot and deliver a questionnaire to answer research questions and to meet objectives;
- be able to take appropriate action to enhance response rates and to ensure the validity and reliability of the data collected;

Please rate your experience. . .

Questionnaires are a part of our everyday lives. For modules in your course, your lecturers have probably asked you and your fellow students to complete module evaluation questionnaires, thereby collecting data on students' views. Similarly, when we visit a tourist attraction, have a meal in a restaurant or travel by air there is often the opportunity to complete a visitor feedback form, comment card or passenger survey. Airlines are no exception, wanting to collect data from

their passengers so they can enhance their customers' experiences. Whilst on a flight, and normally as the plane is nearing the destination, each passenger is asked via the aircraft's inflight entertainment system if they would be willing to answer a few questions about their experiences. If a passenger is willing, she or he then clicks on the "passenger survey" icon displayed on their seat back screen and the first of the questions appears. Subsequently they can comment on their experiences by answering a series of multiple choice questions using the plane's inflight entertainment



system. This starts with a brief introduction emphasizing the importance of passengers' opinions in helping the Airline to improve:

Here at [Airline Name] we are dedicated to the continual improvement of our services and to the airline itself. To assist us in achieving this and to be in with a chance of winning 10,000 air miles we would be grateful if you could tell us what you thought of your experience flying with us today – thank you.

This is followed by series of multiple choice questions such as those given below.

Other topics about which questions are often asked include the service given by the cabin crew, the quality of the inflight entertainment system and the overall value for money of the airline. Personal details are also usually collected from each passenger, including their name, age, country of origin and email address; passengers being informed that this will enable the airline to contact them, if they win the prize.

How did you check-in for your flight?

Online

☐

Check-in counter

☐

Kiosk

☒

Please rate your check-in experience for each of the following:

	Excellent	Very good	Good	OK
Ease of finding the check-in area	☐	☐	☐	☐
Waiting time in queue	☐	☐	☐	☐
Politeness of check-in staff	☐	☐	☐	☐
Knowledge and helpfulness of check-in staff	☐	☐	☐	☐

Introduction

Perhaps not surprisingly, the questionnaire is one of the most widely used data collection methods within the survey strategy. Because each person (respondent) is asked to respond to the same set of questions, it provides an efficient way of collecting responses from a large sample prior to quantitative analysis.

However, before you decide to use a questionnaire we should like to include a note of caution. Many authors argue that it is far harder to produce a good questionnaire than you might think. You need to ensure that it will collect the precise data that you require to answer your research question(s) and achieve your objectives. This is of paramount importance because, like an airline, you are unlikely to have more than one opportunity to collect the data.

Introduction

The design of your questionnaire will affect the response rate and the reliability and validity of the data you collect. These, along with response rates, can be maximized by:

- careful design of individual questions;
- clear and pleasing visual presentation;
- lucid explanation of the purpose;
- pilot testing;
- carefully and appropriately planned and executed delivery, and return of completed questionnaires.

An overview of questionnaires

Questionnaires tend to be used for descriptive or explanatory research. Descriptive research, such as that undertaken using attitude and opinion questionnaires and questionnaires of organizational practices, will enable you to identify and describe the variability in different phenomena.

