CHAPTER 10
QUESTIONNAIRE SURVEYS IN MEDIA RESEARCH

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THIS CHAPTER

This chapter gives an overview of the theory and practises associated with questionnaire surveys as a quantitative methodology with specific reference to the ways in which surveys are used in media research. An application of how questionnaire surveys are used in audience research is illustrated by a case study.

The most important topics dealt with in the chapter are the following:

- Historical development of the use of questionnaire surveys in the social sciences and other applied disciplines
- Research topics appropriate for questionnaire surveys
- Steps in questionnaire surveys
- Probability and nonprobability sampling
- Types of surveys
- Designing of questionnaires
- Reliability and validity as yardsticks of quality for questionnaire surveys
- Sources of error in questionnaire surveys

Learning outcomes

At the end of this unit you should be able to:

- Discern whether a questionnaire survey is appropriate to investigate a particular media-related research problem or issue or not
- Make an informed choice of sampling design appropriate for investigating a particular media-related problem or issue
- Draw various probability and nonprobability samples
- Make an informed choice of a type of survey appropriate for investigating a particular media-related problem or issue
- Design a questionnaire to investigate a particular media-related problem or issue
- Critically evaluate questionnaire survey studies
- Conduct a questionnaire survey of your own on a limited scale

10.1 INTRODUCTION

Most of us are accustomed with questionnaire surveys. At some or other time each one of us has been confronted by a fieldworker or a letter (with a questionnaire attached to it) with a request to answer some questions. A questionnaire could be included in your study material for a course in Media Studies. One of the questions could read as follows: "What is your opinion of your textbook on media audiences? Do you think it is an (a) excellent book; (b) a good book; (c) an average book; (d) not such a good book; or (e) a poor book?"

You would probably not be ruffled by such a request as you have encountered questionnaires before. The reason is that the questionnaire survey is one of the most widely used research methodologies in the social sciences as well as in the marketing industries and other applied fields (Babbie 1990; Neuman 2006). However, the popularity of surveys might be misleading. It might appear to a lay person that surveys are a quick and easy option to obtain information about a topic. A poorly conducted survey could, however, easily yield misleading or worthless results. Good surveys are complex endeavours that require a lot of thought, effort and dedication. In this chapter you will learn more of the ingredients of good surveys as well as of the strengths and limitations of questionnaire surveys as a research methodology.

10.2 BRIEF HISTORICAL OVERVIEW OF SURVEY RESEARCH

The survey is a very old technique. It can be traced back to ancient forms of the census. The aim of a census is usually to count people and/or to obtain information on the characteristics of the entire population of a particular territory (Babbie 1990; Neuman 2006).

In the Old Testament, Moses instructed Eleazar, the son of Aaron, to take a census of all the people of Israel. King Dawid also conducted a census of all the people in his kingdom. Jesus was born when Joseph and Mary went to their ancestral town to be counted. Ancient Egyptian leaders conducted censuses to assist them in administering their domains. The *Domesday Book* represents a famous census of England conducted from 1085 to 1086 by William the Conqueror. Particularly in early censuses, the aim was to assess the potential income or property available for taxation or the number of young men available for military service. The power of ancient leaders was also established by the number of their subjects.

Over time surveys also acquired other political functions. Babbie (2001:238) gives the example of a little-known survey that was conducted in 1880. A German socialist mailed approximately 25 000 questionnaires to French workers. The rather lengthy questionnaire contained intricate questions such as the following: "Does your employer or his representative resort to trickery in order to defraud you of a part of your earnings?" The survey researcher in this case was none other than the later Socialist leader, Karel Marx.

The development of representative democracy as a form of government has added to the importance of both censuses and surveys (Babbie 1990; Neuman 2006). Nowadays censuses are, among others, used to assign the number of parliamental representatives for a particular group or region. Census bureaus have also made important contributions to the development of various aspects of surveying. Opinion polls have furthermore become part and parcel of modern elections. Today very few democratic elections take place without research organisations conducting polls in an attempt to predict the outcome. Commercial research organisations have furthermore played an important role in expanding the use of surveys to marketing research (especially during periods when no elections are conducted).

The refinement of questionnaire surveys as a respectable "scientific" research methodology in the social sciences has started at universities in the United States of America (USA) and the United Kingdom (UK). Babbie (1990) mentions two individuals in this regard, namely Samuel A. Stouffer and Paul Lazersfeld. Stouffer did pioneering work by employing survey methods to investigate social problems such as the effects of the Depression in the USA and the status of black Americans during the 1930s. Paul Lazersfeld, who came from a European intellectual background, applied rigorous survey techniques in studying phenomena such as communications, leadership and economic behaviour. The use of questionnaire surveys in academia was furthermore stimulated by the quest of social scientists to model themselves after natural scientists and to become more professional, objective and nonpolitical.

World War II served as a further important incentive for the development and refinement of survey research techniques (Neuman 2006). This war also promoted cooperation between academic social researchers and marketing practitioners who joined forces in the war effort by studying morale, enemy propaganda, production capacity, and so forth. In doing so, they learnt from each other and gained experience in conducting large-scale surveys. Academic researchers helped practitioners to appreciate precise measurement, sampling and advanced methods of statistical analysis. Practitioners, on the other hand, introduced academic researchers to the practical side of organising and conducting the fieldwork in large-scale surveys. Many of these researchers joined universities after the war where they promoted the use of survey methods in social research. Despite the fact that some university researchers were initially sceptical of a research technique that had predominantly been used by politicians and the marketing industry, survey research has constantly grown in use within academia.

Nowadays survey research is widely used in both academic research as well as applied areas (Neuman 2006). Researchers in many social science disciplines (e.g. communication, education, sociology, political science and social psychology) conduct surveys to expand the knowledge base within their respective fields. Quantitative survey research has furthermore become a major industry. Many applied fields rely heavily on surveys. Governments all over the world regularly conduct surveys to inform policy decisions. Surveys have, in particular, become indispensable in media industries where broadcasting, print and other industries make use of surveys to obtain information

about media audiences (see chapter 15). Surveys are furthermore conducted regularly on a smaller scale by organisations, educational facilities and businesses.

Modern survey techniques have shown tremendous development over the last 75 year (Neuman 2006). Technological development such as the development of computers have furthermore facilitated survey research as data capturing, data storage and statistical analysis have been made easier and quicker. In recent decades researchers have started to develop theories and to conduct research into aspects of the survey process itself such as the communication-interaction processes associated with survey interviews, the effectiveness of visual clues, the impact of question wording and ordering, and the reasons for respondent cooperation and refusal. As such, this kind of metatheoretical research to enhance the validity of surveys has become an exciting field of scientific enquiry in itself.

10.3 WHAT IS A SURVEY?

Survey research has developed within the positivist paradigm of social research. The data produced by a survey are inherently statistical in nature. Robert Groves (1996:389) calls surveys "quantitative beasts". Although it is possible to include open-ended questions in a questionnaire which can yield data of a more qualitative nature (see section 13.8.1), survey research is predominantly a quantitative methodology and the data are reported in the form of tables, graphs and statistics such as frequencies, means, standard deviations, *t* and *F* values, correlation coefficients, and so forth. In most cases even the responses on open-ended questions are coded in such a way that the results can be reported in the form of statistics.

A further important characteristic of survey research is that it is essentially a self-report methodology (Neuman 2006). The term "self-report" refers to the fact that we ask people − called respondents − questions when conducting a survey. Respondents are requested to provide information regarding themselves and/or to describe their own behaviour, attitudes, opinions, and so forth.

When studying surveys as a methodology, you need to keep in mind that survey research is just one of a range of research methodologies available to the social researcher (Babbie 1990). Whereas the questionnaire survey is a versatile methodology that can be applied in a variety of contexts to investigate a multitude of topics, it is not appropriate to many research topics, and might not be the best approach to study some of the topics to which it is sometimes applied.

10.4 RESEARCH TOPICS APPROPRIATE FOR QUESTIONNAIRE SURVEYS

As surveys involve self-reporting, it is an appropriate methodology to investigate research questions dealing with topics on which we can ask questions which people will be able to answer. Questions can be asked on the following issues:

- *Characteristics* − We can ask people questions on their demographic characteristics such as their age, gender, race, language, educational qualifications, income, marital status, and so forth.
- *Behaviour or behavioural intentions* – People can answer questions on what they did in the past, what they usually do and/or what they intend to do: Did you watch *Generations* last night? Do you listen to the radio in the mornings? To which radio stations do you listen? How many hours do you watch television during weekends? Do you subscribe to satellite television? Do you intend to subscribe to satellite television in the near future?
- *Self-classification* − People can be asked to classify themselves into various groups: Into which social class would you categorise your family? Do you consider yourself to be a heavy television viewer, moderate television viewer, or light television viewer? Would you call yourself a soap opera addict?
- *Preferences* − People can voice their preferences: Which radio programmes do you prefer? If you have a choice, would you rather watch a rugby game or a soccer match?
- *Attitudes/beliefs/opinions* − Surveys are *per excellence* appropriate to question people about their attitudes, beliefs and/or opinions on almost any topic: What kind of job do you think the SABC Council is doing? Do you think that the media in South Africa are really free? What is the most important factor threatening press freedom in Africa?
- *Expectations* − People can answer questions on what they expect to happen: Who do you think will become the new chairman of the SABC Council? Do you think that press freedom will improve, stay the same or deteriorate in Africa?
- *Knowledge or awareness* − People can be asked questions to establish their knowledge or awareness of certain issues: Do we have commercial television stations in South Africa? If yes, name them. Which soap operas are broadcast on the television channels of the SABC?

When conducting survey research, it is important to remember that respondents can only provide reliable and valid answers on questions pertaining to themselves. Questionnaire surveys are therefore a very personal research method. Respondents cannot answer questions on behalf of other people. In audience research parents are sometimes requested to provide information on the television viewing behaviour of their children (see chapter 15). However, research has proven the results of such studies to be less reliable as parents tend to underestimate their children's television viewing (Webster, Phalen & Lichty 2006). Sometimes a representative is requested to complete a questionnaire on behalf of the organisation or group. In such a case only specific information pertaining to the characteristics of the organisation or group can be answered. The representative cannot, for example, provide information on the attitudes or opinions of individual employees.

Questionnaire surveys are also not a good option to provide answers on "why" questions, that is research questions dealing with the reasons for particular trends or phenomena (Neuman 2006). It is,

for example, not possible to establish by means of survey research the reasons why many South African learners watch television during school hours. A particular learner can, however, be asked about his or her own behaviour, that is whether he or she watches television during school hours. People can also be asked what their opinions regarding such behaviour are or what they think the reasons for a particular trend or phenomenon is. Researchers can also ask respondents what they think the reasons for the lack of discipline in South African schools are. They can also ask respondents whether they think that television play a role. The responses will, however, represent nothing more than opinions, namely respondents' subjective understanding of the issue at hand. Few respondents will, however, have the expertise and be fully aware of the complexity of factors that shape a particular phenomenon such as undisciplined behaviour among children.

Survey research is also not a good option to investigate "how" questions. The results of survey research can assist policy makers in identifying potential problem areas with regard to a particular phenomenon and could thus form the basis for deriving strategies to address problem areas. However, the results of a survey can only provide information on how respondents behave and/or what they think or feel should be done, that is information on behaviour, perceptions, opinions and/or attitudes. Few respondents would, however, have insight into the complexity of a particular phenomenon to make informed proposals to address problem areas.

In media research, surveys are also inappropriate where questions regarding the contents of media products are investigated. Surveys can, for example, not answer questions on the foreign and/or local contents of television schedules or the violent contents of particular programmes. Again, survey research can only provide information on respondents' behaviour (e.g. whether they watch particular programmes or not), opinions and/or attitudes on such phenomena.

10.5 STEPS IN SURVEY RESEARCH

The steps in survey research are discussed here in order to indicate the complex nature of the decisions that have to be taken at each stage. The steps are, however, not necessarily in chronological order. The following basic steps are followed in most questionnaire surveys (Neuman 2006; Van Vuuren, Maree & De Beer 1998):

Formulate the research question or problem, subproblems and/or hypotheses.

In survey research a deductive approach is usually followed (Neuman 2006). That means that the researcher begins with a research question and/or problem and ends with empirical measurement and data analysis. Research questions usually follow from an idea that requires research. Especially in academic environments, the idea could represent a personal preference or interest of a researcher. Experienced researchers in a particular field usually have such a proliferation of research ideas that they cannot research them all. In the end, the curiosity and creativity of the researcher play an

important role in identifying research ideas. In institutional and marketing research environments, the research problem is usually predetermined by the needs of an institution or particular clients. In audience measurement, for example, the research questions are determined by the needs of the media and marketing industries. Whatever the case, the research question is the rudder that steers the boat and determines the nature of the journey. Every single step in a survey is determined by the aim of a study as represented by the research question or problem, subproblems and/or hypotheses. This means that, in the absence of absolute clarity on the aim of a survey study, the researcher(s) will fumble in making the crucial decisions involved with each of the other steps.

Answer the question: Is a survey a viable and/or the most appropriate methodology to investigate the research problem?

Again, at this stage the researcher must seriously consider whether the research question indeed addresses one or more of the aspects that can be investigated by means of survey research as discussed in section 13.3. If not, it should be considered whether an alternative methodology would not be more appropriate.

Study the literature.

Now the researcher has turned his or her research idea into an acceptable research question, problem, subproblem(s) and/or hypotheses. The researcher has also established that survey research is indeed a viable method to provide answers on these. What now? How do one start? Before starting with the real business of conducting a survey, the wise and sensible researcher will have a look at what other researchers have done in the field. This is done by doing a thorough review of the available literature. Reading of the available literature should be both extensive and intensive. Students often say that they could find nothing in the literature relating to their study. That usually means that they did not search hard enough, did not make use of modern technology available for literature searches or did not use the available facilities correctly. Even in the case of experienced researchers it is wise to seek the assistance of a subject librarian. The survey researcher, in particular, should search for articles and/or reports that describe other survey studies that have been done on the same topic or related topics. How did these researchers approach the topic(s)? Which questions did they ask and how did they ask questions on relevant issues? In doing so, the researcher will get a good idea on what has worked for other researchers and what has not.

Do some homework and investigative research.

Apart from studying the literature, it is also a good idea to talk with experts and/or experienced researchers in the field. There are some tricks of the trade that are not written in textbooks, articles or reports. Many researchers also conduct investigate research, usually of a qualitative nature (see chapter 11). Interviews can be conducted with people that can offer insight into the topic and/or

problem under investigation. Focus group interviews with people representative of the population could furthermore help the survey researcher to get a grasp on the problem area or the variety of issues at stake. Such research will help the researcher to set relevant questions in the questionnaire (Bailey 1987).

Identify the target population and accessible populations.

The nature of the population is another factor determining most of the other steps and decisions in the process of survey research. The nature of the population should also be taken into account in the construction of the questionnaire and the formulation of questions. It is therefore imperative to identify and describe the target and accessible populations clearly and unambiguously (see section 13.6.1).

Decide on the type of questionnaire survey to be employed, and when, where and how the survey will be conducted.

The aim of the study and the nature of the population should be considered when decisions on the nature of the survey are made. In addition, all kinds of practical considerations such as the time factor and the availability of financial and other resources should be taken into account in order to ensure the success of the survey. Various types of surveys as well as their strengths and imitations are discussed in section 13.7.

Decide on the sample size, the type of sampling and the procedure of sampling to be employed.

Sampling is pertinent to questionnaire surveys. Both the reliability and validity of a survey depend largely on the type and procedure of sampling employed, and on the size of the sample. The survey researcher should therefore have a thorough knowledge of both the techniques of survey research, and the theory of sampling. Once again, in the case of complex populations, the researcher should not hesitate to obtain the service of sampling experts (usually statisticians who specialise in sampling). Sampling is further discussed in section 13.6.

Draw the sample.

After deciding on the sample size, the type and procedure of sampling, the procedure should be applied meticulously in every step of drawing the sample. No shortcuts should be taken, otherwise both the reliability and validity of the survey could suffer (see section 13.9).

Construct the questionnaire.

The quality and usefulness of the data obtained will depend largely on the quality of the questionnaire. The questionnaire is the survey researcher's methodological instrument just as the scalpel is the instrument of the surgeon. It is imperative that this instrument should be sharp and effective. The researcher should therefore carefully consider the issues to be covered in the questionnaire, the

wording and format of each question, the logical order of questions, and so forth. More information on questionnaire construction is provided in section 13.8.

Pilot-test the questionnaire; obtain the opinions of experts.

As already indicated, no questionnaire researcher should ever depend solely on his or her own insight, knowledge and/or expertise when constructing a questionnaire. Other experts on questionnaire construction and experts within the field of investigation should be consulted. Even after the insight and advice of such experts have been obtained, the questionnaire should be pilot-tested and adjusted according to the insights that the pilot-testing yielded before the final layout and printing are done. No changes can be made to a questionnaire once it has been printed or copied. Care is therefore necessary to ensure that data obtained by means of the final questionnaire will indeed meet the expectations of the researcher and other stakeholders. One of the techniques of pilot-testing is to ask a small number of people that are representative of the population to complete the draft questionnaire. After having done so, the researcher conduct interviews with the respondents in order to establish whether they experienced any problems with the questionnaire, whether there were any instructions, questions, words and/or phrases that they did not understand, and so forth. In doing so, potential problems with the questionnaire can be identified and rectified before the printing of the final questionnaire proceeds.

Do the layout of the questionnaire.

The technical layout of a questionnaire should be carefully done as the electronic capturing of the data depends on the correct layout. Researchers are advised to consult with the persons who will be responsible for data capturing in order to ensure that the layout meets their requirements.

Train interviewers and conduct interviews.

Once the questionnaire has been finalised and printed or copied, the researcher reaches the stage where the actual survey can be conducted. If the type of survey requires the involvement of interviewers, thorough training of interviewers is imperative to ensure that the interviewers will follow the sampling instructions meticulously and conduct the interviews according to the requirements of the researcher.

Code open-ended questions.

Once all the questionnaires have been completed and returned, open-ended questions have to be coded in order to allow for the electronic capturing of the data. (Closed or structured questions are usually presented in coded format in the questionnaire.) Principles similar to those for the thematic coding of text in content analysis are followed (see Cooper & Schindler [2001:424-434] for guidelines on the coding of questions.)

Capture the data in electronic format.

After the coding of open-ended questions, the data can be captured electronically. Most statistical packages nowadays have a program that enables researchers to capture the data themselves. However, mistakes in the capturing of data imply faulty data from which wrong conclusions could be drawn. The capturing of data should therefore be meticulously controlled in order to ensure that each respondent's responses are captured correctly. If fairly large samples are involved, it is usually too time-consuming for the individual researcher to capture the data. In such cases researchers make use of professional data-capturing services.

Do the statistical analysis of the data.

This is stage to which all survey researchers are looking forward to! Finally, the researcher will be able to see what answers the data yield on the research question(s). As already mentioned, questionnaire data are essentially statistical in nature. Statistical analysis enables the researcher to summarise the data and draw relations between variables. Nowadays, a number of user-friendly statistical packages such as the Statistical Analysis System (SAS) and Statistical Software for the Social Sciences (SPSS) are available. Analysing the data themselves is usually an immensely fulfilling experience for researchers who have been involved in the project from the beginning. However, the user-friendliness of statistical packages can be misleading. Researchers should have a sound background in the underlying assumptions and premises of the statistical techniques that they use. If they do not have the knowledge or expertise to do the data analysis, a statistician should be consulted.

Interpret the statistics and draw conclusions.

Whereas the statistical analysis of the data could be done by a statistician, it is the responsibility and privilege of the researcher (sometimes with the help of a statistician) to interpret the data and draw conclusions in the light of the initial aim of the study.

Disseminate the findings.

The final stage of the research venture is perhaps the most important. All the trouble taken with the previous steps will be in vain if the research findings are not appropriately disseminated and applied in decision making. The form in which the findings will be reported, will depend on the aims of the study and the stakeholders involved. Academic research is usually reported in the form of dissertations, theses, conference papers and articles published in academic journals. In commercial settings, concise executive summaries of the most important findings are often preferred. Oral presentations, which allow the researchers to interact with groups of stakeholders on the findings, represent another popular form of dissemination. A researcher should always be ready to adapt the reporting of findings according to the needs of particular stakeholders.

Again, it needs to be emphasised that the steps as discussed in this section do not necessarily need to follow in the same order. Although it is, for example, essential to develop a questionnaire before there can be any question of data gathering, the sample-drawing procedure and the development of the questionnaire could quite feasibly proceed simultaneously. After the pilot-testing of the questionnaire, the researcher will probably go back to the questionnaire development phase to address problems that have been identified in the pilot-testing. And this does not mean – nor is it advisable – that the researcher should take full responsibility for each phase. Good questionnaire surveys are usually a team effort rather than a solo flight. Few researchers have the expertise and capacity to conduct every step in survey research successfully on their own. A survey researcher should therefore not hesitate to seek the advice and assistance of experts when needed.

10.6 SAMPLING

If you go for a blood test, the nurse will only take only a sample of your blood. As your blood is exactly the same throughout your body, the sample will be sufficient to provide information on the state of your health. More or less the same principle applies to sampling in questionnaire surveys. If, for example, you want to study the radio listening behaviour of the South African public, it is hardly possible to interview every member of the public. You will therefore have to take a so-called sample of the South African public.

The main motivations for sampling in survey research are time and cost. Theoretically it might be possible to interview every member of the sector of society that you are interested in. For example, in the population censuses that are conducted at regular intervals in South Africa, the underlying principle is to obtain information about every person who sleeps within the borders of South Africa on a particular night. Unfortunately surveys where you interview every member of the population are in most cases too expensive and time consuming and just not practically possible. Survey researchers therefore make use of sampling methods to select a subgroup of the population, the members of which are then interviewed. Sampling as practised in survey research is, however, more complex than taking a blood test. Unlike the blood in your body, the members of most societies are not the same throughout, but tend to differ on a variety of characteristics from one another. Societal variety and heterogeneity are indeed some of the most difficult problems that sampling practitioners have to deal with.

10.6.1 Important concepts in sampling

Before we discuss methods of sampling in greater detail, you should acquaint yourself with the vocabulary used when sampling methods are discussed (Babbie 2001; Neuman 2006).

[units of analysis]*Unit of analysis*

A sample is drawn from a larger pool of cases or elements. The sampling elements are called units of analysis. In media research the units of analysis are usually individuals as most media researchers are interested in people's media behaviour, media consumption or reactions towards the media. The units of analysis could, however, also be organisations. A researcher can, for example, be interested in how various newspapers deal with race-related issues. Here the focus of interest is not the opinions of individual journalists that work for a particular newspaper, but the official policy of the newspaper itself. The questionnaire will therefore be sent to the offices of newspapers. The questionnaire can be completed by the editor or any other person that have the expertise to answer the questions. Only a single questionnaire will be completed for each newspaper. The unit of analysis will therefore be newspapers. In content analysis, the units of analysis are often newspaper articles, television programmes, policy documents, television schedules, and so forth.

[population or surveys]*Population or universe*

The larger pool from which a sample is drawn, is called the population. The term "universe" is often used interchangeably for the population. The term "population" as used in sampling should not be confused with the general way the term is used in the layman's world. In sampling, it is imperative to define the population very precisely. In the case of the All Media and Products Survey (AMPS) conducted by the South African Advertising Research Foundation (SAARF), the population is all members of the South African public of 16 years or older (SAARF sa). Three aspects are usually specified in the definition of the population :

- The units of analysis – in the example of AMPS the units of analysis are individual members of the society.
- Geographic location – in AMPS only people residing in South Africa are included in the population.
- Temporal or other boundaries – in AMPS the population is limited to individuals of 16 years or older, that is persons born before a specific date.

In delineating the population of a study, vague terms such as "adults" or "teenagers" should be precisely defined by specifying age limits. When a term such as "university students" are used, it should, for example, be indicated whether both full-time and part-time students, undergraduate and postgraduate students, university students and/or students of technical colleges, and so forth, are considered. In short, there should be no ambiguity or uncertainty on who is included in the population (or universe) and who is excluded.

[target and accessible population]*Target and accessible population*

Apart from the terms sample and population, a distinction is sometimes drawn between the target and the accessible population. Whereas the target population refers to the total pool or section of society that we are interested in, the accessible population refers to that section to which we have access in order to draw a sample. Let us take the example of the researcher who wants to study the opinions of the South African public on the SABC. The target population in this case is all adult members of the South African public of 16 years or older. However, because of time and cost constraints, the researcher decides to draw a sample from the readily available address list of South Africans who pay television licences. In this case the accessible population is all the members of the public whose names appear on this address list.