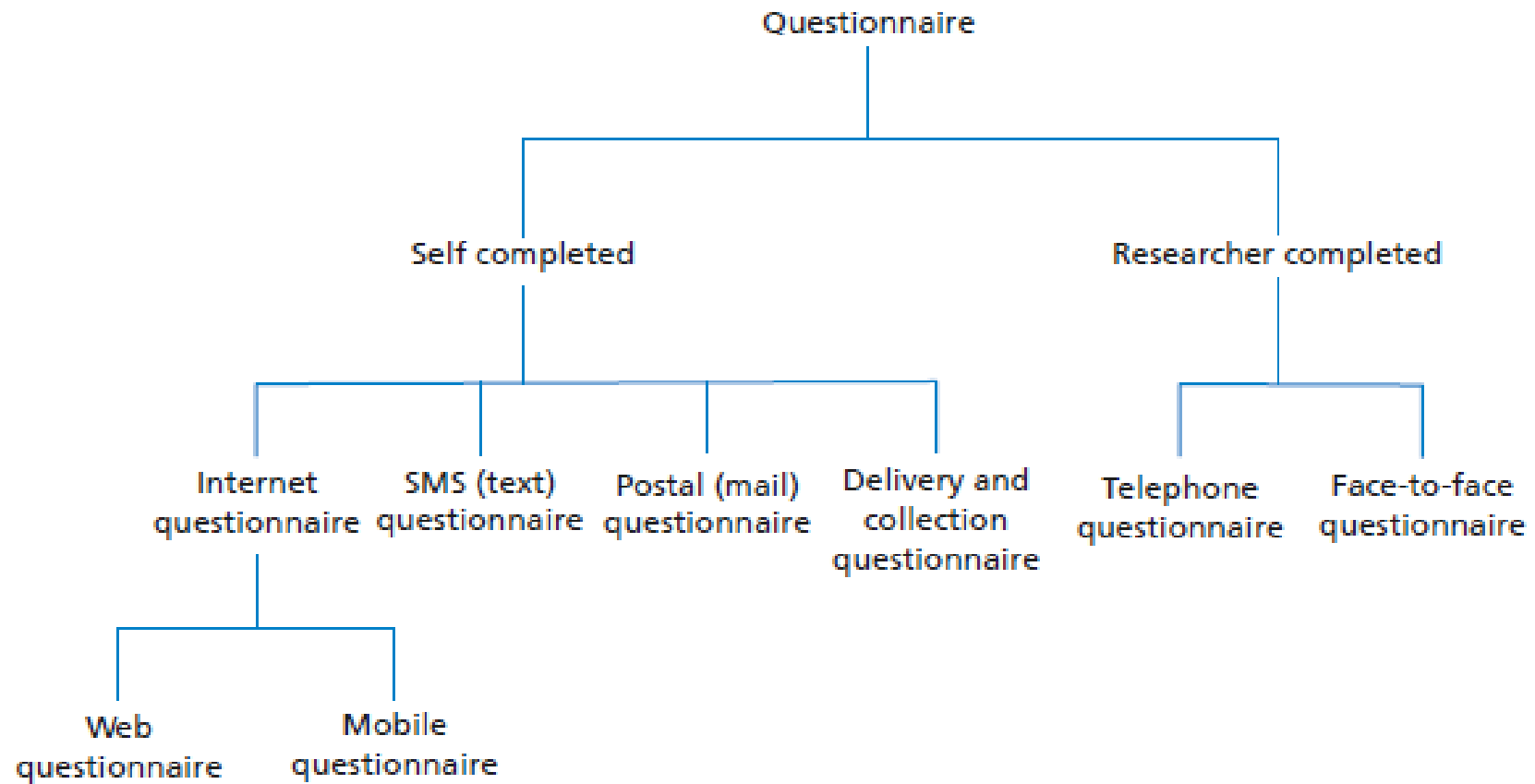
In contrast, explanatory research will enable you to examine and explain relationships between variables, in particular cause-and-effect relationships.

Questionnaire modes

The design of a questionnaire differs according to whether it is completed by the respondent or a researcher and how it is delivered, returned or collected.

Self-completed questionnaires are usually completed by the respondents and are often referred to as surveys.

Responses to researcher-completed questionnaires (also known as interviewer-completed questionnaires) are recorded by the researcher or a research assistant on the basis of each respondent's answers.



The choice of questionnaire mode

Your choice of questionnaire mode will be influenced by a variety of factors related to your research question(s) and objectives, and in particular the:

- 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.

The choice of questionnaire mode

Any contamination of respondents' answers will reduce your data's reliability. Sometimes, if they have insufficient knowledge or experience, they may deliberately guess at the answer, a tendency known as **uninformed response**. This is particularly likely when the questionnaire has been incentivized.

Respondents to self-completed questionnaires are relatively unlikely to answer to please you or because they believe certain responses are more **socially desirable**. They may, however, discuss their answers with others, thereby contaminating their response.

The choice of questionnaire mode

Respondents to telephone and face-to-face questionnaires are more likely to answer to please due to their contact with you, although the impact of this can be minimized by good interviewing technique.

Responses can also be contaminated or distorted when recorded. In extreme instances, research assistants may invent responses. For this reason, random checks of research assistants are often made by survey organizations. When writing your project report you will be expected to state your response rate.

The choice of questionnaire mode

When doing this you need to be careful not to make unsubstantiated claims if comparing with other questionnaires' response rates. While such comparisons place your response rate in context, a higher than normal response rate does not prove that your findings are unbiased. Similarly, a lower than normal response rate does not necessarily mean that responses are biased.

The type of questionnaire you choose will affect the number of people who respond. Researcher-completed questionnaires will usually have a higher response rate than self-completed questionnaires. The size of your sample and the way in which it is selected will have implications for the confidence you can have in your data and the extent to which you can generalize.

The choice of questionnaire mode

Longer questionnaires are best presented face-to-face. In addition, they can include more complicated questions than telephone questionnaires or self-completed questionnaires.

The presence of a researcher (or the use of Cloud based survey design, data collection and analysis software such as Qualtrics Research core™ and SurveyMonkey™) means that it is also easier to route different subgroups of respondents to answer different questions using a filter question.

The choice of questionnaire mode

The suitability of different types of question also differs between methods. Your choice of questionnaire will also be affected by the resources you have available, and in particular the:

- time available to complete the data collection;
- financial implications of data collection and entry;
- availability of research assistants and field workers to assist;
- cloud based survey design, data collection and analysis software.

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Deciding what data need to be collected

For most entrepreneurship and innovation research, the data you collect using questionnaires will be used for either descriptive or explanatory purposes. For questions where the main purpose is to describe the population's characteristics either at a fixed time or at a series of points over time to enable comparisons, you will normally need to deliver your questionnaire to a sample.