The definitions of the target and accessible populations have serious implications for the generalisation of the results of a study and therefore the impact and applicability of the results (Du Plooy 2001). For example, if you draw a sample only from the names on the address list of people who pay television licences, you will only be able to generalise the findings to the people on the list.

[sampling frame]*Sampling frame*

A sampling frame is the list or quasi list that closely approximates all the elements or units of analysis from the population (Neuman 2006). If a sample is, for example, drawn from the address list of people who pay television licences, this list of addresses represents the sampling frame. The sampling frame plays a cardinal role in drawing probability samples. Examples of sampling frames are telephone directories, tax records, lists of the students registered at a particular university, the list of employees of an organisation, and so forth. Most techniques in probability sampling depend on the availability of a sampling frame. It is furthermore only possible to draw generalisations to the population represented by the sampling frame. A good sampling frame is therefore cardinal to good sampling. A mismatch between the conceptually defined population and the sampling frame can give rise to invalid sampling and sampling error.

[sampling ratio and interval]*Sampling ratio and sampling interval*

The sampling ration is the sample size to the size of the population, that is the number of names on the sampling frame (Neuman 2006). For example, if the population consists of 50000 people and a researcher draws a sample of 1000, the sampling ration is 1:50. Thus the sampling ratio is the number of elements in the population divided by the number of elements in the sample. The sampling interval represents the standard distance between the elements selected for a sample. Given a sampling ratio of 1:50, every 50^{th} element in the sampling frame will be selected. The sampling interval is therefore 50. The sampling ratio and sampling interval play an important role in probability sampling techniques such as systematic sampling.

[sample size]*Sample size*

A common worry among questionnaire researchers is how large a sample should be in order to conduct a reasonably good survey (Nardi 2003). There is no simple answer to this question. Some textbooks offer formulae to calculate the desirable sample size. It is, however, the experience of this author that such formulae are seldom used in practise. Decisions on sample size are rather determined by practical considerations such as financial, manpower and time constraints. The type of survey is also an important factor. As internet, postal and self-administered surveys are relatively simple and cost-effective, it is possible to involve relatively large samples. Face-to-face interviews are, however, expensive and labour-intensive endeavours and financial and manpower considerations will play an important role in decisions on sample size (see section 13.7).

There are a number of considerations to keep in mind. The first is rather simple: the larger the sample, the better. Sampling error is bigger when generalising from a small sample to the population (see section 10.10). According to Kerlinger (1986:119), probability sampling techniques require that the sample should be sufficiently large to give the principles of randomisation "a chance to 'work'" (see section 10.6.2). Bigger samples also have larger statistical power in the testing of hypotheses. However, if nonprobability sampling techniques are used, the sample size does not matter as much (see section 10.6.3). A large sample size will not correct the bias inherent to nonprobability sampling. Regardless of the sample size, generalisation to the population will not be possible (Nardi 2003).

The nature of the population that is being studied should also be kept in mind (Nardi 2003). When a population is relatively homogeneous, a smaller sample can be acceptable. Also, if it is expected that all members of the population think or behave more or less the same, that is when there is not large variation in the phenomena being studied, a smaller sample could sufficiently reflect the population. However, larger samples are required for heterogeneous populations (e.g., the South African population) and where large variations in the phenomena being studied are expected.

Another important consideration is the kind of statistical analyses you are planning to do. A smaller sample size can restrict the choice of statistical analyses that can be conducted. If you are planning to compare subgroups such as gender, age or racial groups, the sample size should be big enough to ensure a sufficient representation of these subgroups. A minimum sample size is also required to conduct more sophisticated statistical analyses such as factor analyses. In order to prevent later disappointment, it is therefore recommended that a statistician should be consulted in making decisions on sample size.

10.6.2 Probability sampling

In survey research we distinguish between two types of sampling, namely probability and nonprobability sampling (Babbie 2001; Neuman 2006). The terms random and non-random sampling are also used. The term "random" refers to a mathematical process that yields a mathematical random

result, that is an outcome which has no distinctive pattern. In a true random sampling process, each element or unit of analysis in the population has an equal chance of being selected for the sample.

[random and non-random sampling] In most cases, random or probability samples require more work and effort than non-random samples (or nonprobability samples). Some of the most tiresome tasks are to acquire or compile a sampling frame and to reach each of the elements selected for the sample to complete the questionnaire. However, probability samples are in most cases superior to and preferred above non-probability samples. Firstly, probability sampling avoids a researcher's or fieldworker's conscious or unconscious bias in selecting respondents. It is consequently more likely to generate a sample that will be truly representative of the population. Probability sampling furthermore enables the researcher to use powerful statistical techniques in the analysis of the data and to generalise the findings to the population. Several options are available for drawing a probability sample.

[census-type sampling]*Census-type sampling*

When the pool from which elements are drawn is relatively small, the researcher can consider to include all the elements in the study. Such studies are called census-type studies (Kotzé 2004). For example, if a researcher investigates the internet-usage behaviour of the employees of a small organisation, all employees can be asked to complete the questionnaire. (Of course, it will seldom be possible to involve each and every employee. Some might be sick or on leave during the period when the study is conducted, while other might simply refuse to participate.) As a rule of thumb, a census-type study should be considered when the population has 500 or less elements. In the case of larger populations, a census-type study can be considered when the manpower and financial resources are available and one of the easier methods of interviewing such as self-administration is employed.

[simple random sampling]*Simple random sampling*

Simple random sampling is what the term indicates. It represents the simplest way of drawing a probability sample (Babbie, 2001; Neuman 2006). For this form of probability sampling an accurate sampling frame needs to be obtained whereafter elements listed in the sampling frame is selected according to a mathematically random procedure. The simplest procedure is to throw all the names in a hat or other container, shuffle the names and draw elements for the sample one by one. More advanced techniques require that each name in the sampling frame is numbered. If there are 100 names on the list, 100 numbers are required. A table of random numbers is then used to draw the sample. Tables of random numbers and exact descriptions of the sample drawing procedure can be found in most general research and statistical handbooks (see the list of recommended books). If the sampling frame is available in a form that can be read by a computer program (e.g. a computer database, a DVD or CD or any other form of computer disc), a simple random sample can be drawn by means of a computer program. In practice, the computer program numbers all the elements in the

sampling frame, generates its own list of random numbers and prints out the list of elements selected. Although simple random sampling is the purest form on which all other forms of probability sampling are based, it is often not practical to implement.

[systematic sampling]*Systematic sampling*

Instead of relying on random numbers, researchers often use systematic sampling when a list of elements (a sampling frame) is available. In systematic sampling, the sampling interval serves as basis for selecting elements (Babbie 2001; Neuman 2006). Every k^{th} element in the total list is selected. For example, if the list contains 10 000 elements and a sample of 1000 is required, every 10^{th} element would be chosen. The sampling will start with any random number between 1 and 10. In order to avoid any human bias, it is important to select the first element at random. In order to select a random starting point between 1 and k, the person responsible for drawing the sample, often closes his/her eyes and points (with closed eyes) to a number between 1 and k. The element having that number is included in the sample and from there on every k^{th} element is selected.

In most cases, simple random sampling and probability sampling will yield similar results. However, systematic sampling is sometimes not desirable where there is a cyclical pattern in the way elements are listed in the sampling frame. Babbie (2001) quotes in this regard the example of a classical study conducted during World War II where every 10^{th} soldier was selected from unit rosters. The rosters were, however, arranged squad by squad with the sergeants first, then corporals and then privates. Each squad had 10 members. The end result was that the systematic sample contained only sergeants. If another random starting point was used, the sample could − for the same reasons − have contained no sergeants at all which is also not desirable. When a systematic sample is considered, the sampling frame should therefore be examined carefully. If the elements are arranged in a specific order, the researcher should ask the question whether the order would bias the sample in any way.

However, Babbie (2001) regards systematic sampling not only as more convenient , but also as superior to simple random sampling in most cases. Systematic sampling is furthermore often used in combination with other forms of sampling − see in this regard the discussions of stratified sampling and multistage cluster sampling.

[stratified sampling]*Stratified sampling*

Stratified sampling is a different but effective approach to probability sampling (Neuman 2006; Rosnow & Rosenthal 1996). The researcher firstly divides the population into subpopulations (also called substrata) on the basis of supplementary information on the population. After dividing the population in relevant strata, a random sample is drawn from each stratum – usually by means of systematic sampling. In doing so, the researcher controls the relative representation of each stratum in the final sample instead of allowing random processes to do it. The result is a more representative

sample of the population than would normally be yielded by means of simple random sampling. However, prior knowledge of the population is required.

A simple example is a population of 10 000 that consists of 55% males and 45% females. If a sample of 1 000 is required, a proportion of 550 (55%) will be drawn randomly from the male elements and 450 (45%) from the female elements. If a simple random sample is drawn, the composition of the final sample could deviate from the true gender ratio in the population.

Stratified sampling is, among others, used when the researcher has reason to believe that a certain group (or stratum) of interest could differ from others with regard to the topic under investigation. The researcher could, for example, believe that the media behaviour of rural people could differ from those of urban people. It is also used when certain strata are relatively small in number in comparison with others. When drawing a simple random sample, the smaller strata could altogether be "missed" by the random procedures. For example, a researcher investigates the media attitudes of students of the Department of Communication Science of Unisa. However, as Master's and Doctoral students form only a very small portion of the total number of students, it could happen that no students from this stratum could be included in the final sample if simple random sampling is applied. Stratification could ensure a fair representation of this group.

[multistage cluster sampling]*Multistage cluster sampling*

Multistage cluster sampling is a complex form of sampling usually employed for diverse and geographically dispersed populations where no sampling frame is available (Neuman 2006; Pitout & Du Plooy 2001). This form of sampling is mostly employed in large-scale surveys of a whole country or a particular region. As the term indicates, the sampling process involves various steps or stages.

Cluster sampling closely resembles stratified sampling in the sense that the population is divided into "blocks" or "clusters" in the first stages. The difference is, however, that the clusters are treated temporarily similar to elements in a population. A sampling frame of clusters − and not of individual elements − is therefore required. In national or regional surveys, the existing official division of the country into census enumerator areas are often employed for clustering purposes.

In a second stage, the clusters − which are still treated similar to individual elements − could be stratified according to relevant substrata. In South Africa, clusters are usually stratified according to the various provinces as well as rural and urban areas. Racial group membership could furthermore serve as a basis for stratification. Once stratification of the clusters has been done, a certain number of clusters is drawn randomly − usually by means of systematic sampling − for each substratum similar to the process of stratified sampling.

In the next step or stage, a number of households is systematically drawn within each of the clusters selected for the sample. The exact number of households to be drawn will depend on a number of factors such as the sample size, the number of households that can be comfortably completed by a single fieldworker or a team of fieldworkers during the survey period, and so forth. In the end, the

households can be seen as smaller clusters within the larger clusters usually represented by census enumerator areas.

The last stage involves selection of one of the household members within each selected household. The question here is who to choose. The first instinct of a fieldworker could be to select the first person he or she encounters such as the person that opens the door. This could, however, lead to sample bias as certain household members are less likely to be at home during certain hours. Working people are, for example, not likely to be at home during daytime. A random procedure for within-household sampling therefore needs to be followed. There are various techniques available to do so. In most South African surveys a selection grid is used. Household members that fulfil the sample requirements are listed from the eldest to the youngest (or the other way round) and a number is allocated to each one. A specific number (representing a household member) is then selected on the basis of the number allocated to the household according to the order in which households have been selected or visited in the larger cluster. Other techniques of simple random sampling can also be employed.

Cluster sampling is less expensive for large and geographically dispersed populations than simple random sampling. The reason is that the individual elements within a cluster are physically close to each other. If a simple random sample is drawn and the elements are widely dispersed over a large geographical area, it would be very expensive to travel to each selected respondent. Multistage cluster sampling is, however, less accurate than the other techniques of probability sampling. Sampling error can occur in any of the different stages. It is nevertheless the sampling method used in most large-scale surveys. A complex method of multistage cluster sampling is, for example, followed in the AMPS studies conducted by SAARF (see section 13.11 - SAARF sa).

Overall, random sampling involves much more work than the techniques for nonprobability sampling. A probability sample is, however, usually preferable above a nonprobability sample because it enhances the reliability and validity of the findings (see section 13.10), it enables the researcher to use powerful statistical techniques in the analysis of the data and to generalise the findings to the population. The best possible sample for a particular study is usually well worth the time, cost and effort.