The sample needs to be as representative and accurate as possible where it will be used to generalize about a population. You will also probably need to relate your findings to earlier research. It is therefore important that you select the appropriate characteristics to answer your research question(s) and to address your objectives.

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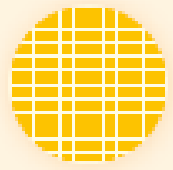
07

Deciding what data need to be collected

You will need to have:

- reviewed the literature carefully;
- discussed your ideas with your supervisor.

For research involving organizations, it is essential to understand the organizational context in which we are undertaking the research. Similarly, for international or cross-cultural research it is important to have an understanding of the countries and cultures in which you are undertaking the research. Without this it is easy to make mistakes, such as using the wrong terminology or language, and to collect useless data. For many research projects an understanding of relevant organizations can be achieved through browsing company websites, observation and in-depth and semi-structured interviews.



Box 11.1

Focus on student research

Using cloud based software to design a questionnaire

Ben's research project involved emailing a hyperlink to a Web questionnaire to small and medium-sized

enterprise owners to discover how they defined small business success. He designed his questionnaire using the cloud-based software Qualtrics as this would either allow him to analyse his data within the software or download his data and use analysis software such as IBM SPSS Statistics, a spreadsheet or a database.

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Deciding what data need to be collected

Explanatory research is usually deductive, using data to test a theory or theories. This means that, in addition to those issues raised for descriptive research, you need to define the theories you wish to test as relationships between variables prior to designing your questionnaire.

You will need to have reviewed the literature carefully, discussed your ideas widely and conceptualized your own research clearly prior to designing your questionnaire.

Deciding what data need to be collected

In particular, you need to be clear about which relationships you think are likely to exist between variables:

- a **dependent variable** that changes in response to changes in other variables;
- an **independent variable** that causes changes in a dependent variable;
- a **mediating** variable that transmits the effect of an independent variable to a dependent variable;
- a **moderating** variable that affects the relationship between an independent variable and a dependent variable.

Types of data variable

Data variable that can be collected through questionnaires are:

- factual or demographic;
- attitudes and opinions;
- behaviors and events.

These distinctions are important as they relate to the ease of obtaining accurate data and influence the way your questions are worded. **Factual** and **demographic** variables contain data that are readily available to the respondent and are likely, assuming the respondent is willing to disclose, to be accurate.

Types of data variable

These variables include characteristics such as age, gender, marital status, education, occupation and income. They are used to explore how attitudes and opinions, and behaviors and events, differ, as well as to check that the data collected are representative of the total population.

Attitude and opinion variables contain data that respondents may have needed to think about before answering. They are likely to be influenced by the context in which the question was asked; recording how respondents feel about something or what they think or believe is true or false. **Behavior** and event variables are also likely to be influenced by context. They contain data about what people did (behaviors) or what happened (events) in the past, is happening now, or will happen in the future



Box 11.3

Focus on student research

Opinion, behaviour and attribute questions

Emily was asked by her employer to undertake an anonymous survey of financial advisors' ethical values.

In particular, her employer was interested in the advice given to clients. After some deliberation she came up with three questions that addressed the issue of putting clients' interests before their own:

- 2 How do you feel about the following statement? 'Financial advisors should place their clients' interest before their own.'

(please tick the appropriate box)

- strongly agree ☐
- mildly agree ☐
- neither agree or disagree ☐
- mildly disagree ☐
- strongly disagree ☐

- 3 In general, do financial advisors place their clients' interests before their own?

(please tick the appropriate box)

- always yes ☐
- usually yes ☐
- sometimes yes ☐
- seldom yes ☐
- never yes ☐

- 4 How often do you place your clients' interests before your own?

(please tick the appropriate box)

- 81–100% of my time ☐
- 61–80% of my time ☐
- 41–60% of my time ☐
- 21–40% of my time ☐
- 0–20% of my time ☐

Emily's choice of question or questions to include in her questionnaire was dependent on whether she needed to collect data on financial advisors' attitudes, opinions or behaviours. She designed question 2 to collect data on respondents' opinions about financial advisors placing their clients' interest before their own. This question asks respondents how they feel. In contrast, question 3 asks respondents whether financial advisors in general place their clients' interests before their own. It is therefore concerned with their individual opinions regarding how financial advisors act.

5 How old are you?

(please tick the appropriate box)

- | | |
|--------------------------|--------------------------|
| Less than 30 years | ☐ |
| 30 to less than 40 years | ☐ |
| 40 to less than 50 years | ☐ |
| 50 to less than 60 years | ☐ |
| 60 years or over | ☐ |

Question 4 focuses on how often the respondents actually place their clients' interests before their own. Unlike the previous questions, it is concerned with their actual behaviour rather than their opinion.

To answer her research questions and to meet her objectives Emily also needed to collect data to explore how ethical values differed between subgroupings of financial advisors. One theory she had was that ethical values were related to age. To test this, she needed to collect demographic data on respondents' ages. After some deliberation she came up with question 5:

Questionnaire validity and reliability

The internal 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 questionnaire and the rigor of your pilot testing.

A valid questionnaire will enable accurate data that actually measure the concepts you are interested in to be collected, while one that is reliable will mean that these data are collected consistently. Even if everyone understands a questionnaire they may interpret it in different ways due to three forms of miscomprehension:

Questionnaire validity and reliability

- instructional, where instructions such as ‘please rank the following in order of importance, ranking the most important 1, the next 2 and so on’ are not followed; the respondent doing something else such as ranking all as 1;
- sentinel, where the respondent enriches or depletes the syntax of a question; for example, a respondent answers a question about ‘management’ as her or his ‘line manager’;
- lexical, where the respondent deploys a different meaning to a word to that intended by the researcher; for example, where the word ‘satisfied’ in a question is intended to refer to obligations being fulfilled, but is interpreted as gratification.

Establishing validity

Internal validity in relation to questionnaires refers to the ability of your questionnaire to measure what you intend it to measure. It is sometimes termed measurement validity as it refers to concerns that what you find with your questionnaire actually represents the reality of what you are measuring.

This presents you with a problem as, if you actually knew the reality of what you were measuring, there would be no point in designing your questionnaire and using it to collect data! Researchers get around this problem by looking for other relevant evidence that supports the answers found using the questionnaire, relevance being determined by the nature of their research question and their own judgement.

Establishing validity

Criterion-related validity, sometimes known as predictive validity, is concerned with the ability of the measures (questions) to make accurate predictions. This means that if you are using the data collected by questions within your questionnaire to predict customers' future buying behaviors then a test of these questions' criterion-related validity will be the extent to which the responses actually predict these customers' buying behaviors.

In assessing criterion-related validity, you will be comparing the data from your questionnaire with that specified in the criterion in some way. Often this is undertaken using statistical analysis such as correlation.

Establishing validity

Construct validity refers to the extent to which a set of questions (known individually as scale items) actually measures the presence of the construct you intended them to measure.

It is therefore dependent upon lexical and sentinel miscomprehension for each scale item being minimized. The term is normally used when referring to constructs such as attitude scales, customer loyalty and the like and can be thought of as answering the question: ‘How well can I generalize from this set of questions to the construct?’

Establishing validity

Because validation of such constructs against existing data is difficult, other methods are used. Where different scales are used to measure the same construct, the overlap (or correlation) between these scales is known as **convergent validity**.

In contrast, where different scales are used to measure theoretically distinct constructs, an absence of overlap (or correlation) between the scales means they are distinctive and have **discriminant validity**.

Testing for reliability

Reliability is therefore concerned with the robustness of your questionnaire and, in particular, whether or not it will produce consistent findings at different times and under different conditions, such as with different samples or, in the case of a researcher-completed questionnaire, with different research assistants or field workers.

Alternatively, respondents may answer inconsistently due to instructional miscomprehension. Between five and nine per cent of respondents do not read instructions that accompany a questionnaire, this being due to familiarity with the task of completing questionnaires.

Testing for reliability

Three common approaches to assessing reliability, in addition to comparing the data collected with other data from a variety of sources. Although the analysis for each of these is undertaken after data collection, they need to be considered at the questionnaire design stage. They are:

- test re-test;
- internal consistency;
- alternative form.

Testing for reliability

Test re-test estimates of reliability are obtained by correlating data collected with those from the same questionnaire collected under as near equivalent conditions as possible.

The questionnaire therefore needs to be delivered and completed twice by respondents. This may create problems, as it is often difficult to persuade respondents to answer the same questionnaire twice. In addition, the longer the time interval between the two questionnaires, the lower the likelihood that respondents will answer the same way. We therefore recommend that you use this method only as a supplement to other methods.

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Testing for reliability

Internal consistency involves correlating the responses to questions in the questionnaire with each other. However, it is nearly always only used to measure the consistency of responses across a subgroup of the questions.

There are a variety of methods for calculating internal consistency, of which one of the most frequently used is **Cronbach's alpha**. This statistic is usually used to measure the consistency of responses to a sub-set of questions (scale items) that are combined as a scale to measure a particular concept. It consists of an alpha coefficient with a value between 0 and 1. Values of 0.7 or above indicate that the questions combined in the scale internally consistent in their measurement.

Testing for reliability

The final approach to testing for reliability outlined by is ‘**alternative form**’. This offers some sense of the reliability within your questionnaire through comparing responses to alternative forms of the same question or groups of questions. Where questions are included for this purpose, usually in longer questionnaires, they are often called ‘**check questions**’. However, it is often difficult to ensure that these questions are substantially equivalent. Respondents may suffer from fatigue owing to the need to increase the length of the questionnaire, and they may spot the similar question and just refer back to their previous answer! It is therefore advisable to use check questions sparingly.