10,6.3 Nonprobability sampling

Despite the advantages of probability sampling, some research studies are conducted in circumstances that do not allow for random selection of elements. In some studies probability sampling is also inappropriate. Suppose you want to study the information needs and media usage patterns of migrant workers. Probability sampling will not be possible as no list of migrant workers exists. Such cases call for nonprobability sampling.

[quota sampling]*Quota sampling*

Quota sampling is often used in audience and marketing research (Babbie 2001; Mytton 1999). Of all the nonprobability sampling techniques, quota sampling shows the closest resemblance to probability sampling as it is modelled on the principles of stratified sampling. It is, however, not a true probability sampling technique. Quota sampling is used when interviewers need to look for fixed numbers of respondents of different categories or types. The variables involved are typically gender, age, housing type, social class, housing type or ethnicity. Quotas (the number of respondents to be interviewed for each category) are calculated for each category of each variable that are regarded as relevant for the particular study. One interviewer may, for example, be instructed to interview 10 male respondents in the age group 18 to 25 years that fall in the high socio-economic group. Another may be given the task to interview 10 female respondents of the same age and socio-economic group.

The sampling process usually starts with a matrix or table of variables important to the study as well as information on the distribution of the population with regard to these variables. If a researcher wants to study the cellphone usage behaviour of teenagers from 12 to 18 years old, there are various characteristics that could be important such as socio-economic background, age and gender. On the basis of the population proportions of each cell in the matrix representing these variables, a quota of the sample (a decision on the size of the sample should be made beforehand) is allocated to each cell of the matrix. That means that the researcher will need to know, for example, what percentage of the population is 12 year old, male and belongs to the higher socio-economic group. Information on proportional distributions is necessary for all possible combinations of the variables at stake, that is for all cells in the matrix.

Quota samples generally take less time and are cheaper than probability samples (Mytton 1999). Interviewers in surveys using quota sampling also complete many more interviews per day than when they need to seek specific individuals according to a random sampling plan. For these reasons, quota sampling is used in many commercial and marketing surveys. Interviewers are often seen with clipboards in shopping malls searching for respondents that fulfil their quota requirements. Often, when a respondent does not meet these requirements, the interview is politely ended.

Despite its resemblance with stratified sampling, there are several problems inherent to quota sampling. It is firstly, as already mentioned, difficult to obtain information on relative population proportions. It is therefore difficult to compile quota frames (the matrix with proportions for different cells) that represent a population correctly. The selection of sample elements could furthermore be biased even if correct information on cell proportions can be obtained. Fieldworkers instructed to find respondents fulfilling a complex set of characteristics, could introduce bias in several ways. They could select and interview respondents that are easily available such as family members, friends, people in their neighbourhood, church, and so forth. Fieldworkers will also tend to avoid people in places difficult to reach (e.g. people living in high-rise buildings) and those living in remote areas. If those people that are more accessible differ with regard to the topic of the study from those living in

difficult-to-reach places, the findings could be biased. Interviewers can furthermore refrain from approaching people that look unfriendly or seem too busy. A further source of bias is the places where selections are made. Quota sampling done in shopping malls, for example, will be biased towards people that tend to spend more time in these malls.

There are, however, techniques that can be used to reduce the bias associated with quota sampling. The researcher can, for example, vary the places where respondents are sought. Some people can be selected at homes and others at places of work. In recent years, quota sampling is often combined with probability sampling techniques such as cluster or systematic sampling. Fieldworkers are, for example, instructed to systematically visit homes in particular selected residential areas where they should attempt to find respondents fulfilling their quota requirements. The problem is, however, that it is difficult to estimate the representativeness of such hybrid sampling designs. At the same time, the logic of quota sampling can be applied to other research designs. When studying an organisation, representatives of different levels of management as well as employees can be interviewed, both men and women, and so forth.

[random digit dialing (RDD)]*Random-digit dialing (RDD)*

The telephone has become an important tool in audience and marketing research. Random-digit dialing is a sampling technique used for projects where the general public is interviewed by means of telephone interviews (see section 13.7.6 − Mytton 1999; Neuman 2006). Although telephone directories can serve as sampling frames, a number of groups are missed when telephone directories are used: people without telephones; people who have recently moved; people with unlisted numbers; people in hostels; people who only have cellphones; and so forth. People without telephones are perhaps the most important group in this regard as they represent the poor, the uneducated, the transient. These people would be difficult to reach in any telephone survey. However, in most developing countries ownership of mobile phones is more widespread than landline telephones.

When using RDD, the focus is on telephone numbers and not on directories. In South Africa, landline telephone numbers have three components: a three-digit area code (municipal area); a three-digit residential area code; and a four-digit number. Similar to landline numbers, cellphone numbers also have 10 digits. A computer program is used to randomly generate telephone numbers: landline numbers, cellphone numbers, or both. A problem is that the program can select any number. This means that some selected numbers would be out of service, disconnected, payphones, or numbers of businesses. Until an interviewer calls a particular number, it is not possible to know whether it really is what the researcher wants, namely the number of an individual or household. This could mean that a lot of time and money can be spent on making calls to numbers that do not yield any interviews. Some research organisations make use of a computer program that dials the numbers automatically. However, it is still necessary that a human must listen to find out which numbers are individual or residential numbers.

As mentioned already, the sampling element in RDD is telephone numbers and not individuals. As in the case of multi-stage cluster sampling, interviewing in all cases the person that answers the telephone would give rise to sample bias. A secondary stage of within-household sampling is consequently necessary to select the person to be interviewed.

When landline numbers are drawn, it is possible to stratify the sample according to municipal areas and/or residential areas. Stratification is, however, generally not possible in the case of cellphone numbers. The most important reason why RDD cannot be regarded as a true probability sampling technique is, however, the fact that both landlines and cellphone penetration is often low among the poor and in far-off rural areas − particularly in developing countries. That means that some degree of sample bias is almost inevitable.

[convenience sampling]*Haphazard, accidental or convenience sampling: Reliance on available subjects*

Many survey studies rely on available subjects such as stopping people visiting a shopping centre, at street corners or in other locations, interviewing members of clubs or other organisations, and so forth. University lecturers, for example, frequently request students enrolled in their classes to complete questionnaires (Babbie 2001; Neuman 2006).

The ease and inexpensiveness of such selection techniques explain their popularity. However, these techniques do not allow any control over the representativeness of the sample. It is consequently not possible to generalise the findings to the population and to establish the general value of the data. Available subjects could be selected to pretest questionnaires. Although studies based on available subjects could yield valuable insights, care should be taken not to overgeneralise the findings.

[purposive sampling]*Purposive or judgmental sampling*

Purposive or judgemental sampling implies that elements are selected on the basis of knowledge of the population and the aims of the study (Babbie 2001). For example, a researcher wants to study the role of opinion leaders in a society. It would be difficult to identify all opinion leaders in order to compile a sampling frame. However, the researcher could decide to focus on the most visible leaders voicing opinions during community meetings and through the media. In doing so, sufficient data for the purposes of the study could be collected. Some researchers might also be particularly interested in deviant cases that do not fit regular patterns of attitudes and behaviour. A researcher might, for example, be interested to study the reasons why some South African children watch television during school hours (see chapter 15). In order to provide in-depth information on the phenomenon, it would be necessary to search for and select children involved in this form of deviant behaviour. Selecting such deviant cases, represents a form of purposive sampling.

[snowball sampling]*Snowball sampling*

Snowball sampling is appropriate when the members of a special population are difficult to locate such as homeless people, migrant workers or undocumented immigrants (Babbie 2001). In snowball sampling, the researcher first interviews those individuals that he or she is able to locate. These members are then requested to provide information on or to locate other members of the population that they happen to know. The term "snowball" refers to the process of accumulating respondents as each located respondent suggests other potential respondents. The representativeness of such samples is, however, also questionable and the technique should only be used in exploratory studies.

[volunteer sampling]*Volunteer sampling*

Some researchers call for volunteers to participate in their research (Rosnow & Rosenthal 1996). For example, ethical guidelines at universities sometimes prohibit lecturers to pressurise students to participate in research projects and they therefore make an appeal on students to volunteer to participate in a study.

In recent years, researchers have come to know a great deal about the differences between typical volunteers and nonvolunteers in research studies. Rosnow and Rosenthal (1996:204) name the following:

- Volunteers tend to have higher levels of education than nonvolunteers.
- Volunteers tend to have a higher social status than nonvolunteers.
- Volunteers tend to be more intelligent than nonvolunteers.
- Volunteers tend to have a higher need for social approval than nonvolunteers.
- Volunteers tend to be more arousal-seeking than is the case with nonvolunteers.
- Volunteers tend to be more unconventional than volunteers.
- Women are more likely to volunteer than men.
- Volunteers tend to be less authoritarian than nonvolunteers.

The differences between typical volunteers and nonvolunteers imply that sampling bias is virtually inevitable when making use of volunteers. Apart from the general differences between volunteers and nonvolunteers, it is furthermore difficult for a researcher to establish whether there are important differences between the two groups with regard to the topic of a study. For example, if a researcher makes use of volunteers to investigate students' attitudes towards soap operas, the volunteers might be predominantly soap opera addicts, while students not really interested in soap operas, could refrain from participating. If that is indeed the case, the use of volunteers can give rise to biased findings and conclusions. Of all the nonprobability sampling techniques, volunteer sampling is probably the least desirable. It should be avoided if possible.

In conclusion it can be said that nonprobability sampling has its uses for certain research projects within particular contexts (Babbie 2001). However, researchers should at all times be aware

of and acknowledge the shortcomings of nonprobability sampling techniques especially with regard to the accurate and precise representation of the population.

10.7 TYPES OF QUESTIONNAIRE SURVEYS

Since survey research is used for a wide variety of purposes in a multitude of contexts, various types of interviewing may be used. Each of the interviewing types has particular advantages and disadvantages. The choice of a type of survey will depend on several factors such as the aim of the study, the geographical distribution and characteristics of the population, the financial, human, technological and other resources available, and so forth. A sound knowledge of the advantages and disadvantages of each type is a prerequisite for making informed choices.

10.7.1 Self-administered surveys

In this type of survey, questionnaires are usually handed directly to respondents. The respondents have to read the instructions and complete the questionnaires by themselves − usually in their own time and at their convenience. They can also check personal records if necessary (Babbie 2001; Neuman 2006). The advantages of self-administered surveys are the following:

- Self-administered surveys are by far the cheapest and easiest way of conducting surveys. As self-administered surveys are also relatively simple to organise, they can be conducted by a single researcher. These considerations are usually important for poorly funded students and university lecturers.
- The response rates may also be high for well educated populations who have a strong interest in the topic of a survey.
- Respondents might furthermore be more willing to respond to questions on sensitive issues in self-administered surveys than when they are interviewed.

Self-administered surveys hold, however, several important disadvantages:

- Self-administered surveys are not really appropriate for populations where relatively large numbers of people are illiterate or semi-literate. In order to complete a questionnaire, a person needs to be able to read and comprehend both the instructions and questions. Open-ended questions furthermore require a person to express his or thoughts in words and to be able to write these down. If a person has not reached a sufficient level of literacy, his or her responses could be unreliable.
- Self-administered surveys are not a good option for surveys with complex questionnaires.
- Where questionnaire are completed in private, the researcher has no control over the conditions under which questionnaires are completed and does not know who really completed the questionnaire. A respondent can, for example, complete the questionnaire in a noisy bar where

fellow drinkers may also render their inputs on the questions asked. A respondent can also assume a bogus identity in the questionnaire.

- Nobody is available to clarify questions or to provide assistance when needed.
- Poor questionnaire completion where some questions are not answered is another serious problem. Poorly completed questionnaires are regarded as a source of nonreponse error. Where completed questionnaires are picked up individually by the researcher or a fieldworker, the questionnaires can, however, be checked for full completion before it is received back.

10.7.2 Postal surveys

Postal surveys constitute a specific form of a self-administered survey. The questionnaires are posted to the respondents and the respondents have to complete the questionnaires and return them to the researcher. A stamped and addressed envelope is usually included for posting the completed questionnaire back to the organisers (Babbie 2001; Neuman 2006; Van Vuuren & Maree 1999).

Postal surveys hold the same advantages as other forms of self-administered surveys. Particular advantages to postal surveys are the following:

- It is probably the cheapest form of surveying. For the price of an envelope and two stamps, a questionnaire can be sent to any address in the country.
- A further important advantage is that questionnaires can be distributed over a wide geographical area.
- A postal survey is, in particular, convenient where an address list of the population is available.
- It furthermore offers anonymity and avoids interviewer bias.