Designing individual questions

The design of each question should be determined by the data you need to collect. When designing individual questions researchers do one of three things:

- adopt questions used in other questionnaires;
- adapt questions used in other questionnaires;
- develop their own questions.

Types of question

Initially, you need only consider the type, wording and length of individual questions rather than the order in which they will appear on the form. Clear wording of questions using terms that will be familiar to, and understood by, respondents can improve the validity of the questionnaire. Shorter questions are easier to understand than longer ones and questions should, ideally, be no longer than 20 words, excluding possible answers.

Most types of questionnaire include a combination of **open** and **closed questions**. Open questions, sometimes referred to as open-ended questions, allow respondents to give answers in their own way.

6 Please list up to three things you like about your current employment:

1

2

3

Types of question

Closed questions, sometimes referred to as closed-ended questions or forced-choice questions, provide two or more alternative answers from which the respondent is instructed to choose.

Closed questions are usually quicker and easier to answer, as they require minimal writing. Responses are also easier to compare as they have been predetermined. However, if these predetermined responses are misunderstood by respondents then they will not be valid.

Types of question

Six types of closed question are discussed:

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

As well as:

- creating scales to measure constructs by combining rating questions.

Also issues associated with translating questions into other languages and pre-coding responses are discussed.

List questions

List questions offer the respondent a list of responses from which she or he can choose either one or more responses. Such questions are useful when you need to be sure that the respondent has considered all possible responses. However, the list of responses must be defined clearly and be meaningful to the respondent

What is your religion?

Please tick ✓ the appropriate box.

Buddhist	☐	No religion	☐
Christian	☐	Other	☐
Hindu	☐		
Jew	☐	(Please say:)	
Muslim	☐		
Sikh	☐		

Category questions

Category questions

In contrast, category questions are designed so that each respondent's answer can fit only one category. Such questions are particularly useful if you need to collect data about behavior or attributes. The number of categories that you can include without affecting the accuracy of responses is dependent on the type of questionnaire. Self-completed questionnaires and telephone questionnaires should usually have no more than five response categories. Researcher-completed questionnaires can have more categories provided that a prompt card is used or, as in question 8, the researcher categorizes the responses.



Box 11.6

Focus on student research

Use of a prompt card as part of a face-to-face questionnaire

As part of her face-to-face questionnaire, Jemma asked the following question:

Which of the following tourist sites did you visit whilst staying in Cusco?

[Show respondent cards 1 and 2 with the pictures of tourist sites. Read out names of the tourist sites one at a time. Record their response with a ✓ in the appropriate box.]

	Visited	Not visited	Not sure
Maras	☐	☐	☐



1. Maras



2. Moray



3. Misminay Andean village



4. Sacsaywaman



5. Priory of Santa Domingo



6. Ollantaytambo

Moray	☐	☐	☐
Misminay Andean Village	☐	☐	☐
Sacsaywaman	☐	☐	☐
Priory of Santa Domingo	☐	☐	☐
Ollantaytambo	☐	☐	☐
Inca Pachacutec Monument	☐	☐	☐
Qorikancha	☐	☐	☐
Pukapora (Red Fort)	☐	☐	☐
The Sacred Valley	☐	☐	☐

Jemma gave card 1 (below) and subsequently card 2, both of which were A4 size, to each respondent; reading out the name of each tourist site and pointing to the photograph. She collected both cards after the question had been completed.

8 How often do you visit this retail park?

[Researcher: 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 | ☐ |

Ranking questions

A **ranking question** asks the respondent to place things in rank order. This means that you can discover their relative importance to the respondent. In the next question, the respondents are asked their opinions about the relative importance of a series of features when choosing a mobile phone.

Mobile Phone Features	Rank
Screen Size	
Camera	
Processor	
Battery Life	
Memory	

Rating questions

Rating questions are often used to collect opinion data. They should not be confused with scales to measure concepts, which are a coherent set of questions or scale items that are regarded as indicators of a construct or concept.

Rating questions most frequently use the Likert-style rating in which the respondent is asked how strongly she or he agrees or disagrees with a statement or series of statements, usually on a four-, five-, six- or seven-point rating scale.

Rating questions

Possible responses to rating questions should be presented in a straight line (such as in question 10) rather than in multiple lines or columns, as this is how respondents are most likely to process the data.

If you intend to use a series of statements, you should keep the same order of response categories to avoid confusing respondents. You should include both positive and negative statements so as to ensure that the respondent reads each one carefully and thinks about which box to tick.

Task 2

How difficult (1) or easy (5) was it to log into the app?

☐

1

☐

2

☐

3

☐

4

☐

5

Very difficult

Very easy

Next

Rating questions

Another variation is **the semantic differential rating question**. These are often used in consumer research to determine underlying attitudes. 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 anchor respondents' attitudes.

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.

On each of the lines below, place an x to show how you feel about the service you received at our restaurant.

Fast

—|—|—|—|—|—|—|—|—|

Slow

Unfriendly

—|—|—|—|—|—|—|—|—|

Friendly

Value for money

—|—|—|—|—|—|—|—|—|

Overpriced



completely
satisfied

1



very
satisfied

2



satisfied

3



less
satisfied

4



dissatisfied

5

Table 11.3 Response categories for different types of rating questions

Type of rating	Five categories	Seven categories
Agreement	Strongly agree	Strongly agree
	Agree	Agree/moderately agree/mostly agree*
	Neither agree nor disagree/not sure/uncertain*	Slightly agree
	Disagree	Neither agree nor disagree/not sure/uncertain*
	Strongly disagree	Slightly disagree
		Disagree/moderately disagree/mostly disagree*
		Strongly disagree
Amount	Far too much/nearly all/very large*	Far too much/nearly all/very large*
	Too much/more than half/large*	Too much/more than half/large*
	About right/about half/some*	Slightly too much/quite large*
	Too little/less than half/small*	About right/about half/some*
	Far too little/almost none/not at all*	Slightly too little/quite small*
		Too little/less than half/small*
		Far too little/almost none/not at all*

Frequency	All the time/always*	All the time/always*
	Frequently/very often/most of the time*	Almost all the time/almost always*
	Sometimes/about as often as not/about half the time*	Frequently/very often/most of the time*
	Rarely/seldom/less than half the time*	Sometimes/about as often as not/about half the time*
	Never/practically never*	Seldom
Likelihood		Almost never/practically never*
		Never/not at all*
	Very	Extremely
	Good	Very
	Reasonable	Moderately
	Slight/bit*	Quite/reasonable*
	None/not at all*	Somewhat
		Slight/bit*
		None/not at all*

Quantity questions

The response to a quantity question is a number, which gives a factual amount of a characteristic. For this reason, such questions tend to be used to collect behaviour or attribute data. A common quantity question, which collects attribute data, is:

What is your year of birth?

(for example, for 1997 write:)

1	9	9	7

Because the response to this question data is coded by the respondent, the question can also be termed a self-coded question.

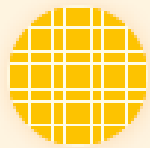
Matrix questions

A **matrix** or **grid** of questions enables you to record the responses to two or more similar questions at the same time.

As shown in the example below, the appropriate response to each question is then recorded in the cell where the row and column meet. Although using a matrix saves space, it is suggested that respondents may have difficulties comprehending these designs and that they are a barrier to response.

Q: Please choose how satisfied you were with your flight experience.

	Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied
In-flight service	✓				
Onboard entertainment				✓	
Wifi connectivity			✓		
Meal options		✓			



Box 11.8 Focus on student research

Using existing scales from the literature

When planning his questionnaire David, like most students, presumed he would need to design and develop his own measurement scale. However, after reading Schrauf and Navarro's (2005) paper on using existing scales, he realised that it would probably be possible to adopt an existing scale, which had been reported in the academic literature. As he pointed out to his project tutor, this was particularly fortunate because the

process of scale development was hugely time consuming and could distract his attention from answering the actual research question.

In looking for a suitable published scale David asked himself a number of questions:

- Does the scale measure what I am interested in?
- Has the scale been empirically tested and validated?
- Was the scale designed for a similar group of respondents as my target population?

Fortunately, the answer to all these questions was 'yes'. David, therefore, emailed the scale's author to ask for formal permission.

Question wording

The wording of each question will need careful consideration to ensure that the responses are valid – that is, measure what you think they do. Your questions will need to be checked within the context for which they were written rather than in abstract to ensure they are not misread and that they do not privilege a particular answer.

Given this, the checklist below should help you to avoid the most obvious problems associated with wording that threatens the validity of responses.



Box 11.10 Checklist

Your question wording

- ✓ Does your question collect data at the right level of detail to answer your investigative question as specified in your data requirements table?
- ✓ Will respondents have the necessary knowledge to answer your question? A question on the implications of a piece of legislation would yield meaningless answers from those who were unaware of that legislation.
- ✓ Does your question appear to talk down to respondents? It should not!
- ✓ Does your question challenge respondents' mental or technical abilities? Questions that do this are less likely to be answered.
- ✓ Are the words used in your question familiar to all respondents, and will all respondents comprehend them in the same way? In particular, you should use simple words and avoid jargon, abbreviations and colloquialisms.
- ✓ Are there any words that sound similar and might be confused with those used in your question? This is a particular problem with researcher-completed questionnaires.