However, apart from the disadvantages associated with self-administered surveys in general (see section 13.7.1), a major problem with postal surveys is that response rates are usually very low. Questionnaires can furthermore trickle in over a long period of time. For these reasons, postal surveys are rarely used in market and audience research (Van Vuuren & Maree 1999).

Several techniques can, however, be employed by researchers in an attempt to raise response rates. A number of reminder letters are usually sent out, but add to the cost of the survey. Various incentives can also be offered to encourage respondents to complete and return questionnaires. Sometimes respondents are promised that their names will be entered into a prize draw once their questionnaire has been received back. An ingenious form of incentive was offered in a recent survey conducted on behalf of Elsevier Publishers among authors who had published articles in the journals published by them. The publisher undertook to donate a particular amount to a charity on behalf of the respondent if he or she completes and returns the questionnaire. The respondent could even make a choice between three charities. In this way, an appeal was made on the conscience of the respondent to make sure that a charity of his or her choice does not lose an amount of money due to the fact that he or she has not completed and returned the questionnaire.

10.7.3 Group-administered surveys

The group-administered survey is yet another form of self-administered survey. Respondents are gathered in a group, questionnaires are handed out to each and the questionnaires are completed within the group situation. This form of surveying is particularly appropriate where the population lives or works closely together or gathers regularly for other reasons. It is often used by university lecturers who can ask students attending a class to complete a questionnaire during class time.

There are several advantages to this form of surveying:

- The most important advantage is that a large number of questionnaires can be completed within a relatively short period of time with a limited amount of effort.
- The researcher can furthermore control the circumstances under which the questionnaires are completed.
- The researcher or a fieldworker is also available to clarify instructions or questions and to render assistance where needed.

The presence of the researcher or a fieldworker could, however, be intimidating and make respondents feel that their anonymity is threatened. They could therefore feel less free to express their true opinions and feelings. This type of survey is therefore not appropriate for investigating sensitive issues. Interviewer bias could also result from the presence of the researcher or fieldworker.

10.7.4 Computer surveys

The development of computer technology has opened new ways for conducting questionnaire surveys. In this form of self-administered surveying the questionnaires are sent to the respondents via e-mail. After completion, the questionnaire is usually also sent back via e-mail. An important prerequisite for internet surveys is that all elements in the population should have internet access and a list of the e-mail addresses of the population should be available.

The technology that has been playing a major role in establishing international information highways, the internet, has indeed made global surveys possible. Questionnaires can be distributed with relative ease and speed to any e-mail address in the world. However, as a form of self-administered survey, internet surveys hold the same disadvantages as discussed in section 13.7.1. Similar to postal surveys, response rates can also be low for internet surveys and special measures should be taken to encourage the full completion and returning of questionnaires.

10.7.5 Face-to-face interviews

Face-to-face interviews are the original way of collecting survey data and is still used extensively today − particularly in media and marketing research (Van Vuuren & Maree 1999). Face-to-face interviews in questionnaire surveys should, however, be distinguished from qualitative in-depth

individual interviewing. Whereas it is possible to deviate from the interview schedule and to do probing in in-depth interviews, the interview in questionnaire surveys is usually focused on the completion of the questionnaire. Interviews are usually conducted at the homes of respondents by trained interviewers. The interviewer will assist the respondent to complete the questionnaire by asking the questions and recording the responses on a standardised interview schedule. Only the responses on the questionnaire are recorded. Additional information such as facial expressions is generally not important.

Although this method of questionnaire interviewing is probably the most expensive, it is in most cases superior to all the other types of surveying for the following reasons (Babbie 2001; Neuman 2006; Van Vuuren & Maree 1999):

- It is the most appropriate method in situations where members of the population are illiterate or semiliterate. In developing countries in South Africa, it is the only option for surveys that include, for example, rural areas where illiteracy is still prevalent.
- It allows the completion of relatively long and complex questionnaires.
- Visual prompts and other aids can be used.
- The circumstances under which questionnaires are completed are controlled closely. Fieldworkers can also verify the most important demographic details of respondents.
- The interviewer can provide clarification − in rural areas in South Africa, interviewers often need to explain questions in vernacular languages.
- The presence of an interviewer usually constrains "don't know" and other kinds of irrelevant responses.
- Poorly completed questionnaires are limited as interviewers are instructed that all questions should be completed for each respondent. In most cases interviewers are only paid for fully and correctly completed questionnaires.
- Response rates are usually high as interviewers are instructed and paid to implement the sampling plan and to complete the required number of interviews. Properly executed interview surveys usually achieve response rates of 80% or higher.

The disadvantages of face-to-face interviews include the following:

- The high costs involved with the recruiting, training and paying of interviewers and covering their travelling expenses – due to these costs, this kind of survey can seldom be afforded by individual researchers.
- A very important disadvantage is that the interviewer may influence the responses, especially in cases where sensitive or highly politicised issues are covered.

The interviewers are, indeed, a very important factor in face-to-face surveys (Babbie 2001). In large-scale surveys a relatively large number of interviewers are usually involved. They are usually paid per completed questionnaire, while their travelling and other expenses are also covered. Where a number of interviewers are involved, their efforts need to be controlled and a number of supervisors also need to be recruited, trained and paid. Both interviewers and controllers need to be properly trained in order to ensure that the sampling plan will be implemented correctly and that the questionnaires are completed in a way that will ensure that the survey yield data of a high quality. The interviewers also need to be sensitised to the fact that they should not act in a way that will influence or pressurise respondents to respond in a certain way.

Another golden rule is that interviewers − notwithstanding their position in society − should never be trusted completely even when they have been trained intensively. Survey interviewing is hard work and the temptation to cut corners is often irresistible. When seasoned survey researchers come together, stories abound on how they have been taken in by interviewers. The following incident is but one example. A researcher once conducted a survey in the Gauteng area among adults of 18 years older on issues related to social identification. In one census enumerator area selected for the study, a secondary school teacher was recruited as interviewer. This interviewer should have visited a number of selected households in the area and conduct one face-to-face interview per household. Instead, she handed the questionnaires out to the grade 10 learners in one of her classesans asked them to complete the questionnaires at home. This roguery was discovered when one of the learner's parents phoned the researcher to complain about the nature of the questions which she did not think were appropriate for children (the telephone number of the researcher was given in the introductory letter to the questionnaire).

In order to avoid knavish tricks like these and to ensure the integrity of the data, a telephone number and address is usually obtained for each completed questionnaire. Survey organisers usually go back to about 10% of the households where questionnaires were completed to ensure that the correct respondent was selected by means of the within-household sampling process, that an interview really took place, to control the correctness of demographic details, and so forth. However, to ensure the anonymity of respondents, the telephone numbers and addresses of respondents are usually not captured in the final data set.

10.7.6 Telephone interviews

Telephone interviews are another form of personal interviewing. However, in this instance, the interviewers conduct the interviews per telephone. In the developed world where telephone penetration is high, telephone surveys are often conducted as a cost-effective alternative to face-to-face interviews (Van Vuuren & Maree 1999). Telephone directories can serve as sampling frames or random telephone numbers can be generated by means of RDD (see section 13.6). However, due to

the relatively low penetration of both landline and cellular phones, in particular in rural areas, telephone interviews are less useful in developing countries.

The advantages of telephone surveys are the following (Neuman 2006; Van Vuuren & Maree 1999):

- Telephone surveys are a quick and easy way of surveying as a staff of interviewers can conduct a large number of interviews in a relatively short period of time.
- A wide geographical area can be covered − although the costs of an interviewer and a long-distance call will be more than the costs of the stamps required for a postal survey, telephone interviews avoid the disadvantages such as low return rates of postal surveys.
- As already indicated, telephone interviews have a high response rate, especially for short interviews.
- Telephone surveys work well for surveys on sensitive issues as a sense of anonymity is better retained than in face-to-face interviews.

The disadvantages of telephone surveys are the following:

- The amount and complexity of information that can be gathered is limited due to resistance to long telephone interviews. Telephone questionnaires should therefore be relatively short, simple and straightforward.
- Visual aids such as those employed in readership surveys cannot be used (see chapter 15).
- Long distance calls can be expensive, but the costs are usually less than for face-to-face interviews.
- The main drawback is, however, that sampling bias is almost inevitable where significant sections of the population do not have access to telephones. However, even in developing countries, telephone interviews can be used for populations with high telephone penetration such as urban populations.

10.7.7 New technological developments and survey interviewing

As we have already seen in the discussion of internet surveys, many of the new technological developments that influence people's lives, have also opened new possibilities for survey research. It is in particular recent innovations in computer technology that are making not only the work of interviewers easier, but also the completion of questionnaires in the case of self-administered surveys. Some of these techniques are the following (Babbie 2001:265):

CAPI (computer assisted personal interviewing) − As discussed in chapter 15, interviewers carry laptop computers with them and a respondent's responses is recorded on the computer.

CATI (computer assisted telephone interviewing) − This technique is basically the same as CAPI, but the interviews are conducted per telephone.

CASI (computer assisted self-interviewing) − A research worker bring a computer to the respondent's home and the respondents reads the questions and enters his or her responses on the computer.

CSAQ (computerised self-administered questionnaires) − The respondent receives the questionnaire on a computer disc or any other means, runs the software which asks the questions and accepts the respondent's responses. The data file is then returned to a research worker or the research organisation.

TDE (touchstone data entry) − The respondent needs to initiate the process by calling a number given by the research organisation. The call prompts a series of computerised questions which the respondents answers by pushing buttons on the telephone keypad.

VR (voice recognition) − Instead of using the telephone keypad as in TDE, the system is enabled to accept and record spoken responses.

Personal digital assistants (PDAs) − PDAs are electronic devices often used in media research (see chapter 15). They are pre-loaded with questionnaires and distributed to respondents. Respondents are required to carry the PDAs with them. At various times throughout the day the devices would ring, asking the respondents to complete a short questionnaire. After a pre-determined period the devices are returned to the research organisation for the off-loading of the data (Webster et al 2006).

According to Babbie (2001), research has indicated that these devices are generally more efficient than conventional methods such as the traditional pen-and-paper method of completing questionnaires. It furthermore does not appear that their usage gives rise to a reduction in the quality of data. Some of these techniques such as CAPI are nowadays used in audience measurement surveys such as AMPS (see chapter 15). However, as most of these techniques are relatively new, more research needs to be done to determine their impact on questionnaire surveying.

10.8 QUESTIONNAIRE DESIGN: THE ART OF ASKING QUESTIONS

There is an English saying: "If you ask a silly question, you get a silly answer" (Mytton 1999:37). This is nowhere more true than in the construction of questionnaires. As already mentioned, the questionnaire is the basic data gathering instrument of the survey. No matter how much care has been taken with all the other steps in survey research, if the questionnaire is not well constructed, the data

will be spoiled. Asking questions is therefore a crucial skill that survey researchers need to develop. It is unfortunately not a skill that is quick and easy to acquire. There is, however, a logic to questionnaire construction that can be learned with time, practise, experience and dedication.

The problem that questionnaire researchers has to deal with, is that human behaviour is wonderfully varied and complex (Mytton 1999). No two people are exactly the same. They differ in their media consumption behaviour, opinions and way of thinking about issues. The media researcher, on the other hand, wants to summarise and generalise with regard to the varied opinions, attitudes and behaviour of individuals and to categorise media consumers into categories that make a variety of forms of analysis possible. In doing so, a complex reality is simplified and distorted in a certain way. However, as it is too time-consuming to describe the media behaviour of each individual in a population in detail, some degree of summarising, aggregation and/or generalisation is inevitable in media research. The questionnaire is the main instrument that makes this possible. We put the same questions to each individual included in a sample. Their combined responses provide a picture of the whole.

However, just as individuals differ with regard to almost anything, they also differ with regard to the way that they interpret and respond to any question put to them. Questionnaire questions consequently differ distinctively from questions habitually asked in everyday conversations (Mytton 1999). For example, you may ask a friend: "Which television channels do you watch?" Your friend may mention one or two channels. However, your friend may assume that you mean "Which television channel do you watch the most" or even "Which programme do you like the most?" Your friend's answer will depend on the way that he or she interprets your question. If you ask the question to somebody else, it might be interpreted quite differently. In order to avoid such variation, questionnaire questions should be precise and vagueness and ambiguity needs to be avoided. Mytton proposes the following questions that need to be asked by survey researchers for every question that is included in a questionnaire:

Will all respondents understand the question in the same way and give similar (not the same) responses? Vague, imprecise questions should be replaced by precise, unambiguous wording. A question such as "Which television channel do you watch most frequently?" is, for example, more precise and will yield more consistent responses, that is, it can be expected that everyone will understand the question in the same way. A question such as "Have you watched *Generations* in the past two weeks" is also a better option and will yield more reliable responses regarding habitual watching behaviour than merely asking "Do you watch *Generations*?" In the latter case, a respondent can answer "yes" even if he or she has watched the programme only once a year or two ago.

Can it be reasonably expected that respondents will know the answer or be able to answer the question? This question is of paramount importance for media research. We often ask people

questions about their media behaviour, for example the radio stations that they listened to, the television channels that they watched and/or the newspapers that they read the previous day, week, two weeks or even a longer period back. However, will they be able to remember? Questions asking people in great detail about behaviour that took place too far in the past might be a waste of time. Considerations like these have given rise to the development of an array of audience measurement practises as discussed in chapter 15. In many questionnaires, people are furthermore requested to give information on their household income. However, only the head(s) of a household will probably be able to provide such information.

Can it be reasonably expected, even if a respondent knows the answer, that he or she will tell the truth? Even when people know the answer to a question, they may be hesitant to reveal the correct information. Despite assurances of confidentiality, people might, for example, be afraid to reveal their income as they could fear that the government, taxman – or even family members – might get hold of the information. One solution is not to request precise information, but to show a range of income categories from which respondents have to make a choice. The socio-economic status of a household can also be established by considering other factors such as ownership of items such as radios, television sets, cars, and so forth, as is being done by means of the SAARF Universal Living Standards Measure (SAARF LSM^{TM}) (SAARF sa). People might furthermore be afraid or hesitant to reveal sensitive or controversial behaviour such as visiting pornographic websites.

Will the question, as stated, provide the information that you want? The dilemmas associated with question wording have already been touched on in the introduction to this section. It needs furthermore to be considered that there is not a single question format that will suit all the researcher's information needs. The wording and format of questions need to be varied according to particular information needs. Question format and wording will be discussed further in the following sections.

10.8.1 Open-ended versus closed-ended questions

There are basically two types of questions in a questionnaire, namely open-ended and closed-ended questions (Babbie 1991). In open-ended questions, respondents are asked to formulate and write down their own answers to a question, for example:

For what purposes do you use the Internet?

_____

_____

_____

In closed-ended questions respondents are requested to select their answer from a list of response options that are provided, for example:

> *For which of the following purposes do you use the Internet? Tick off the functions that you use:*
>
> *E-mail* ____
> *Internet banking* ____
> *Internet shopping* ____
> *Seeking information* ____
> *Visiting chatrooms* ____

One can also combine the two methods by adding "Other" to the response options in the abovementioned example. Under the "Other" category individual respondents are free to describe, in their own words, any additional purposes not mentioned in the list of response options.

Both open-ended and closed-ended questions have distinct advantages and disadvantages (Mytton 1999; Neuman 2006; Rosnow & Rosenthal 1996). The advantages of open-ended questions lie in the fact that they:

- Offer opportunities to express feelings and experiences spontaneously
- Do not lead respondents by suggesting specific answers
- Provide exploratory, unanticipated or novel findings
- Allow respondents to answer in their own language, thus increasing rapport
- Permit creativity and self-expression
- Can provide rich detail on a complex issue or an issue with which the researcher is not very familiar with

The disadvantages of open-ended questions are the following:

- Open-ended questions are time consuming for the researcher (who has to analyse and code each response) as well as for the respondents and interviewer
- Open-ended questions often invite off-the-mark or rambling responses
- It is difficult to assess the reliability of open-ended questions
- Comparisons and statistical analyses are difficult.
- Articulate, highly educated respondents and respondents with strong viewpoints on the issues at hand have an advantage
- Language plays an important role - in other words, respondents who have difficulty in expressing themselves in a particular language are at a disadvantage

The advantages of closed-ended questions tend to be the complete opposite of the disadvantages of open-ended questions:

- It is easier and quicker for respondents to answer open-ended questions, thus the work of interviewers becomes easier
- It is much easier and quicker to code, capture and analyse open-ended questions
- Direct comparisons between the responses of individual respondents, groups of respondents and across surveys are possible
- Open-ended questions force respondents to reply according to the dimensions that are of interest to the researcher
- The categories of open-ended questions help to explain what is wanted to the respondent
- Irrelevant responses are reduced
- Open-ended questions make it easier for respondents to answer sensitive questions.
- Less articulate or less literate respondents are not at a disadvantage

Again, the disadvantages of open-ended questions are almost the complete opposite of the advantages of closed-ended questions:

- The response categories provided by the researcher could miss the point altogether or important issues could be left out
- Open-ended questions could suggest ideas and elicit responses that the respondent would not otherwise have given.
- Open-ended questions could enforce simplistic answers to complex issues
- Clerical mistakes (or marking the wrong response) are possible

It is up to the researcher to decide whether a closed-ended or open-ended question is the most appropriate in a particular case. However, novice questionnaire researchers tend to prefer (and overuse) open-ended questions – probably because open-ended questions are easier to construct. However, one of the most important disadvantages of open-ended questions is that they are extremely time-consuming and difficult to analyse and report (Mytton 1999). Consequently, the questionnaires for large-scale surveys involving relatively large samples usually consist predominantly of closed-ended questions, while open-ended questions are used only in exceptional cases where the researcher wants to explore a new or relatively unknown phenomenon or field. In most large-scale surveys the number of closed-ended questions is restricted to no more than two or three per questionnaire.

10.8.2 Compiling closed-ended questions

Although most questionnaires consist predominantly of closed-ended questions, compiling closed-ended questions requires knowledge, skill and expertise. Closed-ended questions should meet the following requirements (Babbie 2001; Mytton 1999; Neuman 2006):

- *The response options should be exhaustive, that is the options should cover all possibilities.* Although it is possible to add an "Other" category to make provision for aspects not covered in the existing options, the coding and analysis of responses to an “Other” category are time-consuming and difficult – similar to open-ended questions.

- *The response options should be mutually exclusive*. That means options should not overlap and the same meaning should not be reflected in more than one option. For example, when using – as in the following example ─ categories to determine age, a particular person’s age should not fall in more than one category:

	WRONG	MORE *CORRECT*	
Age:	*16 to 25 years*	*16 to 25 years*	*1*
	25 to 35 years	*26 to 35 years*	*2*
	35 to 45 years	*36 to 45 years*	*3*
	45 to 55 years	*46 to 55 years*	*4*
	55 to 65 years	*56 to 65 years*	*5*
	65 years +	*66 years and older*	*6*

- *Items/questions should not be leading and should not pressurize respondents in a particular direction.* Mytton (1999:39) gives the following example of a statement that was used in India in a survey on the newly introduced cable television channel (CTV):

  WRONG
  Some of the CTV feature films contain sex/violence which affects the mind of children? What is your opinion about this aspect of CTV?

  The statement already indicates what respondents should think about the issue. A statement should rather be formulated in such a way that it gives respondents the freedom to agree or disagree, for example:

  MORE CORRECT
  Films containing sex/violence could affect the minds of children negatively. To what extent do you agree or disagree with this statement?

- *Items/questions should be as simple, straightforward and short as possible*. Long and complex statements should be avoided. The following excessively long and complex statement was

also used in the abovementioned survey in India (Doordarshan is the state television channel – Mytton 1999:39):

WRONG

It is generally believed that the indiscreet showing of foreign films on CTV without removing objectionable scenes/dialogues (unlike Doordarshan which shows only classical/award winning foreign films and even removes objectionable scenes) is a direct invasion on our culture. What is your opinion about this?

Apart from the fact that the statement is also leading, it is almost self-evident that respondents would be lost halfway through the statement and that they would have extreme difficulty to grasp the meaning. A simpler and more straightforward wording will be the following:

MORE CORRECT

Films containing scenes involving sexual behaviour should be edited before screening on television. To what extent do you agree or disagree?

- *The wording should be such that confusion, vagueness or ambiguity is avoided.* Language that could mean different things to different people should not be used. Consider the following question:

  WRONG

  How much time do you spend watching television?

A great deal	*1*
A moderate amount	*2*
Not a lot	*3*
No time at all	*4*

Only the last response option has a definite meaning. With the other options only subjective opinions are measured on the amount of time watching television. For a businessman, an hour might be "a great deal", while for a teenager it might be "not a lot".

- *Questions and statements should be unidimensional.* Double-barrelled items – usually characterised by the use of "or" and "and" ─ such as in the following example should be avoided:

  WRONG

  Do you eat breakfast and read your newspaper in the mornings when listening to the radio?

In this case it will be unclear whether a "yes" response applies to eating breakfast, listening to the radio or to both. The same applies to a "no" response. It will be better to use two separate unidimensional questions, namely:

MORE CORRECT

Do you eat breakfast when listening to the radio in the morning?

Do you read your newspaper when listening to the radio in the morning?

- *Instructions should be clear.* It should, for example, be indicated clearly whether respondents should choose only one response option or whether they are allowed to choose more than one.

- *The question format should be appropriate to the kind of information that is needed.* There does not exist a single format that can fulfil all the researcher's information needs. The skilled survey researcher will vary the format of questions for different information needs. Some of the frequently used formats are discussed in the following sections.

10.8.3 Quantity questions

The response to a quantity question involves a number − exact or an approximation − in response to a question to give information in numerical form. Information on a respondent's age, the number of people living in a household, the number of television or radio sets, can be recorded in the form of numbers, for example:

Age: ……. *years*

10.8.4 Multichoice type and checklist questions

In multichoice type questions respondents need to make a choice between response options that are mutually exclusive (Mytton 1999). Sometimes only one response options can be chosen, at other times more than one option can be chosen. This type of question is very versatile. It is most often used to obtain demographic information, but is also used for a range of other purposes as illustrated by the following examples:

Gender:

Male *1*

Female *2*

Do you have access to television?

Yes *1*

No *2*

How often do you watch Generations?

Almost every day	*1*
A few times per week	*2*
A few times per month	*3*
Less than once or twice per month	*4*
Almost never	*5*

Checklist questions are very similar to multichoice type questions. In this type of question format, respondents are often allowed to choose more than one response option, but should be instructed that they can do so as in the following example:

Which of the following television soap operas have you watched in the past two weeks? You can mark more than one.

Generations	*1*
Isidingo	*2*
Sewende Laan	*3*
Binnelanders	*4*
Villa Rosa	*5*

10.8.5 Contingency questions

Contingency questions – also called screening questions or skip questions − are used in order to avoid asking questions that are irrelevant for a particular respondent (Neuman 2006). A contingency question is a two- (or more) part question in which the first question determines which question(s) the respondent needs to answer next. In other words, on the basis of the respondent's response to the first question, the respondent can be instructed to skip one or more questions, for example:

1. Do your household currently subscribe to satellite television?

Yes *1*

No *2*

If you answered "Yes" to question 1, please skip question 2 and move to question 3.
If you answered "No", please answer question 2.

2. What are the most important reasons why your household do not subscribe to satellite television?

10.8.6 Rank-order questions

Rank-order questions is one way of measuring opinions and attitudes (Mytton 1999). In this type of question respondents are asked to put possible answers in a rank order of importance or desirability. Some detail might be provided to help respondents to make informed choices. As illustrated in the following examples, respondents might be asked to order their preferences of radio or television programmes, stations or channels:

Here is a list of various types of television programmes. Please rank them in order of your preference. Put a 1 next to the type of programme that you like the best; a 2 next to the type of programme that you like the second best, and so on.

_____ *News programmes*
_____ *Sport programmes*
_____ *Soap operas*
_____ *Documentaries*
_____ *Talk Shows*
_____ *Comedies*

The television channels of the SABC regularly broadcast the following sports:
rugby, tennis, soccer, box, athletics, hockey and netball. Please indicate which of these broadcasts you like best (first choice), second best (second choice) and third best (third choice):
First choice:
Second choice:
Third choice:

Rank-order questions can also be used to establish the popularity of presenters. This type of question can furthermore be used for more serious purposes (Mytton 1999). Suppose you want to know how young mothers in rural areas want to get information about child health. You might ask a question like the following:

The following are possible ways in which information about child health can be made available to mothers in your area. Please rank them in order of your own preference. Give your first choice the number 1, the next choice the number 2 and so on up to the number 5 for the information source which is the least important to you.