- ✓ Are there any words that look similar and might be confused if your question is read quickly? This is particularly important for self-completed questionnaires.
- ✓ Are there any words in your question that might cause offence? These might result in biased responses or a lower response rate.
- ✓ Can your question be shortened? Long questions are often difficult to understand, especially in researcher-completed questionnaires, as the respondent needs to remember the whole question. Consequently, they often result in no response at all.
- ✓ Are you asking more than one question at the same time? The question 'How often do you visit your mother and father?' contains two separate questions, one about each parent, so responses would probably be impossible to interpret.
- ✓ Does your question include a negative or double negative? Questions that include the word 'not' are sometimes difficult to understand. The question 'Would you rather not use a non-medicated shampoo?' is far easier to understand when rephrased as: 'Would you rather use a medicated shampoo?'
- ✓ Is your question unambiguous? This can arise

will not be clear which group to choose if they have 100 or 250 employees.

- ✓ Does your question imply that a certain answer is correct? If it does, the question is biased and will need to be reworded, such as with the question 'Many people believe that too little money is spent on our public Health Service. Do you believe this to be the case?' For this question, respondents are more likely to answer 'yes' to agree with and please the researcher.
- ✓ Does your question prevent certain answers from being given? If it does, the question is biased and will need to be reworded. The question 'Is this the first time you have pretended to be sick?' implies that the respondent has pretended to be sick whether they answer yes or no!
- ✓ Is your question likely to embarrass the respondent? If it is, then you need either to reword it or to place it towards the end of the survey when you will, it is to be hoped, have gained the respondent's confidence. Questions on income can be asked as either precise amounts (more embarrassing), using a quantity question, or income bands (less embarrassing), using a category question. Questions on self-perceived shortcomings are unlikely to be answered.

✓ Is your question unambiguous? This can arise from poor sentence structure, using words with different lexical meanings or having an unclear investigative question. If you ask 'When did you leave school?' some respondents might state the year, others might give their age, while those still in education might give the time of day! Ambiguity can also occur in category questions. If you ask employers how many employees they have on their payroll and categorise their answers into three groups (up to 100, 100–250, 250 plus), they

comings are unlikely to be answered.

- ✓ 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?
- ✓ Are answers to closed questions written so that at least one will apply to every respondent and so that each of the responses listed is mutually exclusive?
- ✓ Are the instructions on how to record each answer clear?

Translating questions into other languages

Translating questions and associated instructions into another language requires care if your translated or target questionnaire is to be decoded and answered by respondents in the way you intended. For international research this is extremely important if the questions are to have the same meaning to all respondents.

For this reason, it is suggested that when translating the source questionnaire attention should be paid to:

- lexical meaning – the precise meaning of individual words (e.g. the French word *chaud* can be translated into two concepts in English and German, ‘warm’ and ‘hot’);

Translating questions into other languages

- idiomatic meaning – the meanings of a group of words that are natural to a native speaker and not deducible from those of the individual words (e.g. the English expression for informal communication, ‘grapevine’, has a similar idiomatic meaning as the German expression Mundpropaganda, meaning literally ‘mouth propaganda’);
- experiential 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);
- grammar and syntax – the correct use 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).

Translating questions into other languages

A number of techniques for translating your source questionnaire. These, along with their advantages and disadvantages, are summarized in the table below. In this table, the **source questionnaire** is the questionnaire that is to be translated, and the **target questionnaire** is the translated questionnaire.

When writing your final project report, remember to include a copy of both the source and the target questionnaire as appendices. This will allow readers familiar with both languages to check that equivalent questions in both questionnaires have the same meaning.

Table 11.4 Translation techniques for questionnaires

	Direct translation	Back-translation	Parallel translation
Approach	Source questionnaire to target questionnaire	Source questionnaire to target questionnaire; 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 translators; comparison of two target questionnaires; creation of final version
Advantages	Easy to implement, relatively inexpensive	Likely to discover most problems; easy to implement with translators at source country	Leads to good wording of target questionnaire
Disadvantages	Can lead to many errors (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

Chapter

07

Coding question responses

As you will be analyzing your data by computer, question responses will need to be coded prior to entry. If you are using a cloud-based survey tool, this will be done automatically.

The selected response to each closed question will either be given a numeric code or the selected answer recorded. For open questions the text entered by the respondent should be recorded verbatim. Responses will be automatically saved and can subsequently be exported as a data file in a variety of formats such as Excel™, IBM SPSS Statistics compatible or a comma-delimited file.

For paper-based questionnaires you will need to allocate the codes yourself. For numerical responses, actual numbers can be used as codes. For other responses, you will need to design a coding scheme.

Coding question responses

For most closed questions codes are given to each response category. If you are using a paper questionnaire, these can be printed on the questionnaire, thereby pre-coding the question and removing the need to code after data collection. Two ways of doing this are illustrated by questions below, which collect data on the respondents' opinions

16	Is the service you receive? (Please circle O the number)	Excellent 5	Good 4	Reasonable 3	Poor 2	Awful 1
17	Is the service you receive? (Please tick ✓ the box)	Excellent ☐ ₅	Good ☐ ₄	Reasonable ☐ ₃	Poor ☐ ₂	Awful ☐ ₁

Constructing the questionnaire

The order and flow of questions

When constructing your questionnaire, it is a good idea to spend time considering the order and flow of your questions. These should be logical to the respondent (and researcher). They should take account of possible bias caused by the ordering of the questions. For example, a question asking a respondent to list the possible benefits of a new shopping center could, if preceding a question about whether the respondent supports the proposed new shopping center, bias respondents' answers in favor of the proposal.