Personal information sessions by a clinic sister
Radio programmes
Television programmes
Information pamphlets distributed at clinics
Posters at clinics and hospitals
Other – please state _____

10.8.7 Intensity measures

Opinions, attitudes and feelings cannot easily be categorised in a dichotomous way as reflected in questions with a simple "yes"/"no" or "agree"/"disagree" format (Nardi 2003). Although people might have clear preferences, most people feel more or less strongly about most issues. For example, you might feel extremely strongly in favour of greater press freedom and the freedom of the individual to express his or her feelings freely. However, although you might also be in favour of the availability of more television channels in South Africa, you might not feel as strongly about the latter as about the former issues. In other words, it is often not enough to have respondents choose between two opposing categories such as "yes" or "no" or "agree" or "disagree". They also need to indicate the intensity of their feelings, that is how strongly they "agree" or "disagree". People's attitudes, opinions and feelings are consequently often measured by means of intensity measures such as Likert type or semantic differential scales.

[Likert-type scales]*Likert types scales*

The Likert type scale is a closed-ended scale appropriate *per excellence* for measuring attitudes or opinions (Rosnow & Rosenthal 1996). It represents a numerical scale in which numbers are associated with different responses. In most cases the response options reflect varying degrees of agreement or disagreement. Likert type scales often consist to statements to which respondents should indicate the extent to which they agree or disagree. However, as can be deduced from the following examples, the Likert type format is extremely versatile and can take a variety of formats. Neuman (2006:296) gives a list of potential response formats that can be used when compiling Likert type scales. The following are some examples of Likert type scales that can be used in media research:

Television programmes often contain scenes that I find offensive.

Strongly agree	*1*
Agree	*2*
Neither agree or disagree	*3*
Disagree	*4*
Strongly disagree	*5*

Indicate to what extent you are interested in documentary crime programmes:

Very interested	*1*
Interested	*2*
Neutral	*3*
Not interested	*4*
Not interested at all	*5*

What is your opinion of the programmes offered by SABC3?

Very good	*1*
Reasonably good	*2*
Not very good or bad	*3*
Bad	*4*
Very bad	*5*

In the above examples five point scales have been used. There is, however, no rule against a greater or smaller scale size. However, Mytton (1999) holds that four or five options yield the most easily analysed results. It is generally agreed that a neutral option (e.g., "neither agree or disgree") should be provided to enable the respondent to indicate that he or she do not agree or disagree with any of the other response options that are offered. However, some researchers prefer to exclude the neutral option in order to get a clear indication of opinion. The implications of forcing a respondent to take a stand with regard to a particular issue should, however, be considered.

Of particular importance is the order of the response options. The options should follow a logical order, for example from positive to negative, large to small or vice versa, with the neutral option always in the middle. Response options should never be scattered in an illogical order.

A Likert type scale should also be well-balanced. The following scale was used some years ago by a South African airline to establish opinions on the food that they serve on board:

WRONG

How would you rate the food served on this flight?

Good	*1*
Very good	*2*
Excellent	*3*

The problem with this scale is that respondents are not allowed to indicate that they did not like the food. A more appropriate scale would have the same number of positive and negative options such as in the following example:

MORE CORRECT

How would you rate the food served on this flight?

Very good *1*

Good *2*

Cannot say *3*

Bad *4*

Very bad *5*

[matrix questions]*Matrix questions*

In order to enhance the reliability of measurements (see section 13.9), a set of items is sometimes compiled to evaluate opinions or attitudes towards a particular subject or issue (Neuman 2006). In matrix questions the scales are listed in a compact form where the response categories for all the questions are the same. The responses on the various scales are usually summated in order to obtain a single measure of attitudes or opinions towards the object or issue at stake.

Indicate to what extent do you agree or disagree with the following statements regarding the news programmes of the SABC:

	SA	*A*	*N*	*D*	*SD*
The news programmes are politically neutral.					
The news programmes give preference to particular political parties					
The news programmes are objective in presenting political events.					
The contents of news programmes are controlled by the ruling party.					

[semantic differential scales]*Semantic differential scales*

According to Rosnow and Rosenthal (1996) the semantic differential was developed for the measurement of the connotative meaning − as opposed to the denotative meaning − of things in everyday life. The term *denotative* refers to the assigned meaning of an object or subject as reflected in dictionaries, while *connotative* refers to the representational meaning, that is one's own subjective

associations. The inventors of this question format, Osgood, Suci and Tannenbaum (1957), that most things in life (e.g., dogs, flowers, individuals, ethnic groups, presenters, programmes) are perceived in terms of three primary dimensions of subjective meaning, namely *evaluation*, *potency* and *activity*. Osgood et al developed the method of using bipolar cue words to tap all three dimensions of connotative meanings.

In media and marketing research, semantic differentials are often used to evaluate products, programmes, persons, groups, and so forth. The semantic differential can also be employed to make comparisons. Suppose you are interested in comparing the two presenters of an early morning radio programme in terms of their connotative meaning for regular listeners to the programme. Listeners can then be requested to evaluate the two presenters on the same semantic differential scale. To tap the evaluative dimensions associated with the two presenters, the following bipolar anchors can be used:

Bad	*1*	*2*	*3*	*4*	*5*	*Good*
Unpleasant	*1*	*2*	*3*	*4*	*5*	*Pleasant*
Dull	*1*	*2*	*3*	*4*	*5*	*Sharp*
Polite	*1*	*2*	*3*	*4*	*5*	*Rude*

The numbers represent dimensions of a continuous scale and can be explained for the first scale in the following fashion: “extremely bad” (1); “quite bad” (2); “neutral” (3); “quite good” (4) and “extremely good” (5). An example is usually discussed in the instructions for a semantic differential scale in order to help the respondents to understand the significance of the various dimensions of the scales.

Please note that the poles of the scale should represent direct opposites. It is furthermore important to note that no particular order is followed in ordering the positive or negative poles of the scales. In varying the order, that is whether the positive or negative pole is given first or last, recency effects can be avoided. Recency effects refer to the effect that occurs when respondents tend to pursue with their last response offered rather than considering each question or item seriously (Neuman 2006). For example, a respondent who marked “2” on the first semantic differential scale, can tend to proceed in a similar way by marking “2” for all the other scales also.

10.8.8 Overall structure of a questionnaire

A questionnaire usually consists of the following sections:

A Letter of introduction

The letter of introduction is an important part of the questionnaire in which the researcher should do the following:

- Introduce himself or herself and give information on the institutions or organisations involved in the study
- Give an indication of the reason(s) for or aims of the study
- Motivate the respondents to participate in the study
- Assure the respondents of the confidentiality and anonymity of their responses
- Give contact details of the researcher(s)

B Demographic or other relevant details

This section could follow directly after the letter of introduction or could be placed at the end of the questionnaire. In most large-scale surveys, demographic questions follow directly after the letter of introduction due to their vital importance in the analysis of the data. However, wherever its position in the questionnaire, the section should contain questions on the demographic details relevant to the field of study. Most questionnaires contain questions on gender and age. Other details that might be relevant are race, marital status, highest level of education, personal income, socio-economic status of household, occupation and/or home language. In intra-organisational studies other variables such as division or rank might be relevant, while details like occupation and income might be superfluous as information on these might already be reflected in the rank of an employee. In all cases the researcher should decide which demographic variables are relevant to a particular study and only those variables should be covered in the questionnaire.

C Questions related to field/topic of investigation

This section contains the questions aimed at investigating the research problem(s) or issue.

The order of questions within a section needs to be considered carefully (Mytton 1999:53). Here a funnel structure is mostly used. Funnelling refers the ordering of questions from the general to the more specific. For example, if you ask "Have you read the *Sowetan* in the past seven days?", your respondent might be startled. It is better to start with a general question on newspaper reading patterns such as "I want to ask you some questions about newspapers. Do you ever read any newspapers? If yes, which newspaper do you read the most?" From these general questions, you can proceed to more specific questions regarding the reading of particular newspapers.

Another important issue is the length of the questionnaire. The questions included in a questionnaire are determined by the purpose of the study (Mytton 1999:41). The designer of a questionnaire should, however, retain a balance between the number of the questions to be included and the overall length of the questionnaire. If the questions included are too few to explore the

research issue(s) sufficiently, the project will fail. The project will, however, also fail if the questionnaire is so long that it wearies out the respondent, the fieldworker, or both. It is therefore not a good idea to "play it safe" and include everything that might be of relevance. The real skill is to reduce the questionnaire to those questions that are absolutely essential to meet the research objectives. As a general principle, Mytton holds that questionnaires that take longer than a maximum of 45 minutes to administer, should be avoided.

10.9 QUALITY MEASURES FOR EVALUATING SURVEYS: RELIABILITY AND VALIDITY

Reliability and validity are central issues in research (Neuman 2006). They represent the yardsticks with which the quality of all kinds of research − quantitative, qualitative or participatory − are evaluated. Discussions on reliability and validity in most textbooks are, however, often more applicable to measuring scales (e.g., a number of items measuring the same construct) than to survey studies in general. For instance, it is not practically possible to repeat a questionnaire survey on the same sample to determine the test-retest reliability of a survey study. The following sections contain some notes on the reliability and validity pertaining more specifically to questionnaire surveys.

10.9.1 Reliability

A variety of definitions of reliability can be found in textbooks on research methodology. Neuman (2006) defines reliability simply as dependability or consistency. It suggests that the same measurement or response will be obtained under identical or similar conditions. For example, you get on to your bathroom scale and read your weight. If you get off and get on again a number of times, it should give approximately the same weight each time − assuming, of course, that you have not eaten or drunken anything or changed your clothing. If the measurements are consistent, the bathroom scale can be regarded as a reliable measuring instrument. If not, it is unreliable. All researchers want their measuring instruments (e.g., the questions included in a questionnaire), to be reliable and valid. However, it needs to be kept in mind that perfect reliability − as well as perfect validity − is not possible.

Neuman (2006) distinguishes three forms of reliability that are relevant for survey research, namely:

- Stability reliability: Does a particular question or item gives the same results over time?
- Representative reliability: Does a particular question or item gives the same results when applied to different groups/samples?
- Equivalence reliability: Does a particular question or item gives the same results as other indicators measuring the same construct or variable?

Mytton (1999) hold the reliability of a questionnaire survey as the extent to which a questionnaire yields similar results on different occasions. A question that yields one response from a respondent on one occasion, but a different response from the same respondent on another occasion, might be unreliable. (It needs, however, to be kept in mind that a person's attitudes, for example, could change.) The reliability of a questionnaire survey depends mainly on the rigour of the research design; that is the sampling procedures, the way that the questionnaires are applied and the wording of questions. Neuman (2006) suggests the following ways in which the reliability of surveys can be enhanced:

- Clearly conceptualise all constructs − each question should address one and only one concept which implies that ambiguous, clear theoretical definitions should be developed for all issues to be measured
- Use precise levels of measurement – this principle also implies that all ambiguity and vagueness in the wording of questions and/or response options should be avoided.
- Use multiple indicators of a variable, for example a number of items measuring the same construct such as a scale containing a number of items to measure attitudes towards a country's public broadcaster.
- Use pretests and pilot studies to identify defects such as problems with the wording of questions or items.
- Use a probability sampling design to enhance the representative reliability of a survey.
- Ensure that interviewers are thoroughly trained.

There are various ways, some very complex, to test reliability (Mytton 1999). One can use a number of items to measure a particular concept. One can also test a question on the same respondent on different occasions. The problem is, however, that the person can remember what his or her previous answer was. If he or she gives the same response, it could the result of a good memory rather than the reliability of the question at stake. It is rather through experience that survey researchers learn which questions are likely to yield reliable results. Pilot testing is, however, one of the most important ways in which the reliability of survey questions can be improved.

10.9.2 Validity

Consistency of results, as reflected in reliability, is not enough. A questionnaire can be highly reliable, but still be invalid. Mytton (1999) defines the validity of a survey as that quality of a questionnaire that ensures that what is measured reflects reality. Neuman (2006), on the other hand, relates validity to a specific purpose or definition. A question, scale or questionnaire might be valid for a particular purpose but less valid or invalid for other purposes. In this sense validity also refers to our theoretical and operational definitions of concepts. For example, if a researcher is interested in the public's

opinion on violence on television, the theoretical definition of violence will determine how the concept “violence” is operationalised in the questionnaire. Neuman holds that it it is more difficult to achieve validity than reliability.

Four forms of validity as distinguished by Neuman (2006) are particularly relevant to survey research:

- Construct validity: Does a question, item or scale measure the construct or issue that it is supposed to measure?
- Face validity: Does the question appears to measure the (theoretical or operational) construct or issue that it is supposed to measure?
- Expert validity: Does experts within the field agree that the question appears to measure the (theoretical or operational) content or issue that it is supposed to measure?
- Content validity: Do I measure the "full content" of what I should measure, e.g., do the response options of a question consider all possible responses to the question; does a questionnaire measure all areas relevant to the research issue?
- External validity. Can I generalise the results to the population?

The validity of survey research can be improved in the following ways (Neuman 2006):

- Do your homework in order to ensure that you cover the issues that are relevant to providing the answers to a particular research problem; study the literature.
- Do explorative research.
- Use a variety of research methods (triangulation) such as focus groups to assist you with the development of a questionnaire.
- Make use of the judgement of experts, colleagues, peers and/or representatives of the population that you intend to study as you develop your questionnaire.
- Conduct pretesting and pilot studies.
- Make sure that you take into consideration the particular (cultural) context in which your study will be conducted.
- Use probability sampling designs to enhance the external validity of the survey.

According to Mytton (1999) audience researchers are faced with various validity problems. In measuring radio audiences, for example, different results can be obtained by means of questionnaire surveys and diaries. The question then arises: Which is valid, that is which measurements best reflect reality? It is doubtful that audience researchers will ever be able to answer all the questions related to the validity of various measures obtained by different instruments. It is furthermore highly likely that all measurements are distorted in some or other way. It may, however, not matter too much given that we consistently use the same method of measurement for investigating a particular issue or problem.

The distortions will then at least remain consistent over time. That brings us back to Neuman's (2006) definition of validity in terms of the purpose of a study. The question is, in the end, whether a particular survey is able to tell us what we need to know.

10.10 SOURCES OF ERROR OR BIAS IN QUESTIONNAIRE SURVEYS

From everyday life we know that, despite careful planning, few things ever operate perfectly (Mytton 1999). That is also true of survey research. All surveys are susceptible to a multitude of sources of error that can lead to distortions or bias in the results. Here we need to repeat what is being said in chapter 15, namely that the concept "error" as used in research has a different meaning from the understanding of mistakes in everyday life (Webster et al 2006). Error as used in social science research refers to the extent to which measurements obtained by means of survey research fail to reflect reality. The concept of "bias" is often used in conjunction with error. Bias refers to a misrepresentation in what is being measured in a particular direction (Babbie 2001:G1). In the following section we discuss some of the sources of error or bias associated with questionnaire surveys.

10.10.1 Sampling error

Sampling error is the degree of error associated with a particular sampling design. It is usually used in connection with the notion of probability sampling designs (Babbie 2001; Nardi 2003). Discussions of sampling error usually refer to so-called "population parameters" or the exact value of a particular measurement for a particular population, for example the exact number of the adult South African population that watches a particular television programme. If we could draw a perfect probability sample, we should theoretically be able to calculate the population parameter from the responses to the questionnaire. However, the notion of a perfect probability sample is in practise a mere fiction (Tredoux 2002). In most practical research situations, even the most carefully drawn probability samples are distorted and imperfect reflections of the populations they are supposed to represent. There will consequently almost always be a difference between the true population parameters and the estimations of these parameters obtained from a sample. This difference is called sampling error.

There are, however, ways in which researchers attempt to reduce sampling error and/or to correct for it. Sampling error can be reduced by applying the principles of probability sampling in drawing and executing a sampling design (Nardi 2003). It is furthermore assumed that sampling error is smaller for larger than for smaller samples. Nonresponse should also be reduced (see section 13.10.2). Researchers sometimes also correct for sampling error by reporting confidence intervals instead of or in addition to the exact values obtained from the sample (see Babbie 2001:193).

10.10.2 Nonresponse error

The failure to get a valid response on each question in a questionnaire from every selected respondent, that is nonresponse error, weakens a questionnaire survey (Neuman 2006). Several sources of nonresponse error can be identified. Sometimes respondents may refuse to answer questions on sensitive issues such as, for example, their monthly income or questions on visiting pornographic websites. Sometimes respondents can simply neglect to complete a questionnaire fully. The consequence can be misleading findings. Other major sources of nonresponse are associated with the practical implementation of sampling plans. Sometimes a sampled respondent cannot be found; a respondent cannot be at home or cannot be reached after several attempts; a respondent can be reached but do not fulfil the requirements (e.g., age requirement) of the survey; and/or a respondent can refuse to participate in the survey. In South Africa, nonresponse has become a serious problem as it is becoming increasingly more difficult for fieldworkers to gain entrance to households in higher socio-economic areas due to security measures such as gated communities, high walls and electrified gates. The magnitude of nonresponse error in a survey can be estimated by comparing the realised sample size to the sample size in the initial sampling plan and/or inspecting the response rates to specific questions.

Several measures can be taken to reduce nonresponse error (see Neuman 2006:295-299). Careful consideration should be given to the formulation of questions and response options to sensitive issues. Researchers should furthermore put measures in place to ensure that respondents complete questionnaires fully. A system for replacement should be devised and implemented when a selected respondent cannot be found, do not fulfil the survey requirements or refuse to participate. In household surveys, for example, a household can be replaced with the household to its immediate right or left if an eligible respondent cannot be found at the household initially selected. Respondents may also be more willing to participate if a fieldworker represents their cultural group and is able to speak their home language. Refusals can also be reduced by sending a letter or calling a respondent in advance. The initial contact between the respondent and fieldworker is also important. Delivering a questionnaire personally, instead of leaving it on the doorstep or in a postbox, can also enhance participation. The use of incentives, particular in postal surveys, can furthermore raise participation rates.

10.10.3 Interviewer effects

The interviewer's tone of voice, body language, posture and the relationship he or she is able to establish with a respondent, especially in the initial contact phase, are all factors that can influence the responses to the questions in a questionnaire. An interviewer can, for example, introduce bias in a survey by introducing his or her own expectations on what the responses to particular question(s) should be or attitudes towards particular issues in a questionnaire interview. Mytton (1999) suggests two ways in which interviewer bias can be reduced. Firstly, the wording of questions should be as neutral as possible to avoid giving the fieldworker, and also the respondent, the impression that certain

responses are expected. Fieldworkers should furthermore be thoroughly trained to maintain a critical self-awareness of the dangers of influencing respondents and/or a subjective interpretation of responses. Interviewers should furthermore be trained to treat every respondent with politeness, care and respect despite possible cultural, class or caste differences.

10.10.4 Response bias

Some respondents are prone to responding in a particular way (response set), to give social desirable responses (the responses that they think the researcher wants), to exaggerate the truth or simply provide false information (Nardi 2003). There are several ways in which a researcher can attempt to avoid response bias in a questionnaire survey. We already referred to recency effects and the need to vary the order of positive and negative cue words when compiling semantic differential scales (see section 13.8.7). The tendency to lie or to give social desirable responses can be detected by including so-called "trap" questions. For example, when asking a question on the newspapers that respondents read, the name of a fictional newspaper, that is a newspaper that does not exist, can be included in the list. The same information can also be obtained in different ways. For example, information on the newspapers that respondents read can be obtained by a checklist question as well as by a question with a "yes/no" format. When definite signs of response bias are detected in a number of questionnaires, the researcher can opt to exclude these questionnaires from the overall analyses or to analyse them separately.

10.11 CASE STUDY

The most well-known media survey in South Africa is the **A**ll **M**edia and **P**roducts **S**tudy (AMPS® survey) conducted by the South African Advertising Research Foundation (SAARF). Whereas the nature of this survey is discussed in more detail in section 15.9.1 of chapter 15, we discuss the SAARF AMPS® here as an example of a large-scale survey that employs complex multistage cluster sampling to draw a sample of the heterogeneous and geographically dispersed South African population.

For the 2007A SAARF AMPS®, a total countrywide sample of 24 812 respondents of 16 years or older were interviewed (SAARF sa). All metropolitan and urban areas with a population of 100 000 or more were included in the sample. Within each province, metropolitan areas were listed alphabetically in five strata (or categories) reflecting population size − 40 000 to 99 999; 8 000 to 39 999; 4 000 to 7 999; 500 to 7 999 and less than 500 − with their cumulative populations also listed. From each stratum a sample of communities (or clusters) were drawn using systematic sampling with a standard random starting point and fixed interval technique.

The sample required for rural areas was proportionally allocated to the various provinces and, within each province, to magisterial districts proportional to population size as indicated in the 2006 population estimates (also an example of stratification).

The Nielsen Geoframe served as the main sampling frame for the selection of households. The Nielsen Geoframe lists the residential addresses in most (but not all) metropolitan areas and contains 5 983 703 addresses that are arranged alphabetically by suburb and, within each suburb, by streetname. For communities listed in the Nielsen Geoframe, a method of systematic sampling was again followed by starting from a random start in the sampling frame of addresses in each of the clusters drawn and drawing addresses on the basis of a fixed interval. To simplify fieldwork, one other address was then drawn in the immediate vicinity of each address drawn to form clusters of two.

For areas not covered in the Nielsen GeoFrame, GPS co-ordinates were employed to draw households. Within a chosen (drawn) community or magisterial district, a grid was overlaid electronically and coordinates selected on a random basis. These co-ordinates were provided to the fieldworkers who used GPS devices to guide them to the specific point indicated by the randomly selected co-ordinates. Clusters of two were again formed by instructing fieldworkers to move three dwellings to the right to select the second respondent to form clusters of two. The final co-ordinates was captured and used to control for the accuracy of the sample selection.

Each address/household that formed part of the designated sample, was predesignated to provided either a male or a female respondent – in equal proportions. Exceptions were mines, hostels and domestics where the points were allocated to either males or females. The equal gender proportions are reflected in the final realised sample that consisted of 12 405 male and 12 407 female respondents.

At each selected address, within-household sampling was done by means of a random grid where adults of the designated gender in each household were listed according to their age order. Fieldworkers were instructed to interview the selected individual irrespective of language.

The sampling plan also made provision for replacement or substitution in the case of nonresponse. Substitution was allowed after a number of unsuccessful calls at a particular address. Alternately, an individual at the address to right or the left of the address originally selected had to be interviewed. At the substituted address, an individual of 16 years or older had also to be selected by means of the random grid of the same gender as the originally designated respondent.

This sampling plan of the AMPS® survey represents an application of some of the best practises employed in the organisation of large-scale surveys in the rest of the world. However, it also illustrates the unique challenges presented by the complexity of the South African population and how the sampling plan needed to be adapted to cover both metropolitan and far-off urban areas.

Questionnaires are completed by means of face-to-face interviews in which the responses of respondents are recorded by means of CAPI (see sections 13.7.5 and 13.7.7). Visual prompts in the form of shuffle cards that display the mastheads and logos of newspapers and magazines are furthermore used in the investigation of readership patterns.

10.12 SUMMARY

At this stage it should be clear why survey research is not for the fainthearted. Every step of questionnaire surveys present unique challenges to the researcher. The questionnaire survey is nevertheless a highly versatile tool in the hands of the skilled social science researcher. Most of the skills associated with questionnaire surveys can also be developed by experience and practise. However, questionnaire surveys do not present the final answer for all the research problems and topics in Media Studies. Questionnaire surveys, for example, cannot offer an in-depth understanding of the unique experiences of individuals and communities of the media. In order to obtain an in-depth and multifaceted understanding of the relationship between people and the media, the results of questionnaire surveys should be supplemented with the results of other research methods such as in-depth interviews, ethnography as well as quantitative and qualitative content analysis.

RESEARCH ACTIVITIES

1. Formulate five research questions related to your field of interest in Media Studies that can be investigated by means of survey research.
2. Choose any one of the research questions that you formulated in 1. Compile a questionnaire to investigate the research question.
3. Conduct a pilot study to investigate the research question that you chose in 2. Follow the following steps:
    a. Define the population.
    b. Select an availability sample of 5 respondents to participate in the pilot survey.
    c. Conduct a self-administered survey among the selected respondents.
    d. Conduct interviews with the 5 respondents. Try to determine whether they experienced any problems with the questionnaire.
    e. Adapt your questionnaire in response to the feedback that you received from respondents in the pilot study.
    f. Analyse the results of the pilot study by making use of simple frequency tables and graphs.
    g. Critically evaluate your study.

FURTHER READING

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