Constructing the questionnaire

To assist the flow of the questions it may be necessary to include filter questions. These identify those respondents for whom the following question or questions are not applicable, so they can skip those questions. You should beware of using more than two or three filter questions in paper-based self-completed questionnaires, as respondents tend to find having to skip questions annoying.

19 Are you currently registered as unemployed?

Yes



If 'no' go to question 25

No



Constructing the questionnaire

The visual presentation of the questionnaire

Visual presentation is important for researcher-completed, Internet and other self-completed questionnaires. Researcher-completed questionnaires should be designed to make reading questions and filling in responses easy.

The visual presentation of Internet and other self-completed questionnaires should, in addition, be attractive to encourage the respondent to fill it in and to return it, while not appearing too long.



Box 11.13 Checklist

Avoiding common mistakes in questionnaire layout

- ✓ (For self-completed questionnaires) Do questions appear well spaced on the page or screen? A cramped design will put the respondent off reading it and reduce the response rate. Unfortunately, a thick questionnaire is equally off-putting!
- ✓ (For paper-based self-completed questionnaires) Is the questionnaire going to be printed on good-quality paper? Poor-quality paper implies that the survey is not important.
- ✓ (For self-completed questionnaires) Is the questionnaire going to be printed or displayed on a warm pastel colour? Warm pastel shades, such as yellow and pink, generate slightly more responses than white (Edwards et al. 2002) or cool colours, such as green or blue. White is a good neutral colour but bright or fluorescent colours should be avoided.
- ✓ (For researcher completed questionnaires) Will the questions and instructions be printed on one side of the paper only? A researcher will find it difficult to read the questions on the back of pages if you are using a questionnaire attached to a clipboard!
- ✓ Is your questionnaire easy to read? Questionnaires should be typed in 12 point or 10 point using a plain font. Excessively long and unduly 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.
- ✓ Have you ensured that the use of shading, colour, font sizes, spacing and the formatting of questions is consistent throughout the questionnaire?
- ✓ Is your questionnaire laid out in a format that respondents are accustomed to reading? Research has shown that many people skim-read questionnaires (Dillman et al. 2014). 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.
- ✓ Is your questionnaire optimised for the distribution mode(s) you intend to use?



Box 11.14

Focus on student research

Introducing a self-completed questionnaire

Lil asked her project tutor to comment on what she hoped was the final draft of her Internet questionnaire. This included the following introduction:

ANYTOWN PRIVATE HOSPITAL STAFF SURVEY

Dear Sir or Madam

I am undertaking research on behalf of Anytown Private Hospital and we are inviting some people to take part. The research will help us develop the future of the hospital. If you would like to take part in this research please answer the questionnaire.

Thank you for your time.

Not surprisingly, her project tutor suggested that she re-draft her introduction. Her revised introduction follows:

Anytown Private Hospital

Staff Survey 2018

This survey is being carried out to find out how you feel about the Hospital's policies to support colleagues like you in your work. Please answer the questions freely. You cannot be identified from the information you provide, and no information about individuals will be given to the Hospital.



ALL THE INFORMATION YOU PROVIDE WILL BE TREATED IN THE STRICTEST CONFIDENCE. YOUR DECISION TO PARTICIPATE IN THIS RESEARCH IS ENTIRELY VOLUNTARY.

If you do not wish to take part, just do not return the questionnaire to me. If you do decide to take part, the questionnaire should take you about five minutes to complete. Please answer the questions in the space provided. Try to complete the questions at a time when you are unlikely to be disturbed. Also, do not spend too long on any one question. Your first thoughts are usually your best! Even if you feel the items covered may not apply directly to your working life please do not ignore them. Your answers are essential in building an accurate picture of the issues that are important to improving our support for people working for this Hospital.

There are no costs associated with completing the questionnaire other than your time.

WHEN YOU HAVE COMPLETED THE QUESTIONNAIRE PLEASE RETURN IT TO US IN THE ENCLOSED FREEPOST ENVELOPE NO LATER THAN 6 APRIL.

I hope you will be willing to complete and return the questionnaire and thank you for your time. A summary of the findings will be published on the Hospital intranet. If you have any queries or would like further information about this project, please telephone me on 01234-5678910 or email me on l.woollons@anytown-healthcare.com.

Thank you for your help.

Lily Woollons

Lily Woollons

Human Resources Department

Anytown Private Hospital

Anytown AN99 9HS

Pilot testing

Prior to using your questionnaire to collect data it should be pilot tested with respondents who are similar to those who will actually complete it. 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 problems 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 both for individual questions and, where appropriate, scales comprising a number of questions. Preliminary analysis using the pilot test data can be undertaken to ensure that the data collected will enable your investigative questions to be answered.



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